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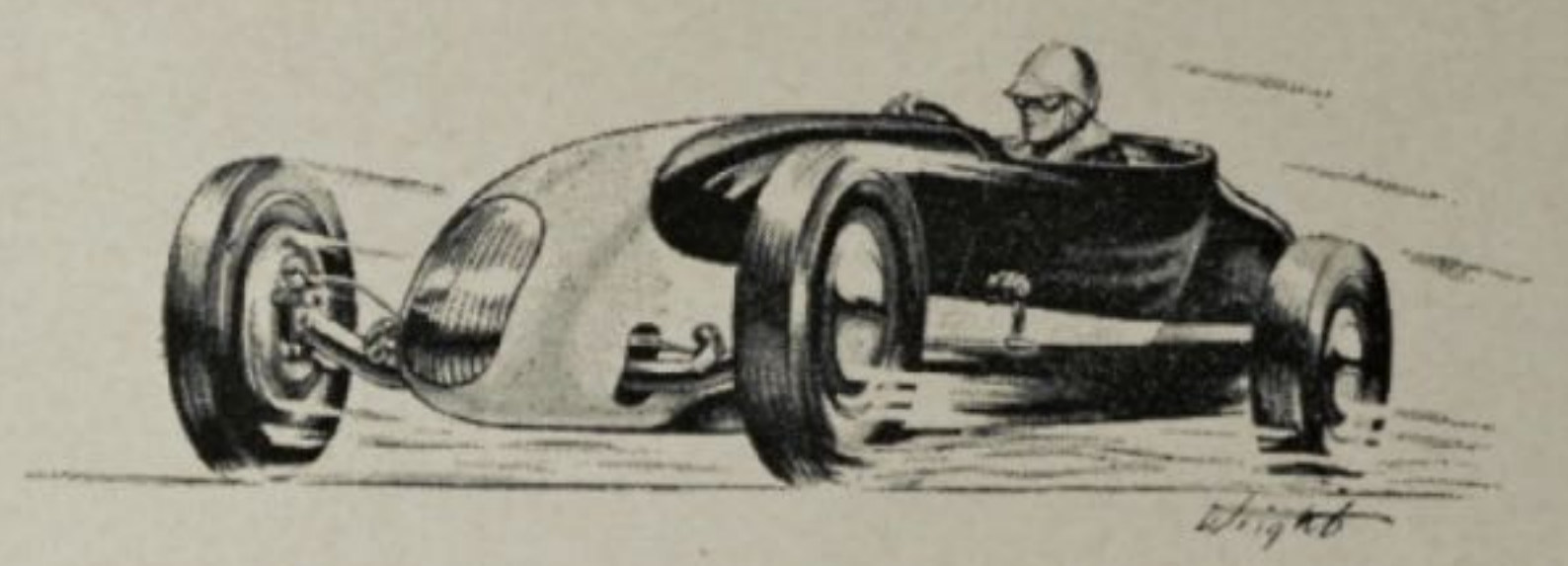
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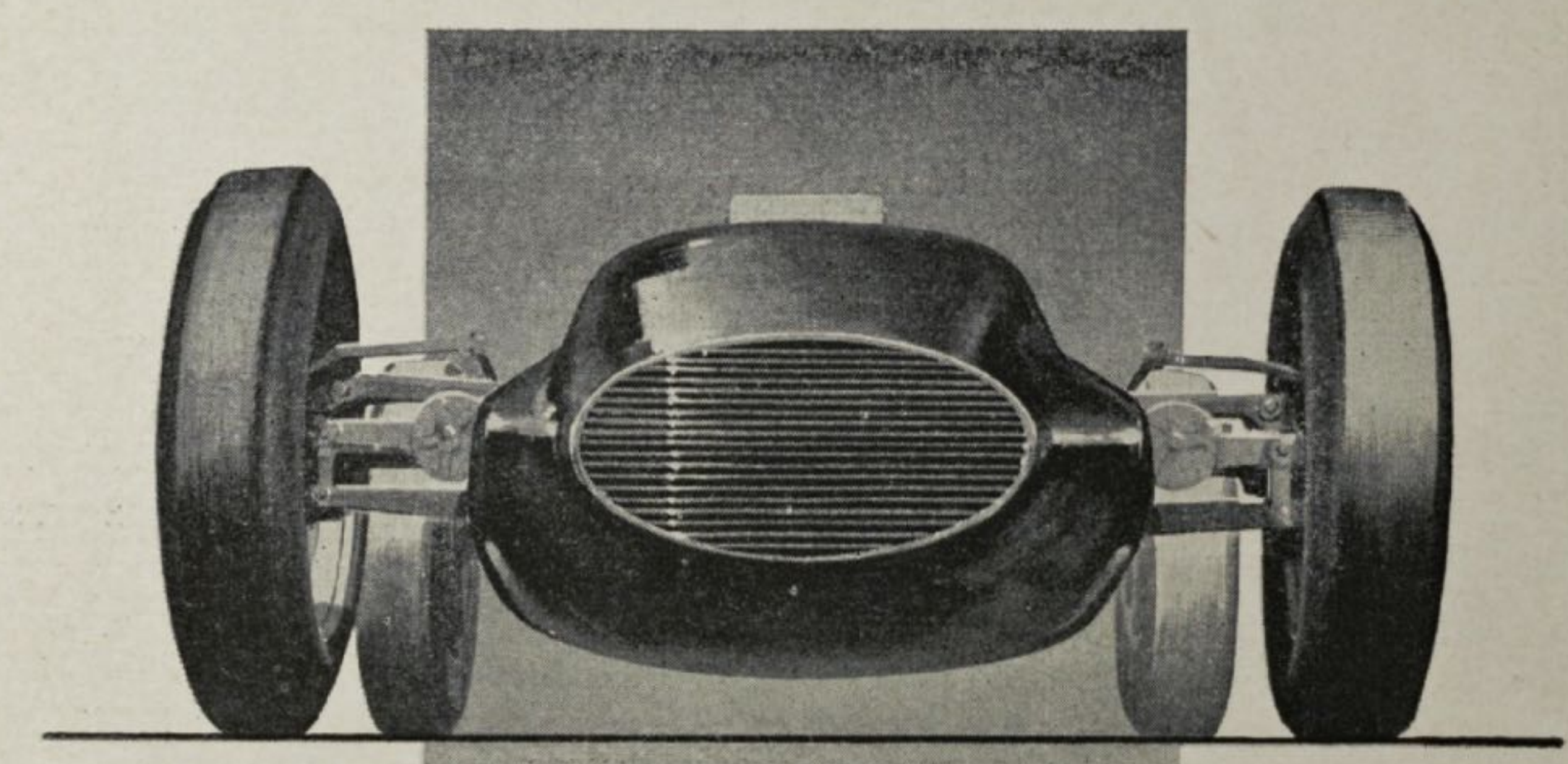
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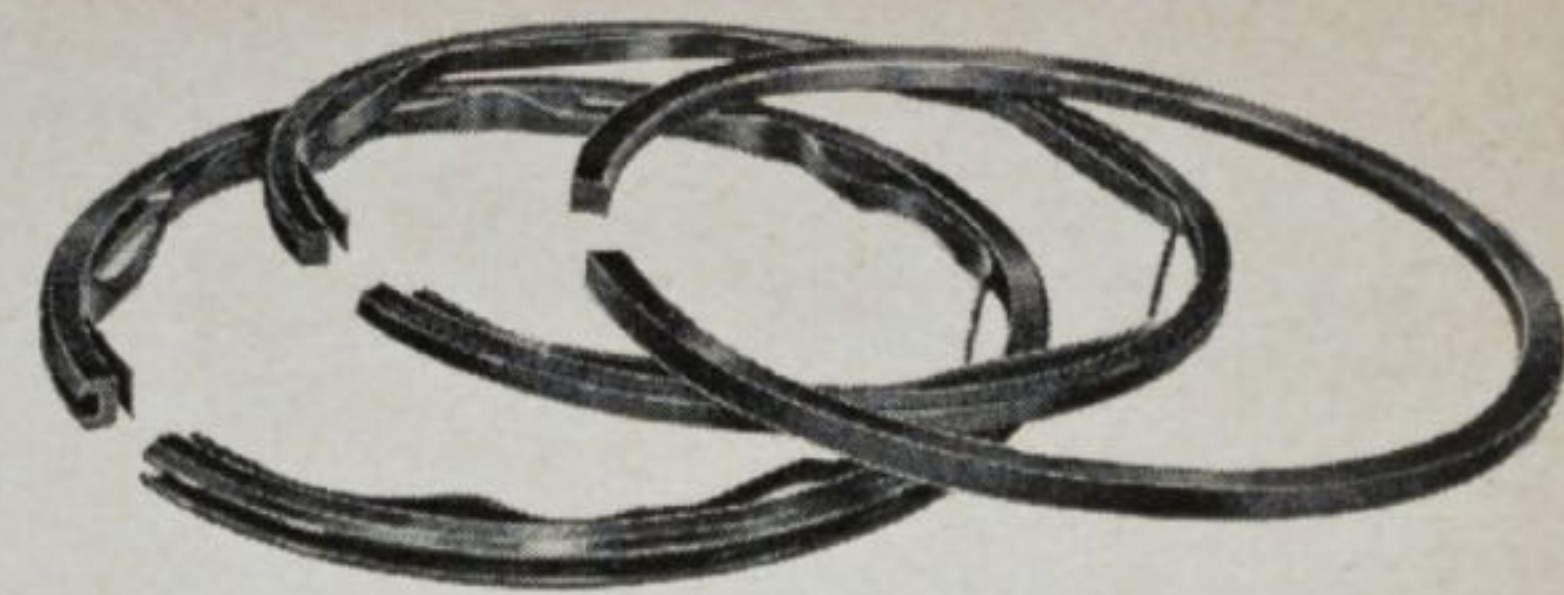
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Standing out of the water, Skimon Demon breaks her own World's Crackerbox Record with a new speed of 68.08 mph.

