

HORSELESS CARRIAGE GAZETTE



VOL. 24 NO. 1
JAN.-FEB., 1962



SILVER ANNIVERSARY ISSUE

Horseless Carriage Club of America

9031 E. Florence Avenue
Arrington Square
Downey, California

Founded in Los Angeles November 14, 1937

A non-profit corporation founded by and for automotive anti-quearians and dedicated to the preservation of motor vehicles of ancient age and historical value, their accessories, archives and romantic lore.

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RALPH CHERRY.....Vice-President
VAUN RODGERS.....Secretary
JOHN OGDEN.....Treasurer

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Ken Sorensen	Roger Taecker	John Ogen

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By-Laws.....Lester H. Barnett
Publications.....Roger Taecker
Regional Groups.....Cecil Frye
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MEMBERSHIP INFORMATION

Active Members must own a Horseless Carriage of year 1915 or earlier; they have all privileges of the club. Annual dues, \$7.00—\$5.00 of which is for a one year subscription to the HORSELESS CARRIAGE GAZETTE.

Life Members are Active Members for life upon payment of \$100.00 dues.

Associate Members have all privileges of the club except holding a National office and voting. Annual dues \$5.00, which includes a one year subscription to the GAZETTE.

Wives of Members may become either Active or Associate members, corresponding to their husband's membership. Only one copy of the GAZETTE, the Roster and other mailings will be sent jointly to husband and wife. Annual dues, \$2.00.

Honorary Members have all privileges of the club except voting.

Regional Group Members, who must be National Active or Associate members, pay additional dues as established by the local clubs.

Illustrated fact sheets summarizing HCCA activities and membership requirements are available from National headquarters. If you have a friend who is interested in early cars and isn't a member ask us to send him a fact sheet and application form—they're free.

Valuable Cadillac Feature Presented

Space limitations prohibited the inclusion of some technical items in the one cylinder Cadillac feature in the last issue, among them some excerpts from the operating manual. Although continued-over articles are not our policy, we feel that some of the technical information we have on hand is so worthwhile both to Cadillac owners and to old auto enthusiasts that we are including it in this issue. Specifically, this is an Operating Manual covering detailed design peculiarities of the various one cylinder Cadillacs, and incorporating instructions for the adjustment and maintenance of these good automobiles. We feel, and hope you will agree, that the space devoted to this is well used, and makes this issue one well worth preserving. This material starts on page 38.

This is reproduced through the courtesy of the Automotive History Collection of the Detroit Public Library.

ANNUAL DUES PAYABLE

Membership dues for 1962 became delinquent the end of January; if you've not yet mailed in yours please do so now to insure being on the mailing list for the next GAZETTE. Please use the special envelope sent you to speed up the return of your membership card, and check to be sure your mailing address is correctly noted.

There is no increase in dues, the Board of Directors having kept within their regular budget while issuing an expensive Roster to members free of charge, and making a number of costly improvements in the GAZETTE. This is possible by adhering to the HCCA's policy of economizing in some areas, but spending the club's funds in ways that are returned to the individual member wherever he may live.

Associate Life Memberships are now available in the HCCA. Write to National Headquarters for details.

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HORSELESS CARRIAGE GAZETTE

OFFICIAL PUBLICATION OF THE
HORSELESS CARRIAGE CLUB OF AMERICA

Vol. 24, No. 1

Jan.-Feb., 1962

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Special color printing of the 25th Anniversary cover by Mike Roberts Color Productions, Berkeley, California.

The
Horseless Carriage Club of America
invites you to attend

THE NATIONAL TOUR

at Valley of the Sun, Arizona

September 27 - 30



COMING EVENTS

- March 18 / Swap Meet
Northern California Reg. Gp.
- March 31-April 1 / Blossom Tour
Santa Clara Valley Reg. Rp.
- April 22 / Swap Meet
Santa Clara Valley Reg. Gp.
- April 29 / Swap Meet
Newport Beach Reg. Gp.
- May 17-18-19 / 9th Texas Tour
Heart o' Texas (Waco) Reg. Gp.
- May 18-19 / Streeter Antique Auction
Claremore, Oklahoma
- May 20 / Shell Hill Climb
Long Beach (Calif.) Model T Club
- May 20 / Johnson Swap Meet
Sioux Falls (S.D.) Reg. Gp.
- June 9-10 / AACA National Meet
Waterloo, Iowa
- June 11-14 / 7th Reno Tour
Nevada Regional Group
- June 22-24 / Pacific Northwest Tour
Seattle-Tacoma Reg. Gp.
- June 28-30 / 6th Midwest Tour
Kansas City Reg. Gp.
- June 29-July 1 / Model A National Meet
San Francisco
- July 9-13 / Raleigh N.C. to Williamsburg Va. Tour
North Carolina Reg. Gp.
- August 10-12 / 4th Annual Coast Tour
Central California Reg. Gp.
- August 18-19 / 1 & 2 Cylinder Car Tour
Santa Clara Valley Reg. Gp.
- August 19 / 9th Swap Meet
Long Beach (Calif.) Model T Club
- August 28 / 590-mile Model T Race
Circle, Montana Model T Ford Club
- September 8 / 11th Fall Meet
Fairfield County, Connecticut
- September 14-16 / Pierce Arrow Meet
Reno, Nevada
- September 23-28 / Glidden Tour
VMCCA; French Lick, Indiana
- September 27-30 / HCCA National Tour
Phoenix, Arizona
- October 20, 21 / San Diego Tour
Newport Beach Reg. Gp.

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NOTICE

One cylinder Cadillac enthusiasts who enjoyed Fred Gilchrist's feature article in the last issue will be interested in some further comments he makes on this vehicle. He is of the opinion, from the inspection of a number of 1906 and 1907 vehicles, that it may be possible to define a sharp cut-off point in the 1906/07 serial number lists, contrary to the usually accepted listings. And to run this down he asks that all 1906/07 one cylinder Cadillac owners write him (c/o John Deere Co., 215 S. E. Morrison, Portland 14) with details of their autos including serial and engine numbers. See the *text* of his article for location of numbers, and be sure to note details of fender clips, muffler and radiator cap.

Fred would also like to tell owners of early four cylinder Cadillacs, introduced in 1906, that though the Gazette article went past this time without covering them, we have plans for a feature on these vehicles later this year.

One further item Fred mentions is the matter of catalog illustrations (as in the Gazette feature) which may sometimes differ from the actual vehicle as delivered, and also differ from the parts catalogs. The latter, for many makes, Fred says, are a more accurate guide. If you have a copy of a *parts* catalog for a one cylinder Cadillac, please get in touch with Fred Gilchrist.

NATIONAL COMMENTS

As time is generally measured, 25 years is a somewhat insignificant span of years. To the Horseless Carriage Club of America and to all of its 8,300 members, the year 1962 marks a most significant milepost on our tour-map of club history and events.

1962 IS OUR 25TH ANNIVERSARY YEAR!

Our club was organized November 14th, 1937, by a small group in Los Angeles, California, who were genuinely and sincerely interested in preserving motor vehicles of early vintage. 37 people were present at the first organization meeting and it is fitting that we honor them now as our "Founding Fathers."

In less than a year, The Horseless Carriage Club as it was first named, had gained a total membership of 100 members. Soon thereafter Regional Groups were chartered and our membership continued to grow. Today we have a total membership of 8,300 and a Regional Group structure encompassing 74 Regional Groups located throughout the United States and including one in Canada. We have members in several foreign countries and our national publication the HORSELESS CARRIAGE GAZETTE is recognized as one of the best in its field.

Later on the name of our club was changed to The Horseless Carriage Club of America and from time to time our by-laws have been changed to facilitate administration of the complex affairs of a club with so large a membership.

Throughout the past 24 years the original concept has been maintained. Basically we are members because our club provides a unified expression of our desire to preserve and maintain motor vehicles of ancient age and historical value. There are many facets of our hobby and our members follow diversified routes in its pursuit, and in so doing derive a great deal of satisfaction through the fun and relaxation it provides.

Commemorative mention will be made throughout 1962 of our Anniversary. Your 1962 membership cards will bear a notation "25th Anniversary Year"; they will be encased in a plastic envelope and if you desire you can carry a small picture of your car in the same envelope with your membership card.

A new membership roster will be mailed to every member about the first of March. The Roster will also commemorate our anniversary. The 1962 Annual National Tour will be held in Arizona, sponsored by the Valley of the Sun Regional Group at Phoenix, Arizona, and will commemorate our 25th and Arizona's 50th Anniversaries.

It is the intention of your National Board of Directors to further improve our National Publication, the HORSELESS CARRIAGE GAZETTE. We encourage all Regional Groups to publicise our 25th Anniversary in their Regional Group Publications and at their various events.

THOMPSON PROD. MUSEUM MOVES

Thompson Products "Auto Album" at Cleveland, whose collection of more than 100 early autos (many built in Cleveland), aircraft and associated material has for years been one of the top museums in the nation, is to have a new home. Thompson-Ramo-Wooldridge corporation plans to transfer the entire collection to the Western Reserve Historical Society, who will build a new two story building of about 54,000 square feet to house the vehicles, executive offices, et cetera. This will be located in Cleveland's cultural center, near the Art Museum, Natural History Museum, Case Institute and other civic and educational institutions.

The present management and policies of the Museum will be retained, and facilities such as the library, restoration shops, the replica of an early street scene and the gift department will be expanded. The Western Reserve Historical Society Museum has on its Board of Trustees such men as Frederick Crawford, the head of Thompson Products, Inc., who started the collection in 1937 with a 1905 Duryea, and James Bohannon, former head of the Peerless Motor Car Co. The future of this important collection is thus assured for years to come, and in surroundings appropriate to the historically important vehicles.

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OBITUARIES

DUNCAN CHAPMAN, Pacific Palisades, California

HENRY HOLZ, Salt Lake City, Utah

FRED KESTING, Appleton, Wisconsin

JOHN C. QUINN, Orange, California

The National Directors have honored me with the opportunity to serve as your National President for another term. I shall continue to make Regional Group visits with the aim to further strengthen and unite H.C.C.A.

LET'S MAKE 1962 THE BEST OF OUR FIRST 25 YEARS!

Sam DeBolt

President, Horseless Carriage Club of America

HCCA ANNUAL MEETINGS

More than 340 persons attended the HCCA 25th Anniversary Year banquet in Los Angeles. The meetings held for Directors, Regional Groups, women members and horseless carriage film enthusiasts were likewise well attended. Four large busses were filled for the morning tour to visit the collections of Ray Nelson and George Schweiger.

First event of the weekend program was a showing of motion pictures taken in the early years of the club's history, plus films on the last National Tour at Seattle-Tacoma and the excursion to Europe last year. Held concurrently, the National Board's organization meeting saw Bob Ball, long-time Treasurer of the Southern California Regional Group, elected to the Board of Directors along with four incumbent members. Elected President for 1962 was Sam DeBolt, last year's President, who announced plans to continue his many Regional Group visits. Vice-President for the year is Ralph Cherry, former Regional Groups Committee head. Secretary is Vaun Rodgers of El Paso, serving his second term in that office. Treasurer is John Ogden, former Activities Committee head. Chairman of the Board is Ernie Boyer.

Twenty-one regional groups were represented at the Regional Groups meeting, most of whom announced ambitious tour and meet plans for the year. A large number of club operational matters were explained at this meeting, and National Committee heads for the year announced. These are: Regional Groups, Cecil Frye; Activities, Ken Sorensen; Safety, Clarence Kay; Publications, Roger Taecker; By-Laws and Budget committees, Les Barnett. Additionally, Don Colee of Phoenix is National Tour Coordinator, and Mike Roberts will head a committee on publication technical matters.

Greeting members and Hotel guests alike as they entered the building's foyer was a 1905 two cylinder

Model C Ford, the property of Burr Prentice. Restored by Herb Prentice, experienced tour and meet judges look to no avail for a spot of grease or fleck of dust on this shining vehicle. Displays of early GAZETTES and HCCA photos of club activities years ago were shown at the registration and reception rooms.

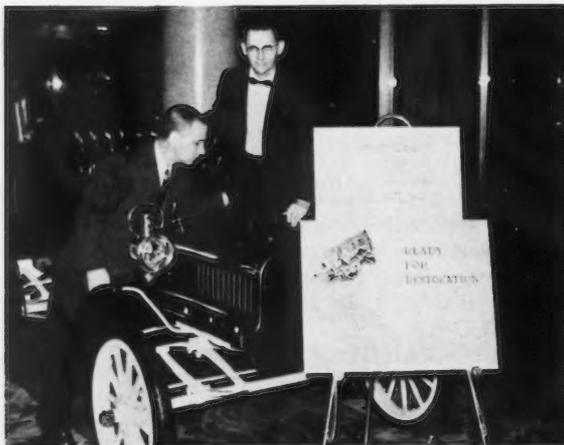
The woman's meeting featured large displays of jewelry, clothing accessories, etc. of the Horseless Carriage era, and spirited discussions on the subject marked the afternoon-long affair. Chairman of this event, Virginia Barnett, reports on this in detail elsewhere in this issue.

Dinner music at the evening banquet was of particular interest to members of some years' standing, for a former GAZETTE Editor, Al Michaelian, was among the musicians. Entertainment preceding the formal program was by Wally Boag & Co., an exceptional act from Disneyland's Diamond Horseshoe.

Master of Ceremonies J. O. Goodell proved a popular one, his long experience in club activities giving him a fund of remarks for all occasions. The fast-paced program included a summary of recent and future club plans by President Sam DeBolt, and Dr. Alfred Lewerenz gave a short but fascinating account of the club's founding and early history. There were 15 of the first-year members present to receive special awards, all of them still active in HCCA events.

Regional Groups Committee head for last year, Ralph Cherry, presented awards to winners of the Regional Group publication competition; these are listed elsewhere on this page.

Overall head of the meetings and dinner arrangements was John Ogden, whose careful planning made for a trouble-free Anniversary celebration. He was assisted in various ways by Truman Welch, E. R. Bourne, Ann DeBolt and Barbara Ogden.



Director Les Barnett and Herb Prentice inspect Burr Prentice's 1905 Model C Ford, on display at the Statler Hotel during the HCCA meetings.



National President Sam DeBolt and J. O. Goodell, master of ceremonies at the 25th anniversary year festivities.



National Directors for 1962. Back row: Dr. E. C. Lawrence, Ernie Boyer, Ralph Cherry, Don Colee, Ken Sorensen, Cecil Frye, Bob Ball, John Ogden. Seated: Vaun Rodgers, Sam DeBolt, Les Barnett, Clarence Kay, Hal Dahl. Kneeling in foreground: Mike Roberts. Not shown, Roger Taecker.



FORMER NATIONAL PRESIDENTS: (front, l-r) Herb Prentice, Dr. George E. Shafer, Dr. Alfred S. Lewerenz, W. Everett Miller, Lester H. Barnett. (back, l-r) Lindley F. Bothwell, Floyd Clymer, Harry B. Johnson, Warwick Eastwood, Steadman G. Smith, Sam DeBolt, John G. Gillespie, First President Art Twohy was ill and unable to attend.

Regional Group Awards

—PRINTED PUBLICATIONS—

1. COIL BOX COURIER, Jack Garrison, Editor
Southern California Regional Group
2. THE STEERING COLUMN, Walt States, Editor
Nevada Regional Group
3. DUSTER DOINGS, Geo. Paddock, Editor
Newport Beach Regional Group

—MIMEOGRAPHED PUBLICATIONS—

1. THE WINDSHIELD, Helen Bear, Editor
Tulare County Regional Group
2. EVERGREEN GAS-ETTE, A. H. Kreider, Editor
Seattle-Tacoma Regional Group
3. THE HOOD RAISERS, Marjorie Campbell, Editor
Central California Regional Group

—HONORABLE MENTION—

Listed in alphabetical order

- BRASS FACTS, San Diego Reg. Gp.
THE BRASS LAMP, St. Louis Mo. Reg. Gp.
THE BRASS NUTS, No. Calif. Reg. Gp.
CLUTCH CHATTER, So. Texas Reg. Gp.
DASHBOARD DITTIES, Valley of the Sun Reg. Gp.
THE DRIP PAN, No. Texas Reg. Gp.
EXHAUST SMOKE, Central Illinois Reg. Gp.
GASLIGHT GAZETTE, Bay Area Reg. Gp.
RADIATOR CORE-IER, San Francisco Reg. Gp.
THE SPARK PLUG, Wichita Reg. Gp.



25-YEAR MEMBERS: (front, l-r) Steadman G. Smith, Louis Combs, Dr. George E. Shafer, Meta Blackwell, Dr. Alfred S. Lewerenz, Mrs. W. E. Miller, W. Everett Miller, Mrs. Tom Matthews. (back, l-r) Lindley F. Bothwell, Raymond Thompson, C. Robert Lingo, Tom Matthews, Art Austria, T. C. Archibald, Ransom B. Matthews.

REPRESENTATIVES OF WINNING REGIONAL GROUP PUBLICATIONS:

(front, l-r) A. H. Kreider, Seattle-Tacoma; Helen Bear, Tulare Co., Calif.; George Paddock, Newport Beach, Calif.; Marjorie Campbell, Central California; Jack Garrison, Southern California; Walt States, Nevada. (back, l-r) Phyllis Schaumburg, San Francisco; Wayne Stanfield, Bay Area, Calif.; Burt McCormick, Northern California; Doug Smith, San Diego; Don Colee, Valley of the Sun, Arizona.





The Cover Picture

by Mike Roberts

No, Sam DeBolt isn't paying Bad Water Bill for killing his dog, he's contemplating staking Bill to his silver claim. If that ore is as rich as it looks, Sam'll grab it quicker than you can say Rolls-Royce.



We thought GAZETTE readers might like to know what goes on behind the scenes when creating a cover picture, so present here a few shots taken at Virginia City, Nevada during the shooting of the current cover photo. Not shown are some of the 13 persons involved in taking the picture, nor the mechanics at Harrah's Automobile Collection garage who specially prepared the car — including a new paint job — for the photo. GAZETTE photographer Mike Roberts traveled close to 700 miles on the project, spent the best part of two days surveying the site and taking the photo, to say nothing of the advance planning he handled. Not least of the unseen contributions is that of the car's owner, who courageously loaned it for the project not knowing what wild misadventures it might meet in a Nevada mining town.

THE CAR: A 1910 Rolls-Royce Silver Ghost from the Harrah Automobile Collection at Reno, specially finished in Inca Silver and photographed at the old Silver Capitol, Virginia City, of the Silver State, Nevada, for the HCCA's Silver Anniversary.



Unloading the Rolls-Royce from Harrah's truck. The car was especially painted for the picture, and the shooting time set by checking the light the day before to anticipate the best results.

Scherry Harrah, r, directs final dusting and polishing.

Volunteer models from the Nevada Regional Group, Sam and Ann DeBolt and Bernice Catlett, gossip while the car gets a final polish by mechanics.

Photographer Mike Roberts makes a final check, the shutter clicks, and the Silver Anniversary Cover is all wrapped up.

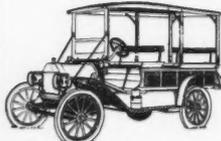
HARRAH COLLECTION OPEN; GAZETTE STORY COMING

Pictured below is the main building housing the new restoration facilities of the Harrah Automobile Collection at Reno, Nevada. This and adjacent shops and storage buildings were opened to the public on February 24th and daily guided tours will hereafter be available to all those interested, busses leaving Harrah's Club in downtown Reno.

More than 550 cars are included in this world-famed collection of interest to old auto enthusiasts everywhere. The restoration work being done by a staff of 50 persons is a remarkable operation, and in the next GAZETTE we shall present an illustrated feature covering all the behind-the-scenes action and showing work under way at each stage of restoration. Watch for this fascinating story!



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Firewalls, white birch or gum water resistant plywood . . . for 1915 to 1923 Fords (please specify exact year), \$6 postpaid.
Hoodclefts for all brass radiator Fords, hardwood \$3.50 per pair, postpaid.
Collboxes, mahogany, for 1909 to 1913 Fords . . . exact duplicate of Helme or Kingston box, but will receive new type coils, a must if your early Ford is going to run smoothly, \$16, postpaid.
Finishing instructions for all above items included . . . guaranteed to be as stated herein, or money refunded.

3036 Orchard Place
Des Plaines, Illinois



The Horseless Carriage Club

by Dr. Alfred S. Lewerenz

An address by the HCCA Research Historian at the 25th anniversary year ceremonies in Los Angeles, January 20, 1962.

As the Horseless Carriage Club of America completes its first quarter of a century of activities it is fitting that the National Board of Directors should honor those present members who helped to shape the Club's functions during the first formative year.

As a date of historic importance, the Club was founded on November 14, 1937, but this fact does not mean that the date marks the beginning of the diversified activities that we now associate with our organization. The origin and growth of the Club have beginnings that stretch back for many years prior to 1937. It might be of interest at this time to review a bit of the pre-history of the Club as well as to recall some of the events of its first year of existence back in the year of 1938.

In both the 1920's and 1930's there was a surprising amount of collecting of automobilia going on in the Southland. The nuclei of a number of the big collections of today were in existence before the Wall Street crash of 1929. Collectors of automobile literature, accessories, insignia and antique vehicles had gotten in on the ground floor, as it were, when such items could be purchased at junk or salvage prices. An early car that might bring from two to three thousand dollars today then might cost ten to twenty dollars. Similarly a copy of HORSELESS AGE selling today for six or seven dollars at that time could be picked up in an old magazine shop for a dime.

Between Santa Barbara and San Diego there were forty or more enthusiasts who diligently sought to preserve items related to the early day automobile now more or less covered by the term "Horseless Carriage."

A major difference between the experiences of collectors prior to 1937 and those of the present time is that these early collectors were pretty much lone workers. Each thought of himself as the only person with his interest. The collector usually was regarded by his friends as being just a trifle balmy for having an interest in the rusty, dusty items that could be found in rich profusion in junk yard bins or on second hand book store shelves. Collectors sought out old time wrecking yards and book shops off the beaten path and in small communities. Their goal was to discover caches of treasures such as a long forgotten cigar box filled with enameled name plates from cars such as Chalmers, Monroe or Stevens-Duryea. Their searching eyes watched for maintenance manuals for pioneer cars, brass bulb horns, gas headlights or for an ancient car well buried under a deposit of later junked vehicles.

These eagle-eyed customers seeking the antique were a bother to wreckers. The junk yard men, little realizing the potential value of their all but forgotten early day parts stored in out of the way spots, were accustomed to doing business only with purchasers who came for replacement parts. These busy proprietors felt that they had no time to wait on people who only wanted to collect items that were off-beat in their mental catalogs. However, to the collector the rewards of perseverance were great and the motivation was sufficient to overcome the joshing of friends and the discourtesy of the already overworked junkers.

Thirty or forty collectors, each pursuing his own path, must eventually cross the trail of another individual of similar interests. So it was that Mr. X looking for an early type Bosch Magneto at Y's Wrecking Yard would be told by the proprietor that a Mr. Z had been in just a few days before hunting the same type of equipment. As this type of experience occurred time after time, each collector began to pick up names of other local collectors of automobilia.

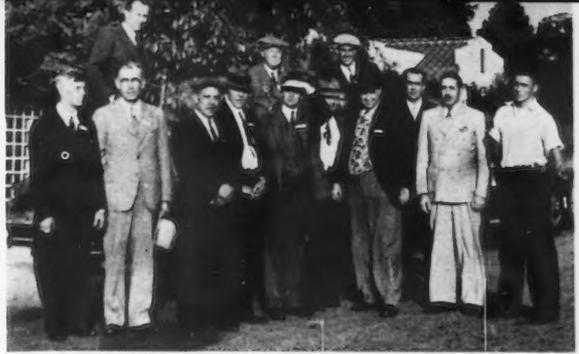
There was a natural curiosity as to what these fellow enthusiasts were like and so it came about that three of the most active collectors arranged to meet together. The host was W. Everett Miller of Eagle Rock, a collector of automotive literature for his Library of Vehicles. His two guests were Arthur E. Twohy, a collector of antique cars and literature, and William Wakefield, another collector of automobile literature. The date was the evening of November 7, 1937. During their getting acquainted conversation, the three discussed the fact that there were evidently numerous other collectors similar to themselves who might like to share each others experiences. Everett Miller proposed that a meeting be called of the known collectors to determine whether they would like to form some sort of mutual aid organization, Arthur Twohy followed up immediately on this proposal and on November 8, 1937, sent out invitations to thirty-five individuals who were known to be interested in some phase of automobilia. This invitation can be thought of as the first notice for the Club-to-be for it outlined a plan for a get-together at Art Twohy's home, 400 North Kenmore, Los Angeles, on Sunday, November 14, 1937. It was suggested that each of the thirty-five bring others interested in the same hobby as well as antique cars and other related treasures. The response was felt to be excellent when twenty-seven hobbyists came, a number of them driving to

Club 25 Years Ago

the meeting place in their early day automobiles. For the sake of history, it should be noted that the first car to attend a meeting of what was to become the Horseless Carriage Club of America was a 1913 Buick Touring Car driven by Louis W. Combs. As of the present writing, this car is in the Bill Harrah collection in Reno, Nevada. "Lou" at the time was also a collector of radiator shell emblems, brass accessories and automotive literature. This meeting at Art Twohy's home has since been regarded as the founding event of the Club and Club founders are considered to be those people who attended that initial gathering on November 14, 1937. The reaction of Art Twohy's guests was that a second meeting should be held in the near future.

Five days later, on November 19th, a birthday party was given for Everett Miller at which some of the guests had also been present at the Twohy meeting. A topic that came up for discussion was the possibility of having a name for the group of collectors. It was at this time that Mrs. Katherine Miller suggested that the proposed organization be named the "Horseless Carriage Club." This title was so well received that the notice Mr. Miller sent out for the second meeting bore the heading THE HORSELESS CARRIAGE CLUB RIDES AGAIN, JANUARY 16, 1938. This was the first time that the Club's name appeared in printed form.

The year 1938 saw the initiation of many of the activities that became traditional with the Club. On January 16th, the second meeting was jointly sponsored by Dr. Alfred S. Lewerenz and W. Everett Miller at the latter's home. As a result of invitations sent out, more than seventy hobbyists came to see the antique vehicles that had assembled for the



The original gathering at Art Twohy's home in November 1937. (l-r) Amos Peterson, Louis Combs, Dan Freiwell (above), Herbert Briggs, Fred Buess, Paul Johnson, Everett Miller, Art Twohy, Ransom Matthews (partly hidden), A. S. Lewerenz, Dr. Geo. E. Shafer, Wm. Young, Basil Daniels, Dick Twohy. Tom Matthews and Bob Lingo arrived after photo was taken.

event. Following a dinner some fifty guests who remained voted to set up a simple organization with Art Twohy as President and Everett Miller as Secretary. A number of names for the new Club were suggested but Ransom Matthews strongly backed the name of "Horseless Carriage Club" and it was finally adopted. There was no Treasurer elected at that time as it was planned to have no dues. It was at this second meeting that the custom of a wife appearing in a costume appropriate to the car driven by her husband was originated by Mrs. Katherine Miller and Virginia Lanning.

At first the Club meets were held at places arranged by the sponsors and guests were encouraged to drive their antique cars to the gathering place, thus promoting careful restoration in addition to acquisition. Briefly, the remainder of the gatherings held the first year took place as follows:

Third Meeting, March 13, 1938. Held at the Los Angeles County Museum and sponsored by Ransom Matthews of the Museum staff. At this time, the two-hundred old car fans present voted dues of \$1.00 per year to help establish and distribute membership lists.

TWOHY LUMBER COMPANY
801 Petroleum Securities Bldg.,
714 West Olympic,
Los Angeles, California.
Prospect 8746

Dear Friends:

W. E. Miller, Wm. Wakefield and I, the other evening, had an idea that it would be a good plan to get together in sort of a club the fellows interested in old cars; their catalogs, lamps, horns, auto magazines, radiator emblems, and all the other specialized branches of the hobby. The more we thought of it the better it looked - hence this letter - what do you think of the plan?

Our idea was a club without dues, initiation, pass words or anything - just to get together a group of fellows all interested in the hobby. Anybody who would like to come in would be eligible.

This letter is being sent to the parties listed on the attached sheet. If you know of anyone else you would like to see join, please his name and address in and a copy of this letter will be sent to him.

Now, to put the idea into execution, this is your invitation to an open house, Sunday, November 14th, at my home, 400 North Laurore, from 10 - 11:30 all day until you get tired and want to go home. Mrs. Twohy has offered to serve sandwiches and coffee at 11:30, so you're welcome to come at any time that suits your convenience. I hope you will all come for an all-day party. There will be lots to see and do - there will be a dozen veterans cars to see - some of them to ride in and, yes, even drive them if you want to.

At that time plans can be talked over about some other rather having a meeting at his place.

W. E. Miller made a few suggestions: You all have some treasures, bring them along; and let the rest enjoy the show.

Please phone (or write) me at my office, Prospect 8746 - or evenings at my home (Prospect 5097).

Sincerely,
Arthur J. Twohy.

THE HORSELESS CARRIAGE CLUB RIDES AGAIN

January 16, 1938

THE SECOND MEETING WILL BE HELD AT THE

Library of Vehicles

IN THE HOME OF

William Everett Miller
1400 North Laurore Street
4233 WEST AVENUE 41
LOS ANGELES, CAL.
PHONE
ALBANY 8103

Dr. & Mrs. A. S. Lewerenz
CO-OPERATING
SUNDAY, JANUARY 16, 1938
2 TO 10 P.M.

WE EXTEND TO YOU A CORDIAL INVITATION TO COME AND JOIN US IN THE PLEASANT PURSUIT OF THIS FASCINATING HOBBY

MEET AND REMINISCE WITH FELLOW ENTHUSIASTS - RIDE IN THE OLD CARS - VIEW THE SOUVENIRS OF OTHERS - AND READ THE EARLY LITERATURE 400-000 ILLUSTRATIONS 470 BOOKS - 4,000 CATALOGS

HOT VICTUALS AT 5 P.M. AN INFORMAL EVENING PROGRAM

BRING YOUR OLD CARS R-S-V-P

THE HORSELESS CARRIAGE CLUB WAS ORGANIZED BY MR. A. E. TWOHY AT THE SUGGESTION OF MR. WAKEFIELD AND MR. MILLER AND FIRST MET TOGETHER AT MR. TWOHY'S HOME, 400 N. LAURORE AVE., LOS ANGELES, ON SUNDAY NOVEMBER FOURTEEN LAST. THERE ARE NO MEMBERSHIP DUES

HOBBY SPECIALTIES

- CARS
- EMBLEMS
- BRASS SCRIPT
- LAMPS
- LITERATURE
- MECHANISM

COLLECTORS

A. E. TWOHY	P. F. OHLGREN
L. W. COMBS	E. S. JENNIE
A. S. LEWERENZ	G. A. BEERY
R. MATTHEWS	DAN FREIWELL
W. WAKEFIELD	W. G. CLOSE
H. BRINGS	GEO. TOWNE
JOHN MATTHEWS	G. J. SMITH
MRS. T. MATTHEWS	P. DANIELS
CHARLIE RAY	HOWARD WELCH
F. F. BOLLEWELL	J. RUSSELL
WALTER HARRIS	J. STANLEY
EDWARD DANIELS	C. STANLEY
JOE WILHELM	E. VAN DUSEN
DR. BOYD	W. W. BERRY
ANDREW STEINMAN	ART LUTHER
FRANK BROWN	B. LINGO
JOE BEALE	ED. BULLOCK

Announcement of the second meeting of the Horseless Carriage Club on January 16, 1938.

A reproduction of Art Twohy's letter which led to the founding of the Horseless Carriage Club.

25th ANNIVERSARY continued

Fourth Meeting, June 5, 1938. Sponsored by Bob Lingo and T. C. Archibald the Club members met at the Stearns Ranch located North of Montebello. Some twenty early day automobiles were driven to the ranch where about 150 members enjoyed the cars and the exhibits that had been set up by collectors of special forms of automobiliana such as hub caps and emblems.

Fifth Meeting, August 14, 1938. Held on the grounds of the Moreland Truck Company in Burbank, the meet was sponsored by Louis W. Combs and Art Austria. As by this time dues were being collected, Dr. Alfred S. Lewerenz was elected Treasurer. Expanding Club activities resulted in the election of Dr. George E. Shafer of San Bernardino as Vice-President, Bob Lingo as Assistant Secretary and Mrs. Thomas Mathews as Ladies Hostess. In order to have wider membership representation in Club activities, a plan for creating a fifteen-man Board of Directors was adopted. The first meeting of the new Board of Directors was held at the home of President Arthur Twohy on September 25, 1938. One of the first actions of the Board was to authorize Everett Miller to prepare a design for a Club emblem. Increasing financial demands in connection with preparing and mailing Club meeting notices caused the initiation dues for new members to be raised to \$5.00.