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Gerry Grant

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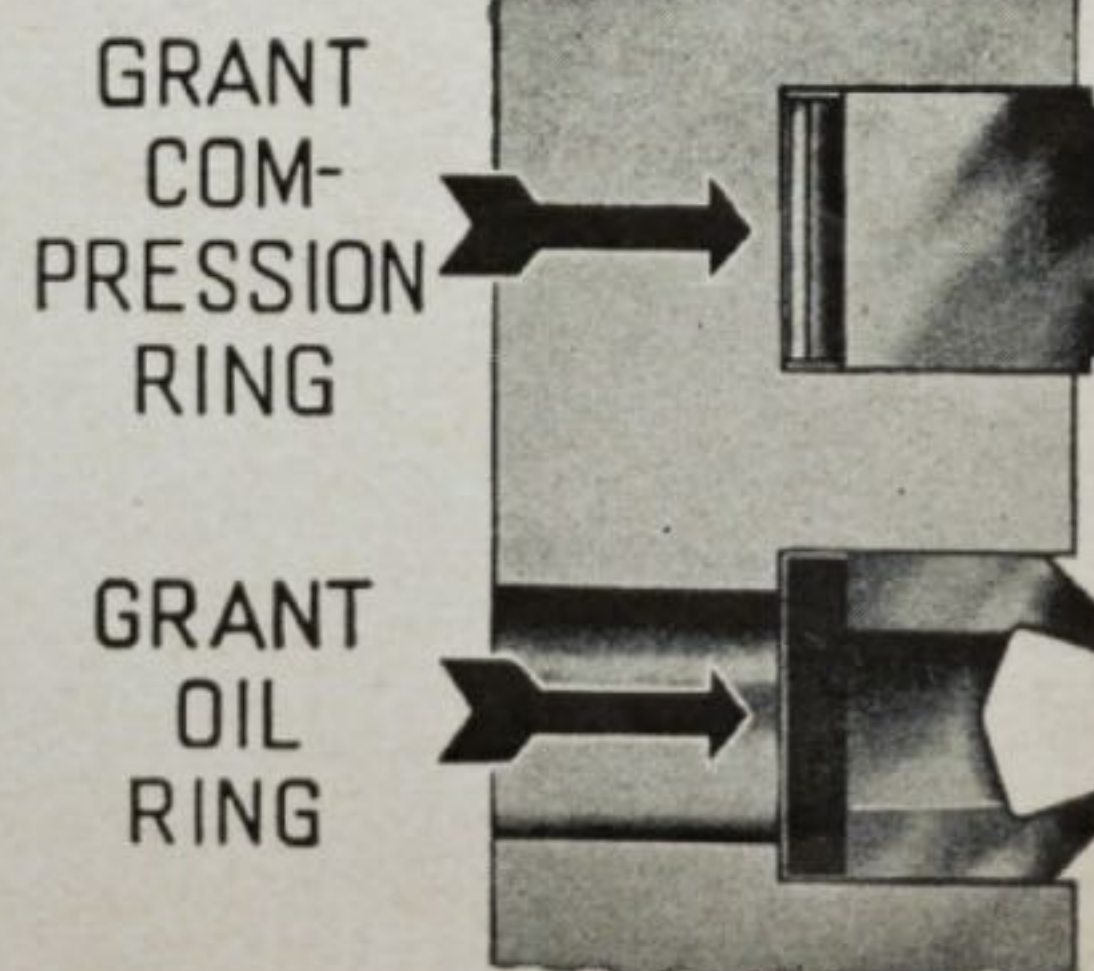
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GRANT & GRANT, 241 N. Westmoreland Ave.
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June 13, 1949

Grant Piston Ring Company
241 N. Westmoreland Ave.
Los Angeles, California
Attn: Gerry Grant

Gentlemen:

You may have heard how my "Crackerbox", Skimon Demon has been running lately. At one time it held the world's record for the Crackerbox at 63.99 mph.

On my last overhaul job, I installed your Grant Piston Rings and at this time, I'm happy to let you know that Skimon Demon beat my old record by 4.09 mph, having now set the present record of 68.08 mph.

About the performance of my engine with your piston rings, I have been able, not only to get more speed, but to maintain this speed consistently throughout the whole season without using oil in excess.

Since making the new world's record, on pulling down the engine, I have been impressed with the fact that there is so little wear on the cylinder walls that I can say there hasn't been enough increase in the taper to show on the micrometer.

I hope to better my own record in the very near future.

Very Sincerely Yours,
George Zimmer
3525 Alhambra Avenue
Los Angeles, California

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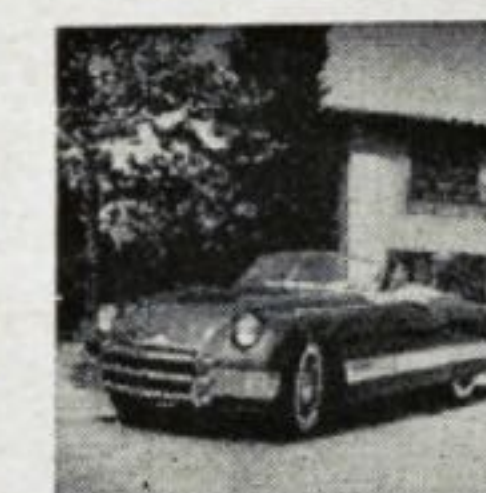
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PUBLISHERS • ROBERT R. LINDSAY, ROBERT E. PETERSEN
EDITOR • WALTER A. WORON
ADVERTISING MANAGER • FLOYD J. WHEELER, JR.
ART DIRECTOR • ALBERT H. ISAACS, JR.
STAFF ARTIST • THOMAS J. MEDLEY

COVER: Kurtis Sport Car now in production at the Kurtis-Kraft, Inc., plant in Los Angeles, California. Photo by R. E. PETERSEN.



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why motor trend?

Eighteen months ago, the publishers of HOT ROD MAGAZINE conceived the idea of publishing a monthly publication dealing with the fast-growing sport of hot rods. The worth of that idea is attested to today by the fact that over 85,000 copies of that magazine are published monthly.

Because of the wonderful response given to HOT ROD MAGAZINE by readers and advertisers alike, the formation of MOTOR TREND has been made possible. Since the time that thought was first given to a new magazine of general interest to a motoring world, numerous hours of discussion and many months of planning have been spent on magazine format.

We weren't satisfied with just another magazine—we wanted a magazine that would interest the foreign car exponent, the sports car enthusiast, the custom car

fan, and also be equally interesting to the stock car owner. For a title we wanted a name that would not only be catchy, but one to tell you what it is about.

That is the "why" of MOTOR TREND—a magazine that brings you the trends of the automotive field: designs of the future, what's new in motoring, news from the continent, trends in design. MOTOR TREND will also feature photographs of well-designed custom cars, foreign cars and unusual race cars—you will read about horseless carriages, and patented automotive inventions that were never produced.

We hope that MOTOR TREND meets with your approval, but naturally, the only way that we can be sure that we ended up with the right thing is by your response. We welcome and appreciate constructive criticism.

the car FOR YOU?

NOT WILLING to take a back seat to the many fine sports cars being imported from Europe and aware of the growth of public interest in cars of this type, Frank Kurtis, well-known builder of midget and big race cars, has designed and is producing America's one and only sports car. The impetus behind the development of such a car is in the fact that so many people are modifying their stock passenger cars to gain the appearance and performance of a sports car, and still do not have a true sports car. Further, Kurtis is of the opinion that many persons want a car with sleek lines not available in production models and also wish to be able to select their own engines, gear ratios, and other items that affect performance.

The Kurtis Sports Car apparently has all the features a sports car should have: speed, maneuverability, acceleration, power and sleek looks. Along with all these features, there are many other items that make this car quite attractive, such as choice of engine, adjustable steering gear, removable body panels, roadster top, and the use of standard parts throughout.

This car has a wheelbase of 100 inches, stands but 51 inches high, and is 68 inches wide. Over-all length of the car is 169 inches, or 14 feet 1 inch, while the weight is kept to a bare minimum of 2300 pounds, giving the car a high horsepower-weight ratio.

The car will be powered by a Ford or Mercury engine of 110 HP. A Borg-Warner overdrive is optional equipment.

The chassis and body are an integral unit; that is, the frame longitudinal and cross-members actually form a part of the body. The body panels are then placed into position on the supporting structure.

The independently sprung front wheels utilize Ford wishbones and coil springs. The rear axle is spicer type, with Hotchkiss drive, employing semi-elliptic springs. The brakes are standard hydraulic shoe type.

The grille is built ruggedly, mounted on rubber shocks, and yet is compact and simple. Wide chrome bumpers completely enclose the car body except for the front wheel well. The rear license plate is built into the rear bumper, with stop lights and direction indicators on each side of the plate. The body is made up of ten panels. On the first models,

these panels are made from Fiberglas, both for ease of manufacture and for ease of repair. In the event one of these panels is damaged, it is easier to straighten than a comparable steel panel. However, after a thorough testing period, a change-over to aluminum panels may be made.

The top is removable, as are the Plexiglas side windows. With the windows and top in place, the car takes on the appearance of a trim convertible.

The car is so low that it is necessary to make a shroud in the floorboard for the drive shaft running from the engine to the rear axle. For this reason, and the fact that the car is strictly a sports model, only two seats are provided. The seats, well-cushioned and covered with leather upholstery, slide fore-and-aft on tracks and are also easily removed.

The dashboard is of smooth design, with the instruments being grouped in one panel in front of the steering wheel. The instruments include a speedometer, a tachometer, an oil pressure gauge, a fuel pressure gauge, a manifold pressure gauge, a water temperature indicator, a fuel level indicator, and an ammeter. The steering wheel can be adjusted in length for different drivers simply by pulling or pushing on the wheel. The post automatically locks in position.