Sixth Meeting, October 16, 1938. This event was a Club run out to the National Military Home at Sawtelle. The meet was sponsored by John H. Ozmun, a veteran living at the Home and owner of an early Holsman high wheeler. At a meeting held in conjunction with the run the design for a Club emblem was submitted by Everett Miller to the members present, and approved. The accepted design was essentially that which now constitutes the official insignia of the Horseless Carriage Club of America. The needs for by-laws by which to operate the Club in a business-like manner was presented to the membership. At this time there was also a growing sentiment for establishing a Club publication to provide better communication with the growing membership of some eighty individuals, many living in other states as far away as the East Coast. As a result of this attitude, the first issue of what then was called THE HORSELESS CARRIAGE CLUB GAZETTE was produced in mimeograph form by a small group of Directors working most of one night under the inspired leadership of Art Twohy. So rigorous was the effort of producing this first issue that the Board voted to have the second issue printed commercially by the offset process. Volume I, Number 1, of the new HORSELESS CARRIAGE CLUB GAZETTE carried the date line of November 29, 1938. In its pages appeared the first "List of Members" which included both Club founders as well as those individuals who had joined the organization during 1938. This "List of Members" on

pages 1-3 of Vol. I, No. 1 of the GAZETTE is the basis for the selection of names of Club members eligible for twenty-five year pins in 1962. Right from the first the GAZETTE carried member's ads. One of these offers a 1908 Buick White Streak for \$100.

Seventh Meeting, December 4, 1938. This final event was a tour to San Bernardino by Dr. George E. Shafer. More than thirty of Dr. Shafer's cars were on display in a public garage. For the Club members this was the first long trip beyond the confines of Metropolitan Los Angeles and the tour served as an excellent test of the quality of the restoration work being done by owners. It should be recorded here that this was the first meet at which it was requested that all participants, both men and women, wear authentic costumes appropriate to the vintage of their antique cars. At the San Bernardino meeting Club members voted to have a set of by-laws drawn up, to be submitted to the Club the following field day. President Twohy appointed a representative committee which met several times at the home of the Treasurer, Dr. Alfred S. Lewerenz. Much legal assistance was given by Board member Attorney Steadman G. Smith. The proposed governing rules were submitted to the Club members at the meeting of February 26, 1939, and adopted as read.

This brief review of the pre-history and first year of the Club has been presented to point out why these twenty-five year members are being honored at this time. First, as lone collectors, later as pioneer Club members these people showed originality and creative ability in establishing a hobby activity that has had a wide-spread response from the entire family. The Club encourages a pastime that all ages can enjoy; husbands, wives and children.

Without the technical assistance of experts in restoration these pioneers contrived to bring back to operating condition many of the antique cars which today are the gems of nationally famous collections. Without a Club organization to inspire and reward good work, they set about an organization that would serve to help those members that would join in the years to follow. Perhaps at the time, these pioneer Club members did not realize the full import of their constructive activities but that they built well is evidenced by the strength and the energy of the Horseless Carriage Club of America today. Members so honored are listed below. No name has intentionally been omitted. The selection has been on the basis that in each case the individual has been on both the 1938 "List of Members" and on the latest available "Roster of Members."

The following twenty-four names were called at the HCCA Annual Dinner held at the Statler Hilton Hotel, Los Angeles, January 20, 1962. Twenty-five year pins were given to those members who were present by John Ogden representing the Board of Directors. Pins were to be mailed to those members not present at the annual dinner.

HCCA facts & figures

At the recent Annual Dinner of the Horseless Carriage Club, celebrating the twenty-fifth anniversary of the Club (reported elsewhere in this issue), a number of facts of interest were presented to the members present. Kudos and accolades were heaped upon the thirteen men who have held the President's chair, as well as 25 of the 28 living founding members.

However, a number of significant statistics, important to all interested members (not only those present at the dinner), were omitted in the interest of time and brevity. These statistics present an insight to the real growth of the Club, and serve as a true barometer of progress within our organization, as well as the basis for justifiable pride for any member who has contributed his time and effort for the success of any Club activity or publication.

You might be interested to know that there have been 15 annual National Caravans, 1948 to 1961, plus major events throughout the U.S. such as the Texas Tours, Midwest Tours, Nevada's Reno Tours, numerous tours to such places as Yosemite, Mt. Rainier and Rocky Mountain National Parks, tours to the Grand Canyon, San Francisco, "backroads" tours, one and two cylinder car tours, springtime "blossom" tours—tours for every purpose and whim, everywhere. Careful planning, efficient execution and broad appeal to members from distant areas has assured record attendance each time. Foremost, these tours have stimulated the restoration of authentic, well-finished and appealing horseless carriages, which have brought attention, admiration and praise to the Club, its members and its objectives.

There have been 103 GAZETTES published from 1938 (No. 1) to 1961 (Vol. 24, No. 6), of which 102 have been produced by offset printing. 21 were the small (5½ x 8½) size, from 1938 to 1945. Since that time they've all been of the standard large format. All were black-and-white until 1948 when two-color covers were introduced. In 1955, 1956, and 1957 a scheme of alternating the colors was tried so that the issues could easily be identified in a member's files. Three issues per year were published from 1938 to 1945, except 1943 when four issues were printed. Four issues per year were pub-

lished from 1946 to 1953 except for 1950, when five were sent out. In 1954 the GAZETTE went to six issues per year, and has been able to maintain this rate since that time. In 1955, 1956, and 1957, four-color covers were used on the Christmas issues. Since that time we have been proud to be able to have four-color covers on every issue, 24 of them to this time. These four-color covers have been due to the ability, cooperation, and wholehearted interest of Club member Mike Roberts, famed color photographer of Berkeley. Each cover or scene, including many interiors and back covers has been made or reproduced exclusively for the GAZETTE, and with the exception of one old-fashioned colored stereoptician view, all were shot specifically for the GAZETTE. Many of the Christmas issue covers have been printed in Mike's plant on special cover stock.

GAZETTE editors in the past 23 years, have been long-suffering, patient and surprisingly few. Art Twohy, Ransom Matthews, Ben Sharpsteen, Al Michaelian, Ann Bothwell and Fred Hayward have served many years and have given many hours to the Club's popular publication. In addition, both Dan Post and Julian Goodell have served as interim editors. Ben Sharpsteen, Al Lewerenz, Herb Prentice, Harry Johnson and Virginia Barnett have served as advisers and feature writers for many years. In the early years Art Twohy and Everett Miller supplied volumes of rare historical material for reprint purposes. Catherine Miller, Bernice Sharpsteen, Bernice Goodell, Herb Royston, Jamison Handy and Al Dunkel have all spent many hours in one phase or another of GAZETTE preparation. In recent years Dick Philippi has produced many important feature articles. The GAZETTE has always been the culmination of the devoted efforts of a small percentage of the membership, but a true example of group effort.

Not the least of the Club's publication efforts are the many Regional Group journals published throughout the country. Most of the 74 Regional Groups have a regular publication which they distribute to their own members. Some years ago the National Club instituted an annual publications contest, with trophies awarded to the various categories of winning publications. This stimulus has succeeded in its *raison d'être*—the regional journals throughout the country have upgraded in almost every manner, and competition is becoming keener every year.

The pattern of the rise of membership has been an interesting one, and it closely follows the growth and improvements of the GAZETTE. From 14 members at the first meeting in 1937, the roster grew to 104 in 1940, 310 in 1944, 521 in 1946, and 747 in 1948. The war years impeded the growth in the Club, but since 1949 the expansion in membership has been both large and consistent. It jumped to 1700 in 1950, 4270 in 1954, 6400 in 1956 and as of January 20 stood at 8,210. —J. O. GOODELL

T. C. ARCHIBALD
ART AUSTRIA
META BLACKWELL
LINDLEY F. BOTHWELL
CHARLES BUEHL
LOUIS W. COMBS
C. L. CRITTENDEN
ALFRED S. LEWERENZ
ROBERT LINGO
RUTH MATHEWS
TOM MATHEWS
RANSOM MATTHEWS

KATHERINE MILLER
W. EVERETT MILLER
ROBERT C. NORTON
BURR H. PRENTICE
WM. F. SCHEPLER
GERALD A. SELBY
DR. GEORGE SHAFER
O. J. SMITH
STEADMAN G. SMITH
RAYMOND THOMPSON
ROBERT TILTON
ARTHUR TWOHY



Regional Group Highlights

Valley of the Sun (Phoenix) is the site of the 1962 National Tour, and preparations are already well underway according to Chairman Bob Bitler. To be held September 27-30, the route will include scenic areas rich in early Western history. A group of members in this club are at work on the restoration of an early American LaFrance fire engine for a project, as yet unannounced, in connection with the tour.

Newport Beach (California) held a Back Roads tour recently, arranged by member Frank Thompson. Highlight of the drive was a visit to the huge Yorba ranch, dating back to 1810 and still managed by a descendant of the original owner. Mechanical trouble plagued Bobby Babcock's one cylinder Reo, but other drivers reported a trouble free run.

South Texas (Houston) had a capacity turnout for their annual year end awards banquet, according to correspondent Bobbie Warren. This was followed early in January by Houston's second annual Mid-winter Tour, a highly successful event.

Santa Clara (California) had 18 cars turn out for a fund raising promotion during the Holiday shopping season. Meeting at Montgomery Village, Bill Small's 1909 Maxwell led the parade to the exhibit grounds.

North Carolina regional group had more than 100 members at their annual year-end banquet. National President Sam DeBolt was on hand to speak on club activities. North Carolina's big tour for 1962 is set for July 9-13, starting at Raleigh and visiting Norfolk, Va. and the famed site of old Williamsburg.



North and South Texas (Dallas and Houston) recently met for a joint tour at Nacogdoches which they plan to make an annual event. Rain fell during part of the weekend, but Tour Chairman Jack Baker managed to keep entrants busy. Top winners in the driving contests were Ned Brandt (1917 Ford), Eddir Groves (1927 Nash), John Reese (1916 Ford) and Jim Watson (1930 Ruxton).

Nevada regional group members turned out 18-strong to be the high spot in Nevada's 97th birthday festivities at the Carson City capitol. Nevada Governor Grant Sawyer himself drove a 1910 Thomas Flyer in the parade. Howard Crew's unusual 1903 Michigan headed the HCC parade section.

Southern Ontario (Canada) members turned out for events into early Winter, attending a Color Cavalcade at Muskoka, and a run north of Burlington attracting 36 cars. A number of Model A Fords joined the latter group for the day. 1961 marked the 10th year of this club's activities.

Fairfield County (Connecticut) had 102 cars out for their 10th annual meet according to word received from Ted Gemza. The many rare early cars on hand included two T-head Mercers, a Thomas Flyer, a Lozier, a Mercedes-Simplex, an Austro-Daimler and a Frayer-Miller. A swap meet was a new feature of this meet, attracting large crowds of active traders. Pictured is Mrs. Roy Henderson looking over an attractive brass display; other photos show Bob Kielt and Don Boas in the Ford cranking competition and Dr. Lee Davenport's 1912 Lozier on the balancing board.

◀ **Heart o' Texas** (Waco) regional group had 44 autos on their annual three day Ramble, attracting one entrant all the way from San Diego. The touring included miles of easy driving through beautiful countryside, a stop at Tonkawa, the early Indian settlement and lunch on the banks of the Brazos river. Driving contests took up a good part of one day, and a visit to the collection of material on Robert and Elizabeth Browning at Baylor University was enjoyed by women participants while judging was underway. Pictured is Lloyd Manning's 1908 Hupmobile cooling off after a good run in the hot Texas sun, and Boone Dowdy's 1914 Cadillac stopped for adjustments amidst a crowd of rural experts. The awards banquet featured among other things the awarding of a new 30x3½ tire. Members everywhere are reminded that this club are sponsors of the 9th Texas Tour to be held during May.

You'll have to give second-hand car dealers credit for one thing: They are always trying to do others good.

TEXAS TOUR NEWS



This is not a "Guess What State You're In" map—this is the HEART OF TEXAS, where the 9th TEXAS TOUR will be hosted by the Heart of Texas Regional Group, Waco, Texas, on May 18, 19, and 20.

The month of May in Heart of Texas is a beautiful time of year. Wildflowers are never more plentiful.

Omaha, Nebraska members plan a full year of important activities, one of the most interesting being the large scale participation in the Nebraska Motor Sports Auto Show May 5th and 6th. If you want to join them in this activity write Wm. Baker (3302 Dodge St., Omaha) for full details.



ful . . . Indian blankets, buttercups and Bluebonnets by the acre . . . you'll want to bring your camera and plenty of film!

Rich in Texas history, this area offers much nostalgia for those who are interested in our Country's past. The present is also well provided for, and we don't believe you'll regret touring in Texas.

Although Texas weather cannot be predicted, so they say, the 9TH TEXAS TOUR Committee is working in close liaison with the Weather Bureau, and we can almost guarantee perfect Spring weather at tour time.

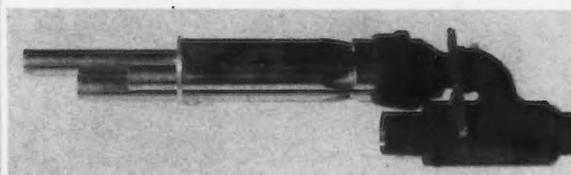
We officially stopped bragging when Alaska became a State, but we still like to mention that we think our Tours are tops! 9TH TEXAS TOUR fees will be very nominal, and motel accommodations will be the finest, and at special reasonable rates. The food? We have some surprises in store for you in that department, but we will tell you this much: Be sure to bring a Texas-sized appetite with you!

Brochures will tell the complete story later, but if you want to assure a memorable vacation this summer, please write NOW to Karl F. Binner, 9TH TEXAS TOUR Secretary, 805 North Davis, West, Texas.

There'll be a BIG Heart of Texas welcome awaiting everyone in Waco, Texas, on May 18, 19, and 20.

— Robert E. Weathers
Tour Chairman

HORSELESS CARRIAGE OWNERS ATTENTION!



Harmonized four-toned exhaust horn complete with cut-out valve custom made to fit any size exhaust pipe. GUARANTEED ONE YEAR.

\$29.95 Complete.

Send outside diameter of exhaust pipe along with Money Order (no checks please) to:

R. L. Fassler

926 W. Edinger—Santa Ana, California

Additional information supplied upon request

Evolution of the Michigan

BY HOWARD CREWS

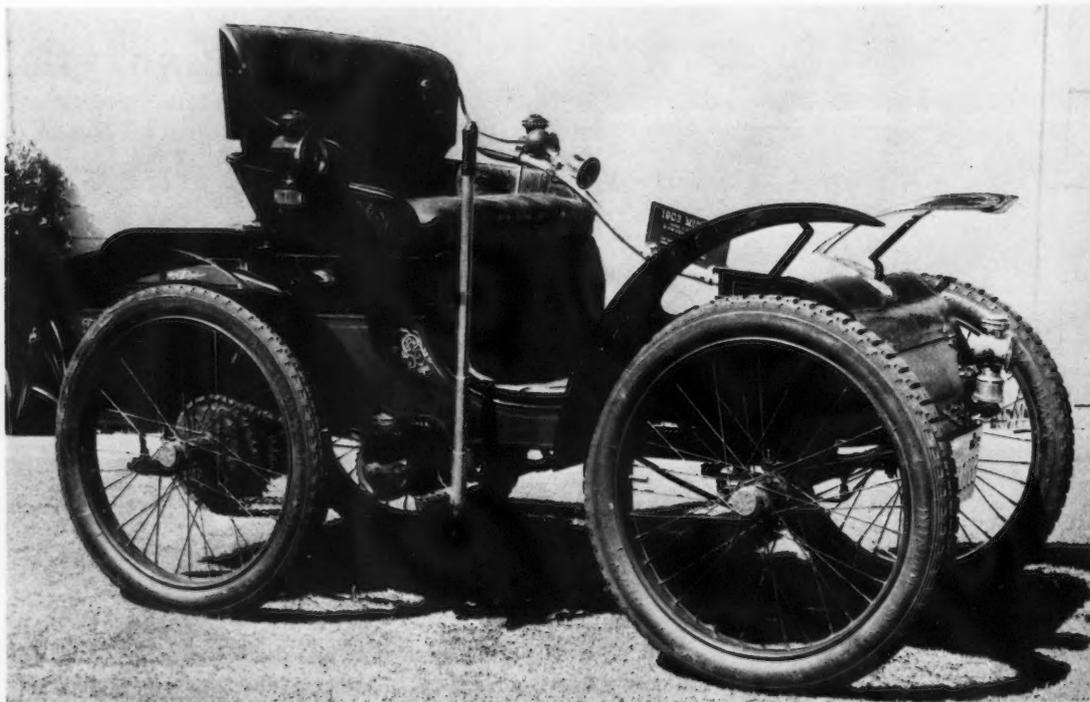
Telling someone that I own a MICHIGAN automobile almost invariably results in — “Michigan? Never heard of it.” This is surprising in antique car circles, for as many as eight different Michigans of various types were made, including gasoline, electric and steam. Pleasure cars, trucks and even a hearse. In this article I will attempt to acquaint those who have “Never heard of it” with the Michigan, and for those who have, to illustrate the growth in size, weight and horsepower, and to portray the struggle the pioneers had, simply to exist and improve their product. My intention is not to adhere strictly to specifications and technical matters.

Detailed information on some of the Michigans is hard to come by, but for example, in 1910 the MICHIGAN STEAM MOTOR COMPANY of Pontiac, Michigan, were marketing a truck equipped with a Model D. Twin quadruple compound condensing engine, which was rated at 20 horsepower at 900 r.p.m. And in the same year the Michigan Motor Car Manufacturing Company, of Detroit and Rochester, came out with a MICHIGAN SIX GASOLINE PLEASURE CAR, with 123 inch wheelbase.

So much for two of the Michigans. However, since I have done most of my research on the Kalamazoo Michigans (possibly because I have owned a 1903 tiller steering Michigan of this strain since 1925) (“SWEET ADELINE,” H. C. Gazette, Mar.-Apr. 1958) I will devote most of this article to those hardy little cars, of which there are a few descendants still on the road.

In 1902 the Blood Brothers of Kalamazoo, Michigan, made their first car. It was a one cylinder, air cooled job, weighing only 360 pounds, a wheelbase of 48 inches and a gage of 30 inches and 28 x 1 3/4 inch single tube (glued on) tires. This extremely small and lightweight car made over 3000 miles before the design was changed. It was well constructed and stood up to its work, but being small, as all early cars were, and having a skeleton body, it was soon found to be deficient in essential qualifications. The Blood Brothers had been bicycle builders and had adhered to bicycle construction too closely.

The next Blood Brothers car had the skeleton framing replaced by a partial body, the same motor used, but clincher tires were fitted, increasing the



Author Howard Crews of Portola, California owns this 1903 Michigan.

weight to 425 pounds. These two cars were made while the Blood Brothers ran the Kalamazoo Cycle Company, which was later merged into the Michigan Automobile Company, Ltd. At the end of one year the Blood Brothers withdrew and established an independent factory, which produced the "BLOOD BROTHERS SIDE ENTRANCE TONNEAU TOURING CAR."

The Michigan Automobile Company Ltd., was organized in Kalamazoo January 1, 1903 with a capital stock of \$150,000. Charles B. Fuller, chairman; Frank D. Fuller, secretary and general manager; W. E. Upjohn, treasurer and the firm had its first car on the road about May 1, 1903. This car had a wheelbase of 54 inches, gage 36 inches, single cylinder, air cooled, $3\frac{1}{2}$ horsepower, weighed 475 pounds and sold for \$450. The earlier Blood car was improved upon, with the addition of fenders, elaborate striping and a new name, MICHIGAN.

About 100 of these little cars were made and sold in 1903. Lightness and low cost were stressed, omitting the reverse gear, because, as was stated in the brochure, "It would only add to the cost and isn't necessary, as one can easily lift the front end around."

The second Michigan model was on the road by June 1, 1904, with a wheelbase of 78 inches, gauge 55 inches, 28x3 tires, motor a pair of $4\frac{1}{2}$ x5 cylinders, rear entrance tonneau to seat five passengers, weight 1200 to 1400 pounds and priced at \$1000. "About 30 of these cars were made and sold in 1904 and all are in use and well liked." (Cycle and Automobile Trade Journal, Jan. 1905.)

The third Michigan, called the model D, was out in November 1904, having an 80 inch wheelbase, 30x3 tires, weighed 1675 pounds and sold for \$1100.

The fourth model, catalogued as the 1905 Model E, had the same motor as the model D, but with an 86 inch wheelbase and a "King of the Belgians" side entrance tonneau.

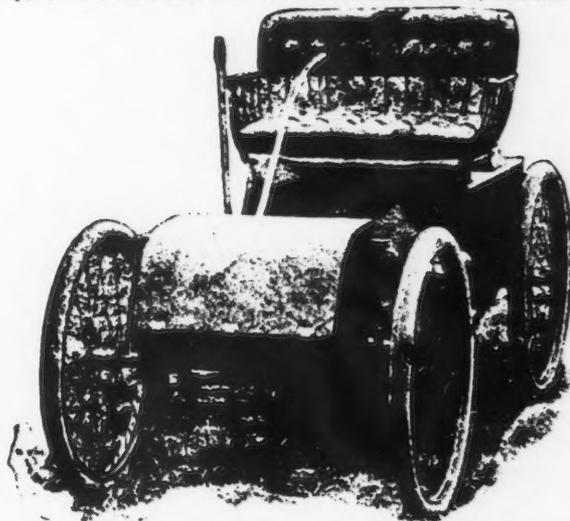
You will notice the trend then, as now, was to increase the size, horsepower and price of each new model.

By this time the company had a commodious and well equipped four story brick factory in Kalamazoo, and was manufacturing entire cars in their own factory from original designs (except for a few accessories). In 1905 a production of 250 cars of both of the later models was expected. The designer for these two cars, William E. Russel, was also superintendent for the company.

What the Michigan lacked in mechanical capabilities, it made up for in decoration. Even the little tiller steering model was elaborately striped with floral designs, and the coat of arms on the model D and E was a work of art. In the brochure advertising these models they went to great lengths to promote not only the automobile, but the "Sport of Automobiling," as shown in the following paragraphs:

The Blood Gasoline Car

Michigan Automobile Co., Kalamazoo, Mich., makers; $3\frac{1}{2}$ H. P., single-cylinder, $3\frac{1}{4}$ x $3\frac{1}{2}$ -inch gasoline engine, air-cooled by fan attached to crank shaft; jump spark ignition, with two sets of batteries; splash lubrication; transmission through chains and friction clutches; 2 speeds forward and reverse; roller chain drive; Brown-



THE BLOOD $3\frac{1}{2}$ H. P. MODEL A.

Edge differential; engine at rear of rear axle; started from seat; speed lever also advances spark making engine run at from 200 to 2000 R. P. M.; highest speed of car, 20 miles per hour; lever steering; angle iron frame; 28-inch wire wheels, steel rims; 2-inch special heavy Dunlop tires; carries 2; weight, 400 pounds; price, \$450; tank capacity, 100 miles.

From CYCLE AND AUTOMOBILE TRADE JOURNAL, April 1903.

The Michigan Automobile



PRICE ONLY \$450.00

May be seen during Show Week at
Chicago Automobile Exchange
Cor. 16th St. and Michigan Ave.
(One block from the Coliseum)

CALL AND SEE IT.

It is a gasoline machine, with air-cooled motor. Cooling is by fan. Runs at all seasons, nothing to freeze. Carries two passengers. Has good power. Beautifully finished and carefully made throughout. It is the cheapest car on the market today that may be called a finished product.

Catalog and Statements of uses sent on application.

MICHIGAN AUTOMOBILE CO., Ltd., Makers,
KALAMAZOO, MICHIGAN, U. S. A.

An advertisement for the 1903 Michigan.



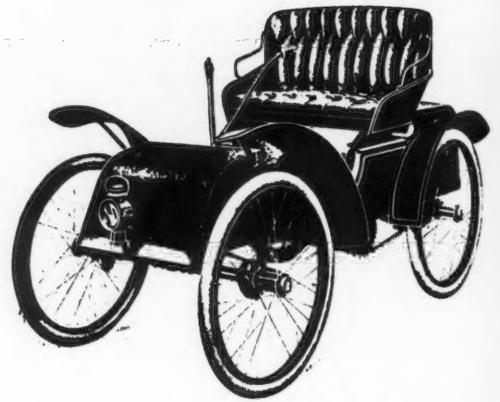
Coat-of-Arms used on the 1905 Models D and E Michigan vehicles, built at Kalamazoo.

"Automobiling is the king of sports. The queen of amusements. It is a rational form of open air enjoyment, appealing to the best side of our natures. It is the strong man's delight — this mounting the cab and riding away with the strength of a Hercules and the speed of a Pegasus. It is the woman's rare treat, rolling away through the country and down the shady avenue. And the children — well if anyone enjoys an auto trip, it is the little men and women.

"It is becoming too, a distinctly fin-de-seicle thing. Riding and driving horses has been and no doubt always will be a favorite means of pleasure. No rational man, howsoever an enthusiastic automobile lover will deny that. But a good auto' goes so far beyond the capabilities of a good horse, possesses so much greater speed, endurance and strength, that one only has to become familiar with this twentieth century mode to become also an ardent admirer of it. True, there are arguments pro and con, and to a lover of horse flesh, no arrangement of cylinders, pistons, cranks and levers can satisfy that feeling which exults in the ability to curb and command the noblest of animals, and make them subservient to the human will. But who that has not done it can feel the thrill of power and command which comes to the man who throws in the clutch and speeds over the hill and down the steep and off on the long stretch, leaving behind the puny horse and everything else on the road. Indeed, one must be careful or this superiority breeds a spirit of arrogance — so often the concomitant of power. He who has driven horses only must see that a new force has come, and that he owes it respect."

But evidently the Michigan did not come up to their expectations for in 1906 the Michigan Automobile Company Ltd. quit making cars. The Fullers, under the name of Fuller Manufacturing Company, continued making parts and eventually settled on the Fuller Transmission, which is still being made, although I understand there have been no Fullers connected with it for many years. The Upjohns went into the pharmaceutical business. And, as H. L. Fuller, son of Charles B. Fuller, told me in a letter, "The name MICHIGAN was given to the Michigan Buggy Company."

The Michigan Buggy Company was building cars by 1910 and said in an advertisement in "Cycle and Automobile Trade Journal," "You can rest assured that we, with a trade-mark and name worth



THE "MICHIGAN"

The "Michigan" Gasoline Run-about.

The Michigan Automobile Company, Limited, of Kalamazoo, Mich., announce that they will begin to make deliveries of their light automobile, the "Michigan," formerly called the "Blood," early in June. The "Michigan" is said to be the smallest automobile on the market at the present time. Its tread is only 36

inches and the wheel base is 54 inches, but the seat and machinery having a low centre of gravity make it as safe to ride in as the larger machines. The seat is full sized for two persons, while there is also plenty of carrying capacity for tools and luggage. The wheels are 28 inches in diameter and are shod with Dunlop tires. The engine is 3½ horse power, and is air cooled by a fan. As no water is used it can be run as well in winter as in summer, with nothing to freeze up. The engine has a suction inlet valve and a simple sparking mechanism. It runs at from 250 to 2,000 revolutions per minute. The speed of the engine is controlled by twisting the grip of the handle at the right of the

seat. Pushing forward the same handle throws in the low gear clutch, while pulling the handle back engages the high gear clutch with the driving mechanism. The driving is done by means of roller chains, one countershaft and individual friction clutches, no toothed gear being used except in the Brown-Lipe equalizing gear on the rear axle. The rear axle runs on Hyatt roller bearings. The countershaft and front wheels run on ball bearings.

The muffler is of a new design, used only on this machine. The capacity of the gasoline tank is enough for over 100 miles on ordinary roads. The machine is capable of traveling up to 20 miles per hour. A slight pressure on a powerful foot brake is sufficient to stop the machine in its own length. There are two speeds forward, but no reverse, as the machine is so light it can be easily drawn backward by hand or the front part can be lifted off the ground and turned around. It will turn inside a 20 foot circle. The weight of the machine is a trifle over 400 pounds. The body is finished in black or red. Two sets of batteries, located under the seat, are furnished with each rig, besides a foot pump and all necessary tools.

Announcement of the Michigan in the HORSELESS AGE, 1903.

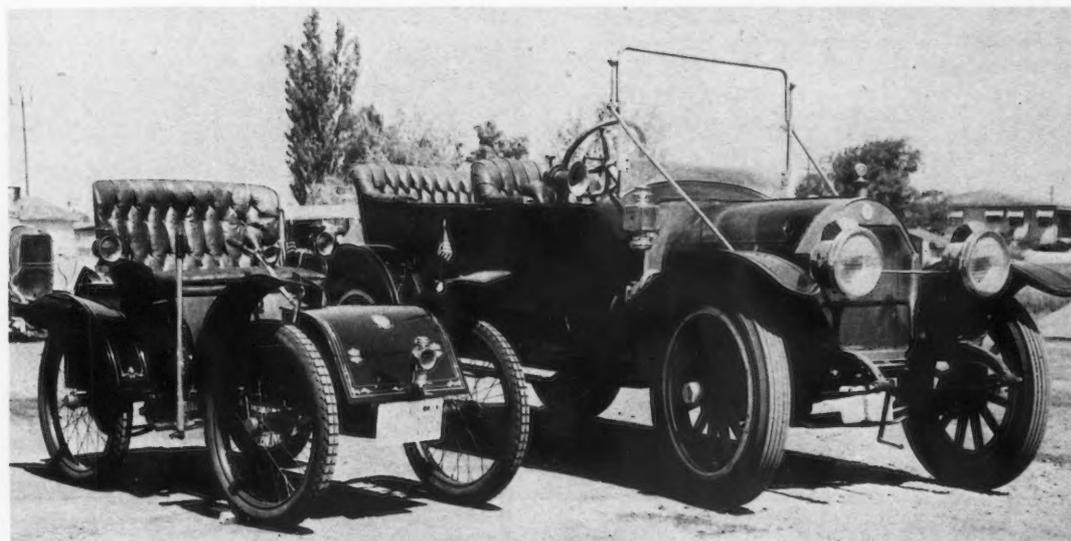
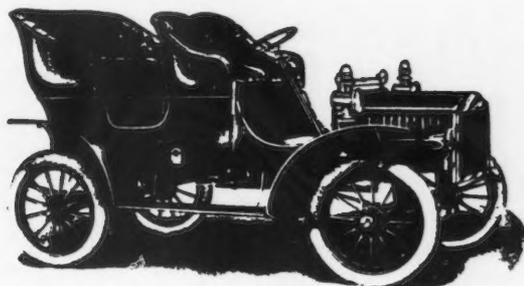
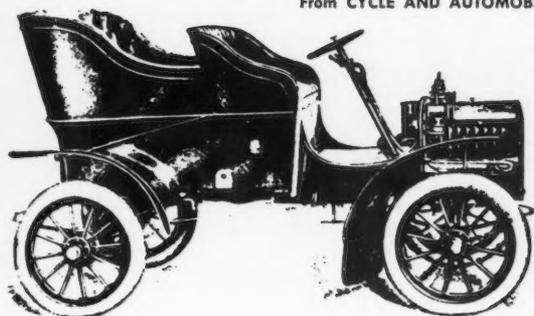
millions of dollars, would never have gone out after automobile business with anything less than as good an automobile as Yankee brains can build."

By 1912 they were making a Michigan "30" and a MICHIGAN FORTY model K, with 116 inch wheel-base; "A big, powerful, dependable car, that suffers none by comparison with the Packard, Peerless, or Lozier. Price \$1500," said the ad.

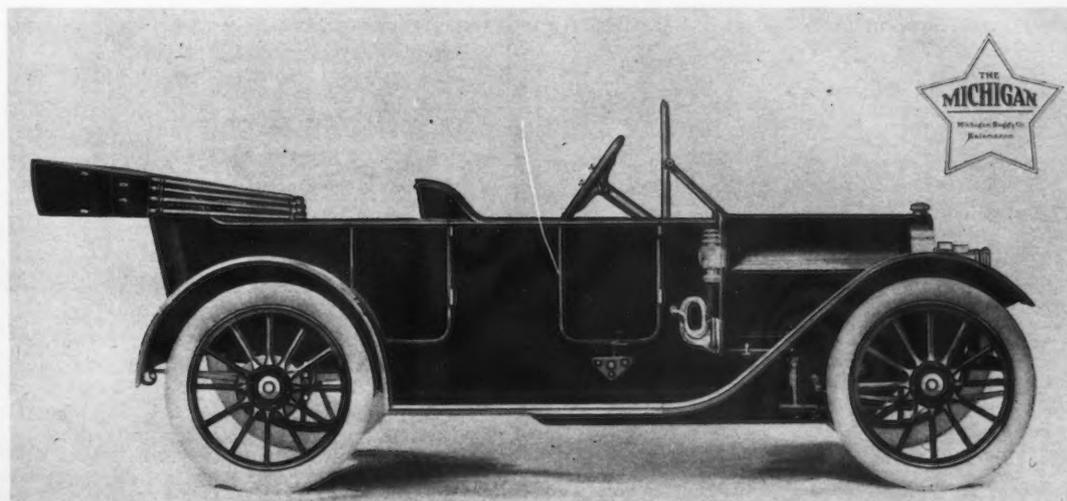
Michigan Buggy Company owners then organized the Michigan Motor Car Company in Kalamazoo, and came out in 1913 with the MIGHTY MICHIGAN, which literally, was to "end all Michigans." A big and very powerful car with four speed transmission, all Michigans of this type had Buda engines. I remember a neighbor of ours back in Illinois, a farmer, who bought a Mighty Michigan. It was so fast and powerful that he was afraid to drive it in high gear so drove it all the way home in second.

The Michigan Company's 1905 Cars

From CYCLE AND AUTOMOBILE TRADE JOURNAL, January 1905.



The extremes of the line — a 1903 Michigan owned by Howard Crews of Portola, California and a 1911 Mighty Michigan owned by Otto Van Gorder of Carmichael, California.



1912 Michigan made by the Michigan Buggy Co. of Kalamazoo.

Floyd Clymer locates rare Packard

Floyd Clymer, former HCCA President and the well-known Los Angeles motorbook publisher, has once again proved the truth of his oft-repeated statement that "the barns are full of 'em" — and the city garages, too.

He recently got wind of a Second Series Packard Twin Six sedan to be sold as part of an estate and arranged to inspect the car. It was in a dilapidated garage on Walton Street in Los Angeles, just a few minutes from the 100,000-capacity Coliseum in the heart of the city. The car bore a 1932 license, and had been stored there since that date. The former owner died eight years ago; his wife last year. Only four bids were received on the car, and Clymer's offer took it.

Removal of the vehicle to Clymer's storage garage, where he has a dozen early vehicles and twice that number of early motorcycles, was undertaken at once. During the final few weeks before the car was sold someone had apparently been sleeping in the machine, and the windshield and a door window were broken. But the car — as shown in photos here — is in exceptionally sound condition, complete even to items like the special Boyce Moto-Meter. The unusual close-coupled body, with almost razor-edge styling at the rear, is of aluminum as are the fenders; both are in excellent condition. The wheels are of intriguing design and in top shape; three of the 35x5 tires held air when inflated.

An early restoration is planned, and the vehicle will be ready for inspection by interested persons at Clymer's new store and publishing offices (222 N. Virgil at Beverly Blvd., Los Angeles) sometime in March. This is said to be one of the few Packard Twin Six sedans of this style still preserved.



Representative of the bank handling the estate sale opens the garage door after 30 years of disuse.



Sunlight strikes the Second Series Packard Twin Six for the first time since 1932. Note the "razor-edge" coachwork.



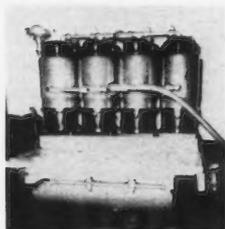
Local citizens flocked to the scene to kibbitz and offer advice.

Ready to be towed to Clymer storage garage.



WANTED

1905 Model B Ford Engine or any part of same.
Will pay for leads giving results.



WANTED

Model K Ford Transmission
Or any part of same



WANTED: Model A-C-F Oiler

HERB BLOOM — 314 N. East St. — Arlington, Texas

The Horseless Carriage

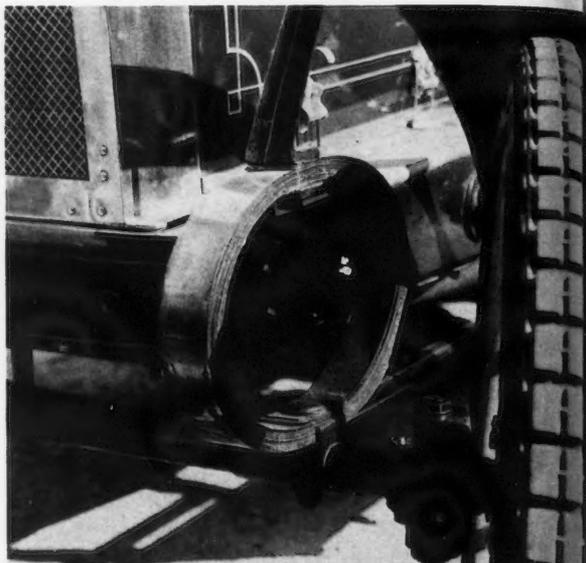
By Charles G. Proche

Photos courtesy REVUE AUTOMOBILE, Berne, Switzerland.

Switzerland is one of the few countries where all the world's automobiles can be seen, therefore it has always been a paradise for those who indulge in the sport of automobile identification. In the absence of an automobile industry all the passenger cars have to be imported, therefore the customs duty has been very low.

There were times in the past when cars "Made in Switzerland" chugged merrily up the Alps, but the foreign competition forced the few local auto makers to close down, so that today we see the Swiss-made cars only in museums or during a rally.

La Maison Suisse des Transports in Lucerne recently organized near Lake Zurich a Rallye for veteran cars, and the contestants displayed many rare vehicles which have never been seen or heard of on this side of the Atlantic. Among the British, French, German, Italian and Swiss *marques*, which took part in this event, the most interesting were the 1898 EISENACH, 1899 OPEL LUTZMANN with horizontal 3 hp single cylinder engine, the MARKKRANSTADT, and a 1904 single cylinder TURICUM in which the gas tank is housed in one-half of the radiator.



An extremely original suspension system was used on this 1904 Turicum built at Uster, Switzerland. The "spring" between solid axle and frame appears to be a single strip of steel wound into a coil.

Built at Geneva, this early Swiss racing car is a DeFaux with a 100 HP engine.



again in Switzerland

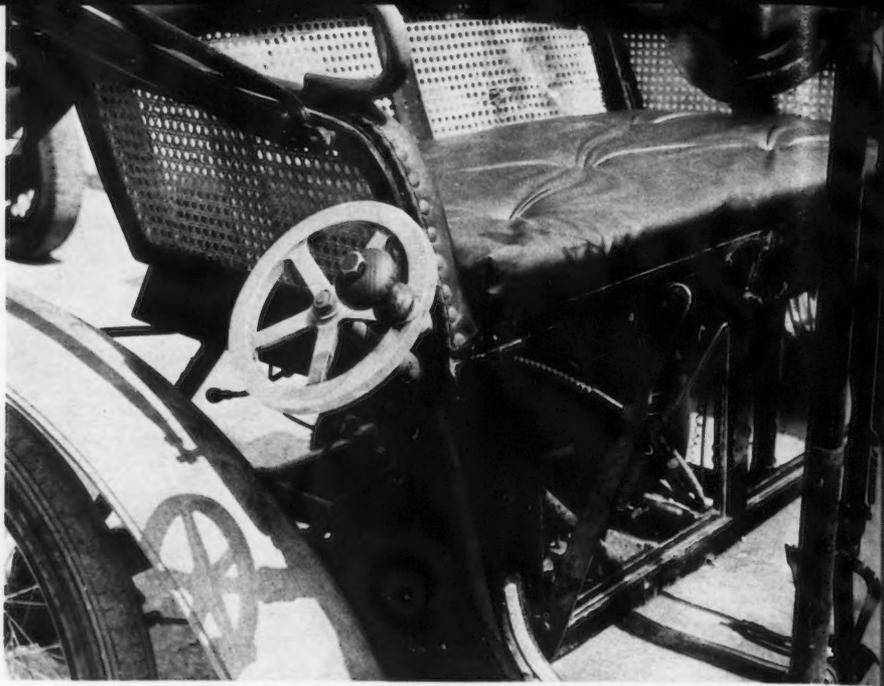


1910 MAF, built at Markranstadt, near Leipzig in Germany. Name MAF is from the first letters of the maker's name: Markranstadt Auto Fabrik.

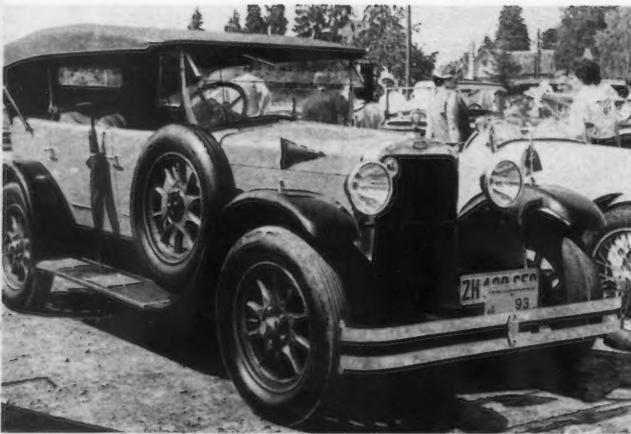


Le Zebre, a French car built just after the First World War. It has a strange one-cylinder engine with two pistons, one having two connecting rods. It burns a heavy oil for fuel, using the semi-Diesel principle.

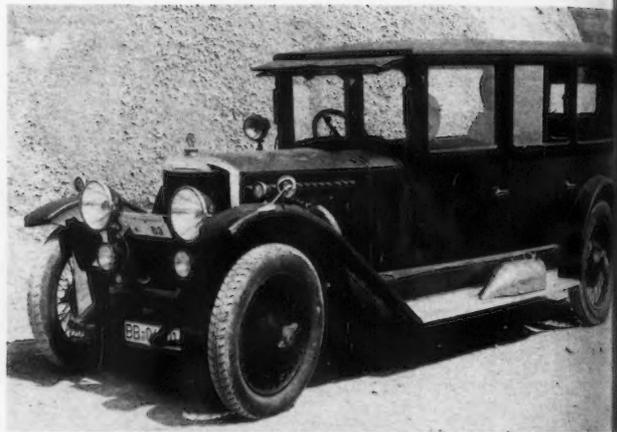
SWISS AUTOS



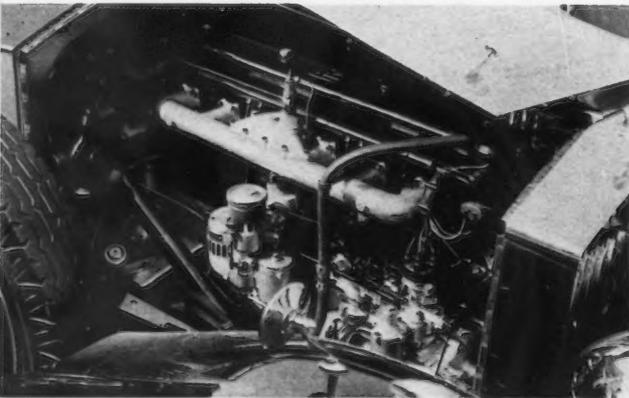
That little "steering wheel" at the side of the seat is used for cranking the engine of this 1898 Eisenach two-cylinder auto.



This is a 1924 Ansaldo, built at Turin by a WWI Italian arms manufacturer.



This 1922 50 HP Steiger is a German car whose radiator design is reminiscent of the Mercedes of that era. Note the streamlined oil (or water?) tank on the running board.



No Continental auto rallye is complete without a Rolls-Royce. This is a Phantom II c. 1930.



One of the once well-known French Salmsons. This is a 1926 "San Sebastian" sports model with OHV engine.

FLORIDA ANTIQUE CAR MEET

The fourth annual Antique Car Meet at Ormond Beach, Florida, sponsored by the Birthplace of Speed Association, attracted more than 100 entries. Registration was at the old Ormond Garage, headquarters of the top racing machines in the early years of the century when the Ormond Beach sands were the scene of important speed record attempts. A gas light parade was held the first evening and the following day a series of driving contests occupied the entrants. ANTIQUE AUTOMOBILE Editor Scott Bailey was MC at the evening festivities. The final day, quarter-mile races were held on the original beach course; small cars raced normally, but Model A Fords on hand held a slow-speed-in-high gear contest.

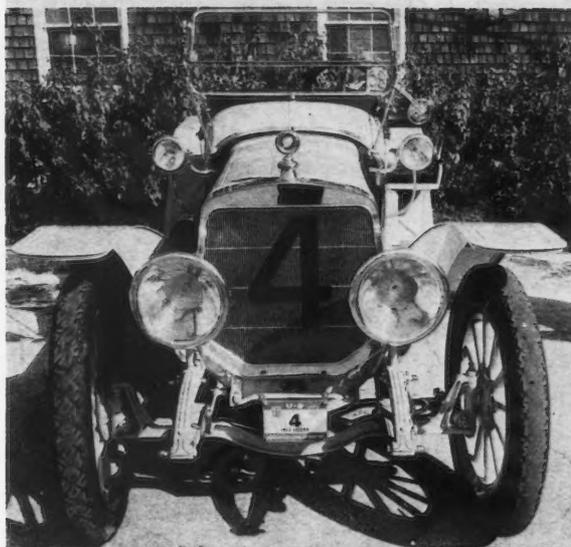
NOTICE

A Free Roster of Members has been mailed to all HCCA members. If you haven't received yours yet, watch for this large, accurate listing, printed in easy to read type. If you need a second copy to carry in your car, a few extras are available at \$1.25 postpaid from the National Office.

Midwest Tour June 27 to 30

Laying out the route for the 6th Midwest Tour are Chairman George Dossett (1907 Cartercar), Lloyd Harris (1915 Ford) and Bev Betts (1923 Ford). Dates for this big event are June 27-28-29-30 and headquarters will be at the world famous spa, Excelsior Springs Missouri. All touring will be over well paved roads in the beautiful rolling Missouri countryside; special routes are to be arranged for one and two cylinder cars. Visits will be made to the Ford factory at Claycomo, one of the newest in the country, to Fort Osage at Sibley, built in 1803 and the first military outpost established west of St. Louis. A day of driving contests, during which time the cars will be judged, will be the final event; a swap meet will be held this day, too. A special category is planned for steam and electric autos.

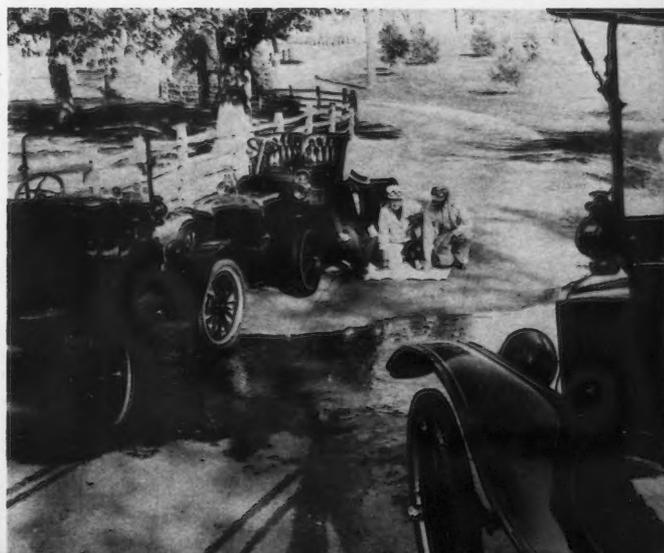
The Kansas City Regional Group, sponsors of the event, plan to make this the year's top tour in their section of the country, and it's expected that attendance figures of previous Midwest Tours will be surpassed by a large figure. If you're interested in this major tour through some of America's most beautiful countryside, drop a card with your name and address to the Tour Chairman, George Dossett, 4901 W. 64th Street, Mission, Kansas. First tour literature should be ready by early March. *Photo by Jim Netherly.*



Top award winner was Jerry Foley's 1913 Lozier speedster, taking the Miller trophy for the best racing-type vehicle.



Jerry Normandin and daughter competing in the potato sparring contest.



WHERE WAS IT BUILT?
WHAT'S THE YEAR?

WHAT WAS THE ORIGINAL COLOR?

WHAT IS IT?

WHAT SIZE TIRES?

WHAT DID IT COST?

WHEN WAS IT DISCONTINUED?

An Early Maxwell in Australia

Sir: I am writing you hoping that you can help me in dating a Maxwell car which I have found. The engine and chassis follow closely the description of the Model Q of 1909 except for a larger bore and stroke (which is 4"). Picture of engine is enclosed. Engine Number is IA1228. Radiator is honeycomb type, Mercedes pattern. Tyre size 32" x 4" BE. Wheels made by "Standard Welding Co." Cleveland. Pat. 1906. Lamps are "Maxwell Model B3." Thanking you in anticipation.

F. H. COWARD

Victoria, Australia



THE ENGINE shown in the picture that you sent appears to have been used in the 1911 Model I Maxwell 25 horsepower Touring Car and in the 1912 Maxwell Mascotte Roadster and Touring Car. From the engine number IA1228, I believe that your engine was supplied with the 1912 series.—A.S.L.

Another I-H-C High Wheel Truck

Sir: Would you be kind enough to advise me as to the year model of an International Harvester (high wheeler truck). Serial number on brass plate on the side of the body is 2987 and is model M.W. It has gas headlights, tail lamp, side lamp brackets but no side lights. Would you know what type side lights were used on this truck? Any additional information would be most welcome.

PAUL W. BINFORD

Novato, California

AN INTERNATIONAL MOTOR TRUCK with Serial Number 2987 MW belonged to the 1913 series. The Model MW was a 1000-pound vehicle usually supplied with an express body. The side lights on a 1913 Model MW were the square design very much like the oil side lamps used on the 1913 Ford Model T. A picture and brief specifications of the 1913 Model MW will be found on page 261 of the AUTO-MOBILE TRADE JOURNAL for March, 1913.—A.S.L.

Correspondence for this department should be addressed to:

Dr. ALFRED S. LEWERENZ
4107 HOLLY KNOLL DRIVE
HOLLYWOOD 27, CALIFORNIA

To receive a reply, inquiries MUST include a self-addressed, stamped envelope. Send front and side view photos, engine and serial numbers, bore, stroke, wheelbase, etc.

A Maxwell Owner Wants Help

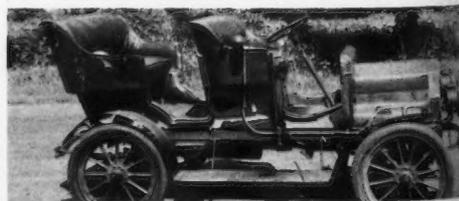
Sir: I have a 1906 Maxwell which I am in the process of restoring. The motor number is OK-188924, a 5" bore, a 5" stroke and wheel base 84" from hub center to hub center. I would like some information on a number of things concerning the car:

1. What color paint should be used?
2. Did this model have a stripe and, if so, what color is it?
3. What type windshield frame did this model have?
4. Was a magneto ever used on this car?
5. What make carburetor?
6. Did the fenders have a roll edge or a wire edge?
7. At the present time it has pulleys for a 1/2" round belt on the fan. Is the round belt authentic for this model?
8. What was the name of the coil used?
9. My car has no back doors as you can see. What shape were the back doors across the top? Were they straight or curved?
10. From the side view of the picture is this the true body style of the car?
11. How many glass openings are in the back of the top and what shape are they?
12. Are any books obtainable on this model car that you know of?

I will appreciate any information that you can give me.

HENRY AVERS

Stillwater, Oklahoma





FOR SALE



- AMERICAN STEAM PUMPER**—99% Complete—Has operated on steam recently \$9,500.00
- NEW YORK OMNIBUS**—Very Fine—later used as hotel bus—very rare—Fine example of early coach work dating from about 1880—Stevenson \$9,500.00
- HANSON CAB**—Extra Good Condition—D. P. Nichols—Chicago & New York & Boston—Beveled Glass, Good Upholstery—66" Tread \$4,500.00
- LADY'S PHAETON**—Rubber Tires—48" WB—53" Tread \$1,250.00
- CREAMERY WAGON**—Very Large—88" WB—66" Tread—10' High—Fine Condition—Selle Gear Co. \$1,500.00
- ENGLISH SHOOTING BRAKE**—Seats 16... \$1,250.00
- KEROSENE WAGON**—Union Oil Co. First one used in Los Angeles—3 tanks—1,000 gal. Capacity—Fine Condition... \$4,500.00
- YELLOWSTONE COACH**—Prof. Rebuilt—Very Fine—Leather Hung—91" WB—64" Tread—Seats 6 inside, 4 on top—Abbott & Downing \$3,500.00
- OPERA BUS**—Glass Enclosed—Seats 6 inside—very rare—Rubber Tires—60" WB—62" Tread—R. M. Stivers, New York \$1,500.00
- TALLY-HO**—Hackney Size—English Built—Best Condition, Seats 4 on top—six inside \$6,500.00
- IRISH JAUNTING CART** (Back to Back Seat) \$450.00
- HUNTING CART OR DOG CART**—Very Good—Brewster & Co. \$450.00
- ROCKAWAY**—Seats 2 Inside, 2 Outside—Fine Coach Work, Beveled Glass—Rubber Tires—H. H. Babcock Co.... \$1,500.00
- ROCKAWAY**—Similar to previous model—Iron Rim Wheels \$1,000.00
- VIS-A-VIS** (Also called Dos-a-Dos) WAGON—Seats 4, 2 seats back to back.... \$850.00
- AMERICAN EXPRESS WAGON**—Needs repair—WB 87"—72" Tread \$400.00
- ROCKAWAY**—Roll Curtain—Iron Rim ... \$350.00
- WICKER PONY CART** \$350.00
- RUBBERNECK WAGON**—4 Seats & Driver—Selle Gear Co.—Fine undercarriage... \$1,500.00

TED BOWERS

6039 W. 76th Street, Los Angeles 45, California
Phone AX 2-1157

COP — Aren't you afraid to leave your raccoon coat there in the rumble seat?
MOTORIST — It's all right, officer, a friend of mine is inside mind-ing it.

I MUST FIRST tell you that reliable car serial and engine number data for early Maxwells are very incomplete. The best identification data are the letters used for model designation, such as, H, J, L, M and N for 1905-1906 models and RL-LC, HB, NC, HC, D and M for 1907-1908 models. At this time I can only try to help you to determine the date of your car since the engine number and the body details are not sufficient for accurate dating. First, you might check over the entire engine to see if you can find any other stamped-in numbers. Also you might scrutinize the frame for stamped-in letters or numbers. Second, you can check specifications and details in pictures in the following references in the **CYCLE AND AUTOMOBILE TRADE JOURNAL**:

March 1, 1906, page 105

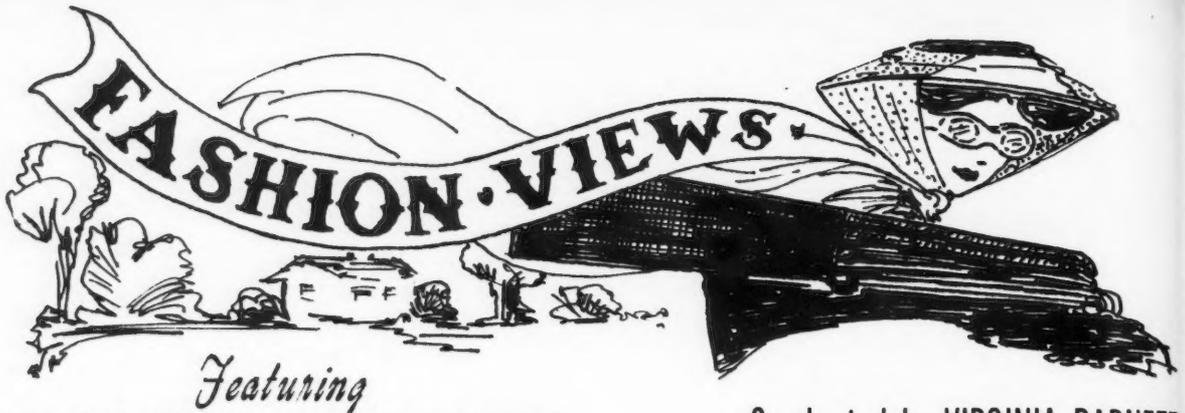
March 1, 1907, pages 34 and 180

On the basis of your pictures, your car may have been originally a 1907 Maxwell 16-20 hp Model HB. If you can verify whether your car is a Model HB, I will try to supply additional information as needed. If the references above are not available locally, you can order photostatic copies from the Detroit Public Library.—A.S.L.

Chevrolet Anniversary Display Features Old Cars



The 1915 Amesboy Special roadster at the right, belonging to HCCA member Roy Scott, set off the display of historic Chevrolet models gathered for 50th anniversary celebrations at the suburban Los Angeles factory. More than 30,000 persons attended the Open House according to Doug Bell, president of the Vintage Chevrolet Club that arranged the exhibit. Other cars pictured, all owned by HCCA members: (r-l) 1922 Series 490 touring car owned by Martin Portland (a Chevrolet dealer who sold this very car new); a Series AE Sport Coupe built in 1931, owned by Doug Bell; a Series AH (1941) Special Deluxe five-passenger coupe owned by Jim Maloney; and a Series KK (1952) Styleline Deluxe four-door sedan owned by Bob Huddle. In left foreground is the new 1962 Impala convertible.



Featuring
SECOND ANNUAL LADIES MEETING

Conducted by **VIRGINIA BARNETT**

Barbara Ogden, Chairman of the ladies' meeting at the 25th Anniversary Year Annual Meeting of the Horseless Carriage Club of America, is to be commended for her special efforts in behalf of the 65 women attending the afternoon event. This was the second such meeting and everyone agreed that it was even better than the first.

In keeping with the anniversary theme for the entire Annual Meeting, Barbara made and decorated the display tables with figurines made of paper mache and painted silver, depicting the ladies of fashion in the early 1900's. The petits fours served at the tea and coffee hour were of pastels and silver and very delicious. The men hearing about the goodies hurried in after their meeting to enjoy the social hour with us. Ann DeBolt, wife of President Sam, was hostess at the tea.

Special feature of the meeting was the display of four very fine collections of accessories, and the descriptions of them by the collectors, all wives of National Directors.

Lillian Sorensen presented her wonderful collection of Fans and Hat Pins, and spoke of the importance of using them properly. She described the value of a signature on hand painted silk fans as collectors items.

Lillian also displayed her hat pin collection in a large, spitoon-shaped Jardenier of deep blue Venetian glass, hand painted in gold. The pins looked like a huge bouquet of jewels. It was very eye-catching and gave the ladies an idea on how to

decorate their home in a similar manner. Amongst the pins were several that Lil prizes highly. They have a tilt catch on the head of the pin that is used to fasten the hat to the back of the front seat at the theater. Very ingenious. She also advised those present to always try to buy hat pins in pairs. They not only should be worn in pairs, but are more valuable as a collectors item.

Ethel Cherry displayed her fabulous collection of hand bags. These included every type and shape imaginable, from traveling types to fancy evening bags. Her latest grouping is the colorful and beautiful glass and metal beaded bags. Other interesting pieces included the little coin purses and smaller inside accessories. Ethel's interesting talk covered the method of construction of the bags, their materials and appropriate uses. She also included her method of cleaning beaded bags which is listed below.

Helen Fry's collection of Antique Jewelry was beautifully displayed on rose velvet in three large antique gold frames. It was a novel and useful way to present this small but important part of our fashion accessories. The collection includes many family pieces which Helen described in detail. Also included were men's jewelry and such items as silver perfume bottles for the purse and men's match cases.

The meeting was concluded with the introduction of Bernice Catlett and Van Jellison of Reno. They reported on the types of costumes that should be worn during the forthcoming Reno Tour in June. Dorothy Colee of Phoenix, described the proper costumes needed for the National HCCA Annual Tour in Arizona in September.

Special emphasis was placed on the proper clothing for touring (while traveling in the antique autos). Simplicity, comfort and warmth being the rule, leaving the fancier costumes for the evening affairs. We expect to see some interesting and authentic new touring costumes making their initial appearances this year.



"It's one of my nicest," admits Ethel Cherry, as Barbara Ogden shows her admiration.

Make plans to go to the

SEVENTH BIENNIAL

RENO TOUR

June 11 thru 14



Information from **ED CATLETT, Tour Chairman**
 POST OFFICE BOX 2899
 RENO, NEVADA



Handbags of every description from the Ethel Cherry collection.



A bouquet of hat pins from the Lil Sorensen collection.



PHOTOS BY BOB SCHAFFER

Lil Sorensen indicates the signature on fan; Helen Fry expresses interest.

Things Worth Knowing

Lil Sorensen recommends French Chalk for cleaning fans. Can be obtained at any drug store. Sprinkle generously on the fan and leave for several hours or a day or two. Shake out vigorously. This chalk can be used to clean gloves and felt hats as well.

Ethel Cherry recommends washing beaded bags in lukewarm suds, being careful to remove lining first. Be gentle in the washing process so as not to damage the threads. Rinse well and hang open in the sunshine 'til dry. Polish handle and top with good silver cream.

Helen Fry recommends cleaning jewelry in carbon tetrachloride, *except for pearls*. Never use a chemical solution of any kind on pearls or jewelry with pearl trim.

Lil Sorensen recommends mending silk fans with silk illusion net. Lay proper size piece of net on back of fan to fit tear or broken spots. Glue carefully in place with milliner's glue. Set aside to dry. This glue is handy for other repairs as well. Flowers, satin and kid shoes or what have you.

BOOK REVIEWS

THE DEALER AND REPAIRMAN for April 1902 is a fascinating 132-page book just reprinted by publisher Floyd Clymer. It covers the motorcycle and bicycle field, with articles on all phases of the just-started motorcycle industry. Dozens of machines are illustrated and described, both domestic and foreign models. This publication started life in 1893 as the *CYCLING GAZETTE*, published at New York, and changed its name as the motorcycle phase of the business replaced the bicycle industry to a large measure. Besides providing information on extremely early models, not generally available elsewhere, this book also contains features on such varied sporting interests as guns and ping-pong, plus a worthwhile advertising section. Clymer is to be commended for retaining the old, original look of the 1902 cover, making it even more a collector's item. Priced at only \$1.50 from Floyd Clymer Publications (222 N. Virgil, Los Angeles 4) this is a genuine bargain.

Five Years on the Desert is the title of an outstanding article in the last issue (No. 26) of *AIR COOLED NEWS*, the publication of the H. H. Franklin Club (Box 535, Cumberland, Md.). This 10-page feature covers Ralph Hamlin and others' adventures in the famed Los Angeles-Phoenix races held from 1908 to 1914. Some outstanding photos illustrate the story on the rough 500-mile race, and show the primitive highway conditions then common in the West. The map illustrating the article is by *GAZETTE* Feature Editor Dick Philippi.

MOTOR CAR INDEX 1918-1929. Published by *AUTO-BOOKS*, Brighton, England, 211 pages, \$4.30.

This volume has built-in authenticity as it was actually published originally in 1929. The purpose of the *INDEX* was to provide automobile manufacturers and their agents with exact information about



WE'RE SAVIN' IT FOR THE RENO TOUR.

the cars sold in Great Britain during the twelve years prior to 1929. Long out of print, the *INDEX* has just been reprinted for the use of automotive historians and antique car collectors. In this book it is possible to obtain quickly information as to the date of production, specifications, cost, wheelbase, etc., for specific cars. The car names are listed alphabetically with the country of origin indicated below. Some 825 makes are presented, with 21 items arranged in tabular form covering basic specifications for engine, chassis, transmission, ignition, wheels, etc. For many makes the chassis serial numbers are included when available to the publishers.

Most of the then current U.S. makes are listed in the *INDEX*, including such relatively rare makes as the Alsace, Birch, Cotay, Dixie Flyer and Fergus to quote but a few examples. To the antique car enthusiast in this country the *INDEX* is the first comprehensive work covering the Post-World War I years that gives fairly detailed data for both U.S. and European makes. The book makes an excellent supplement to *THE WORLD'S AUTOMOBILES* by G. R. Doyle because of the technical information presented.

— A. S. L.

The famous slogan "WATCH THE FORDS GO BY" appears on the front and back covers of the **Model "T" catalog for Jan. 1, 1909.** Thirty-two wonderful pages of photographs, specifications, construction details, and sales arguments cover the Touring Car and Roadster offered at \$850.00, the Coupe and the Landulet at \$950.00, and the Town Car at \$1000.00. One entire page is devoted to the switch to the left hand drive, another to the now famous Planetary type transmission. The 1909 date makes this a must for all "T" enthusiasts. Available as a Collector's Gem reprint from Polyprints, Inc., Box 3674, San Francisco 19, California, at \$1.50. Ask for (CG-5).—H.L.P.