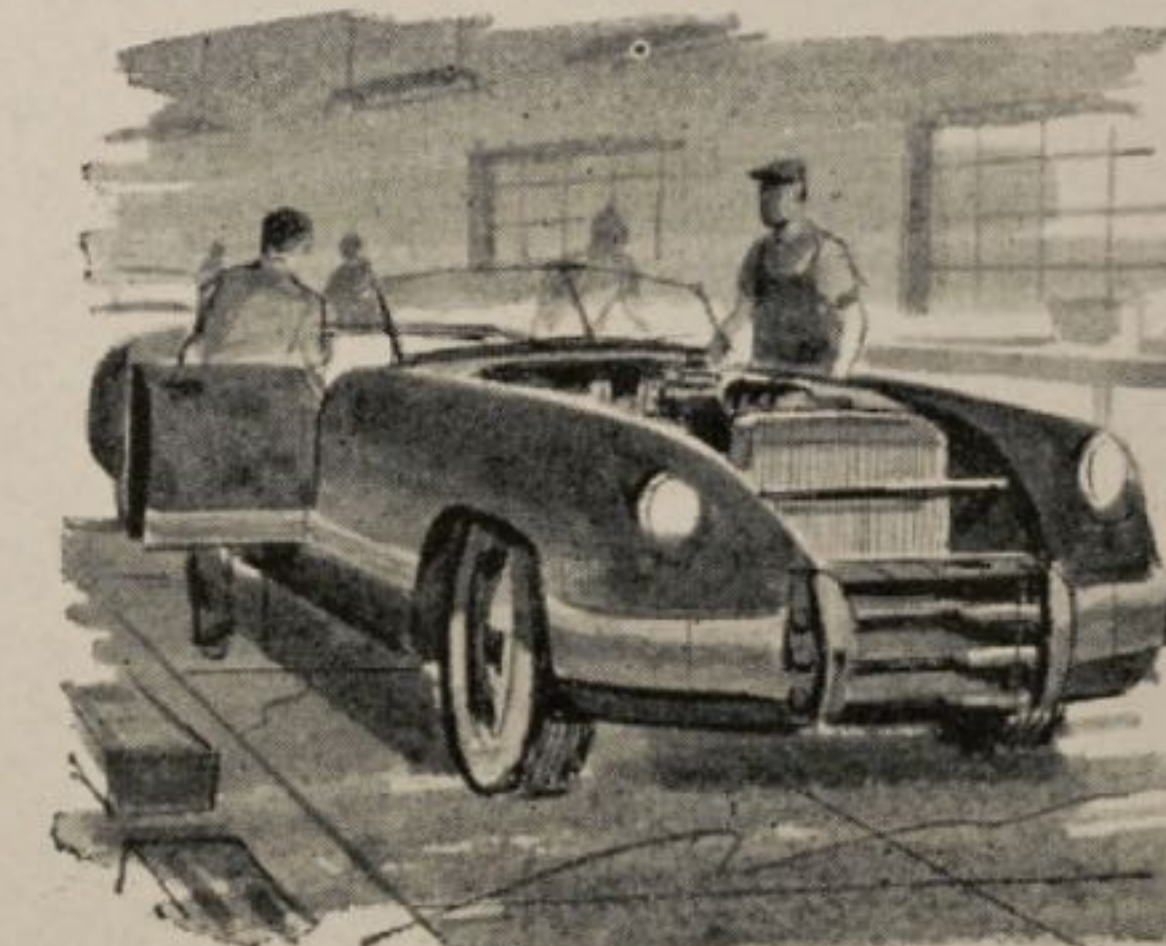
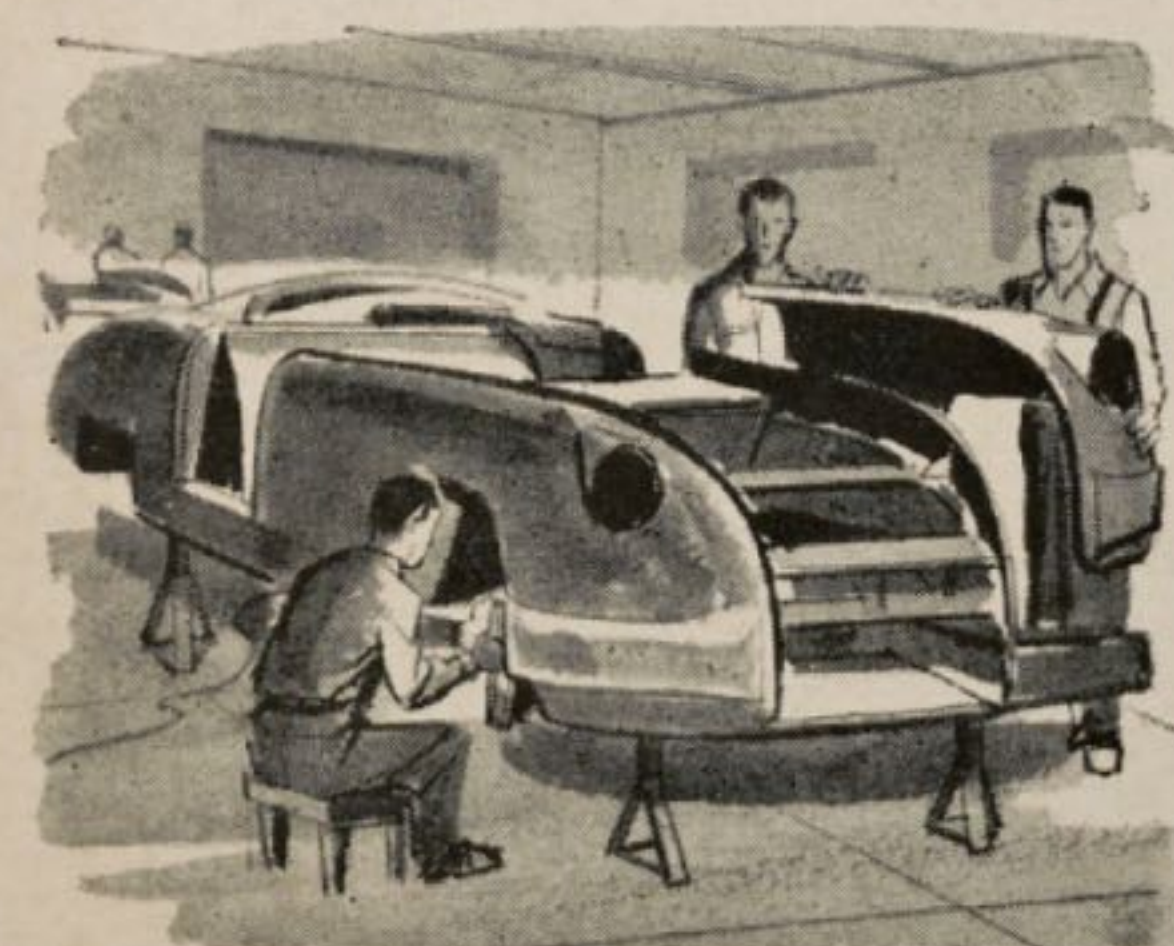
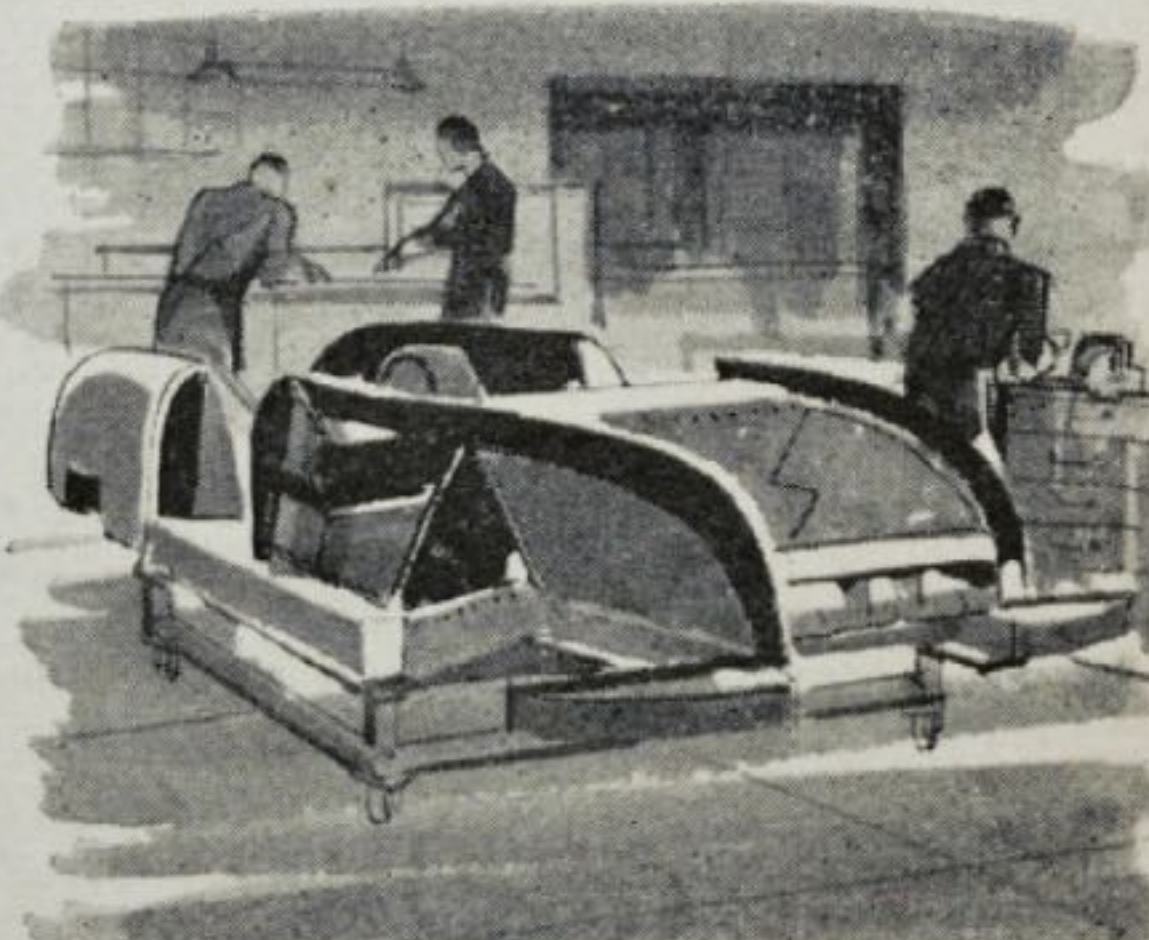
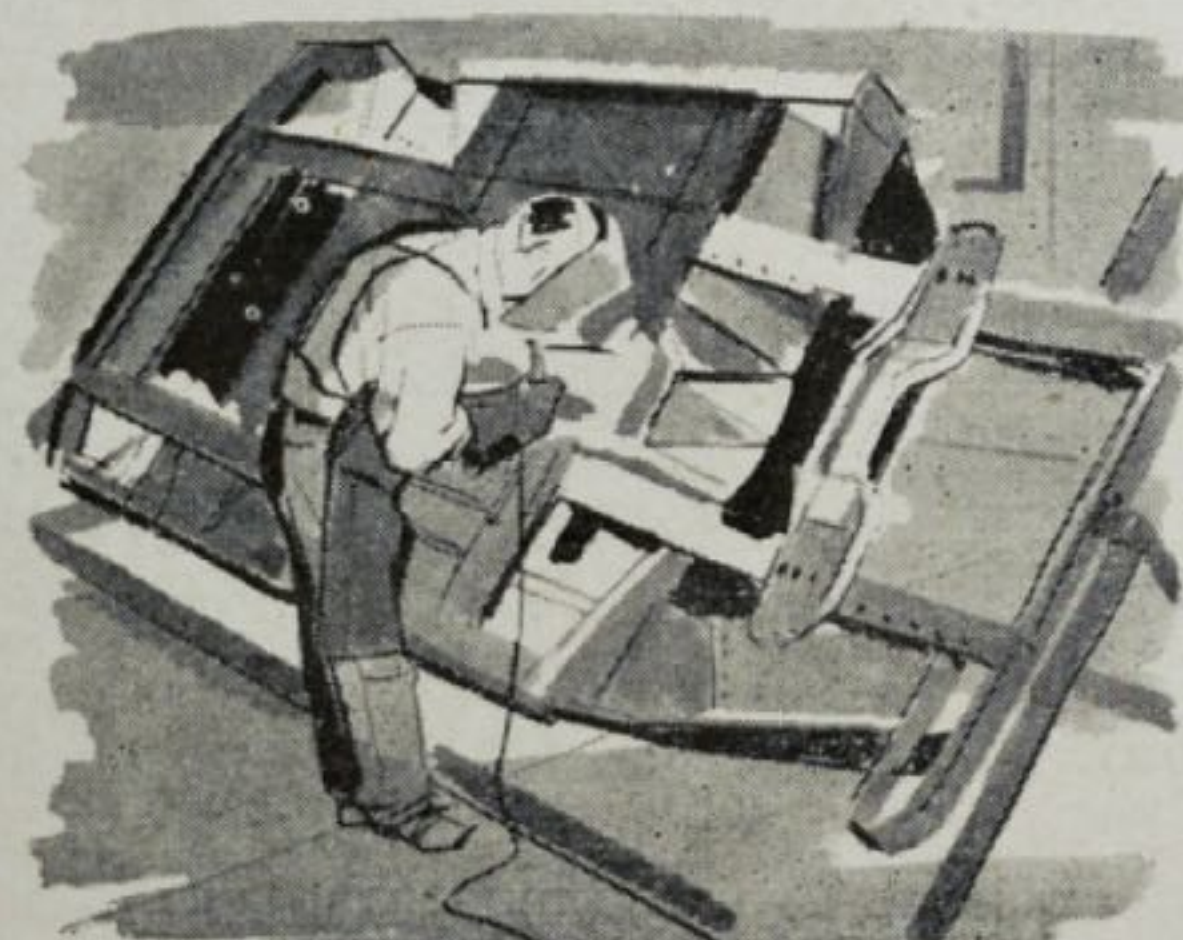
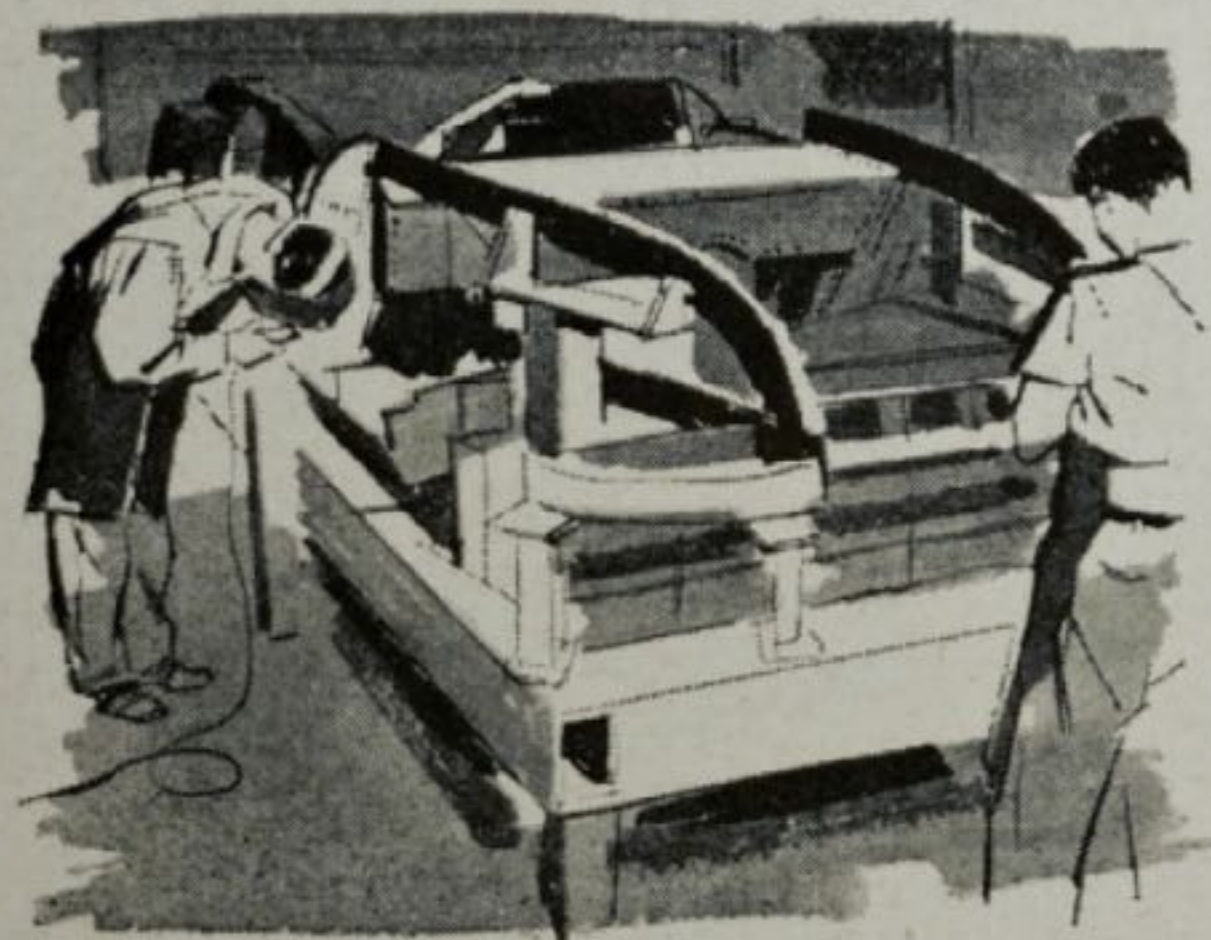
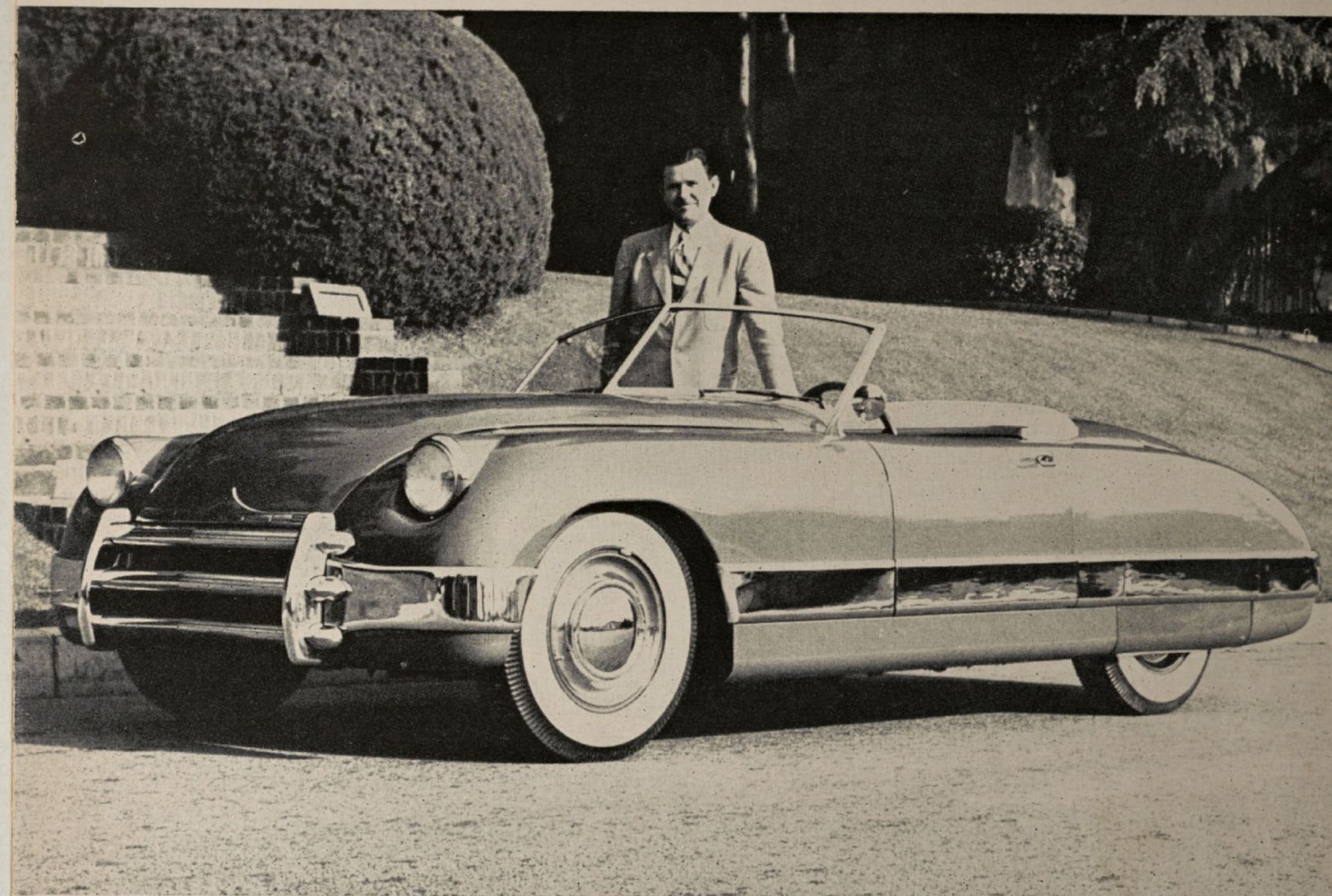
The prototype of the Kurtis Sports Car, equipped with a supercharged Studebaker Champion engine, has undergone thorough testing, both on the highway and on Rosamond Dry Lake in California. The car has been put through its paces by Frank Kurtis and by Bud Winfield, famed in the racing industry for his engineering and mechanical knowledge.