"High Grade On Any Grade" is the catch phrase on the cover of the **Sales Catalog for the 1903 Model A Two Cylinder Ford.** Reprinted as part of the Collector's Gem series by Polyprints, Inc. (Box 3674, San Francisco 19) with the permission of the Ford Motor Company, this first Ford Motor Company catalog can put to shame today's Madison Avenue hucksters. Simply stated, Ford took credit for all that was good and declared that all that was not good had been overcome by advanced engineering. On page seven of this 24 page catalog it is claimed that noise, etc. have been eliminated! Included in the booklet are two excellent photos of the complete Model A car and a partial cutaway of the engine. Printed on glossy stock, the text and photos are splendid. Ask for (CG-7), priced at \$1.25.—H.L.P.

EXCUSE OUR DUST!

Asinine Alley



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LETTERS to the EDITORS



Dear Editor:

I have a few things that have bothered me for some time so I will mention the following:

When something is offered for sale you will receive requests for information and pictures and you can hardly read the writing and without an envelope enclosed you are not sure if you correctly sent it to the right person or the right city even.

It seems to me that if one is serious and wants information that it would be worth the effort to write or print plain enough to read. Also if an envelope is sent along, you would most likely get a more prompt reply. I don't believe that this is done on purpose, but is just the result from not thinking this over.

Also on another subject I am very much interested in the history of old cars—where they were built and when and by whom. This would seem to be in line with our hobby, but many do not even know or care anything about the history of the car they own. I would like more in the magazine about car companies and the men that made our hobby possible.

Another thing I object to is in restoring cars that some make the car much better than it was new. It is alright to want to keep the car original and authentic, but then why go to the silly waxing of the bolts underneath and such. If you want to be correct, why not hand paint and use the same type material as original? To me it seems that the hobby now is to outdo the other fellow in making your car more sharp than his car even if you have to spend a lot of money doing it.

Cars have been my hobby since 1928 so I have seen quite a few of these things over the years.
VIC JOHNSON
Grand Rapids, Mich.

Sirs:

I noticed the photos of a 1919 Grant touring car in the October Gazette, which prompts me to write you about my 1915 Grant coupe which I've had since 1956. The car was stored in Montreal from 1918 to 1956, and actual mileage is less than 10,000.

Advertising strategy promoting this car when new was to emphasize the fact it was a Six, for fours were in vogue and popular prior to this time. My car stands seven feet two inches in height and wears

EDITOR'S REBUTTAL: In the last issue a member's letter questioned the strange roof-device pictured on a Hupmobile coupe in a previous issue, alleging it appeared to be similar to a B-17 observation dome. We are happy to report that thorough research has revealed this suggestion to be wrong, and reproduce here an original advertisement for this vehicle, as shown in the old LIFE magazine for January 9, 1913.

34x4½ tires. It is in mint condition and draws plenty of attention whenever I have it out.

The windows slide down easily and are pulled up by wide cloth straps. The post between the door windows and the rear side window can be removed, giving it the effect of a hard-top.

Open rocker arms on the engine have to be hand-oiled every 50 miles. I believe that all Grant cars were built at Cleveland. Would be happy to hear from other Grant owners.

EARL W. CARPENTER

Box 168, Dundas, Ontario, Canada

Sirs:

Have received more than a dozen replies following the publication of my letter on my GRANT car in the GAZETTE, one all the way from Australia. Many thanks for your help with my research efforts.

—WAYNE LIMBERG, Osseo, Wisc.

Sirs:

The White Steamer feature in your last issue was excellent; they were the best steam automobile ever built. I learned something about them recently



Six Passenger "32"
1913 F. O. B. Detroit. Top equipment—of new kind and emitting unusual sense to machine. Best view, windshield, machine top with auxiliary life cushions, leather, gas headlights, Power-Steer, 1000 lbs. weight and load. 30-hp. motor, 150-cu-in. bore and 150-cu-in. stroke; 120-hp. wheelbase 37 ft. 4 in. 30-in. diameter wheels. Tires, 34x4½, and 30x3½.

"20" Runabout, Fully Equipped
1913 F. O. B. Detroit. Front cradle, 10 H. P. 100-cu-in. motor, 100-cu-in. stroke, 100-cu-in. bore and 100-cu-in. stroke; 100-hp. wheelbase 37 ft. 4 in. 30-in. diameter wheels. Tires, 34x4½, and 30x3½.

"20" Young Car or Roadster, shown at right of Six Passenger "32", fully equipped, 1913 F. O. B. Detroit.

The "32" Coupe
A distinguished addition to a distinguished line
First View, New York Motor Show, Jan. 11-18

In exterior appearance, the Hupmobile Coupe is as unobtrusively unique and as well-balanced as the other models of the "32" type.

In interior finish and appointment, it is rich and luxurious—imported Bedford Cord upholstery, with side walls to match and ceiling done in heavy satin; with right-hand control and room for three adults in comfort.

The coupe rounds out the line of Hupmobile pleasure cars, which now includes two touring models and a roadster, all built on the same sturdy "32" chassis, and the well-known "20" Runabout.

The entire line will be displayed at the New York and Chicago shows. Inspect the cars there, at any other shows or at the dealer's; and you will see why we believe the Hupmobile to be, in its class, the best car in the world.

Hupp Motor Car Company
1231 Milwaukee Ave. Detroit, Mich.

Three Passenger "32" Coupe
1913 F. O. B. Detroit. Top equipment—of new kind and emitting unusual sense to machine. Best view, windshield, machine top with auxiliary life cushions, leather, gas headlights, Power-Steer, 1000 lbs. weight and load. 30-hp. motor, 150-cu-in. bore and 150-cu-in. stroke; 120-hp. wheelbase 37 ft. 4 in. 30-in. diameter wheels. Tires, 34x4½, and 30x3½.

THE DOUBLE-CLUTCHER'S HAND BOOK

In early days the motor car designers had a gift for figuring transmission gates so each make had its shift.

Through certain years the sleek Premiers you punched like Burroughs' adder; The Metz employed a length of rack, adjustments like a ladder.

The Buick change, the Maxwell change, the gear spots on the Dodge — all different, they didn't make you handy with a Hodge!

When young I thought on gears and shifts, longed for directions terse until I made a poem up where each make had a verse.

For instance: "Shifting on the Dodge no longer is a feat. The nearside forward, that is low; reverse is toward the seat. Away and back is second and the 'high' and dashboard meet."

I added special verses as the makers would contrive departures such as four-speed White's direct or overdrive.

Though they won't care who patronize transmissions automatic, the Muse of Chaucer may have run that veteran in the attic.

—STANLEY DONALDSON



you might like to know. I had heard White steamers were last made in 1910, but that the factory would put one together on special order as long as they had the parts—until about 1916. But a friend of mine, M. L. Hoblit of Santa Monica, told me he had a 1912 White catalog listing steamers. To prove it he sent it to me to examine. It shows the White gasoline cars "30S," "40S," "60S" and also the "1912 White 20 steamers, Model O-O" and the "1912 White 40 steamers, Model M-M."

There are four body styles for the "O-O" and six for the "M-M." From the photos of the cars in the catalog the only difference I can see from my own 1910 "M-M" and 1910 "O-O" is that the 1912 had $\frac{3}{4}$ elliptic rear springs, while the 1910 models had semi-elliptic springs.

ROLAND GIROUX

Reno, Nevada



TOUR The Orient THIS FALL WITH Clarence and Dorothy Kay SEE JAPAN - HONG KONG - BANGKOK IN THE BEST SEASON OF THE YEAR

ESCORTED TOUR LEAVES WEST COAST VIA JET
TO TOKYO OCT. 14, 1962

You will see many of Japan's most important CITIES, SACRED SHRINES, NATIONAL MONUMENTS AND YOU WILL WITNESS "THE FESTIVAL OF AGES" in Kyoto which dates from the 8th Century.

After TEN DELIGHTFUL DAYS you will JET to HONG-KONG (Shoppers Paradise) for THREE DAYS. You will see the BAMBOO CURTAIN, ABERDEEN FISHING VILLAGE, REPULSE BAY, FABULOUS TIGER-BALM GARDENS, and many more interesting and educational attractions.

Then on to BANGKOK in EXOTIC THAILAND, TOUR THE CANALS BY MOTOR LAUNCH, SEE THE HOMES OF THE RIVER PEOPLE, THE FLOATING MARKETS, TEMPLES, THAI DANCERS, THE EMERALD BUDDHA and many more fascinating and amazing sights.

RETURN TO WEST COAST U.S.A. NOVEMBER 4th
Stop-over at HONOLULU permitted.

Write today for interesting Brochure containing
Full itinerary, price, etc.

Vacation Tours Division
GERMAN TRAVEL SERVICE

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Antique

AUTOMOBILE BOOKS

**THE GREAT OLD CARS
... WHERE ARE THEY
NOW?**
by Stanley K. Yost



A handbook of proven methods of organizing historic automobiles for parades, meets, shows, fairs, rallies, tours and community celebrations, by leading authorities.
197p., 5 1/2 x 8 1/2
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Complete stories of 50 great American cars with 73 illustrations. Authoritative, easy to read volume by recognized auto historian.

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Cloth \$4.75
Paper \$3.75

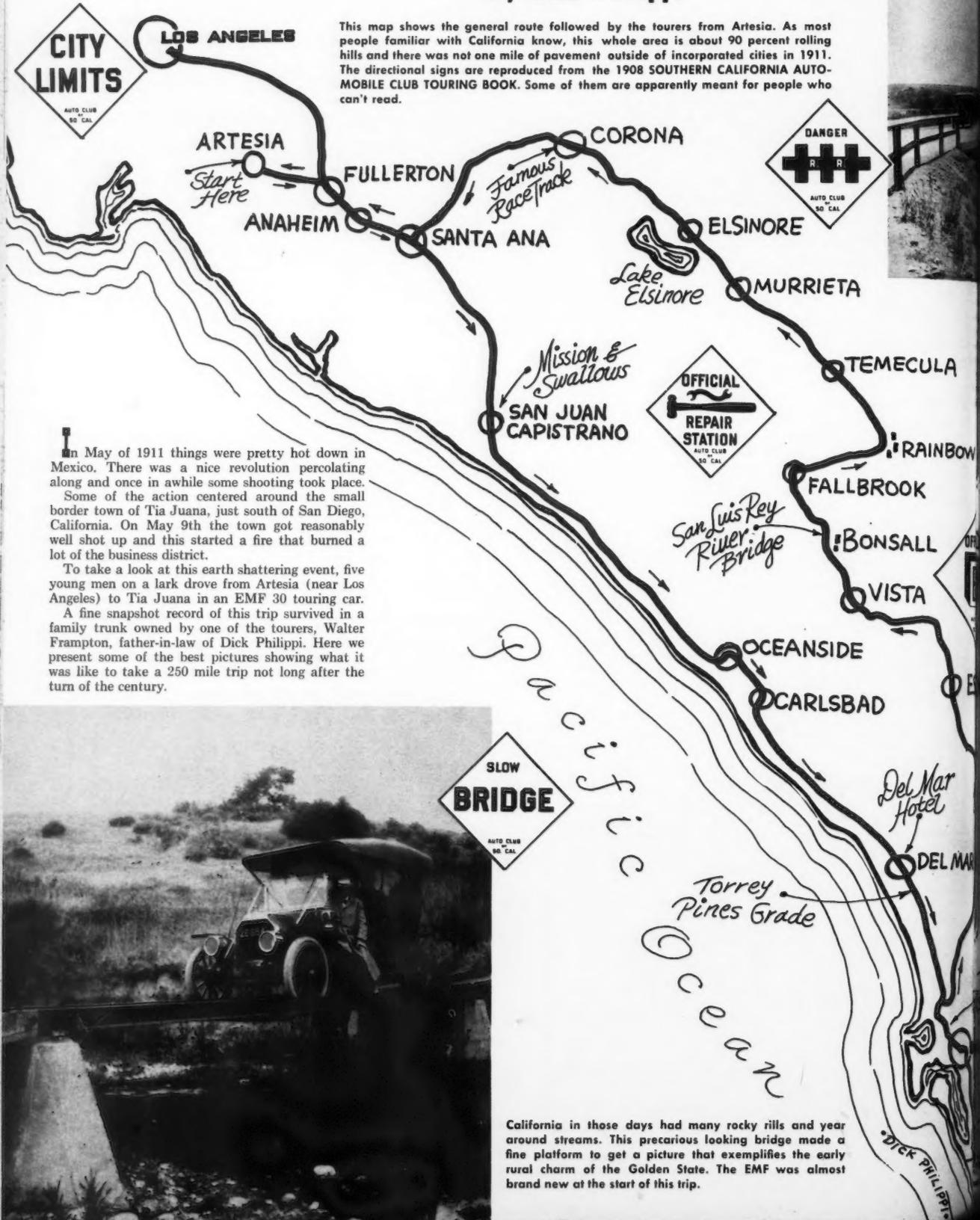
Write to: Dept. G

WAYSIDE PRESS 1501 Washington Rd.
MENDOTA, ILL.

FIVE GUYS SCOUT 1911 MEXICAN

By Dick Philippi

This map shows the general route followed by the tourers from Artesia. As most people familiar with California know, this whole area is about 90 percent rolling hills and there was not one mile of pavement outside of incorporated cities in 1911. The directional signs are reproduced from the 1908 SOUTHERN CALIFORNIA AUTOMOBILE CLUB TOURING BOOK. Some of them are apparently meant for people who can't read.



In May of 1911 things were pretty hot down in Mexico. There was a nice revolution percolating along and once in awhile some shooting took place. Some of the action centered around the small border town of Tia Juana, just south of San Diego, California. On May 9th the town got reasonably well shot up and this started a fire that burned a lot of the business district.

To take a look at this earth shattering event, five young men on a lark drove from Artesia (near Los Angeles) to Tia Juana in an EMF 30 touring car.

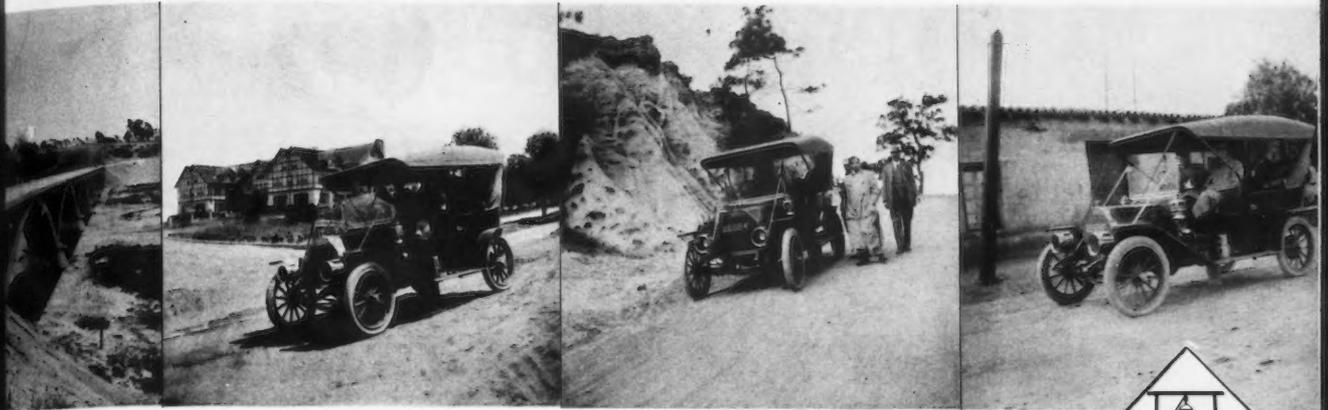
A fine snapshot record of this trip survived in a family trunk owned by one of the tourers, Walter Frampton, father-in-law of Dick Philippi. Here we present some of the best pictures showing what it was like to take a 250 mile trip not long after the turn of the century.



California in those days had many rocky rills and year around streams. This precarious looking bridge made a fine platform to get a picture that exemplifies the early rural charm of the Golden State. The EMF was almost brand new at the start of this trip.

DICK PHILIPPI

CA REVOLUTION IN EMF THIRTY



1. The reinforced concrete bridge over the San Luis river at Bonsall was quite an engineering achievement for those days and it still carries auto traffic. Del Mar was 50 years newer in 1911 and quite popular with western winter tourist trade which stopped over by the R. R. No automobiles cluttered up the front end in those days. Torrey Pines grade gained an early reputation for meanness. It was short, steep and tough. No

tears were shed when it was later bypassed with a high gear road. The famous Torrey Pine, which grows nowhere else in the world, may be seen in the background. No trip to San Diego in 1911 would be complete without a stop at Ramona's birthplace — our EMF crew was no exception. Early California roads, because of the dry climate, were among the best in the nation.



The border station was a little on the primitive side. Later to come were the carefree horse racing, gambling, night clubbing crowds of the roaring twenties. Far right picture shows primeval aspect of the California coast of those days. A dirt road with horse tracks and not a house in sight.



Below: This post card view of the burning Mexican town was taken from the safe vantage point of the U. S. side, with the Tia Juana river in between. The whole fracas became quite a tourist attraction. It is not recorded whether the government changed hands during this episode or not.



Mexican beer has long fascinated visitors from this side of the border. With a cool supply of brew, the Artesia boys washed away some of the accumulated dust. No highway patrol to interfere with innocent fun!



Ramona's Birthplace

DIEGO

Beer Stop

Revolution Here U.S.A.

TIA JUANA Old Mexico



Burning Tia Juana - After the Battle May 9th - 1911.

Current Restorations

MAKE YEAR CYLS. MODEL BODY

BRUSH 1908 1 cyl. D Roadster
Needed: Good 28x3 wood clincher wheels. New or new condition 28x3 clincher tires. Wheels don't have to be genuine Brush.

E. Clavel, Esq., Box 98, Wauchul, Florida.

BUICK 1915 4 C-24 X
Needed: Radiator, owner's manual, roadster body or sections, fenders (many 1914 B-24 body units interchangeable).

Judson Ihrig, 1645 Quincy Place, Honolulu 16, Hawaii.

CADILLAC 1912 4 30 Touring
Needed: Touring body, side lamps and brackets, starter and generator, manual or literature.

Sheldon Ball, Box 311 A, Homan Hall, Fresno State College Fresno 26, Calif.

CADILLAC 1926 V-8 61? . Phaeton Touring
Needed: Lock and assembly for tool box cover, crank hole cover, trunk, windshield and wings for rear seat, authentic horn.

De Vere D. Goheen, 2408 Erskine, South Bend 14, Indiana

CHALMERS 1911 4 M Touring
Needed: Rear wheel driving crab, 26" non-demountable lock ring type rims for 34 x 4 tires, rear hub cap.

C. A. Fanucci, 1421 N. Branciforte Ave., Santa Cruz, Calif.

CHRYSLER 1926 6 70 Roadster
Needed: Top bows, headlights, steering wheel, any literature that may be purchased or copied, etc.

Terry Weinheimer, 9061 E. Imperial Ave., Garden Grove, Calif.

COLE 1917 V-8 8-70 Cloverleaf Roadster
Needed: Dashboard instruments, ring gear, top bow sockets, wire wheel snap rings, parts car.

Ken Hand, 224 No. Minnesota, Wichita 14, Kansas.

DODGE 1919 4 30 Touring
Needed: New left front fender. New starter drive sprocket. Crank hole plug.

Paul Frederick, 458 So. Indianapolis, Tulsa, Oklahoma.

FORD 1907 4 N Roadster
Needed: Rear end parts, intake manifold, hood, fender irons, steering wheel, radiator, lamps, horn, hub caps.

Joe Ersland, 923 Minn. Chickasha, Oklahoma.

FORD 1911 4 T Touring
Needed: One to four 30-3½ wood felloe wheels, with or without hubs. Want round felloes but will take square felloes.

Herbert Royston, P. O. Box 25503, W. Los Angeles 25, Calif.

FORD 1914 4 T Touring
Needed: Head lamps, acet. generator, top bows or sockets, hood, radiator, right rear axle housing, bulb horn.

Les Crane, 2501 I Street, Rio Linda, Calif.

FORD 1915 4 T Touring
Needed: Hood, brass head lamp rims, 4 fenders, splash aprons, two 30 x 3 tires and tubes, one 30 x 3½ round felloe wheel, detailed pictures, brass Bell Klaxon.

T. H. Eicher, 1312 17th St., Alamogordo, N. M.

FORD 1930-31 4 A Tudor Phaeton
Needed: Top including irons and bows. Any condition as long as its all there. Can use roadster or 4 door touring top.

Fred Elstrod, R. R. No. 4, Syracuse, Indiana.

MAXWELL 1910 2 AA Roadster
Needed: L. H. No. 7 or No. 9 sidelight, brass carbide generator, radiator cap, brass tail light, service literature.

Vincent Amato, Ridgewood Road, Middletown, Conn.

LISTINGS FOR THIS DEPARTMENT SHOULD BE SENT TO

Herb Prentice
9734 Garnish Drive
Downey, California

SEND DETAILS ON A POSTCARD. SUBMIT NO MORE OFTEN THAN EVERY THIRD ISSUE, AND BE SURE TO INCLUDE YOUR CURRENT HCCA MEMBERSHIP CARD NUMBER. LIMIT NEEDS TO 20 WORDS.

MAXWELL 1911 2 AB Runabout
Needed: Tool box and Maxwell 2 cylinder carburetor.

Erwin Kochler, 2554 Wood St., River Grove, Illinois.

NASH 1929 6 470 4 Dr. Sedan
Needed: Valves, cam and main bearings, gaskets, Marvel carb. wire wheel hub caps, misc. body parts, shop manual and Nash emblems.

Adrian B. Smith, Box 847, Oroville, Calif.

PACKARD 1934 8 X Coupe
Needed: Windshield frame complete with all related hardware. Believe this is same as for Conv. Coupe.

Bruce O. Armstrong, Route 3, Box 593, Poulsbo, Wash.

PIERCE ARROW 1907 6 36 Sta. Wagon
Needed: Pair rear fenders and mounting brackets, pair rear wheels, 26" 34x4 tires, side lamps, horn, manual, speedometer.

Albert Hood, P. O. Box 1494, Carmel, California.

PIERCE ARROW 1926 6 80 Roadster
Needed: Combination light switch and ignition switch, radiator shell, automatic timing chain idler, four 600-22 high rubber tires, instruction manual.

Sam Heintzelman, 3716 Falcon Ave., Long Beach 7, Calif.

SAXON 1915 6 S Roadster
Needed: Fenders, splash shields, trunk lid, top bows and irons, top rests, 1916 engine. Have 1917 will trade or sell, 25" wheels, spark and gas controls.

Gary Olsen, Box 103, Gowen, Mich.

STUDEBAKER 1913 4 35 Touring
Needed: Hawley carburetor with fitting for dash adjustment.

Charles Figge V, 2633 N. Commonwealth Ave., Los Angeles 29, California.

STUDEBAKER 1917 6 ED-7 Touring
Needed: Fenders, hood, headlights, coil, distributor gear, external brake band, two 34 x 4 S.S. tires, aluminum running board.

Carl Pevey, 16407 S. E. 15th, Bellevue, Wash.

STUTZ 1916 4 F Speedster
Needed: Radiator, ammeter, 2 spark magneto, engine parts, owner's maintenance manual.

S. R. Gasparovich, 4327 W. Plank Rd., Peoria, Ill.

WHITE 1912 4 30 Touring
Needed: Rear body section with rear doors complete.

Irshal Davis, c/o Schools, Mullan, Idaho.

The traffic officer had raised his hand and the lady motorist stopped with a jerk. Said the officer as he drew out his little book: "As soon as I saw you come 'round the bend I said to myself, 'Forty-five, at least.'"

"Officer," remonstrated the lady, indignantly, "you are very much mistaken. It's this hat that makes me look so old."

Illustrated fact sheets summarizing HCCA activities and membership requirements are available from National headquarters. If you have a friend who is interested in early cars and isn't a member ask us to send him a fact sheet and application form—they're free.

PRIDE *and* JOY

RECENT RESTORATIONS BY HCCA MEMBERS



This photo of an outstanding 1904 Cadillac Model-B surrey arrived too late for the recent Gazette feature. Ralph Curtiss of Hackensack, N.J. is the owner.



Member P. G. Hosking of Australia and wife pictured with their 1905 one cylinder Cadillac; photo arrived too late for last issue featuring this model. Mr. Hosking states that this car was imported for a "race" sponsored in 1905 by the Dunlop Rubber Co., covering a distance of almost 600 miles from Sydney to Melbourne. He does not state the result of the contest.



**more
about
Cadillac** ➔

INSTRUCTIONS

FOR OPERATION AND CARE OF THE

Single Cylinder Cadillac

NOTICE

Space limitations prohibited the inclusion of some technical items in the one cylinder Cadillac feature in the last issue, among them some excerpts from the operating manual. Although continued-over articles are not our policy, we feel that some of the technical information we have on hand is so worthwhile both to Cadillac owners and to old auto enthusiasts that we are including it in this issue. Specifically, this is an Operating Manual covering detailed design peculiarities of the various one cylinder Cadillacs, and incorporating instructions for the adjustment and maintenance of these good automobiles. We feel, and hope you will agree, that the space devoted to this is well used, and makes this issue one well worth preserving.

This is reproduced through the courtesy of the Automotive History Collection of the Detroit Public Library.

PARTS AND REPAIRS

TO THE OWNER:

To avoid unnecessary delay and useless correspondence PARTS FOR REPAIRS should, wherever possible, be ordered from the dealer from whom machine was purchased or from nearest local Cadillac dealer who is generally in a position to know what is desired and how to order it. (If he is not we should like to know it).

With sixteen thousand Cadillac automobiles in use it is obviously impractical for us to deal direct with all Cadillac owners. We cannot open accounts with or sell at a discount to any except regular dealers with whom we make annual contracts. Where conditions are such as to, in our judgment, warrant it we will fill orders for parts at prices listed in our parts catalogue f. o. b. factory *providing Cash accompanies the Order*.

In case orders are sent under above conditions we must have motor number, and model of machine with correct description, name and number of the part, as per price list of parts. If these are not procurable return the part properly tagged, *charges prepaid*, (or it will not be accepted), a special letter of instructions written and return instructions given. Otherwise we cannot promise prompt service or an intelligent fulfillment of the order.

Our responsibility in all cases ceases with delivery to the transportation company.

REPAIRS.—In the event of claims or the necessity for repairing on such parts as TIRES OR SPARK COILS, do not send these to us. It only incurs extra expense because we would be obliged to re-ship them to the factories. In all such cases correspondence should be opened direct with the makers of the parts and if necessary the same should be sent direct to said makers or their branches, transportation prepaid.

The names and addresses of makers will be found on these respective parts.

TO CADILLAC DEALERS:

We prefer to transact all our business through our regular dealers with whom we have contracts. However, in order to give Cadillac owners more prompt service we are willing to open accounts with sub-dealers in your territory with your guarantee and consent. It is our desire to protect our dealers as well as the owner and for this reason have adopted the above policy.

Broken parts must invariably be sent to us transportation charges *prepaid* for examination before any claim will be allowed. The new parts will be charged for, and if any allowance is made, credit will be given for old parts if returned within 30 days.

Above instructions to owner relative to ordering parts must also be followed.

CADILLAC MOTOR CAR COMPANY, DETROIT, MICH.

Member Association Licensed Automobile Manufacturers.

THE CARE OF A MOTOR CAR

In the care and operation of an automobile, much must be left to the judgment of the operator, who should study the construction of his car and thoroughly acquaint himself with its mechanism, the functions of its various parts and the "why" of everything connected with it. Remember that the difference between a comprehensive understanding of your automobile and the superficial knowledge possessed by most owners and drivers is the difference between having troubles and annoyances and not having them.

The old adage "A stitch in time saves nine" applies with special significance to the motor car. This does not necessarily mean that it should be constantly tinkered with but that intelligent care and proper attention will often correct a needed adjustment or lubricate a bearing that is becoming dry, but which if neglected, may cause serious and possibly expensive damage.

The care of an automobile may be boiled down to two important instructions—"Lubricate" and "Adjust." It will be readily understood that where one part moves or works upon another, there is always more or less friction and these parts must be oiled more or less frequently, including springs, shackle joints, connecting rod bearings, etc.

But do not stop with oiling only at the points mentioned. Look the car over carefully and you will find numerous oil holes, oil cups and grease cups. Remember that these are placed there for a purpose. **THAT PURPOSE IS OIL.** Oil holes frequently become stopped up. When they do, be careful not to overlook them.

Great care is also necessary to see that all nuts, bolts and screws about the car are kept properly tightened. Most important parts subject to wear are, wherever possible, provided with adjustments for taking up such wear and these should be inspected occasionally, and receive attention whenever required.

By far the greater portion of "automobile troubles" is the result of negligence and carelessness, while the reasonable care to which any piece of machinery is entitled, will insure long life and satisfactory service.

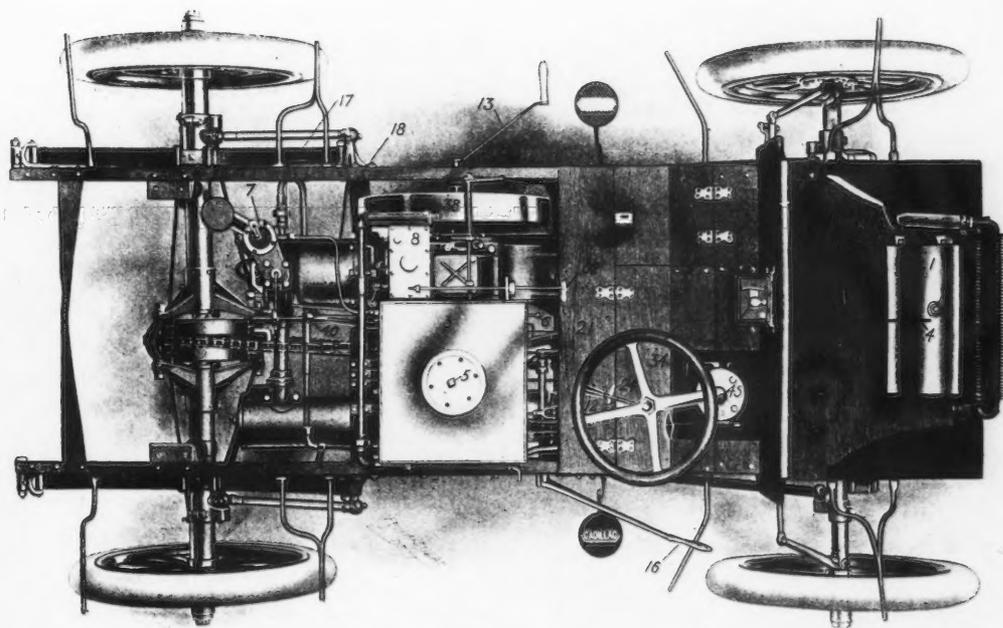


Figure 1

WHAT TO DO TO A NEW CAR.

Raise hood cover and fill water tank (Fig. 1). To do this remove plug (2) in top of tank (1), insert funnel and fill with water. In freezing weather use some good anti-freezing solution. In filling tank first time or after water system has been drained, open cock (38) in end of stand pipe at side of lubricator. To get at this cock remove front cushion on left side and raise seat panel. Be sure to close cock (38) after tank is filled.

Take out cushion on right side front seat, raise seat panel, remove plug (5) in gasoline tank (3), insert the funnel and fill with clean gasoline, straining the gasoline through a screen, or preferably, a chamois skin in the funnel, and then replace the gasoline and water filling plugs (5 and 2, Fig. 1), screwing them in firmly, but not too tight. See that the gasoline valve (6) is open and that gasoline flows freely to Carburetor (7) by pressing down with the finger the primer (17, Fig. 1 and 3) until the gasoline flows out of the bottom of the Carburetor.

The gasoline tank used on Models K, M, S and T is divided into two compartments, the large one holding about six gallons and the small one about one gallon. The latter is for reserve.

When filling the tank, be sure to open the valve which has the short stem, so that the gasoline will enter both compartments, then close the valve again so that the gasoline in the reserve compartment will be held there.

Before starting the car, see that the valve which supplies the carburetor is open; this is the valve with the long stem.

When the gasoline from the large compartment has been exhausted, the motor will of course stop, which is a notification to the driver that but one gallon remains and that the supply must soon be renewed.

The gasoline from the small compartment may then be transferred to the large one by opening the valve which has the short stem.

After a motor has stood some hours, or long enough to have entirely cooled down, the primer rod may be pressed down until the gasoline flows out of the intake tube before trying to start. However, if a motor has just been stopped or has stood only a short time, it will usually start without priming. If it does not it should be primed, but only for a few seconds. Holding down the primer until the gasoline flows out would on a warm motor make it necessary to turn the motor over the compression possibly three or four times, as the first charges would be too rich in gasoline vapor to be explosive.

See that oil cup (8, Fig. 1) is full and feeds about 15 to 20 drops per minute. (No exact rule for oil feed can be given—too much oil is indicated by blue smoke from exhausts.) This cup, which also feeds the main bearings, is of the utmost importance (see Fig. 13, page 27).

Oil the transmission (49, Fig. 4) through the oil hole in the flange between it and the small driving sprocket (33) with about half pint of heavy lubricating oil at least as often as once per week. In cold weather a lighter oil should be used.

The steering gear should be oiled occasionally at the top and bottom of the steering post (45, Fig. 1), also on the rack (46, Fig. 3).

The wheel knuckles are oiled at 47 and 48, Fig. 4.

Radius rods (50, Fig. 4) should be oiled at both ends.

See that all grease cups (39, 40, Fig. 4, and 43, Fig. 4), are filled. The cups 39, 40 and 43 should be given a turn every two or three days. A small amount of powdered graphite mixed with the grease adds materially to its lubricating qualities and to the life of the lubricant, and also gives it more body for resisting the heat.

Cadillac



THROTTLE AND SPARK LEVERS

Models K, M, S and T

This illustration shows the location of the spark and throttle levers directly underneath the steering wheel as used on Single Cylinder Cadillacs Model K, M, S and T, made in 1906-1907 and 1908.

The lower of the two levers opens and closes the throttle, that is, it regulates the quantity of gasoline or gas supplied to the combustion chamber of the motor. To open the throttle to increase the amount of the charge, draw this lever toward you. To close the throttle, decreasing the charge, push this lever from you.

The upper lever is to advance or retard the timing of the electric spark which ignites the charge of gas in the motor. To advance the spark, that is, to ignite the charge earlier, draw the lever toward you. To retard the spark, push this lever from you.

When starting the car always see that the throttle is wide open—that is, with the lever as far toward you as possible. Also be sure that the spark lever is as far from you as possible.

When operating these levers, move them straight forward or back. Do not pull up or push down on them.

THE SWITCH ON MODELS K, M, S AND T

The switch which turns the electric current "on" and "off" is now located on the front of the coil box, which is attached to the dash of the car. When the switch is perpendicular the current is "off." To turn it "on" swing the switch to the right or left so that it contacts with one of the brass contact points. At the top end of the switch arm is a cut-out plug. This may be pulled out if desired when the car is to be left standing, for without this plug in position, the car cannot be started.

Read instructions in this book relative to use of batteries.

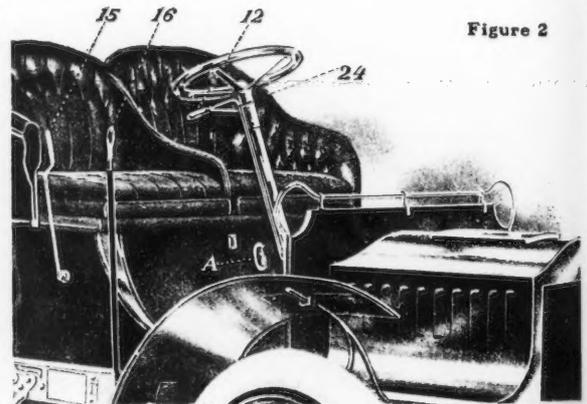


Figure 2

The above illustration shows the location of the control lever (16) the throttle lever (12) the spark lever (15) and the Lubricator and Switch-rod handle (A), all as used on the Single Cylinder Cadillacs, Models B, C, E and F, made in 1904 and 1905.

The operation of the control lever (16) is the same on all Single Cylinder Cadillacs.

The Throttle lever (12) is to open and close the throttle. To open the throttle move this lever to the left. To close the throttle move this lever to the right.

The spark lever (15) is to advance or retard the timing of the electric spark which ignites the charge of gas in the

motor. To advance the spark, that is, to ignite the charge earlier, move this spark lever (15) forward. To retard the spark, move this lever backward.

The use of the Lubricator and Switch-rod handle (A) is explained in appropriate places further along in this book. This handle (A), however, is used only on Models B, C, E and F.

TO START THE MOTOR

First. Open the throttle. (12, Fig. 2).

Second. Turn switch handle (A, Fig. 2) up.

Third. Retard spark lever (15, Fig. 2).

Fourth. See that controlling lever (16, Fig. 2) is neutral.

Fifth. Insert starting crank (13, Fig. 1) in end of shaft (14, Fig. 1), turn crank (in direction indicated by arrow under fly wheel (Fig. 3) until the compression is felt to resist further motion, then turn the engine quickly over compression once. If engine fails to start, "prime it" by pressing down rod (17, Fig. 1) until gasoline flows. If the motor fails to start after the third or fourth time over compression there is some good reason. Cranking at random is a useless waste of energy.

Make sure that spark lever is way back, that switch is turned on to connect with battery and that you can hear vibrator "buzz" every time engine goes over compression. The contact points may be dirty or burned or it may need adjusting. A weak battery will cause vibrator to give less movement than is desirable. See if battery wires and all electrical connections are properly and securely adjusted as per instructions on page 24. See that spark plug is clean and that the battery will carry a hot spark across

the opening between the wire points. This opening should be from 1-64 to 3-64 in., according to strength of battery. To obtain good results with a weak battery you must make the opening between the wires less than when battery is developing full strength. Be sure controlling lever is neutral and that engine turns easily. No gasoline or internal combustion motor of any type can start under a load.

In extreme cold weather gasoline motors are sometimes hard to start and require more generous "priming" than in moderate temperature. It may be necessary to saturate a handkerchief with gasoline and hold in the hands a few seconds, then place over or in the intake air pipe. This warms the mixture and aids in starting a cold motor on a zero morning. It is usually unnecessary to "prime" a motor unless it has been standing idle for an hour or more. Too much priming will make too rich a mixture and necessitate unnecessary cranking.

After the motor has been started, turn the handle (A) horizontally in either direction, turning off one battery, but leaving the oil turned on. The oil is off only when the handle is down. Push the throttle lever (12) under the steering wheel to the extreme left, just before stopping the motor, which is accomplished by turning the handle (A) down.

A FEW "DONT'S"

Don't try to start without the switch turned on.

Don't try to start without retarding the spark as far as possible.

Don't try to run without oil, water and gasoline.

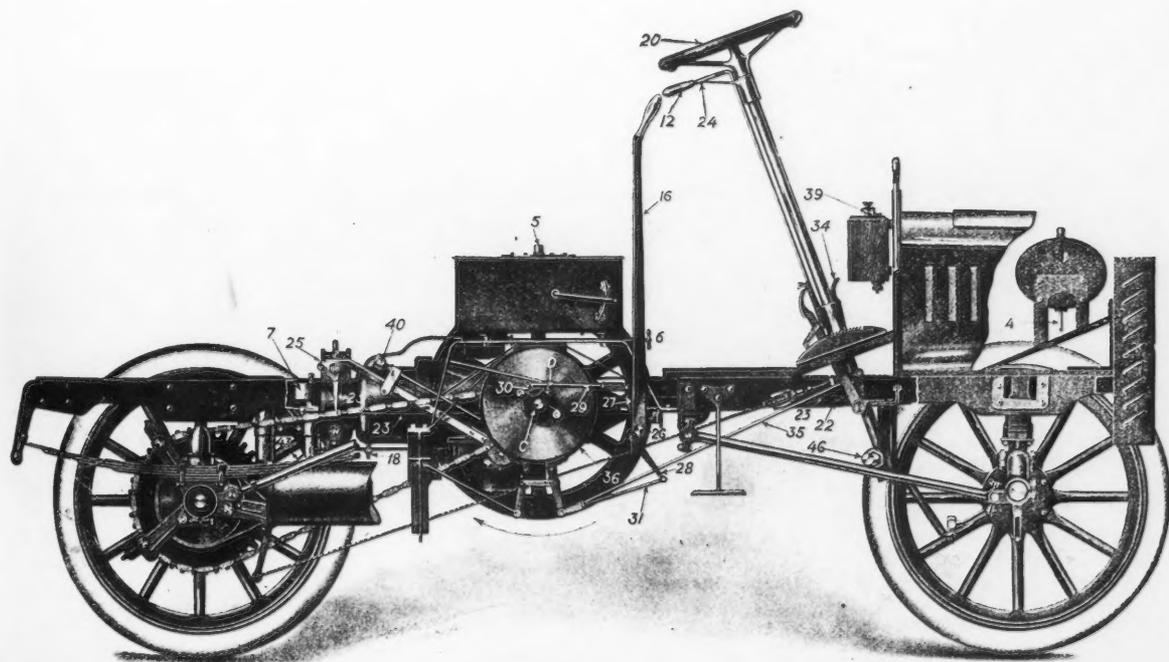


Figure 3

SECTIONAL VIEW

Don't crank a motor, that is, don't turn it over the compression more than three or four times after priming. If it does not start at once there is something wrong. See page 12 on common sources of trouble.

Don't drive fast nor attempt to stop quickly on a wet, slippery road or pavement.

Don't allow an automobile to stand in cold weather with pure water in the circulating system. It will freeze and burst something. In cold weather use some good anti-freezing solution.

Don't run a motor fast when the automobile is standing still; there is no worse abuse.

Don't use slow speed lever for brake, you may break your crank shaft.

Don't advance spark lever too fast or too far (crank shafts can be broken by injudicious use of spark advance).

Don't throw high speed lever (No. 16) forward before low speed lever (31, Fig. 3) is released or vice versa, or a broken crank shaft may result.

TO INSPECT THE CADILLAC

All parts of the motor must work easily. Valves must be tight when closed, giving good compression. The spark must be good and timed to give the explosion at the proper point. The carburetor must allow a flow of gasoline when the primer is held down (17, Fig. 1) and must stop the flow when it is

released. The carburetor valve must have the proper amount of lift to give the right mixture when running. (See Fig. 10, page 20.)

To see that the parts are working properly as outlined above, proceed as follows:

Open the cylinder drain valve (18, Fig. 3) so as to release the compression, then put the controller lever (16) in its neutral position, about half way between the ends of its travel. Now, by inserting the starting crank in the end of starting shaft (14) the motor should turn with very little resistance. Close the valve (18); the motor should turn as easily as before, except on the compression stroke, when throttle is wide open, which should give a considerable resistance to the turning of the starting crank. When the handle (A, Fig. 2) is turned up, and the spark lever (15) is moved to the retarded position, the spark should occur just after the end of the compression stroke of the piston. That is, just as the resistance of the compression on the starting crank has stopped, the sound of the vibrator (39, Fig. 3) on the coil should commence. If no sound of the vibrator can be heard when turning the motor over slowly by hand at the end of each compression stroke, the electrical outfit should be inspected separately. See electrical explanation (Fig. 5, pages 24 and 25).

SUGGESTIONS FOR OPERATING

The speed of the motor is controlled by either or both of two methods. An examination of cuts (Figs. 1, 3 and 4)

Cadillac

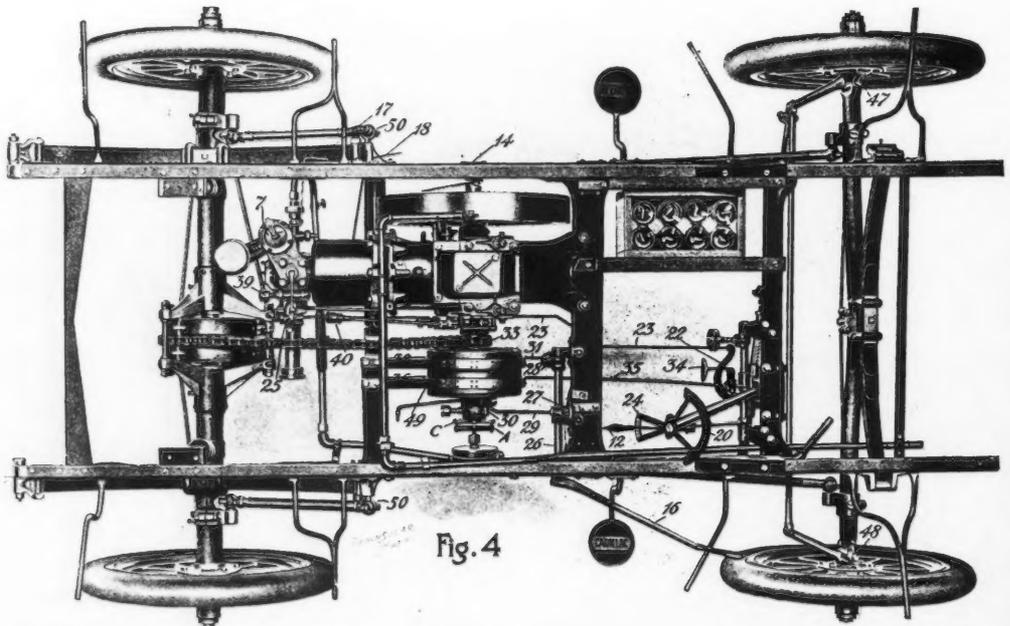


Fig. 4

will show how the throttle lever (12) just under the steering wheel (20) extends down below the floor (21) and ends in an arm (22) which is connected to the rod (23, Fig. 4) so as to move the rod (23) endways as the lever (12) is shifted in its quadrant (24). Trace the rod (23) back and it will be seen to engage the throttle cam (25) at its rear end in such a manner that the throttle cam (25) is shifted by any endwise movement of the rod (23).

The shifting of the cam (25, Fig. 3) increases or decreases the size of the opening into the cylinder through which the explosive mixture of air and gasoline must pass, thereby increasing or decreasing the amount of the charge which, of course, has a corresponding effect on the speed and power of the motor.

The other method of controlling the speed and power of the motor is to change the time of igniting the compressed charge of gasoline and air. Three simple facts should be remembered in connection with this timing of ignition.

First: The lever (15, Fig. 2) must be retarded as far as possible in starting the motor to give a late spark and avoid an explosion that will throw the crank in a **reverse** direction.

Second: The faster the motor runs the farther the spark lever may be advanced.

Third: When the motor is slowed down on a hill or a bad road it will pull better and is less liable to be stopped by an overload if the spark lever is kept retarded more than at high speed. To keep the spark advanced as far as pos-

sible without making the motor pound or jerk means a greater amount of power for a given amount of gasoline.

Figs. 3 and 4 show the method of engaging the different gears. The controlling lever (16) is attached to the controller shaft (26), which has attached to it two arms (27 and 28). Arm 27 has attached to its end a rod (29) which engages and controls the high speed clutch (30). Arm 28 has attached to its end a rod (31) which engages and controls the reverse brake band (32). If the controlling lever be moved forward, the arm (27) and rod (29) cause the high speed clutch to lock the transmission gearing all together so that it revolves with the motor shaft and acts as an additional fly wheel, carrying with it the driving sprocket (33).

It will thus be seen that when the automobile is being driven with the high speed gear in operation, there are no gears running and no loss of power between the motor and the ground except the friction of the chain and rear axle.

If the controlling lever (16) be moved back, the high speed clutch releases, leaving the motor free to run without driving the automobile. This is the neutral position. If the controlling lever be moved still further back it is evident that the rod (31) attached to the arm (28) will be drawn forward and by its engagement with the reverse brake band (32) will close the band upon its part of the transmission gearing. When that part of the transmission gear within the reverse brake band (32) is prevented from turning, the sprocket (33) must turn in the opposite direction from that of the motor, but at a slower speed. It is

11

12

apparent that the band (32) may be made to clasp its part of the transmission gearing more or less closely, allowing more or less slip.

A slow speed or hill-climbing gear is provided and works as follows (shown in Figs. 3 and 4).

If the controlling lever (16) be in the neutral position, that is, with both the high speed clutch and reverse brake band released, and the slow speed foot pedal (34) be pushed forward it moves with it the attached rod (35), the other end of which engages the slow speed brake band (36) which, when moved forward by the pedal (34), closes the slow speed brake band (36) upon its part of the transmission gearing. When the part of the transmission gearing clamped by the brake band (36) is prevented from turning, the driving sprocket (33) must revolve in the same direction as the motor shaft, but at a slower speed.

COMMON SOURCES OF TROUBLES

1. Inadequate lubrication.
2. Imperfect vibrator action. The vibrator (39) can be seen by taking top off the coil box.
3. Dirty spark plugs.
4. Exhausted batteries.
5. Loose or broken wires.
6. A weak commutator spring.
7. Tight brake bands or any imperfect adjustment.

8. Dirty gasoline.
9. Water in the gasoline.
10. Frozen circulating water.
11. Lack of circulating water.
12. Charred or sticky valve stems.

Common sources of troubles do not include accidents, and such things as may be termed occasional or accidental troubles, so that in dealing with **common** sources, remember that the difference between a comprehensive understanding of your automobile and the superficial knowledge possessed by many owners and drivers is the difference between having troubles and annoyances and not having them. Familiarity with a machine does not call for special mechanical ability, only a careful study of the directions and explanations contained in this book, and a common sense application of them to your automobile.

Of the common sources outlined above, the first, inadequate lubrication, is by far the most detrimental, as it may ruin all of the most important wearing surfaces of the motor. Use the utmost care and vigilance to see that the sight feed oil cup (8, Fig. 1) is feeding about 20 drops per minute on a new machine. This feed may be reduced to about 15 drops after a few weeks' use.

Of equal importance are the two feed pipes (M2-M4, Fig. 13) which lubricate the main shaft bearing. See page 27, Fig. 13.

Next in importance is the transmission gear which should have about half a pint of heavy oil every three or four hundred miles of use. This rule applies to average

conditions. If used on hilly, muddy or sandy roads where the hill-climbing gear is used much, one hundred miles might be far enough on one oiling, although that would mean exceptionally severe conditions.

After these come the minor oiling points that need attention occasionally, say from two days to a week, depending on conditions of use.

Referring to Fig. 4, the most important would be the high speed clutch (30). There are two clutch rings here that do not revolve, and that bear against the clutch disc on one side, and against the adjusting nut on the other, having a race of balls at each side which should have a little oil occasionally.

The three grease cups (40 and 43, Figs 3 and 4 and 39, Fig. 4) and the rolls which operate the inlet valve at (25) should have occasional attention. This makes a total of only nine places to oil on both the motor and the transmission gears. Remember that a properly oiled and adjusted motor may be turned by one finger against a spoke of the fly-wheel.

Troubles Nos. 2, 3, 4, 5 and 6 will all give the same symptoms; uncertainty in starting, skipping of explosions and irregular action when running.

The least liable to occur and the easiest to discover is (6) a weak or broken commutator spring. Stand on the left side of the car and look under the side of the body through the fly-wheel and the commutator and its action can be plainly seen.

Spark plugs that have become sooty from excess of oil and long use, or that have the sparking points too far apart,

must be removed, and if dirty, replaced by clean ones; or if the gap is too wide, the wires (1 and 2, Fig. 5) should be bent until there is a space between them of from $1/64$ " to $1/32$ ", or a little more than the thickness of an ordinary card. Dirty spark plugs may be made as good as new by removing the mica cores and cleaning them thoroughly with sand paper.

When the vibrator contact points become worn, so that the vibrator action is not uniform, they should be smoothed off.

Troubles Nos. 4 and 5 must be discovered by inspection. In a motor well cared for, and properly adjusted so as to turn easily, nearly all failures to start promptly and run regularly are electrical. If, after inspecting the wiring switch, commutator and spark coil, and being sure that the spark plug is clean and the points not too far apart, the motor misses explosions, the trouble is probably due to weak batteries, and these should be replaced with new ones immediately, as from this time on they will deteriorate very rapidly and finally refuse to give any spark whatever. Batteries usually give ample warning of their weakening by the symptoms already described. This trouble is liable to deceive the operator, since the motor will nearly always start readily, but will miss explosions and will probably stop; then after a time the motor will start as before. This is because of the batteries having temporarily recuperated during the rest. This trouble can be temporarily relieved by turning handle (A Fig. 2) up, which connect both batteries. By this method you have temporarily increased the

efficiency of your battery. However, the battery from now on is necessarily short lived, and should be replaced at the earliest opportunity.

The true condition of the batteries can only be determined by the use of an amperemeter. These electrical instruments are small and inexpensive, and indispensable when purchasing new cells, since new cells of this nature deteriorate rapidly even though not in use. New cells will register from 12 to 16 amperes, which will gradually become weaker from use. When the amperage falls below about 8 the cells should be renewed.

Do not waste time and patience cranking a motor, for if in proper condition it will start as surely and run as regularly as a locomotive. The conditions necessary are easily understood and quickly attainable.

No. 7. A motor which when turned over for starting shows good compression, gives one explosion and fails to go far enough to get a second explosion, may be out of adjustment. There is too much friction somewhere, usually in the adjustment of the high speed friction or the friction bands around the transmission case.

Nos. 8 and 9. The motor is provided with a settling chamber or dirt trap in the gasoline pipe just before it reaches the carburetor. This will arrest a limited amount of fine sediment, for should too much dirt find its way into the gasoline tank it may either stop up the pipe or carburetor valve.

The cover of the carburetor may be removed by taking out the four screws that hold it in place and the dirt washed out. By removing the settling chamber also, gasoline may be

poured through the carburetor backward to make sure of absolute cleansing. This trouble, with ordinary care ought never to be met with, but is easily discoverable either by a continuous flow of gasoline from the bottom of the carburetor when the motor is not running, or a failure to flow when the priming rod projecting from the bottom of the carburetor is held up as far as it will go. Do not readjust the carburetor after it has been right until you are sure it is clean. The adjustment will not be altered by the removal of the cover.

Nos. 10 and 11. Always be sure that you have water in the circulating system, and if the weather is cold see that the pump is not frozen, by trying the pump driver (A, Fig. 4) and see that the pump spindle turns freely **before** starting the motor. Otherwise, if you have no anti-freezing mixture, and the pump has frozen, you may break the blades inside loose from the shaft. Of course some mixture to prevent freezing **must** be used in cold weather.

No. 12. One of the most annoying troubles, and some times the most difficult for an amateur to locate, is a sticky exhaust valve stem, causing the valve to stay off the seat and thus lose all the compression, or seat so slowly that the motor will start but not run up to speed. This seldom occurs unless a great excess of oil has been used in the large cup, causing it to work back through the combustion chamber and burn on the exhaust valve stem. This trouble can be quickly and easily remedied by taking off the spark plug cap and working the valve by hand, using kerosene or gasoline to wash the thick oil off the stem.

EXPLANATION OF MOTOR

The following is an explanation of our four cycle motor. The cuts (Figs. 6, 7, 8, and 9, pages 16 and 17) show the correct timing of the valves. The same letters refer to the same parts in the different cuts. The piston travel indicated by the white space shown on cylinder is five inches.

Fig. 6 shows the beginning of the first or suction stroke of the cycle. At $1/16$ inch past the center the inlet valve (A) commences to open, which allows the vapor supplied by the carburetor (Fig. 10) to be drawn into the cylinder, the motor running as indicated by arrows. During this stroke the exhaust valve (B, Fig. 6) is closed. The inlet valve (A) is opened by the eccentric rod (C), its movement being controlled by the eccentric on the secondary shaft (D). This shaft is driven one-half the speed of the motor by the two to one gear (E) and pinion (F).

The way this inlet valve (A) controls the speed and power of the motor is taken up in Fig. 10 and the accompanying explanation.

Fig. 7 illustrates the beginning of the second or compression stroke at the closing point of the inlet valve, both valves being closed during this stroke.

The piston, traveling as indicated by the arrow, compresses the charge, which is ignited at or before the end of this stroke by the spark plug (see electrical explanation), and drives the piston forward to the position as in Fig. 8.

During these two compression and working strokes both valves (A and B) should be closed.

Fig. 8 illustrates the end of the third or working stroke of the cycle where the exhaust valve commences to open $5/16$ inch before the center. During the fourth or exhaust stroke the gases are expelled from the cylinder through the valve (B). The exhaust valve (B) is operated by the cam (1) which pushes the exhaust rocker arm (J) and lifts the exhaust valve (B).

Fig. 9 shows the position when the exhaust valve (B) has just closed just $1/32$ inch past the dead center. The inlet valve (A) will open $1/32$ inch later, admitting new vapor as in Fig. 1.

HOW TO SET CADILLAC VALVES

To set the valves after the shaft has been removed, proceed as follows: First, turn the crank shaft so that the center of the crank pin will be in the same horizontal plane with the center of the crank shaft, having the crank pin at the same time extending back toward the cylinder of the motor. By referring to Fig. 9 on page 17, you will see that the crank pin is in very nearly the position suggested above; although the crank pin must be dropped a little lower than shown on the cut, to bring its center in the same horizontal plane as the center of the crank shaft. Then mesh the valve gears so that the commutator key, which is in the end of the commutator shaft, will be in a vertical position, and will point either directly up, or directly down, when the crank pin bears the relation to the crank shaft above specified. Use special care to make

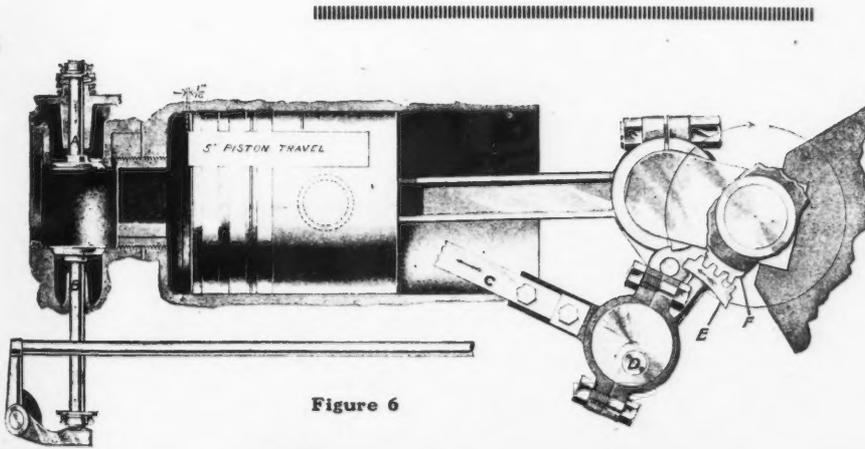


Figure 6

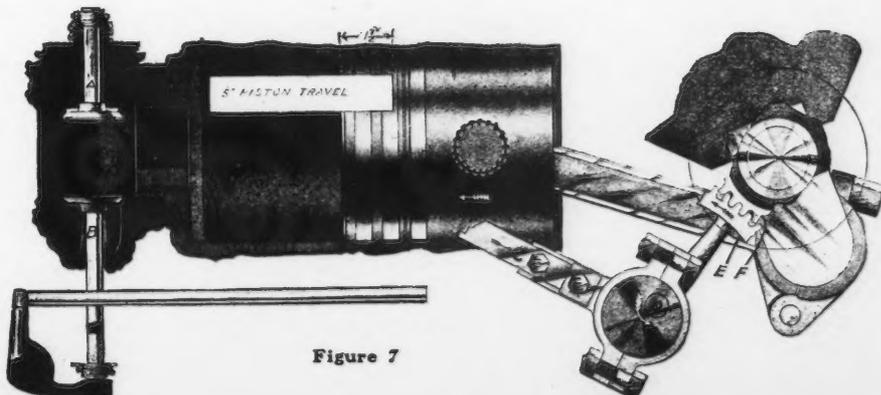


Figure 7

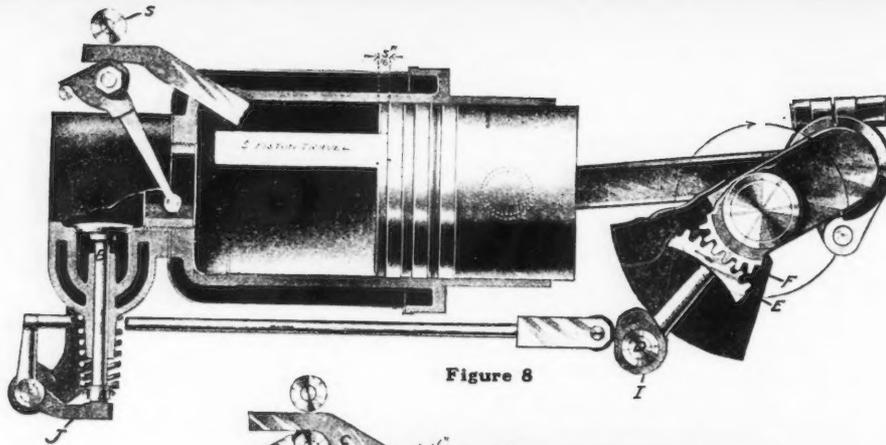


Figure 8

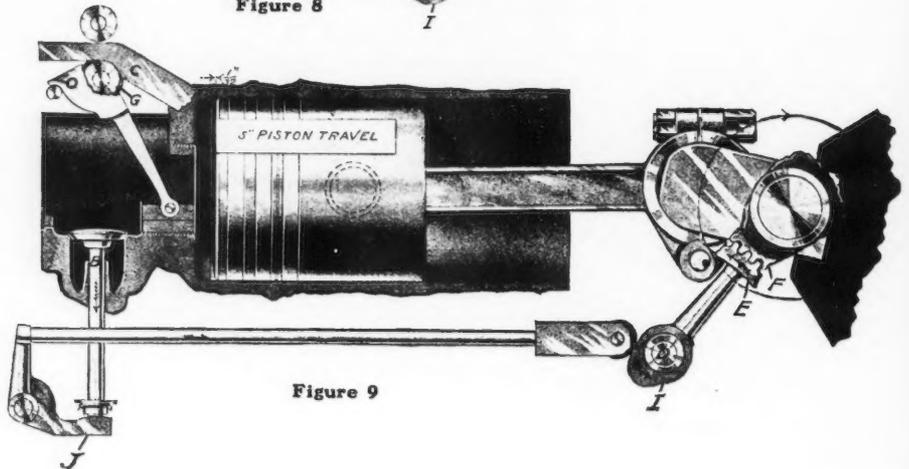


Figure 9

Cadillac

sure that this commutator key is practically vertical, and that it is not standing one tooth away from the vertical position.

After setting the cam shaft according to the above instructions it will be necessary to make a test to make sure that the cam and crank shaft gears are meshed correctly. This can be readily done by inserting the round exhaust push rod. Next put in the exhaust bell crank and pin, which form the connection between the valve stem and push rod. After this has been securely fastened it will be necessary to move the fly wheel forward. Take hold of the exhaust push rod which will turn freely except when performing its duty of lifting the exhaust valve. Move the fly wheel slowly forward and turn the exhaust push rod at the same time. Take care to detect the instant the exhaust push rod begins to bind. This position is termed the opening of the exhaust valve, as a valve in this position will be opened with the slightest movement of the fly wheel. To make sure that the motor has not been turned past the point desired, insert the fingers in the spark plug hole and see that the exhaust valve is on its seat and does not turn freely.

Next insert a rule allowing it to bear firmly on the piston. Without removing the measuring device move the fly wheel forward and note the distance the rule has traveled. This, on a new engine would be $5/16$ of an inch (as shown in Fig. 8, page 17), but if the engine had been running for some time the valves would be expected to be slightly out

of time. In this event, the exhaust would be opening $1/8$ or $1/16$ of an inch instead of $5/16$.

Next, it will be necessary to time the closing of this valve. Continue the movement of the fly wheel until the exhaust push rod begins to loosen, making sure that the exhaust push rod bears slightly on the valve mechanism and that the valve does not twist on its seat. This we call the closing of the exhaust valve, as a valve in this position has just closed.

Next, insert the rule and back up on the fly wheel and note the distance that the piston pushes the rule, which should be $1/32$ of an inch. On an engine that has been run long, the valves would probably be closing on dead center. To recover the time lost by the slight wear of the valve mechanism, it is necessary to remove the exhaust push rod and pene (stretch) in the center. This will lengthen the push rod slightly and give the timing the engine originally had. If, in trying to determine the opening or closing of a valve the fly wheel has been turned too far, back up and begin over again as the back lash must always be out the way the engine is running. If a valve is opening too early and closing too early, or opening too late and closing too late, it is a sure indication that the cam shaft gear does not bear the proper relation to the crank shaft, and this gear must be turned one tooth in the proper direction and retested before any satisfactory results can be obtained.

When timing the inlet valve, disconnect the throttle cam rod, and with the right hand hold the throttle cam

open and down as it would be when the throttle is wide open. Turn the fly wheel in the direction the motor runs until the inlet lever roll (S, Fig. 10, page 20) begins to bear on the inlet push rod. (C, Fig. 9, page 17). Insert the fingers in the spark plug hole and see that the inlet valve is not off its seat. The inlet push rod at the least movement of the fly wheel will now start to open the inlet valve. However, stop in this position and, if the engine is new, you will find the inlet valve opening $1/16$ of an inch past center as indicated in Fig. 6, page 16. To measure this distance, insert a rule and turn the fly wheel backwards, noting the distance the piston pushed the rule outward. This will be the time the inlet valve opens after the piston has passed the center. An engine that has been run for some time will probably open $1/8$ or $3/16$ past center. An engine in this condition would be considered out of time. The closing of an inlet valve is determined by turning the engine forward making sure that you are again holding the inlet lever down and open as above. Turn the fly wheel forward until the inlet lever roll begins to loosen, but is still contracting on the inlet push rod. Make sure that your valve is closed; try again to twist the inlet valve, which should be on its seat. This we term the closing of the inlet valve, and on a new engine would be $1/2$ inch past center (Fig. 7, page 16).