A limited number of cars are now in production at the Kurtis-Kraft, Inc., plant in Los Angeles, California, and will be used as pilot models. These cars will tour the country and will be placed on exhibition before Kurtis goes into full production.

For the mechanically-minded customer, the car can be purchased in kit form for assembly by the customer. Two different kits will be available: one consisting of just the body structure and running gear so that the customer can install his own type of body panels and engine; the other, consisting of the complete car, will be ready for assembly.

(Continued on page twenty-five)

KURTIS SPORT CAR



AL ISAACS



INTERNATIONAL SPORTS CAR SHOW

by GRIFFITH H. BORGESON

HAPPILY, THE SPORT-CAR and quality-car scene is brighter than ever today on the West Coast. Proof: the International Auto Show held at Oakland, California, from June 20th to June 26th, at which forty-seven years of motor trends were well represented.

The first of its kind in the West, it drew 60,183 enthusiasts at a dollar per to see "Sport Cars of the World." Top entertainment was provided, but showman Al Slonaker, who engineered the production, proved a pet point by refusing to advertise his non-automotive attractions. People *will* pay for the opportunity of looking at a good selection of interesting automobiles.

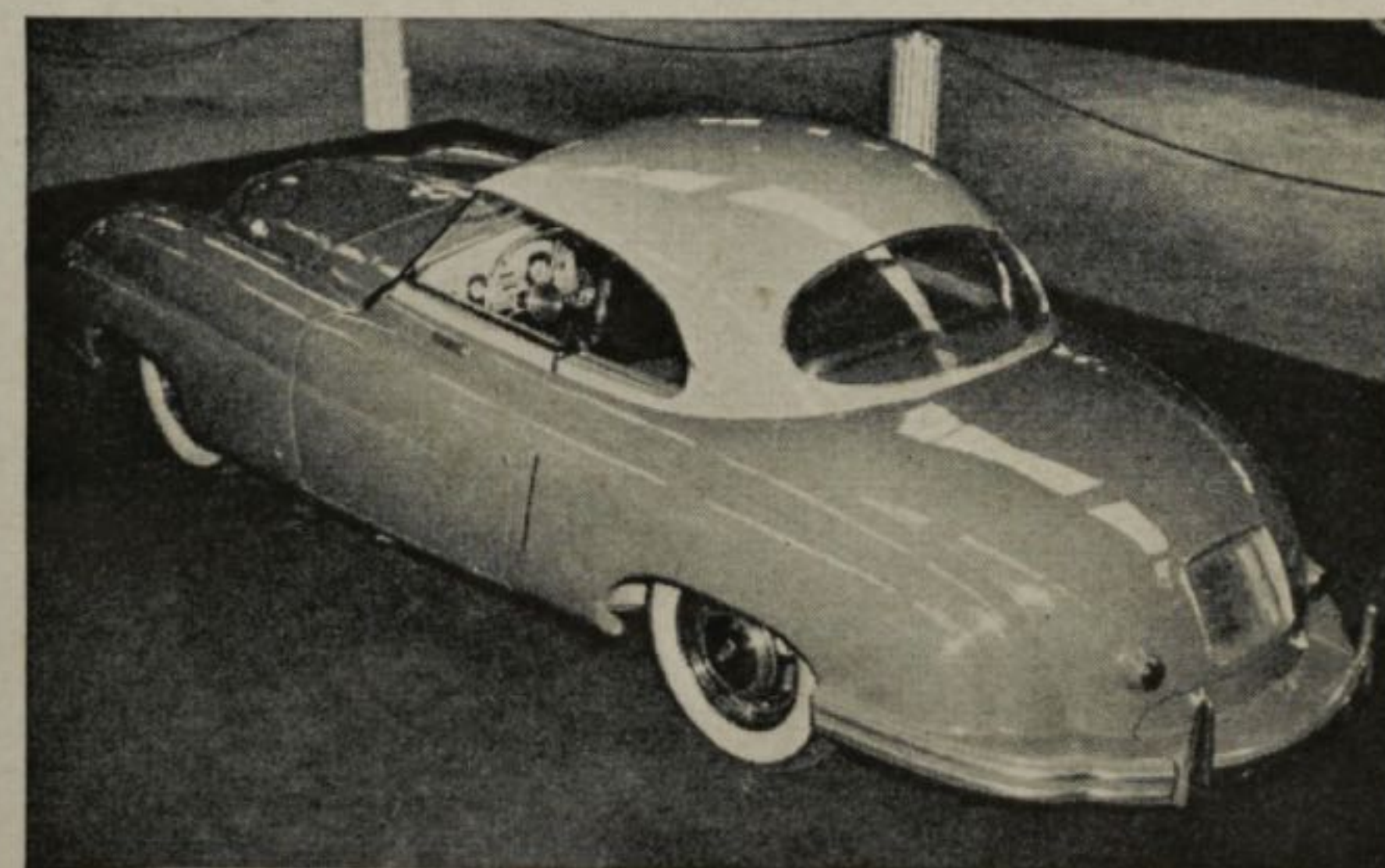
And the interesting stuff was there. There were, in all, 41 cars from the U.S., England, France, Germany, and Italy.

Our own country was represented by (to start with the paleotechnic period) an immaculate and beautifully made '02 Stanley Steamer, a single-cylinder Brush roadster, an '07 Stevens Duryea touring car, and a '33 Chrysler 146 inch wheelbase Imperial. Lebaron put his best into this aluminum-bodied sport phaeton, and reflected perfectly the classic European idea of what constitutes a tasteful synthesis of "sporty" and elegant transportation. The extremely graceful sweep of the front fenders is unshattered by fender wells and their contents. Two spares are carried rakishly at the rear.