Next, insert your rule and turn the fly wheel backwards, compelling the rule to follow the piston without slipping. The distance the rule travels in will be the distance past

center that the inlet valve is closing. When the cam shaft is set correctly, an inlet valve that is out of time will open late and close early. Both of these errors may be corrected by removing the two screws, clip and shim in push rod C, Fig. 6. In all probability you will have to elongate the holes in the push rod in order that it may be pushed up slightly to produce the original timing of the inlet valve. After elongating the holes it will be necessary to make a new shim by filing down a piece of one-quarter inch square stock. One hundredth or one sixty-fourth of an inch is usually enough to put the valve in proper time. One who is familiar with the setting of a valve can determine the size of shim at once, but a beginner will probably have to make two or three trials.

CAUTION

Never pull the inlet push rod sideways in taking off the mixer. If the mixer has been put on and the inlet push rod left out of place, remove the mixer again and put the inlet push rod in position before putting the mixer on.

This is important because if the inlet push rod should be strained, it will prevent its traveling in the exact line in which it is intended to travel, with the result that it will cause the cap and strap to bind on the eccentric. This will cause the flange on the cap and strap to wear very rapidly and, besides, a bent push rod may greatly reduce the power of the motor.

ADJUSTMENT OF CARBURETOR

Fig. 10, page 20, is a sectional view of the carburetor and inlet valve mechanism as used on all single cylinder models. The air is taken in at the end of the intake pipe (K). The intake of the air caused by the suction of the piston lifts the valve (L) and forms a partial vacuum at the terminal of the gasoline passage (M), the screw (N) being adjusted so as to allow the valve (L) to lift from its seat just far enough to admit the proper amount of gasoline to form with the in-going air a proper mixture. The adjusting screw (N) which regulates the amount of gasoline, should be adjusted only in case of improper mixture.

To secure the greatest efficiency, the mixer valve (which admits the gasoline into the carburetor) must open wider when the engine is running at high speed than is necessary when running at low speed. The method of accomplishing this is described below: Have throttle wide open, and spark away back.

Figure 1, page 21, shows the mixer adjusting screw (N) directly over the needle (L) of mixer valve. This position allows no spring action.

Figure 2, page 21, shows the mixer screw (N) moved to the extreme left. This position allows extreme spring action.

Figure 3, page 21, shows the mixer adjusting screw (N) in a normal position. This position allows the proper spring action.

When the adjusting screw is located as shown in Fig. 1, it is evident that the flat spring (Q), between the adjusting screw (N) and the top of the needle (L), cannot perform its

function as a spring. With the screw (N) in this position, the mixer can be properly adjusted for any given speed, but this position is not favorable for securing the most desirable mixture at both low and high speeds.

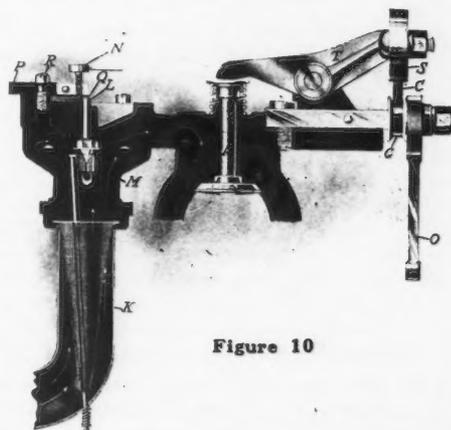
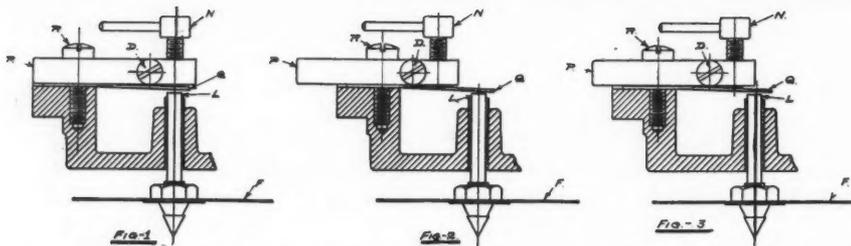


Figure 10

If, for example, when the adjusting screw (N) is in the position shown in Fig. 1, we adjust the mixer properly for low speed, we will find that it will be too lean for high speed.

It is, therefore, necessary to in some way supply a larger quantity of gasoline when the engine is running at high speed. This is accomplished by the flexibility of the spring.

Suppose, now, we change the adjusting screw (N) to the position shown in Fig. 2 (allowing excessive spring action),



and again adjust the mixture properly for low speed, we find that when the engine is running at low speed, the needle valve moves so slowly that it has not sufficient momentum to cause the spring to yield. When, however, the speed increases, the volume of air comes against the diaphragm of the valve at a more rapid rate and causes the needle (L) to strike against the spring (Q) with such force as to make it yield, thus allowing the mixer valve (L) to open wider at this high speed than it did at the low speed. Under these conditions, we may have too much spring action, allowing the valve (L) to open too wide, and making the mixture too rich at high speed.

In that case, we would again adjust mixer binder (P) to bring the adjusting screw (N) to the position shown in Fig. 3, giving less spring action than in Fig. 2, but more than in Fig. 1.

By a little experimenting, the adjusting screw can be located in a position where it will allow sufficient spring action to give the desired mixture at both low and high speeds.

The adjusting of the mixer should be done with throttle wide open and with the engine firing on the center (that is with the spark lever way back). Care should be taken not to run the engine at too high a speed without a load, as racing the engine determines nothing but shorter life.

SPEED OF THE MOTOR

The speed of the motor is controlled by the cam lever (O), which throws the roller (G, Figs. 9 and 10) farther under, the lever (C) giving the roller (S) on lever (T, Fig. 10) more or less throw, thus giving valve (A) more or less opening, admitting a greater or less amount of gasoline and air.

To get the best results, the speed and power of the motor should be controlled by the throttling of the charge and by changing the time of igniting it.

In getting a car under way, have the throttle wide open and the spark rather late, start the car on the low gear, then release the low gear pedal and throw in the high speed



clutch (not all at once), letting it slip a little so as not to throw too sudden a load on the motor.

After the car is fairly going obtain the desired speed by varying the position of the throttle lever under the steering wheel.

To get the greatest efficiency, keep the throttle as nearly closed and the spark as early as will get the desired speed without making the motor pound or jerk.

A motor will do its heaviest pulling with the throttle wide open and the spark advanced a trifle.

It will also burn the most fuel.

However, do not set the spark early enough or close the throttle enough to make a motor pound; it injures the motor.

CARBON DEPOSIT

This is one of the greatest enemies to the motor and electrical apparatus. One quarter of a pint of oil should be kept in the crank case of the motor. An engine that has had too much oil will allow same to leak back into the combustion chamber. The high temperature will evaporate this oil, which will be partially exhausted or condensed on the walls of the combustion chamber and spark plugs and form a sticky film. This film is ready to adhere to any lamp black or carbon which might be in the explosion should the mixture be set too rich. This film will cake up and also form carbon. In time the carbon will start to scale and a thin flake will adhere to the combustion chamber. The intense heat of the explosions of the motor will cause this

carbon to become red hot, which will ignite the charge instead of allowing the spark to do so. This produces a pound in the engine and decreases the power of same. Oftimes these scales become lodged in the exhaust valve seat and the compression is lost.

Carbon which is formed on the spark plugs forms a circuit for a high tension current to travel over, it meeting with less resistance than jumping the points between the spark plugs. Sometimes part of the current will travel over the carbon and the rest of it jump between the spark plug points. The operator looks at his spark plug and considers it is in perfect condition. The spark that will jump in the neighborhood of 1/2 inch in the open air will not jump more than 1/16 inch under sixty pounds pressure. Therefore a spark plug that is sending part of its current through the carbon deposit and the other part between the spark plug points will send all of the current over the carbon deposit when the compression is on. Great care must be taken to make sure that the combustion chamber and spark plugs are free from carbon. Otherwise the motor and electrical apparatus may be condemned through no fault of the same whatever.

BEARINGS

Fig. 11 shows the crank pin and the connecting rod in section.

A is the hollow crank pin, B and C are the babbitt facing and bronze backing of the removable bearings.

D is the cap of the rod F.

EE are the dowels that keep the bearings in place. T represents a cap screw which holds the cap to the rod. The cap screw (T) is kept from turning by the lock nut (G).

In the motor the cap screw (T) and its lock nut (G) are readily accessible by simply removing the small hand hole cover on the top of the motor frame.

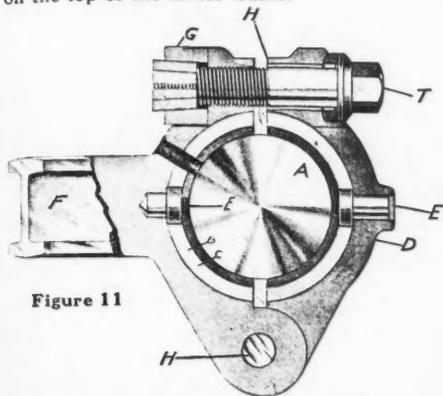


Figure 11

To adjust the connecting rod or crank bearing, tighten the adjusting screw until it grips the crank pin slightly. It is not necessary to loosen the Columbia lock nuts as the tightening of the screw loosens the lock nuts G (Fig. 11). Hold the adjusting screw T in the position referred to and tighten the Columbia lock nut G with the two wrenches which you have in your repair kit, back off

on the adjusting screw T and compel the lock nut G to move in the same angular velocity until the fly wheel can be thrown over by hand one complete revolution when the spark plug is out.

Always adjust a bearing when it is properly oiled, as an adjustment may be obtained which will be loose enough when the oil is out of the bearing, but when it is in, will be too tight and cause the bearing to heat. The backing off of the set screw tightens the lock nut much firmer than could be obtained by getting the proper adjustment and then attempting to tighten the Columbia lock nut as it grips on the diameter long before it is tight enough to perform its duty.

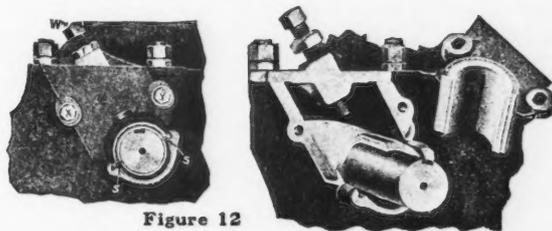


Figure 12

Fig. 12 illustrates a side view of the crank bearings with parts removed, showing the adjusting screw (W). To remove the cap (U) loosen the set screw (W) and take out cap screws (X and Y). To adjust this box, loosen jamb nut (T), screw down the screw (W), or if worn very loose, use thinner liners at SS.

23

24

All bearings must have a very slight amount of freedom to give oil room. If you are not accustomed to making such adjustments, have some one of experience make them for you.

The tension of the high speed clutch is regulated by the adjusting nut (C. Figs 3 and 4). This nut screws on the end of the motor shaft and is locked by the set screw (D, Fig. 3), which is pointed and is screwed down into one of four grooves cut in the threaded end of crank shaft.

When, by reason of the wear of the leather friction surfacing on the clutch, it will not hold the full power of the motor, the set screw (D) should be screwed out of the slot and the nut turned one-quarter of a turn in the same direction as that in which the motor runs, so that the set screw will go into the next slot, then screw it in tight and lock firmly with the lock nut.

Do not screw the set screw in against the thread; it will spoil it and will not hold.

Be sure that the point enters a slot.

ELECTRICAL EXPLANATION

Eight cells are used, wired as shown in cut, giving two separate and independent batteries, each consisting of four cells in series. The cells of each battery are lettered aaaa and bbbb respectively, and care must be taken in re-wiring new batteries so that the current will flow in the same direction in each battery; that is, connect the wire (51) to two similar binding screws as shown, and to the two separate wires in the single insulation (55-56) connect the two

opposite terminals of the batteries. These two wires (55 and 56) are connected to the two outer leaves or fingers of the double switch (61-62), the two inner leaves being connected to the wire (63), which is in turn connected to the motor at (57). When the switch (02) is turned in either direction and connection is made with either terminal (62) or (63), it completes an electrical connection between one terminal of one battery and the frame of the motor; now when the shaft of the motor is revolved, either by hand or by the power of the motor itself, the commutator (54) completes at every other revolution of the motor shaft, an electrical connection through the spark coil (50) and one terminal of both batteries. However, since the switch (02) pressed against but one of the terminals 62 or 63, only one battery has a complete electrical circuit. When batteries are nearly exhausted, both sets may be used together by turning switch (02) downward, engaging both terminals 62 and 63.

At the point (39) on the coil there is a magnetic circuit breaker called the vibrator, which, when properly adjusted, makes and breaks the circuit through the primary winding of the coil, so long as the primary or battery circuit is complete everywhere else.

These pulsations of the battery or primary current through the primary winding of the coil cause an electrical current to pulsate through the secondary winding, if the circuit of the secondary be completed by connecting the binding posts (64 and 65) together. This secondary current is so powerful that a small gap may be left in the circuit and still the electric current will pulsate through the secondary

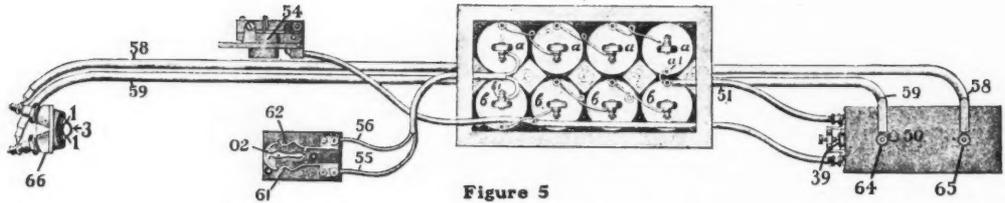


Figure 5

winding, causing a spark to occur at the break. By the use of the heavily insulated wires (58-59) and the insulated plugs in the sparking device (60) this gap in the secondary circuit is placed inside the cylinder so that when the commutator (54) completes the primary electrical circuit through one battery and the primary winding of the coil, the action of the vibrator causes electrical pulsations in the secondary circuit which produces a series of sparks at the gap (3) which, being inside the cylinder or combustion chamber, sets fire to the compressed mixture of gasoline vapor and air.

The time of this lighting or igniting process is controlled by shifting the position of the commutator (54) so that it completes the primary or battery circuit at different times. For example, when turning the motor by hand to start it, the spark lever at the left of the seat **must** be pushed **completely back**, shifting the commutator so that the spark will occur at (3) just after the end of the compression stroke firing the charge, so as to give the motor a forward start. After the motor has started the lever may be brought for-

ward so as to **light** the charge earlier, which gives more power and speed (provided it is not overdone) which is always indicated by the pounding of the motor.

ADJUSTMENT OF VIBRATOR

A vibrator is supplied with two adjustments, viz.: A spring adjusting screw and a vibrator screw. The former is to determine the distance the hammer shall be from the wire magnet which acts on same. The latter is to determine the proper tension to put on the contact points in order that a clear uniform rapid vibration may be obtained. When the batteries are new the wire magnet is stronger, consequently the hammer should be farther away from the core, but as the batteries weaken their influence on the hammer will be less and the hammer should be brought nearer this magnet in order that it may be powerful enough to actuate the hammer correctly.

In determining the proper tension for the adjusting screw it will be necessary to retard the spark lever and



open the throttle to its full extent. The adjustment that will give the highest revolutions of the engine without missing will be the proper adjustment for the vibrator. After the motor has been run for a day after the vibrator has been readjusted the higher points will be burned off of the contacting points. As these surfaces level up it will be necessary to turn the adjusting screw down a notch. This will make up for the amount which has burned off since the previous setting.

To obtain the best results, the vibrator should be carefully adjusted. Make contact so the vibrator will "buzz," and then screw the adjusting screw in until the buzzing is stopped. Then turn the screw back slowly until the vibrator starts again and gives a clear, high note, steady and uninterrupted. The idea is to get the vibrators as short as possible, as this is conducive to economy of current and long life of the platinum or radium contact points. As the battery runs down it will probably be necessary to further turn back the adjusting screw.

SPARK REGULATION

Just how the spark is advanced or retarded in the CADILLAC has already been taken up (see page 21). The time of the spark should always be regulated according to the speed of the motor.

When the ignition occurs before the end of the compression stroke it is called "lead," and should be just sufficient to bring the point of the maximum pressure at the beginning of the working stroke.

"Lead" or advancing of the spark is required because of a delay in the process of ignition which takes time to

fully burn the charge. Thus it will be seen that the faster the motor speeds the earlier the ignition should take place and the spark lever should be gradually advanced as the motor speed is increased. Too much "lead" decreases the power of the motor and is **disastrous** by causing pounding on the bearings. In hill climbing, where the motor speed is slower under the increased load, the "lead" should be retarded gradually to the proper point so as **not** to cause **pounding**. See page 40 for special directions regarding adjustment of coil.

PRIMING OF MOTOR

Mistakes are often made by priming the carburetor too little or too much. Every operator of a machine should become familiar with it and know the necessary amount to prime. Some motors will start any time within an hour after they are stopped without priming. Others may have to be primed for the fraction of a second only. A mistake is made by priming too much. In warm weather an operator who does this will crank his motor three or four times, then prime again and keep cranking and priming until the mixture is so rich that the motor will not start. If a mistake has been made and the carburetor so primed, open the cylinder drain cock and turn the crank slowly, thereby expelling the rich gases. When the first explosion is obtained, close the cylinder drain cock and the next compression will start the engine.

In stopping the motor always throw the throttle wide open in order that a fresh charge may be drawn into the cylinder, which will allow the motor to start with less priming should it be desired to do so.

MULTIPLE OILER

Used on Models B, C, E and F.

In the Cadillac multiple oiler, gravity, assisted by a slight pressure from the crank case, insures a constant flow of oil. There are four oil tubes leading from sight glass tube below the oil reservoir (Fig. 13):

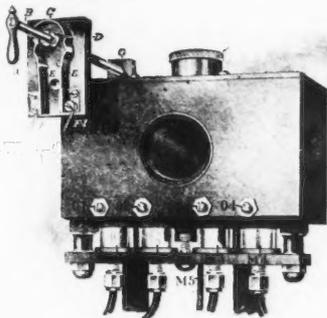


Figure 13

M-1 supplies the crank pin.
 M-2 supplies the right hand main bearing.
 M-3 supplies the piston.
 M-4 supplies the left hand main bearing.
 M-5 is the air exchange which transfers the pressure from the crank case to the oil reservoir.
 The oiler is easily adjusted to the correct number of drops by turning to the right or left the four small screws 0-1, 0-2, 0-3 and 0-4. The number of drops to be used per minute for ordinary work should be about as follows:

M-1, 10 to 14 drops; M-2, 6 drops; M-3, 4 to 6 drops; M-4, 6 drops.

The above is for ordinary use. For heavy roads, hilly countries or fast driving, increase the quantity by 50 per cent. Always adjust oil feeds with the motor running.

When the switch is closed on either or both batteries, the oil starts in all feeders according to the adjustment of each.

The drop is visible as it passes through the glass tube, enabling the operator to accurately time the number of drops per minute. The small pipes leading from the exhaust pipe to the oiler conduct enough exhaust gases to a small chamber under the oil reservoir to warm and assist the flow of oil in cold weather. In warm weather this should be shut off. Care should be taken to procure a good quality of oil especially prepared for gasoline motors and of about 600 or 700 fire test. There are many kinds of oil for this purpose; some good, but many bad. Get the best. It is cheaper than motors.

All lubricating oil should be strained through a piece of cheese cloth before being put in reservoir. Dirty oil is sure to cause trouble.

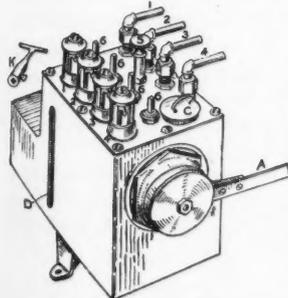
OIL ADJUSTING SCREWS

If any of the oil adjusting screws, 0, 1, 2, 3 or 4, should seem to clog up and change from the adjustment previously made, this may be caused by a piece of lint or some other substance not particularly injurious to the bearings. In such case, open the particular screw of the passage affected about two turns (while the motor is running), and the obstruction will wash through. However, this would be bad practice if you allowed grit or any injurious substance to get in the oil reservoir. (Fig. 13, page 27.)

LUBRICATORS USED ON MODELS K, M, S AND T

On 1906-07-08 Single Cylinder Cadillacs, Models K, M, S and T, several different styles of lubricators are used. They are, however, all of the force feed type, that is, the pumping of the oil from the lubricator into the feed pipes leading to the four bearings is accomplished through the ratchet arm or the belt connecting with the fly wheel of the motor.

The user will recognize which style of lubricator is on his particular car by referring to the several illustrations here shown and should govern himself by the instructions given in connection therewith.



"Style F. J."

It will be readily understood that the more rapidly a motor is running the more oil the bearings require and these force feed lubricators being actuated by the motor the quantity of oil forced to the several bearings is consequently regulated by the speed of the motor.

Proper lubrication of the motor is one of the most essential requisites to its life and satisfactory service, hence the importance of careful attention to the lubricator to see that at all times it is properly performing its functions.

To fill any of the lubricators here shown, remove the filler cap (C). Care should be exercised to use only a good quality of oil especially prepared for gasoline motors, and of about 600 or 700 fire test. There are many kinds of oil offered for the purpose; some good, but many bad. Get the best. It is cheapest in the end.

All lubricating oil should be strained through cheese cloth before placing in the reservoir, to eliminate dirt or lint. Dirty oil is sure to cause trouble.

The gauge (D) indicates the quantity of oil contained in the reservoir.

On the top of the lubricator are four sight glasses, and inside of each there is a small tube. Directly back of each glass is a square-headed adjusting stem (6, 6, 6, 6.) These stems are for the purpose of regulating the supplies of oil. Back of the stems are four feed pipes (1, 2, 3, 4) which convey the oil to the bearings.

When it is desired to ascertain the quantity of oil supplied or to regulate it: First raise the cut-off plunger (5). This cuts off the oil from the bearings and causes it to be forced up through the tubes (inside the glasses), where it drops down and back into the reservoir.

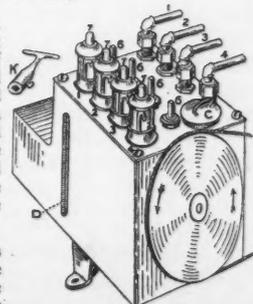
CAUTION

Remember that when the cut-off plunger is raised and the oil running through and dropping from the tubes (in the glasses) that the oil is **not feeding** to the bearings, but is running back into the lubricator reservoir. Therefore, after having adjusted the feeds, be sure to see that the cut-off plunger is replaced into its extreme downward position. The oil will then be forced to the several bearings.

STYLE F. D.

Above each sight glass there is a small plunger (7, 7, 7, 7). When it is desired to ascertain the quantity of oil supplied, or to regulate it, hold down one of the plungers. This will cut off the oil from the bearing which is supplied by that particular feed and force it up through the tube (inside the glass) where it drops down and back into the reservoir. Releasing the pressure from the plunger causes the oil to resume its flow to the bearing.

Bear in mind, that when the oil is running through the tube (in the glass) that it is not supplying the bearing but is dropping back into the reservoir.



"Style F. D."

LUBRICATORS USED ON MODELS K, M, S AND T

THE FOLLOWING APPLIES BOTH STYLES Shown on Preceding Page.

As the quantity of oil required is different for these several bearings, each must be adjusted separately. When regulating the supply of oil, it is advisable to have the motor running at about 400 to 500 revolutions of the fly-wheel per minute. This can be determined by the impulses or exhausts. As the motor exhausts at every alternate revolution of the fly-wheel, there would be 250 impulses or exhausts per minute, or about 42 impulses or exhausts in 10 seconds. (Ten seconds timing of the motor is sufficient to determine the speed at which it is running.)

To regulate the supply of oil, attach the Key (K) to the adjusting stem (6) (back of the glass). To increase the supply of oil, turn the stem to the right (screw it down). To decrease the supply of oil, turn the stem to the left, (unscrew it).

Feed No. 1 supplies the connecting rod bearing, and should be adjusted to feed from 6 to 8 drops per minute.

Feed No. 2 supplies the right hand main crank shaft bearing, and should be adjusted to feed 3 to 4 drops per minute.

Feed No. 3 supplies the piston, and should be adjusted to feed 3 to 4 drops per minute.

Feed No. 4 supplies the left hand main crank shaft bearing, and should be adjusted to feed 3 to 4 drops per minute.

THE FOLLOWING INSTRUCTIONS REFER TO LUBRICATOR SHOWN IN NEXT COLUMN

When it is desired to ascertain the quantity of oil supplied to the bearing or to regulate it, press down the knurled cap (1-2-3-4) on top of the bleeder valve body as far as possible and hold it down until the plunger (6) has completed one downward movement. This will cause the oil to stop flowing to the bearing and cause it to drop out of the bleeder valve. Directly underneath each bleeder valve there is a hole in the top of the reservoir. When testing the supply, slide the cover of the hole around so that the oil from the bleeder valve will drop through it back into the reservoir. As soon as the pressure on the knurled cap (1-2-3-4) is released, the oil resumes its flow to the bearing.

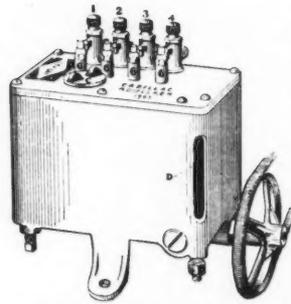
CARE OF CHAIN

About once a month, or as often as the chain becomes dirty and the small roller bearings get dry, the chain should be taken off the sprocket and soaked in gasoline, benzine or naphtha, until all the dirt has loosened; then dip stiff brush in same liquid and brush the chain until thoroughly cleaned. Then put the chain in a pan of heavy lubricating oil and heat the oil and chain very hot, so that the oil will thoroughly penetrate the small bearings; then remove the chain and wipe the oil from the outside of the chain. Then wipe all the dirt and grease from the sprocket teeth, and adjust chain closely as possible without having tension on both top and bottom of chain at same time. Do not strain the chain or bearings.

A better way is to take about four pounds of beef tallow, about one pound of flake graphite, and about one pint of heavy lubricating oil, then heat and stir. When thoroughly melted and mixed, put the cleaned chain in the hot oil, leaving it there long enough to permit the hot oil to reach all the small bearings; then let the chain drip, and wipe the outside dry. It is the bearings that need to be lubricated, not the outside. Oil on outside of sprockets and chain does no good, and serves only to catch dirt and dust.

IMPORTANT REGARDING CARE OF SPRINGS

If springs are to wear well and not break, they must have attention. First, they must be kept firmly held to the spring seats and they must be lubricated. Nine out of ten cases of



On top of the lubricator there are four plungers (6-6-6-6), each having a sleeve on which the wrench supplied fits.

As the quantity of oil required is different for the several bearings, each must be adjusted separately. To regulate the supply of oil, attach the wrench to the sleeve of the plunger. To decrease the supply of oil, turn the sleeve to the left (unscrew it). To increase the supply of oil, turn the sleeve to the right (screw it down).

Feed No. 1 supplies the connecting rod bearing and should be adjusted to feed from 5 to 6 drops

while the plunger is making one complete downward movement.

Feed No. 2 supplies the right hand main crank shaft bearing and should be adjusted to feed 2 to 3 drops while the plunger is making one complete downward movement.

Feed No. 3 supplies the piston and should be adjusted to feed 2 to 3 drops while the plunger is making one complete downward movement.

Feed No. 4 supplies the left hand main crank shaft bearing and should be adjusted to feed 2 to 3 drops while the plunger is making one complete downward movement.

If for any reason it has been necessary to take the lubricator apart, it should be re-assembled carefully so that the gear will properly mesh with the worm. When putting on the cover put in the two center screws first, screwing them down only partly, and then turn the driving pulley in the direction it is driven by the engine, until the worm gear drops into mesh with the worm. Then screw in the two center screws securely. Next put in the two cover screws in the end nearest the fly-wheel, making sure that the worm gear is in correct position before screwing them down tight. Next put in the remainder of the screws.

breakage of automobile springs are due to neglect rather than to weakness or defect.

Springs are held to the spring seats by "U" shaped clips. The constant vibrations cause a certain amount of wear and while this is very slight, it is sufficient to allow the spring clips to become loose. If the clips are not tightened, the continued vibration causes the spring to crystallize and the result is that it breaks.

Spring clips should be examined frequently and the nuts on the ends drawn up tight but not so tight as to strip or stretch the threads. If the spring has shifted from its normal position, push it back into place before tightening the nuts.

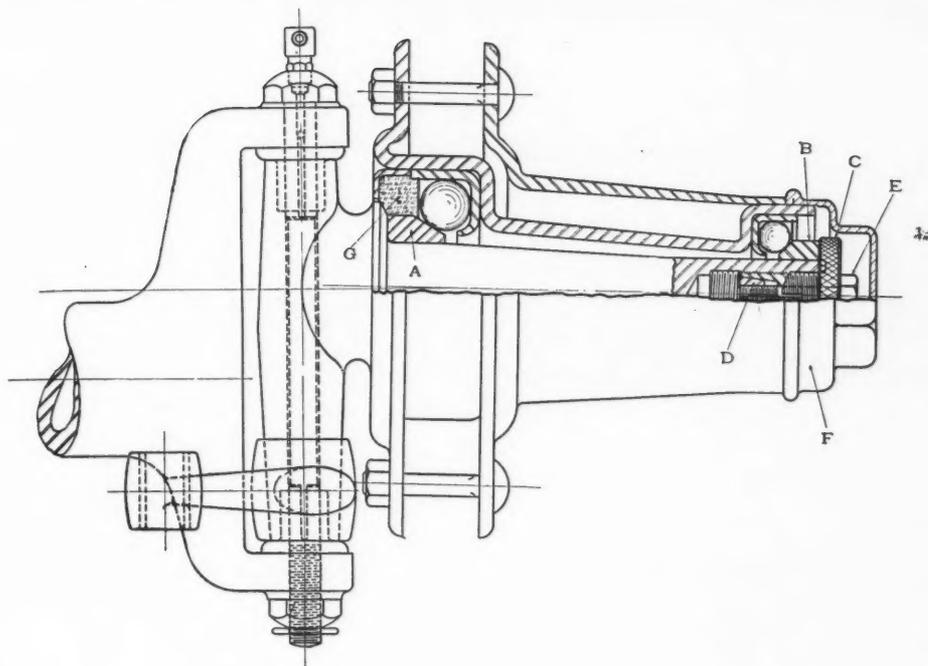
Springs should also be oiled occasionally at the link connections at the ends. This will make them ride easier and wear longer.

It is also advisable to jack up the frame of the car occasionally but allowing the wheels to remain on the ground. This opens up the spaces between the leaves of the springs where a mixture of graphite and oil should be inserted.

ADJUSTMENT OF FRONT HUB BEARINGS

(See Cut Page 31)

Remove brass cap "F," unscrew locking bolt "E" with wrench on hexagon head, then tap lightly with wrench to loosen tapered cone "D," the adjusting screw "C" may be unscrewed with fingers. Wheel can now be removed by drawing from spindle as the cone "B" will slip off with wheel. Note condition of felts "G," if worn, renew, after thoroughly saturating with Standard Oil Co. No. 2 cup



FRONT HUB ASSEMBLY, "E" AND "F"

grease. This grease should also be applied freely to balls and races in hubs. When reassembling, be sure that cone "A" is against shoulder on spindle, replace wheel carefully with outer cone "B" in position having ground and beveled surface in contact with balls. Replace adjusting screw "C," tightening with fingers only until all looseness in adjustment is eliminated, then lock the adjustment by securely tightening with wrench the locking bolt "E."

All threads are right hand, therefore, to tighten, turn to the right, and to loosen, turn to the left, it being understood that adjuster faces the threaded part.

CARE AND ADJUSTMENT OF MODEL "E" AND "F" AXLES

TO REMOVE REAR AXLE SHAFTS

Unscrew dust cap "A." Remove cotter pin from lock nut "B" and unscrew nut from Spindle, this permits of the removal of the rear wheel from the tapered shaft. Also remove hub keys. Next unscrew nut "DD," which allows the two halves of the rear axle to be pulled from the shafts "EE" and the bridge bolts "C" and "K" to be removed from the yokes.