Next in order of seniority came a '33 "J" Duesenberg touring with a poorly executed padded top for which the original body builder was not responsible. Leo Bertelson, the

local specialist in exotic machinery, calls this standard 265 hp unblown eight one of the most powerful J's he has worked on; it can wind up to 95 mph in second gear with no effort.

In the department of contemporary automotive architecture, Huth's dramatic, swaybacked Cadillac was on hand to evoke reactions of either thorough disgust or delight.



R. E. PETERSEN

FIAT by Castagna—A new 1100-S model with coupe body has a 1090 cc. four-cylinder engine. Body maker calls it "Vistotal."

Frank Kurtis of Los Angeles, the racing car body builder whose Kurtis Sport Car has hit the market, presented a striking hand-built convertible sedan on a '49 Buick chassis (the prototype of the Sport Car).

Pierre Paul of Oakland, young, imaginative, and a thoroughly competent craftsman, exhibited a completely "customized" '41 Buick convertible coupe. Every contour and every appointment detail of the tastefully leaded, channeled, and Carson-topped vehicle combine to produce a harmonious composition in the advanced "jello-mold" idiom. One of the belles of the ball, the job can be duplicated by Paul on any similar car for \$2000.

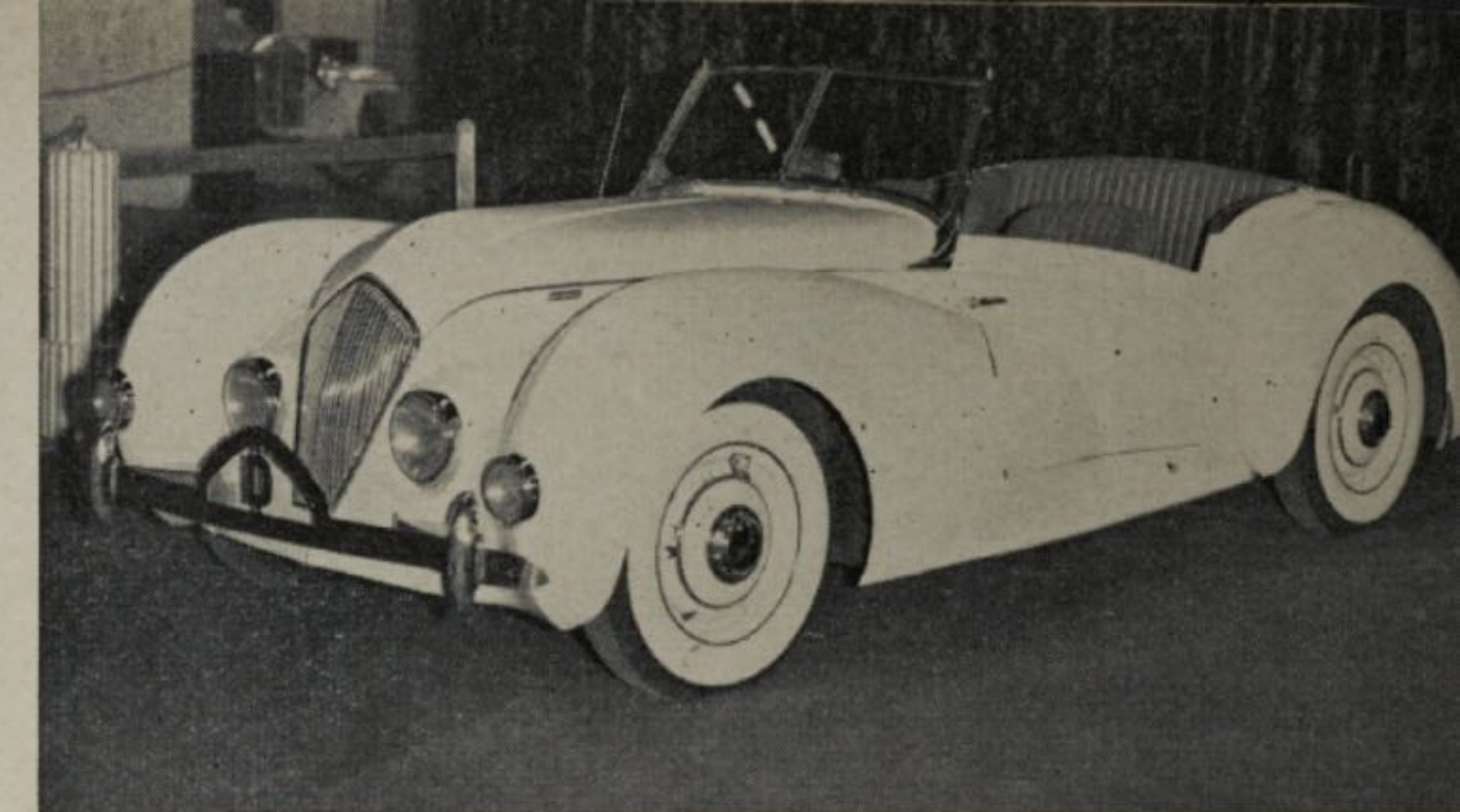
Drawing the biggest crowds of all was a fine assortment of hot rods, perhaps proving another point: that the public finds such automotive alchemy a refreshing contrast to the standard uninteresting, over-advertised American product.

England came through handsomely. Most striking exhibit was the Jaguar 3½ litre (213.6 cubic inches) Mark V saloon and drop head coupe. With its six-cylinder, overhead valve push rod, dual carb engine, its four speed transmission and torsion bar suspension, the car is no mean challenge to the triumphs of Detroit. Coachwork and interior finish leave little to be desired. Not at the show was the new Jag 120, the little 3½ litre dual overhead cam job that recently averaged 132.6 at Ostend, on stock fuel without a blower.

Another outstanding British production car was the Sunbeam-Talbot, winner of the latest Tour des Alpes, a sort of European Pike's Peak trial and a very grueling test for any car. The power plant is a four cylinder, push rod, 47 bhp job with 72.3 cubic inch displacement. Although it sells for just \$3000 here, its convertible body work is by Thrupp and Maberly, who occasionally do coach work for His Britannic Majesty. Every detail is thoughtfully attended to, including an ample tool kit similar to the Jag's. Adequate transportation.

The Riley was represented by a hard top and a convertible sedan. The coachwork in both cases is competent and gracefully satisfying in a subdued and classical way. Its four cylinder, approximately 152 cubic inch, push rod engine develops 100 bhp at 4500 rpm. This car has been clocked at 97 mph