Before removing bridge bolts mark them with a prick punch to insure their being properly replaced.

After bridge bolt "K" is free from the yokes, slip off the brake levers with bands attached.

The tubes being removed, the shafts "EE" with internal gear attached, may be taken from the differential.

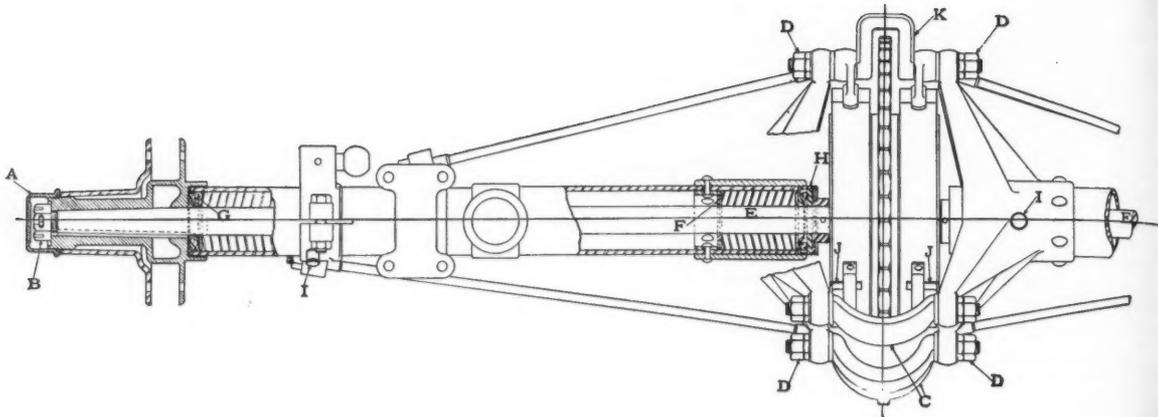
TO REMOVE THE ROLLER BEARINGS

First remove the outer felt retainer "G," this may be done by inserting a screw driver or thin cold chisel between flange and tubing, this allows outer-bearing and inner retaining washer to be removed. The inner bearing, retaining washer "F" and thrust bearing "H" may be removed by tapping with a round bar inserted at the outer end.

TO RE-ASSEMBLE REAR AXLE

In replacing roller bearing, first see that inner retaining washer "F," which is common to all of our bearings, is in place against the ring riveted to inside of tubing. Replace inner bearings, and press thrust bearing "H" firmly into its seat, then replace the outer bearing and press felt retainer into place. Both bearings should be liberally supplied with Standard Oil Co. No. 2 cup grease.

Re-assemble differential with internal gears containing the shafts. Replace the tubes over the shafts. Replace bridge bolts in their proper places, "K" having the brake



CADILLAC MODELS "E" AND "F" REAR AXLE ASSEMBLY.



levers in position and "Ca" for the upper arm, having release springs "JJ" in position against the shoulders of the bridge bolt.

Screw on the thin nut first, and draw the shoulder of bolt firmly against the yoke arm. Follow this with the special lock nut which should be firmly tightened against the thin nut.

Before replacing wheel, inspect the felt protecting outer bearing; if worn, replace with a new one well saturated with Standard Oil Co. No. 2 cup grease. Drive hub key tightly into place in axle.

Replace wheel, and force it to a snug fit on taper spindle by means of the lock nut "Ba" drive in the cotter pins and replace dust cap.

NOTE

Be sure to keep the Axle Bearings properly lubricated, the Oil Cups "II" being provided for this purpose. The Differential should also be kept well oiled, through the Cup inserted in one side of the Gear.

DIRECTIONS FOR ADJUSTING WESTON-MOTT CO.'S BALL BEARINGS

The Adjustment Consists of Three (3) Parts as shown in Cut.

Put felt washer next to balls, then put the wheel on axle. Put adjusting cone in place—see that bent pin enters slot in axle. With adjustment assembled as shown above, push "A" in end of axle as far as it will go, then turn "C" until

the wheel can be revolved freely, but without end play; then turn "B" to the right until it strikes bottom of hole and forces "A" up against bottom of "C," thereby locking it securely. Felt washer will hug cone and render bearing dust proof. Put cap on and all is complete. Always keep bearings closely adjusted. A small amount of vaseline applied occasionally is preferable to oil.

WESTON-MOTT REAR AXLE

To Take Down

Remove brass caps from rear hubs and drive out $\frac{3}{8}$ " pins through threaded part.

Draw wheels off the shafts.

Unscrew nuts from studs, holding gear case together, then either case may be drawn off shaft.

If the wheels stick fast to the shafts, then by first taking the nuts off studs, as above mentioned, the shafts may be drawn out of compensating gear.

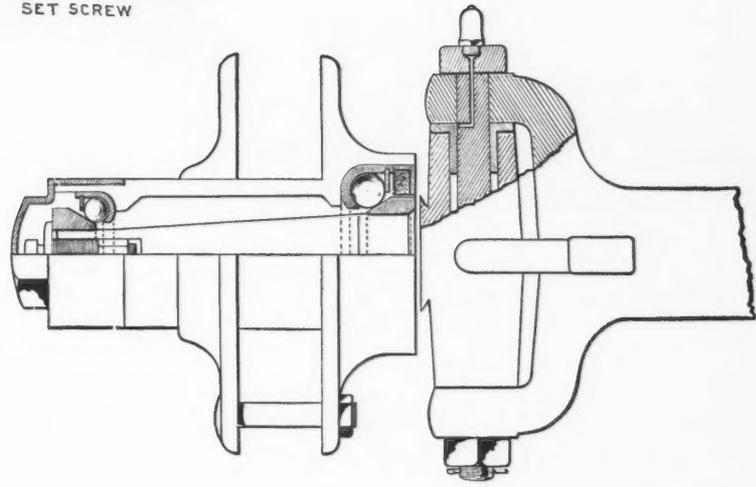
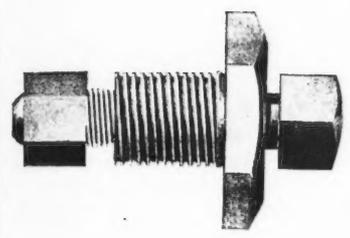
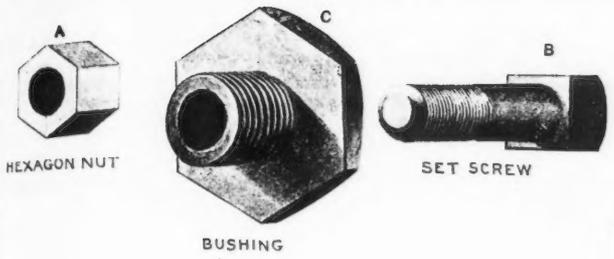
The compensating gear is keyed to shaft by $\frac{1}{4}$ " key.

The thrust is taken up by a ball bearing device against a thrust washer, which is pinned to shaft next to the gear.

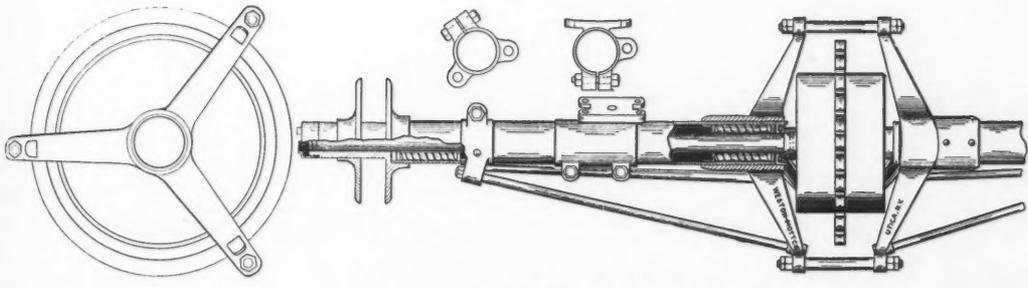
To Assemble

Assemble in reverse manner, being sure to put pins and keys in their proper places.

A felt washer is placed in recess at rear end of hub, making bearing dust proof.



WESTON-MOTT CO.'S BALL BEARINGS



WESTON-MOTT REAR AXLE.

There are 12 $\frac{3}{8}$ " rollers in each bearing, those at end of axle are $\frac{3}{4}$ " long and those next to compensator $2\frac{7}{8}$ " long. Each thrust contains 22 $\frac{1}{4}$ " balls.

Care of Bearings

All bearings in wheels and axles should be packed with vaseline or similar grease, still it is well to oil them occasionally.

AMERICAN BALL BEARING AXLE AND PARTS

Instructions for Adjusting American Ball Bearing Co.'s Front Hub, as Used on Models "A" and "B."

The nut "A," which adjusts the cone "D" on right hand axle, is provided with a right hand thread, and the set screw "B" has a left hand thread. The dust cap "C" has a left hand thread.

All of these parts on left hand axle are reversely threaded.

TO REMOVE FRONT WHEELS

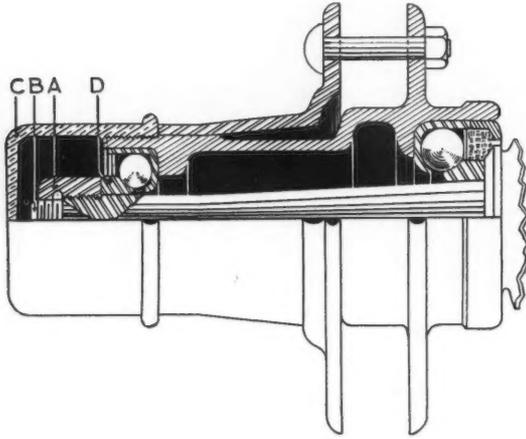
Unscrew brass cap "C," and by means of a hexagon wrench unscrew adjusting nut "A," but do not alter the position of set-screw "B."

When replacing wheels be sure that ground angular surface on cone "D" is in contact with balls. The nut "A" should be set firmly.

TO ADJUST FRONT WHEEL BEARINGS

Proceed as above, withdraw the set screw (B) with a screw driver, screw on the adjusting nut (A) until the adjustment is right. Now turn off the nut (A) about one-half revolution and tighten the set screw (B). If there is lost motion in the bearing, loosen nut (A) and back out screw (B) a little and tighten nut (A) again. Remember, a bearing is properly adjusted only when screw (B) makes

it impossible to force nut (A) on any further and all lost motion is out of the bearing but without being tight. Remember that you can easily put tons of pressure on the bearings with careless use of wrench and nut. When adjustment is right the wheel will revolve back and forth.



A slight looseness is better than a cramped bearing.

Use only such balls as we will furnish.

Bearings should be examined and greased about twice a year with a good grade of cup grease, but all unnecessary adjusting should be avoided.

INSTRUCTIONS FOR ADJUSTING MODEL 'A' BALL BEARING REAR AXLE

On cars equipped with Ball-Bearing Rear Axle, means for adjustment are provided in adjusting collars (E).

To remove inner axles, loosen set screw (G), place a metal pin to fit hole (H), or use the front axle spanner wrench, when the wheel may be revolved and the inner axle ends withdrawn. It is not necessary or advisable to remove wheel from axle ends. When the inner axles have been removed all bearings are convenient for examination or greasing. Avoid all unnecessary adjusting. Examine and grease bearings with Standard Oil Company's No. 2 Cup Grease about semi-annually.

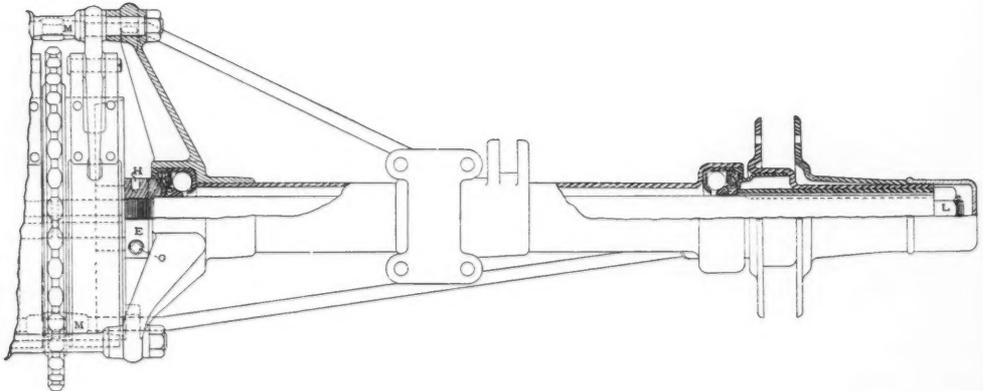
In reassembling be sure that ground angular bearing surface of cones (F) are in contact with balls. Proceed carefully in turning on the adjusting collar (E). Do not jam the balls. When adjustment is correctly made tighten the clamp screw (G) firmly by means of large screw driver, or special socket wrench, which is furnished.

Do not alter the adjustment of truss rod supporting the divided rear axle.

If it is necessary for any reason to remove wheel from axle, be sure to put wheel on axle tightly before assembling axle into place.

On cars equipped with ball-bearing rear axle, means for adjustment are provided in adjusting collars (E).

To remove inner axles, loosen set screw (G), place a metal pin to fit hole (H), or use the front axle spanner



wrench, when the wheel may be revolved and the inner axle ends withdrawn. When the inner axles have been removed, all bearings are convenient for examination or greasing.

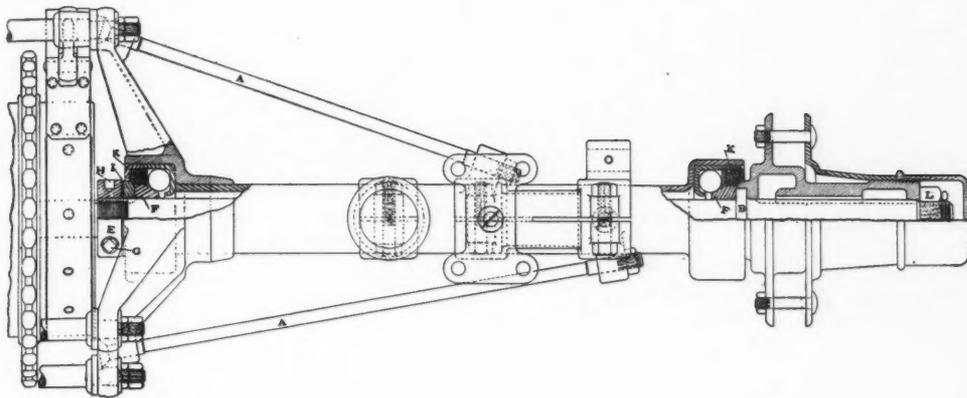
Avoid all unnecessary adjusting.

Examine, and grease bearings with a good grade of cup grease about semi-annually.

In re-assembling, be sure that ground angular bearing surfaces of cones (F) are in contact with balls. Proceed

carefully in turning on the adjusting collar (E). Do not jam the balls. When adjustment is correctly made, tighten the clamp screw (G) firmly by means of special socket wrench which is furnished. If it is necessary to remove compensating gear, the three bridge bolts connecting rear axle should be unbolted. Do not alter the adjustment of truss rods (A). When re-assembling, be sure that cones (F), collars (B), washer (I), and adjusting rings (E) are assembled as shown below. Felt washers (K) should

37
38



be renewed when necessary, and should be thoroughly soaked in oil before putting in place.

When adjusting ball bearings you must have no looseness and no tension. Get the bearing surfaces just up to the balls. If a bearing is loose the load comes on one ball at a time, and will sooner or later spoil the bearing. If a bearing is too tight the load is unnecessarily increased, and

unless care is used a bearing may be set so tight that it will be spoiled in a comparatively short time.

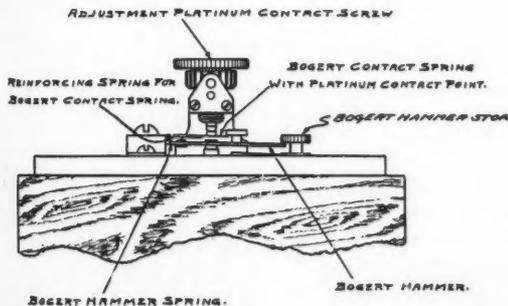
If a bearing is properly adjusted there will be practically no wear whatever.

Jack up a machine occasionally and see if any looseness can be felt.

39

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There is a tendency on the part of both single and multiple cylinder car owners to attempt to make frequent adjustments of the spark coil, thinking by so doing that the running condition of the engine will be improved. This, in general, is an error, as the coil is properly adjusted when it leaves this factory, and should not be readjusted until every other part of the electrical system has been inspected and tested relative to the trouble present.

Having made sure that the trouble is in the coil, proceed according to the following directions:

To adjust a standard Splitdorf coil, as used on the Cadillac single and Model H four-cylinder cars, proceed as follows: First, remove the knurled adjusting screw (adjustment platinum contact screw) and remove any little "bunches" or knobs which may have formed on its platinum point or on the platinum contact point of the Bogert contact spring or ribbon.

These knobs may be removed with a very fine file or with a sharp knife.

Next, close the throttle and open the cylinder relief cock; then turn the engine until the commutator is in contact so that the primary circuit through the induction coil will be closed. Then, replacing the knurled adjusting screw, screw it down until the vibrator commences to buzz; then stop. After the vibrator commences to work, the knurled adjusting screw should be turned from three to six notches further down, stopping at the point which gives the best action of coil, spark and engine.

Do not, at any time, try to adjust the coil until you are sure that there are no knobs on the platinum contact points.

The hammer and ribbon are set at the coil factory, and should not be changed unless they have met with an accident or been tampered with. The position of the hammer and ribbon should be as follows: When the influence of the ribbon and ribbon spring has been entirely eliminated, which can be done by holding the ribbon down until it does not contact with the hammer, or the button on the hammer, there should be just opening enough between the top of the hammer and the lower side of the hammer stop to see the daylight through, or possibly 1-64 of an inch. This can only be altered by bending the hammer spring slightly and carefully. When the knurled adjusting screw has been backed out far enough so that the platinum contacts have separated, the ribbon spring should lift the hammer so that it will contact lightly with the under side of the hammer stop. When the ribbon and hammer are once set in their proper positions, they should not change for a long time.

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- (7) Ads are accepted for one insertion only.

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- (2) Persons requiring ads longer than the standard 50-word group, or who require special typography or space, must use Display space; write for information on rates.

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While every effort is made to assure accuracy, neither the GAZETTE staff nor the HCCA can be held accountable for misleading or unclear statements in ads. In the event of typographical errors, responsibility to the advertiser cannot extend beyond agreement to publish a corrected insertion.

FOR SALE

1932 Chevrolet sport sedan, 6 new tires, new paint, perfect throughout, new battery, runs perfect, drive anywhere. Price \$600.00 firm. Eugene L. Aprill, P. O. Box 342, Pulaski, Wis. Phone Valley 2-5573.



1932 Chrysler Imperial rumble seat coupe, 4 speed transmission, period radio, heater, original 24,000 miles, new upholstery, top and paint, original Goodyear diamond tread tires, drive anywhere. \$700.00. E. D. Orser, 3304 Rimrock Road, Billings, Montana.

1939 La Salle coupe, in restorable condition. \$175.00. Bob Highhill, 11651 Haynes St., North Hollywood, California. PO 3-2809.



1913 Model T, cut-off touring, unrestored. \$850.00. Many extra parts. Will trade for very early unrestored small truck. Paul McGinnis, 1342 Market St., Long Beach 5, Calif.

1920 Model H Stutz Roadster. In good condition throughout. Mechanically sound. New clutch, battery rings and brakes. Has trunk for rear deck and two tire carriers. Pictured in May 1955 GAZETTE. Run anywhere. Price \$2500.00. S. K. Hodgson 3908 Greenbrier Drive, Dallas 25, Texas.



FOR SALE

1931 Cadillac conv. coupe V12, Model 370A Fleetwood, excellent motor, paint good, excellent 6-6 ply tires, 140 W.B. lot of new chrome, needs some more new upholstery. Price \$1090.00. Hubert Hoeselt, Star City, India.

1921 Dodge touring. This is a very dependable tour car. Runs good, looks nice, has a new top and two new Firestone tires and tubes. Is operating very nicely on original equipment including vacuum fuel tank. Many spare parts. Price \$1000.00. Ed Duarte, P. O. Box 321, Loomis, California.

1932 - 7 passenger KB Lincoln sedan. Needs top, paint, upholstery, 2 door sills replaced. Engine, running gear excellent. \$250.00 or will sell parts. 1947 Continental, Olds, engine. \$1250.00. Jack Hitt, 3033 So. 72nd E. Ave., Tulsa, Oklahoma.

Mercedes-Benz, engine no. 136923/01883/52, 4 door sedan. This car was returned from Germany by a Captain after service years. This car is in good original condition. Can be driven anywhere. Cihumsden, 1591 Arthur St., Marne, Mich. Phone OR 7-3624. Price \$1250.00.

1929 Model A Ford roadster, less than 3500 miles since restoration. First owner said this car looks more beautiful than when he purchased it in 1929. \$1250.00 firm. Photos 25¢. Jim S. Briscoe, Route No. 3, Monroe, Georgia. Phone 267-9637.

Indian 4 cylinder motorcycle restored to mint. Motor, transmission rebuilt, black beauty, every part enameled, chrome or cadmium plated. Just completed. \$1000.00. Consider trade equal value antique car. George E. Hopps, 3581 Lakewood Drive, Drayton Plains, Mich.

1909 2 cyl. Buick touring, Model F. Completely restored, new leather upholstery, top, motor rebuilt and balanced, all new tires and tubes. Car complete with all brass including windshield. Completed Yosemite Tour '61. Asking \$3,000.00. R. F. Phillips, 68 Woodward, Sausalito, Calif.

1912 Ford speedster, restored. Overhead valve, complete balanced engine. 3 to 1 Ruxtel, 21 inch Buffalo wire wheels, Livingston radiator, Solar Patent Pending brass lights, exterior brakes. Price \$1800.00. Gene Mayfield, 4846 Art St., San Diego 15, Calif. Phone JU 3-0472.

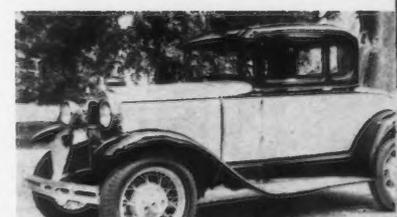
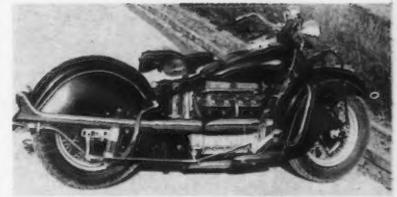
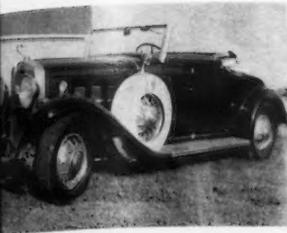
1932 Cadillac sedan. Nice, unrestored V8, side mount and trunk rack. Some extra parts, new safety glass. Price \$595.00. Bob Southard, 2249 S.E. 90th Ave., Portland 16, Oregon.

Rolls Royce 1937 PIII 7 passenger limo. by Windover. Disappearing division, discs, original, runs and performs well, 12 cylinders, 4525 pounds. The finest of the English classics. \$2450 or would take part trade if it's unusual. Paul W. Hatmon, 1843 Vermont Ave., Independence, Missouri.

1907 Brush Runabout, looks good, runs good, and restored in 1955. Good brass and tires, \$2,000.00. 1913 Buick Sport Roadster, restored and runs good. Good tires and new paint. \$2,000. C. D. Knight, 2944 Fifth St., Wichita Falls, Texas.

1930 Ford Model A sport coupe, motor completely rebuilt. Five new tires, new top and upholstery, new radiator and new paint-two-tone. Entire car has been restored to original condition. Runs and drives perfect. Can be driven anywhere. Best offer over \$1,000.00. Callison Ford Sales, Moweaqua, Illinois. Phone 768-3217.

Finest private collection of antique automobiles. All fully restored by professionals. 1905 Cadillac Roadster, \$2,700.00. 1907 Cadillac Touring, \$3,100.00. 1907 Kiblinger Auto Buggy, \$1,300.00. 1910 Buick Touring, \$3,100.00. 1923 Rolls Royce Touring, \$6,000.00. Complete with all accessories F.O.B. Jacksonville. Jerry S. Foley III, 3624 Richmond Street, Jacksonville 5, Florida.



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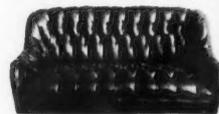
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1911 Marmon "32" roadster, 6 tires (4 new), new light tan leather, tan top, side curtains, trunk and cover, completely restored, ready to drive, green lacquer paint. Price \$4500.00. J. Easton, 880 Prospect Blvd., Waterloo, Iowa.

1925 Ford, Model T touring, completely restored, prize winner. \$950.00. K. Wsocki, 332 Maple Hill Drive, Hackensack, N. J. Phone: Hu 9-3571.

Rolls Royce Pall Mall tourer, 1927 iron head Springfield PI, owner driven 5 pass. A choice classic in excellent condition. \$2995.00. Lt. K. M. Barry, P. O. Box 507, Isle of Palms, S. C.

1911 Michigan 30 H.P. Completely restored, new tires and new leather upholstery. \$2250.00. Otto Van Gorder, 2132 Walnut Ave., Carmichael, Calif.

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1935 Mercedes Benz 300S conv. sedan, mint condition original, not restored. Tires, top, interior and motor excellent. Side spare mounts, dark blue, 4 speed gear box. Excellent show car. Good highway car. Imported from Germany Nov. 61. \$3000.00 firm. Weldon Stimsord, 1101 W. 40, Austin, Tex. GL 35700.

1926 Pontiac, 2 door sedan, good tires, original excellent condition, 29,000 miles. Stored inside. \$595.00 or highest offer. Ray J. Paxson, 1813 Wilson, Butte, Montana.

1915 Model T Ford roadster, completely restored, new paint, upholstery and top, rebuilt engine, transmission, and rear end. Loaded with accessories and other goodies (Warford trans — mission, Rocky Mountain brakes, exhaust whistle, etc.) A good car for any tour. Won first place in Long Beach T Clubs' Shell Hill Climb 1959 and 1960. \$1500.00. David E. Williams, 1 Dana Place, Long Beach 3, Calif.

1915 "T" touring, restored, best offer over \$1000.00 or trade for A-400 in similar condition. 1928 "A" touring, complete and unrestored, \$450.00. 1927 Packard touring dual windshields, complete and unrestored. Best offer. 1937 Cadillac, U-12 7 passenger limousine, original. Best offer. J. L. Cowdrey, 506 Fairfield, Corpus Christi, Texas.

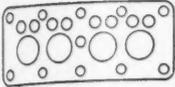
1929 Model A Fordor Sedan in very nice original condition. Must sell because of lack of garage room. \$295.00 firm. Oscar H. Bren, 400 4th St. S.W., Watertown, So Dakota.

1948 MG TC right hand drive, new leather upholstery, new top, side curtains, new tires, \$1650.00 or will trade for antique or classic. Pair 1925 Buick rear wheels, \$10.00. 30x3 1/2 wire wheel, \$10.00. 1931 Chevrolet radiator screen \$5.00. David Ault, 3447 Satinwood Rd., Santa Maria, Calif.

1915 Buick C-37, 5 pass. touring. 112" wheel base. 4 cyl. good mech., good upholstery, original. New top and tires. Wheels finished natural. '62 license No. 16. \$1850.00 firm. A. J. Prather, 2252 Veteran Ave., Los Angeles 64, Calif.

1930 Model A Fordor town sedan. Rebuilt engine, new tires, good paint, trunk and rack, parking lights, wind wings, flower vase, matching trailer (2 wheel) are fine points of this car. Interior nice, but seats need upholstery. Extra parts also. \$500. John Dikeman, 55 Belmont Ave., Long Beach, Calif.

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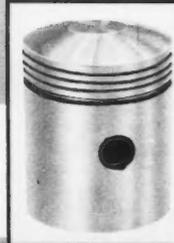
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Stanley Steamer 1910 10 HP 5 pass. touring car. Just completed boiler and chassis restoration. Sell for my investment of \$6000.00 or take large chain drive touring car or open Duesenberg. Dr. Samuel L. Scher, 824 The Crescent, Mamaroneck, New York.

Early 1936 Cord 810 Phaeton, apart at present, basically complete. Price \$350.00 FOB. Also 1937 Cord Westchester sedan body, good shape. Will trade or sell. Please, stamped envelope for replies. Contact Fred Crandell, 9431 Marlowe, Overland 14, Missouri.

1940 American Bantam Roadster perfect body, parts car included, \$275.00. 1931 Lincoln Sedan, very sound (two window sedan) \$800.00. Must sell these cars as I have no room to keep them. Nyle Reed, 1111 E. Pontiac, Fresno, Calif.

1937 Cord Phaeton coupe, model 812, completely restored, engine rebuilt, new upholstery, paint, chrome. This car is ready to run anywhere. Price \$5900.00. F. L. Cocklin, 1303-29th St., N. E. Canton, Ohio. Will consider trade.

1935 Willys Coupe. This car is ready for the road, can be driven anywhere, \$350.00. 1921 Chev. 4 door, \$100.00. 1929 Oakland 6 2 door, \$100.00. 1940 Cadillac V-8 4 door, can be driven anywhere, \$200.00. Marty Natrop, 1007 E. Main Street, Little Chute, Wisconsin.

1937 Cord Phaeton, new yellow lacquer, original type upholstery, chrome, top, tires, wheels, etc. Motor, trans. and running gear is 1948 Cadillac professional installation. Functional outside exhausts. May trade involving good Cadillac 1938-1940 town car or '37 convertible sedan, \$2200.00. B. W. Reese, 20309 Concord Ave., Hayward, Calif.

1911 EMF, black with white top. Perfect running condition, clean and original \$3500.00. See at Ann Holz, 3329 South 4400 West, Salt Lake City, Utah.

Pierce Arrow 1917, model C4-38. Gentleman's roadster in excellent condition. A very good buy. \$5500.00. Edward N. King, 73 West Main Street, Freehold, N. J. Phone 201-HO2-0906. Home evenings.

1927 Chrysler sports phaeton touring. Restored to nearly mint condition. Newly painted, ready to tour. \$1,250.00. L. L. Adamson, 1506 Haddon Ave., Modesto, Calif. Phone LA 23114.

1924 Willys Knight four cylinder seven passenger touring car. Good original condition. Price \$800.00. Ray Dougherty, Rt. 2, Longmont, Colorado.

LINCOLN 1931 Model K 3 window town sedan, exceptional original condition, very little needs to be done. \$1800.00. Ford 1926 Model T coupe, good original condition, Ruxtel, many extras, easily restored. \$500.00. Wanted 1912-13 Stearns-Knight, any condition, prefer complete. Arthur W. Aseltine, 2530 Havencrest Dr., Fallbrook, Calif.

1915 Ford town car (Landaulet). Hassler shocks, natural exposed wood, front upholstery leatherette, rear Royal Blue. Body dark Blue with Black fenders and Cream striping. Awarded two first place trophies at 1961 Omaha midwest tour. Best offer over \$3,500.00. Dwight W. Madsen, 2014 W. 53rd St., Minneapolis 19, Minnesota.

1927 Ford coupe completely restored by expert mechanic. Plus some new and old parts. \$850.00 or best offer. Car located at Ralph Meyering, 460 Terracena Blvd., Redlands, California. Phone: Pyramid 22015.

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1916 Overland touring car, Model 75, 1941 Studebaker 4 dr. sedan. Overland has been a 1st place winner 4 times and is completely restored at a cost of \$4800.00. Studebaker is 75% restored, \$600.00 invested. I am selling both cars for \$3500.00. Firm. Also extra parts. Richard A. Druzak, 103 Ralph Drive, Glenshaw, Penna. Hunter 6-5876.

Hupmobile 1928 sedan, 6 cyl. Serial A incl. 6 wire wheels and tires in running condition. \$375.00 or best reasonable offer. Hupmobile 1927 coupe, 6 cyl. Serial A wood wheels and rumble seat, also in running condition. \$375.00 or best reasonable offer. Alex Berg, 325 S. Center St., Turlock, California.

1903 Curved Dash Olds. Restored by George Green of Lambertville, N. J. This jewel won Grand Prize Piedmont Park Meet July 1961. Unbelievably quiet, beautiful. Best offer over \$3350.00. Martin McFarland, Wm.—Oliver Bldg., Atlanta, Ga.

1916 Reo touring car. Good original mechanical condition. Approximately 29,000 original miles. Top, upholstery, running boards have been redone and car repainted. Tires new with about half tread left. Large comfortable tour car. Price \$1,395. Harold Walters, 1061 Stevenson St., Santa Rosa, California. Phone: LI 2-6584.

1914 Ford T touring. Excellent thru-out. Fine leather upholstery. Ruxtel. Many times prize winner. Participated in latest Reno and Seattle Nat. Tour. \$3,000.00. Tom Parrington, 6352 Muscatel, San Gabriel, Calif.

1922 Ford touring, 75% restored with new top and curtains, black lacquer paint, good tires, everything else original. Perfect body, no rust ever, always garaged. Completed 1957, 1958 Glidden Tours. Best offer over \$1000.00. Luther W. Rehrig, Rt. No. 209, Gilbert, Penna.

1922 Ford touring, restored, lacks sockets and top. Many extras. \$895.00 or make offer. Circa 1919 Ford speedster engine and chassis. Run once since engine rebuilt. Has model A crankshaft, aluminum pistons, Rajo head, full pressure oiling. \$300. or best offer. Sheldon Ball, Box 311A Homan Hall, Fresno State College, Fresno 26, Calif.

1930 V-16 Cadillac Fleetwood four door sedan. Twin side mounts. Chrome trimmed, large trunk rack. Good original condition. Drivable anywhere. \$750.00. 1928 Chevrolet touring, wooden wheels, good running condition. Partially restored. All new upholstery. No top, but have bows. New set side curtains. Extra engine and many new parts. Should drive anywhere with in reason. \$400.00. Dr. T. W. Pruett, 227 Parking Way, Lake Jackson, Texas. CY 7-6781.

1910 Racine rubber tired heavy duty buggy with top. Genuine leather upholstery. Has been stored for 30 years. Pin striping still on axle and wheels. Suitable for adapting to Horseless Carriage comparable to early vintage. Has 7 H.P., one cyl. Fairmont engine mounted under seat. Asking \$195.00. R. E. Miller, 3758 Norris Ave., Sacramento, Calif.

1921 Ford center door sedan, 90% restored, Ruxtel rear end, extra block, pistons, etc. \$1000.00 firm or trade for unrestored Pre-15. Contact Ronald Watson, 1606 West Myrtle, Visalia, California.

Packard twin six, 2 inch Venturi carburetor. 1923 Packard 8 Day Waltham clock. 1906-7 Palmer water pump. 1933 Packard Super 8-12 gas, oil gauge. 1913-27 Chev. valves and others. 1916 yellow and checker cab carburetor. Ford T. speedometer. Ford A moth proof body cloth. Robert Futterman, 160 Flanders Road, Riverhead L.I., N. Y.

Electric horn, 6 volt, Robert Bosch (Germany) No. 105200-Ulab, \$20.00 plus postage. Bob Hicks, 4704 Vineta, La Canada, Calif.

1909 Reo two cylinder touring, \$2500.00. 1911 Oakland Model 33 touring, \$3000.00. Both cars restored. Both have lots of brass on them. Oakland has side curtains included. Harold H. Walther, R. R. 1, Cedar Falls, Iowa.

1931 Lincoln (very sound) see Gazette Vol. 23 No. 2, \$795.00. 1941 American Bantam roadster, \$350.00. Good shape spare parts car included (new paint). Absolutely must sell these cars. Nyle Reed, 1111 E. Pontiac, Fresno, Calif.

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AMAZING "FLEXLIFE" for successfully and easily restoring finishes on genuine or artificial leather that is worn, dry and brittle. Gives new vitality, color and soft pliability. The choice coating of experts, museums, leathercraft hobbyists, and sportsmen. Flexlife is *Not* a lacquer. 16 colors. \$3.25 pint with complete restoration instructions. **LEATHER LIFE OIL**—to clean and nourish leather. 8 oz. \$1. "TOPLIFE" for Cloth Tops—renews color, preserves and water-proofs, Clear & colors. \$3. pint.

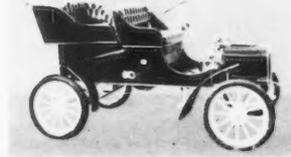
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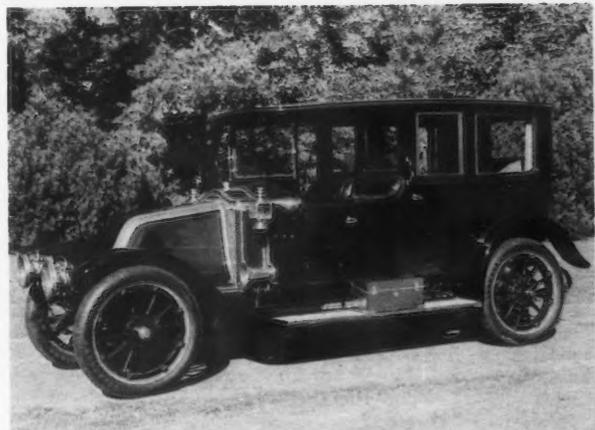
1923 Buick 4 cylinder touring, completely restored with many spares included for \$825.00 or best offer. Further details from Ivan Kuester, 9419 Golden Dr., Orangevale, California. Phone: YU 8-2241.

1926 Packard 7 passenger sedan, stored inside mostly. Runs. Little work to restore. \$350.00 or will consider offer. Call for appointment or write. Enclose stamped envelope for reply. E. Broadbent, Coulterville, Mariposa Co., Calif., Box 26.

1913 Ford touring, \$1500.00, 1921 Dodge roadster, \$1000.00, 1917 Dodge touring (unrestored), \$350.00. 1912 Interstates-head lamps, \$125.00, 1905 2 cylinder Reo front and rear end. Complete except wheels, \$150.00. All cars and parts F.O.B. Lincoln, Nebraska. F. J. Smith, 2211 So. 38 St., Lincoln, Neb.

1917 Model T Ford touring car. Very good, restorable condition. Good original engine, no top bows. Many extra parts. Also extra set of very good front fenders. All for \$350.00 here. W. O. Krumwiere, Voltaire, No. Dakota.

1930 coupe, less than 2,000 miles on rebuilt model C engine with full oil pressure. Hydraulic brakes, new top, good tires, all body work, chrome plating, running gear done. Have all original plus many spare parts. Over \$950.00 invested, sell \$995.00. Robert E. Scott, 3244 Crestford Drive, Altadena, California.



1911 Renault 7 passenger Demorest Limousine, Model CE, fully restored and ready to use. All original and excellent brasses, upholstery and carpetry. An exquisite specimen of luxurious transportation. Winner of National AACA trophy. \$6,200.00. Warren S. Weiant, Jr., Hanover Road, Newark, Ohio.

Bosch (German) 6V horn, UIA6, No. 105200 with bracket. Mailed for \$25.00. Bob Hicks, 4504 Vineta Ave., La Canada, Calif.

FOR SALE



Gas brass headlamps Solar 148L. Completely restored. Came off Lozier, fits many cars. Sell or trade on Ford T speed equipment. Large leather covered trunk, 48" long. Three fitted cases for car of 1910-1920. Free wiring diagrams 1912-1928. Gordon Fairbanks, 4930 Queen Mary Road, Apt. 16, Montreal, Quebec, Canada.

Stanley Steamer engine (believed to be before 1910). Contact Wayne Couch, Owensville, Indiana.

1907 two cyl. Reo frame. 1912 I.H.C. parts frame. 1913 Hupp rear seat section. Four 25" Cadillac rims. 1917 Ford windshield. Two 34x4½ Houk wire wheels and rear hubs. Three 30x3½ Houk wire wheels. Early belt drive Excelsior motorcycle for parts. Dayton motorcycle engine. John Cleverdon, Box 1026, Caldwell, Idaho.

2 33x5 SS tires with flaps. Tires never used. L. A. Armell, 156 S. Indian, Palm Springs, Calif.

Two 34x4½ tires in good condition. \$10.00 each. Warren Kelbe, 25492 Pacific Street, San Bernardino, Calif.

Some used Franklin parts. Ed Landwicht, 3876 W. 65 Place, Chicazo Lawn 28, Ill.

1937 Cord motor, standard, 1947 Lincoln transmission, overdrive, 1947 Cadillac transmission, 10" Atlas lathe, assorted air tools. R. Paseman, 4343 Wilkinson Ave., N. Hollywood, Calif. PO 3-3304.

One pair of brass outside pillar lamps from 1912 Locomobile limousine. Bevel glass in perfect shape. Richard M. Stewart, Central Road, Middlebury, Connecticut.

Magazines for sale. The Automobiler published monthly by the Automobile Club of Hartford, Conn. Lot of 66 copies running from April 1926 through April-May 1955, chock full of ads and articles featuring the cars of the classic period. The lot \$50. Reverdy Whitlock, 15 Broadway, New Haven, Conn.

Parts from these cars: 1932 Chevrolet 4 door sedan including good engine, 1927 Buick 4 door sedan (no engine), 1936 Chevrolet Standard 2 door sedan, 1929 Ford 4 door sedan, Ford "T" open type truck cab including steering wheel and sector. \$25.00. Star radiator (no shell) \$15.00. Roy L. Taylor, 500 East Eighth St., Cisco, Texas.

1911? Stoddard Dayton frame. 1918? Maxwell frame. Running board luggage carriers. 1910? Overland rear end assembly. 1917 Reo steering gear. 1911 E.M.F. front fenders, front axle, brake bands, brake drums, headlight forks, front and rear hubs. 1920 Columbia six radiator. Pasco Ford wire wheel (no hub). John Cleverdon, Box 1026, Caldwell, Idaho.

Livingston V radiator for T. Good condition \$150.00. Set (4) 21" Buffalo (?) wire wheels for T \$95.00. Seat assembly (no upholstery) and cushion with top bracket for Sears. \$65.00. Frank King, Oakley, Illinois.

Two sets of headlamps, are not dented or rusted. The reflectors are in good shape, no lens. Sets are 1918 Mitchell 6 and 1920 Saxon 6, \$20.00 a set. Also one bracket to mount Mitchell headlamp (1918) \$3.00. Virginia Lyon-Wood, P. O. Box 937, Mt. Shasta, Calif.

"The Antique Automobile": Vol. 10 No. 3 and 4, Vol. 11 No. 1, 2, 3 and 4, Vol. 12 No. 1, 2, and 3. "The Air-Cooled News" Franklin Club: 13 mint copies, 1954 through 1958, \$1.25 each. HCC "Gazette" Vol. 1 No. 3, 50¢. Edward A. Davis, 1210 S. Main St., Pleasantville, N. J.

For Ford T: 1 pair head lamps B and B, J. W. Brown Model 16, 3 pairs side lamps, all brass, E and J. "Patent pending" and "Patent 1908" with tail lamp to match. 1 pair side lamps E & J 32, B and B. 1 pair side lamps J. W. Brown 110 B and B. 1 tail lamp Victor 2 B and B. Make offer. Black rubber bulb for horn, \$2.50. H. Curtis, 52 Koehl Street, Massapequa Park, New York.

5 only 30x3½ Dayton wire wheels, complete with hub and hub caps. Good condition. Need painting. Price \$100.00 F.O.B. Holdrege, Nebr. One square brass carbide tank, mounted on bracket. Two screw plugs missing. Price \$25.00. Arthur Sparks, Holdrege, Nebraska. Phone: WYman 5-4685.

Bosch magnetos, type Dav, two cylinder, \$15.00. Type DU-4, \$20.00. Type ZU-4, German, \$25.00. Type ZR-6, German, \$35.00. Good condition. Shop manuals, Packard, Olds, Chevy, \$3.00. Parts price list manuals, Pontiac, Ford, Chevy \$5.00. Auburn-Dayton 18" wire wheels \$5.00 each. Art Stewart, 400 East End Ave., Pittsburgh 21, Penna.

Right angle Klaxon horn, extra motor, new 1923 Ford windshield, hand Klaxon type horn, 1930 Cadillac stoneguards V-8, V-12, 1923 Buick 4 engine, complete motometer with large winged cap. Need red lens 1931 Pierce-Arrow. Jay F. Hyde, 14655 S.W. Uplands Dr., Oswego, Oregon.

Brass radiator for Model T. Top tank excellent, will need some repair. \$75.00. Brass horn for Model T. Perfect condition, complete and polished. \$50.00. Brass rim Jones Speedometer cable and swivel gear. Good condition, gear worn. \$35.00. 1908 Sears autobuggy, excellent original condition, not a restoration. Dr. R. Moreschini, 2929 7th Ave., Pueblo, Colorado.

4 cyl. Star engine, F.O.B. \$40.00. Charles C. Postlethweight, 6019 Washington Ave., Evansville, Indiana.

SWAP

1913 - 69T Overland touring car completely restored except paint, upholstery, tires. Original lamps, extra motor, transmission, rear end. 1915 Model T roadster, perfect condition. Made 2 Reno Tours. Ruxtell rear 3-1, many extras. Will trade both for early restored touring. Harry L. Mindle, 127 West End Ave., San Rafael, Calif.

Will swap or sell 4 new tires 36x4½. Need 4 35x4 size. Also need headlights and rear end for Model 29, 1912 Buick. C. Condie Call, 4132 E. Camelback Rd., Phoenix, Arizona.

Will swap 1921 Baby Grand bow sockets for 1918 Model T touring bow sockets. Edw. D. Boyce, Box 793, Quincy, California. Phone 502.

1938 Ford convertible sedan. Original and complete but not restored. Best offer, but prefer trade for pre-1941 Chrysler Corp. Convertible or Phaeton. Nick Fintzelberg, 2483 "C" Street, San Diego 2, Calif.

Have the following Maxwell parts to trade for a tool box for 1911 Maxwell Runabout: 1 sight oiler for dash and 1 hubcap, both very good condition. Erwin Koehler, 2554 Wood Street, River Grove, Ill.

Good 1910 Model 30 Packard brass radiator. Swap for Model 30 Packard rear end assembly. Also need Model 30 Packard frame. Jody Cleverdon, Box 1026, Caldwell, Idaho.

SWAP



20' Chris-Craft, Model R-20, utility type, double plank hull, excellent condition, good ski boat, never used in salt water. For sale or trade for antique or classic auto. All inquiries answered. Leroy Tiedemann, 4445 Palermo Road, Oroville, Calif.



1923 MacLaughlin motor restored. \$300.00. 1928 Ford A drive away \$135.00. 1928 Plymouth \$125.00. 1928 Oakland \$100.00. Trade or sell 1913 Cad. parts. Ford T & A part list needed for 1908 Buick motor, front and rear end irons, steering, lights, rad. Bill C. Meacher, 1148 Iroquois Street W, Moose Jan Sask, Canada.

Have 26-27 Model T Ford pickup bed. Need 28-29 A Ford roadster or coupe rear fenders, sidemount spare bracket, roadster rear window frame, steering wheel and 29 2 tooth steering gear. Harvey W. Wright, 2005 Verda St., Redding, Calif.

Restored 1913 Studebaker 7 passenger touring. Will go anywhere. Original starter, new leather interior, paint, top, engine excellent. Will trade for a pre 1910 coupe in good condition. Charles Figgez, 2633 N. Commonwealth Ave., Los Angeles 27, Calif.

1913 Metz runabout, 1912 Metz runabout, 1918 Oakland staggered door 2 door sedan, others. Trade one or more for a pre '14 Kissel Kar. Ralph H. Dunwoodie, 546 N. Main Street, Hartford, Wisconsin.

Pair brass Solar headlights. Pair brass Atwood-Castle, with forks, "Clamers-Detroit" on top. Pair black and brass Reo headlights with forks. Pair small brass lights with no name? Trade any pair, give or take, for Ford head lights with Ford on top. Mori Nelson, 1912 Mesa Way, Santa Rosa, Calif.

Many Model 10 Buick parts, transmission, engine, axles, frames, levers, pedals, etc. for any style body for my Model 10 Buick. Russ Bartley, Route 4, Lawrence, Kansas.

1929 Model "A" Ford Phaeton, new paint, new motor, top, upholstery, like new for 1930-36 Deluxe Packard convertible, sedan. Car must be excellent. Eldon L. Kelley, Sheldon, Iowa.

WANTED

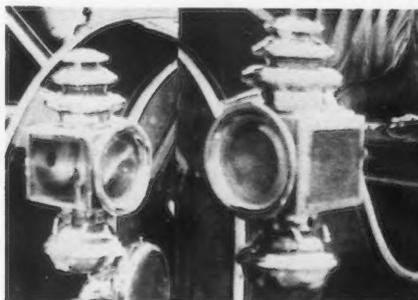
For 1913 Model 24 Buick roadster: speedometer, coil box, side and tail lights, top bows and windshield frame, 1 headlight reflector and lense. Jack Eisenbrey, 5110 San Rafael Avenue, Los Angeles 42, Calif. CL 71610.

For 1926 Chrysler roadster Model 70, top bows, headlights, windshield frame, steering wheel, any literature that may be purchased or copies, etc. Terry Weinheimer, 9061 E. Imperial Ave., Garden Grove, Calif.

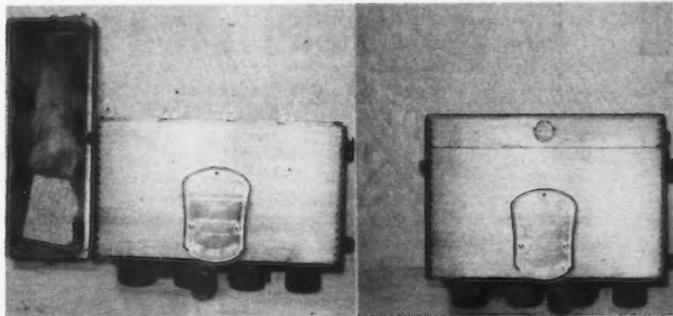
Enthusiastic new club member will pay cash for an unrestored pre 1915 Ford. Please send picture if possible, price, and describe car completely. Car must have most metal parts. Will buy anywhere and answer all letters. David Voralik, 1420 E. Glenoaks Blvd., Glendale 6, Calif. Citrus 6-1296.

Will pay premium price complete top for 1927 Model T Touring. Must include top irons and all metal, wood, and cloth. F. Shepley, 80 Sara Sue, Wichita Falls, Texas

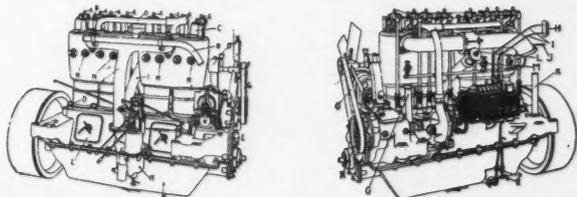
Lettered pedals for 14 Ford and fount for John Brown tail light Model 115. John Kergel, 3208 Claremont Ave., Berkeley 5, Calif.



Need a pair of side lights E & J as shown in picture, with or without electric combination. Send full description and price to Jerry Meixner, Route 4, Qwatonna, Minnesota



Set of four coils for a Pfanstiehl coil box as shown in photo. Must be good coils, will buy outright or trade. Will answer all Letters. Cecil E. Ralston, Box 581, Gruver, Texas.



1911-12 Pope-Hartford 50 HP. Want engine as pictured or parts car or chassis. Harry Johnson, 3671 Leland Street, San Pedro, Calif.

WANTED

4 cyl. 40 H.P. engine used in following cars from 1907 to 1910 Auburn, Berg, Clark, Glide, Lambert, Tourist. Also RH brass steering column. Ray Ringer, 3825 So. Waringing, Denair, Calif.

Radiator emblem for 1912 Imperial, brass robe rail, foot rest, manual for 1912 Imperial. Information on Imperial Motor Car Company wanted. For 1946 Jeep, manual Ord. 9-SNR G503, M. B. Jeep. H. E. Seidenstucker, 2906 S. Bentley Ave., Los Angeles 64, Calif. GR 87415.

Starter motor assembly complete, but condition not important. For Pierce Arrow-Dual valve engine 1921 to 1927 models 32 or 33, Delco-Remy No. 191 or 252 gear reduction type starter. Some of the 1927-28 36 models use this starter also. Jim Oldenhave, P. O. Box 1296, Merced, California.

1919 Essex steering wheel, 1 cylinder Reo complete transmission, 1913-T touring body with top, windshield. Also fenders, running boards and side pans. 1922 Baby Overland, complete distributor, rear fenders, spare tire carrier, switch, radiator and gas cap. Jack Maaskant, 822 Campbell Avenue, Chicago Heights, Illinois.

Automobile Literature, Shop Manuals, Reference, Owner's Manuals, Repair Manuals, Parts Books, Service Bulletins, Sales Catalogs, any type of factory literature. Particularly want Buick and GM material. Have some duplicates for trade. Want to buy 1941 Buick two-door or four-door convertible. Sidney Aberman, 1210 Beechwood Blvd., Pittsburgh 6, Penna.

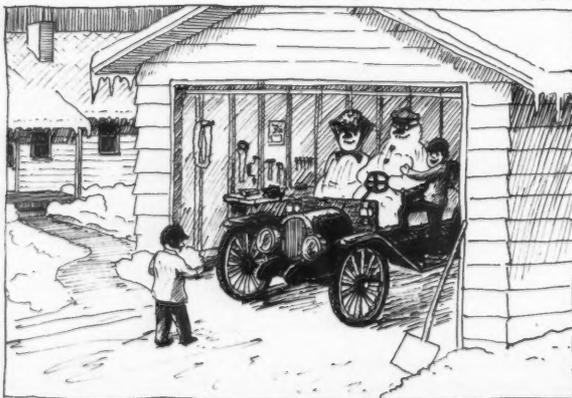
Ford Jeep maintenance manual No. TN 10-1349 dated May 1, 1942. Have jeep, want kindred manual. Bob Hicks, 4504 Vineta Ave., La Canada, Calif.

Set of fenders for 1909 Hudson touring car. Must be new or in very good condition. Also front and rear cushions. Any information on this car regarding paint colors, upkeep, etc.. Joe Addar, Box 235, Talmage, Calif.

For Abbot Detroit 1911, 12, 13. Any kind of parts, radiator, hood, body parts, lights, etc. Also would appreciate correspondence with anyone having this model of car. Jerry Linder, 438 E. Fantz, Fresno, Calif. Ph. AD 7-5105.

Wanted desperately - Open valve "T" Ford block or engine for my early 1911 Ford with 1917 block. Harry B. Johnson, 3671 Leland Street, San Pedro, Calif.

Jack Stevens — Seattle, Washington



"LET'S MAKE 'EM A LITTLE FATTER BEFORE WE SURPRISE DADDY!"

Two Firestone type B (four piece) quick detachable demountable 26" rims for 34x4 straight side tires. Henry B. Shepard, 256 Highland St., West Newton 65, Mass.

Set of four Pierce Arrow 27" wheels with "Johnson" patent rims. Also Pierce literature 1901 to 1920. Seth Ely, Box 547, Dover, N. J.

The name and address of the present owner of the 1924 Dodge roadster owned by Anderson Chandler, Sterling, Kansas and advertised for sale in the Gazette Vol. 19 No. 3, May-June, 1957, page 52. Felix Stringer, 1404 E. Erwin, Tyler, Texas.

Paterson 1909-1910-1911-1912 engine or parts. Also transmission. Would like to hear from Paterson owners. 1911 Primer engine or parts, especially cylinders. Herbert K. Huber, 2990 Grove Way, Hayward, Calif.

Set of 36x4 clincher wheels and rims for 1910 36 H.P. Pierce Arrow. Set Johnson demountable rims 36x4½ for 1913 Pierce Arrow. 2 inch French carburetor for 1913 Peugeot. Mercedes 45 H.P. 4 cyl. original carburetor. 2 mint restored pairs of large side and headlamps in brass. Dr. Samuel L. Scher, 824 The Crescent, Mamaroneck, New York.

Want a touring body for 1925-1926 4 cylinder Chrysler, and top bows. Have front part of body, if you only have the rear section from front seat back, I would consider its use. Also need speedometer for same. William L. Becker, 6222 N. Missouri Avenue, Portland 17, Ore gon.

Mercur 1911-14 raceabout or touring, restored or not. Give price. 20" Rudge Whitworth wire wheel. Edward N. King, 73 West Main St., Freehold, N. J.

An owners manual for 1927 series 80 Pierce Arrow, tail light lens and rim, 600-22 tires. Paul Huntington, Box 397, Mapleton, Oregon.

Winton, any six any body style, preferably an open car in the teens. Any Winton parts or literature. Unrestored car in the teens or earlier, any make any style. B. A. Barnes, 4180 Silverado Trail, Napa, Calif.

For 1916 Buick, Model D-55-6 seven passenger touring. Set wood spoke wheels 27", 36x4½ tires, plain round bullseye tail light, side curtains, owners manual, two 27" Felloe bands. Matt Betton, Box 1010, Manhattan, Kansas.

Rear deck lid, windshield and hood for 1926 Model T Ford roadster. Will buy outright or trade for some other parts. Ronald B. McClish, Box 664, Chester, Calif.

Help a book collector by writing if you have a Branham Automobile reference book on automobiles showing the location of motor and serial numbers. Book will be dated before 1934. Turner Kirkland, Union City, Tennessee.

For 1909 Ford touring, brass lights, windshield, hub caps, generator and radiator. Also need hood, a round gas tank, early engine. Ralph Grooters, 4301 Kalamazoo Ave., Grand Rapids, Mich.

Automobile literature. Shop Manuals, Reference, Owners Manuals, Repair Manuals, Parts Books, Service Bulletins, Sales Catalogs, any type material. Have some duplicates for trade. Want to buy 1941 Buick two-door or four-door Convertible. Sidney Aberman, 1210 Beechwood Blvd., Pittsburgh 6, Pa.

For 1915 Packard 3-38 six need twelve roller tappet assemblies. Also transmission direct drive gear plus first and second speed pinion gear. Must be in good condition. Bradley Skinner, 3805 Toledo Rd., Bartlesville, Oklahoma.

For right hand drive T Ford. Transmission cover. Brake lever. Four door touring body. Axles. Ford T 1909 brass windshield. Straight axles. Complete top or sockets and or bows. Rear fender braces. Ben F. Snider, 3500 Lou Ella Ln, Riverside, Calif.

WANTED

FORD PARTS WANTED: 1909-10 Ford "T" engine pans, 1909-10 Ford "T" cowl formers, Good round fellow Model "T" wheels in 30x3 and 30x3½, Good brass head lamps for 1910-10-11 "T," Square type transmission cover for 1909-10 "T," Complete engine for 1905 Model "C," Fan assembly and transmission for 1907 Model "K," Two pedal set-up for early 1909 Ford transmission, Brass windshields (type used on 1909-10-11 T's), Carburetor for 1908 Model "S," Model "T" field coils, 16" Kelsey Hayes wire wheels.

WANTED: 1922-24 Lafayette Radiator emblem, Piel cut outs in large sizes, 23" and 27" Rudge Whitworth wire wheels, Good rims in following sizes: (both demountable and non-demountable) 25", 26", 27", 28" and rims with wheels (wheels wanted only if in good condition), Model "A" **DUESENBERG** exhaust manifold, Model "J" Duesenberg down draft intake manifold, 1912-13 **STUTZ** engine, Air-cooling shrouds for side and top of 12-cylinder **FRANKLIN** engine, Aluminum magneto cover for 1928 **SSK MERCEDES-BENZ**, Jones speedometers and Warner autometers 1905-12, Also swivel drive for speedometers, 1915 **CADILLAC** radiator, **WANTED:** for 1911 **MAXWELL** Model "AB" runabout, Tail light, all four fenders, carburetor magneto and universal joints, Frame for 1907 50 H.P. **POPE-TOLEDO**, Fan assembly for 1907 **PACKARD** and carburetor (this is Packard's own make), Radiator rock screen for 1929 Model 6-45 and 1930 Model 7-40 Packard, Wind wings for

1929-31 Packard roadsters and phaetons, Wheeler Schebler carburetor 1½" dual throat for 1929 **AUBURN** 8-90 speedster, **WANTED:** All four fenders for 1913 35H **MERCER** touring, also could use a good body, Gear reduction for 1913 **POPE-HARTFORD** starter, All four fenders for 1913 6-cylinder Pope-Hartford roadster, Fenders and body for 1909 Model "D" **DORRIS** touring, Body for 1915 6-cylinder Model "AB" **NATIONAL** touring car, **WANTED:** Set of 43x5 tires for **OLDSMOBILE** limited, Frame for **PIERCE-ARROW** 1917 Model "66," Mechanical oiler for 1906 4-cylinder **POPE-TOLEDO** (this is a small oiler that is about 5" square and mounts in an upright position), Complete set of rear springs and hangers for 1910 **ROLLS-ROYCE**, Engine, transmission and rear axle for 1914 6-cylinder **AMERICAN** under-slung, 2 or 2½" Stromberg glass bowl carburetors. **ALL OLDSMOBILE LIMITED OWNERS** interested in obtaining 43 x 5 tires contact Edward Catlett, Post Office Box 2899, Reno, Nevada.

LITERATURE WANTED: 1913 **STUTZ** sales catalogue, Literature on 1910 and 1911 **E.M.F.**, The Classic Car Magazine, 1954 Volume 11, No. 1 — Spring, No. 2 — Annual Review. Also interested in any other automobile literature.

WANTED: Watch fobs with old cars on them or old car advertising. Buttons with old cars. Badges with old cars on them. Also wanted, other items with old cars or old car advertising.

**EDWARD A. CATLETT, THE HARRAH AUTOMOBILE COLLECTION,
POST OFFICE BOX 2899, RENO, NEVADA.**

WANTED

37 x 5 tires and tubes, either new or used. Catalogs or manuals concerning 1914 Inter-State Model 45. Ralph S. Simons, 32 W. Franklin, Tucson, Arizona.

For 1918 Maxwell touring: Owner's manual, parts book, horn, starter lock button, gear shift knob, steering wheel or wood rim, top bows and sockets, side curtains or patterns. Front floor boards, accelerator pedal, spare wheel bolt plate. Judson Ibrig, 1645 Quincy Place, Honolulu 16, Hawaii.

20/25 or 25/30 Rolls Royce drophead coupe (Thrupp-Maberly, Gurney-Nutting, Compton etc. Must be good. Will purchase outright or can trade 1961 Fiat 1500 Snyder 8000 miles). (Osca engine by Maserati) as new. Photos price, complete description first letter please. Paul W. Hatmon, 1843 Vermont Avenue, Missouri.

One or two 30 x 3½ rear wheels, round fellow oval type spokes for 1909 Ford, right side running board for 1912 Ford Torpedo long type. B. J. Haii, 319 So. 3rd St., Hayti, Mo.

Complete set of wheels for 1914 Hupp. Also left front spindle, fuse box, battery box, top bows for roadster and steering column with wheel. Louis M. Wyman, Box 278, Craig, Colorado.

For 1912 Cadillac: Rear end complete with wheels, rims and drive shaft or what have you. Wesley G. Butler, 1050 Veronica Springs Rd., Santa Barbara, Calif.

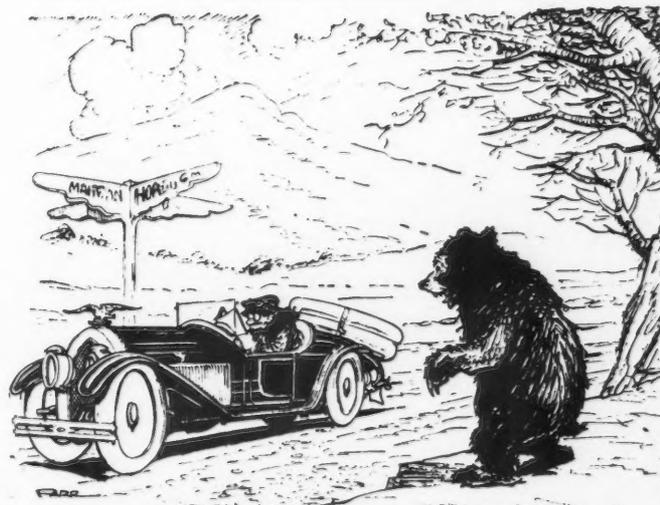
Hood, top bows, head lights, hood former, wind shield and radiator for 1914 Ford touring. Dick Paswaters, 6050 So. 2300 East, Salt Lake City, Utah.

One right side Solar Model 41A side light. Light must be complete. Send price first reply. Also anything for 1903 Ford. L. W. Hahn, 2232 South Evanston, Tulsa 14, Oklahoma.

Do you have an
**OFFICIAL
EMBLEM**



\$3.50 Postpaid.



Tourist—Let's see—the road book says, "Bear left."

A. S. LEWERENZ COLLECTION

Speed
Merchant
1897



Motoring wasn't much fun in the days when every motor vehicle had to be led by a man with a red flag. The ending of the red flag law in 1896 followed the invention by John Boyd Dunlop of the world's first practicable pneumatic tyre. Wheels began turning faster and faster with added safety and comfort. From that day to this, Dunlop tyres have led the world in safety, mileage and all-round performance.



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