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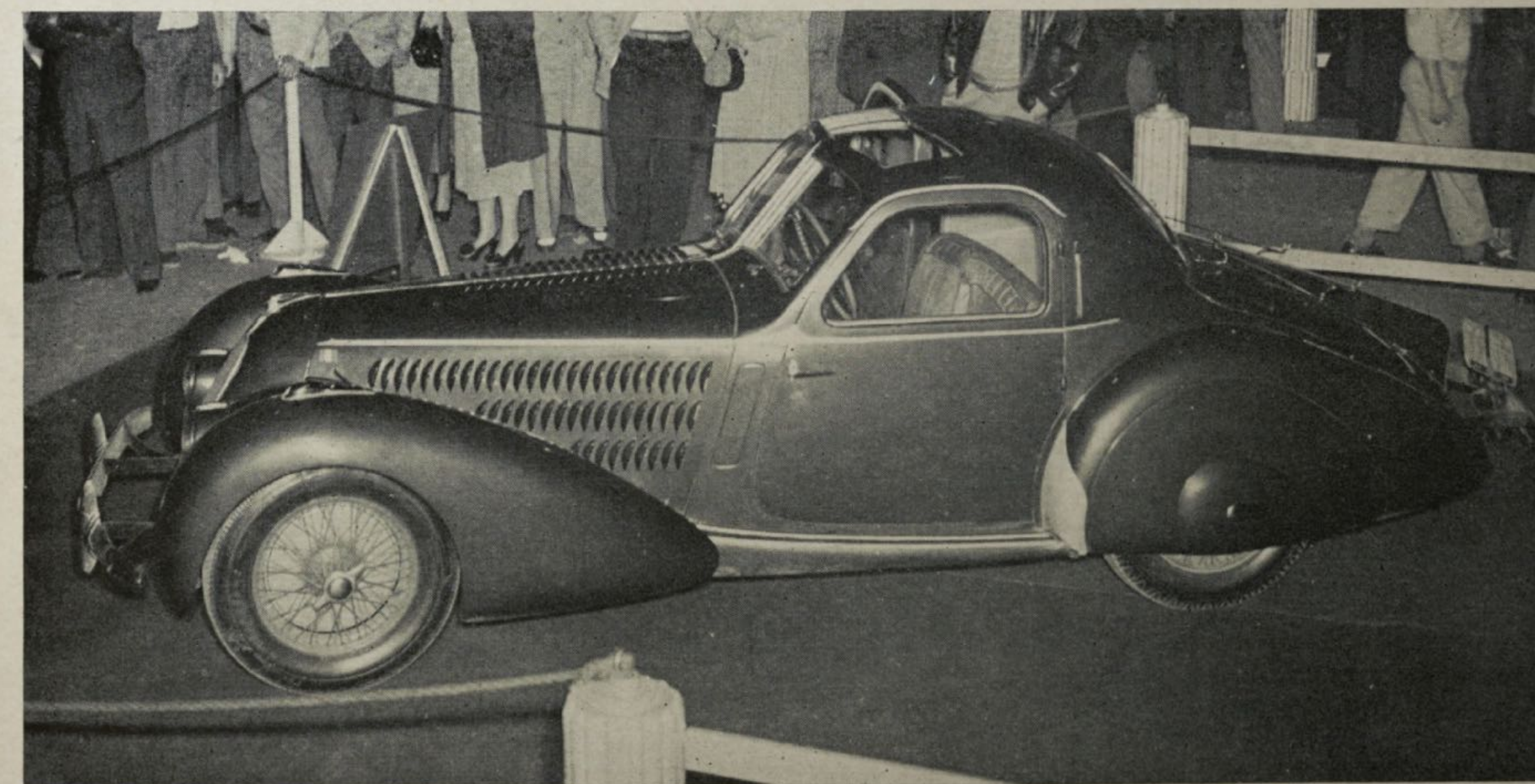
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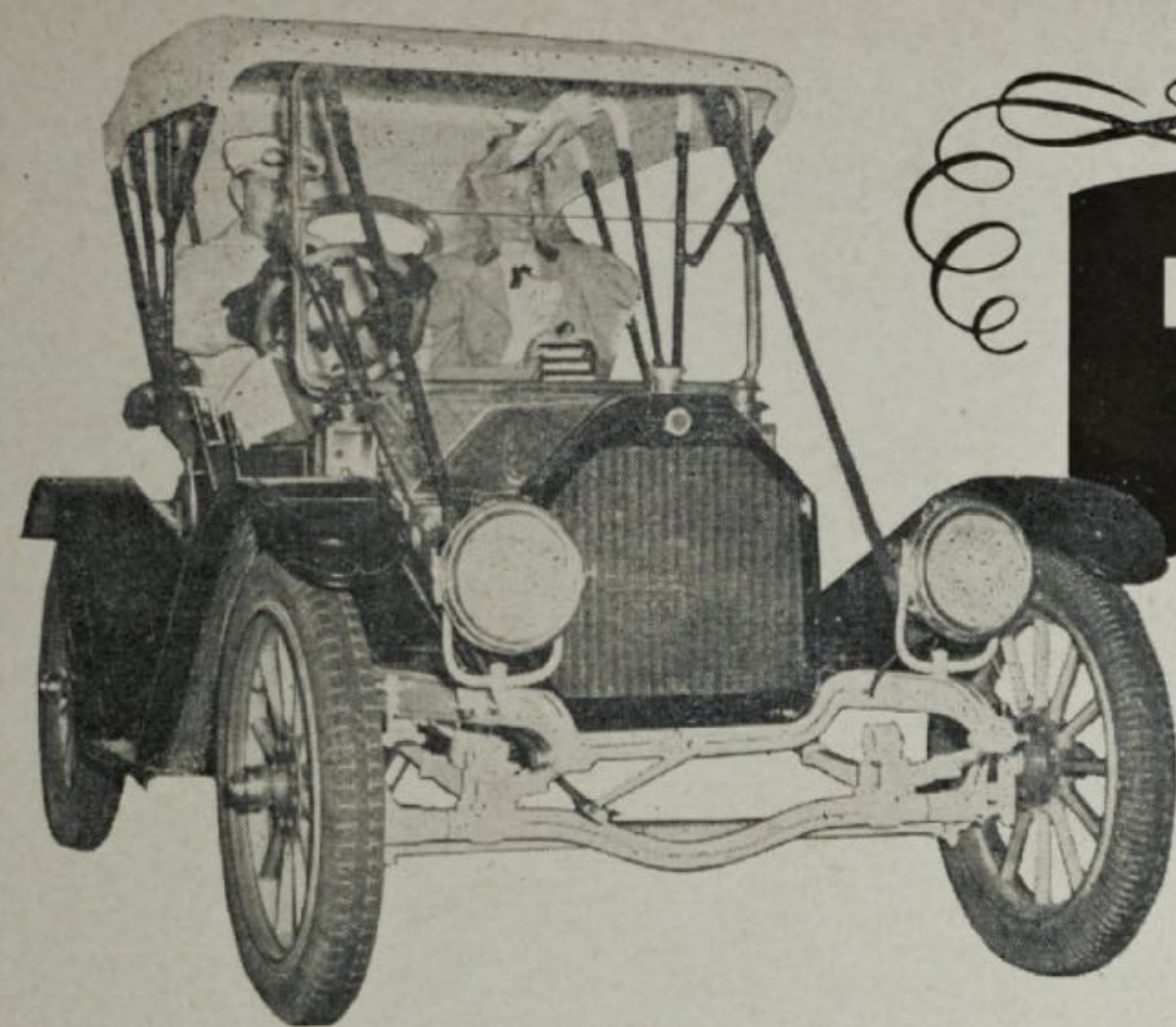
TOP—The Healey sports car is known as the Mille Miglia model for having won that race in its class last year in Europe.

ABOVE—Riley sports and hard top sedans are powered by four-cylinder 152-cubic inch engines that develop 100 bhp at 4500 rpm.

BELOW—A Talbot-Darracq, about the size of an MG Midget, uses a relatively large, six-cylinder, overhead push-rod engine.

INTERNATIONAL SPORT SHOW





TIME NOR TIDE...

by JAMES E. POTTER

DISREGARDING THE fact that "time nor tide waits for no man," the members of the Horseless Carriage Club of Los Angeles turned back the hands of time some 34 years recently when they broke out in their goggles and dusters and went on their second annual horseless carriage caravan. This year's caravan took off for a different destination than the initial one, going to San Diego, instead of to San Bernardino.

Because of the interest evinced by all participating members in the first trek and because of the splendid co-operation of the General Petroleum Corporation (sponsors of the event) and the various police departments, the members looked forward anxiously to another such event. The first caravan also served to deter the skepticism of some members that their cars would not be able to make the trip, and as a result they were more eager than ever to stage a second trek.

This year's event was another three-day jaunt, starting in Los Angeles and winding up in San Diego. Early one morning, the 45 antiques assembled in the garage of the General Petroleum Building. The cars were of all descriptions and were resplendent in their bright colors (chiefly red) and polished brass. All cars participating were 34 years of age or older, as this is one of the prime requisites for entry into the club—it must be of 1915 vintage or earlier.

LOWER RIGHT—Warwick Eastwood at the wheel of his 1905 2-cylinder Buick. With him are his wife, Millie, and Ellen Johnson.

BELOW—Club President Lindley Bothwell leads the caravan in his 1911 Rolls-Royce, formerly owned by Russian Royal Family.

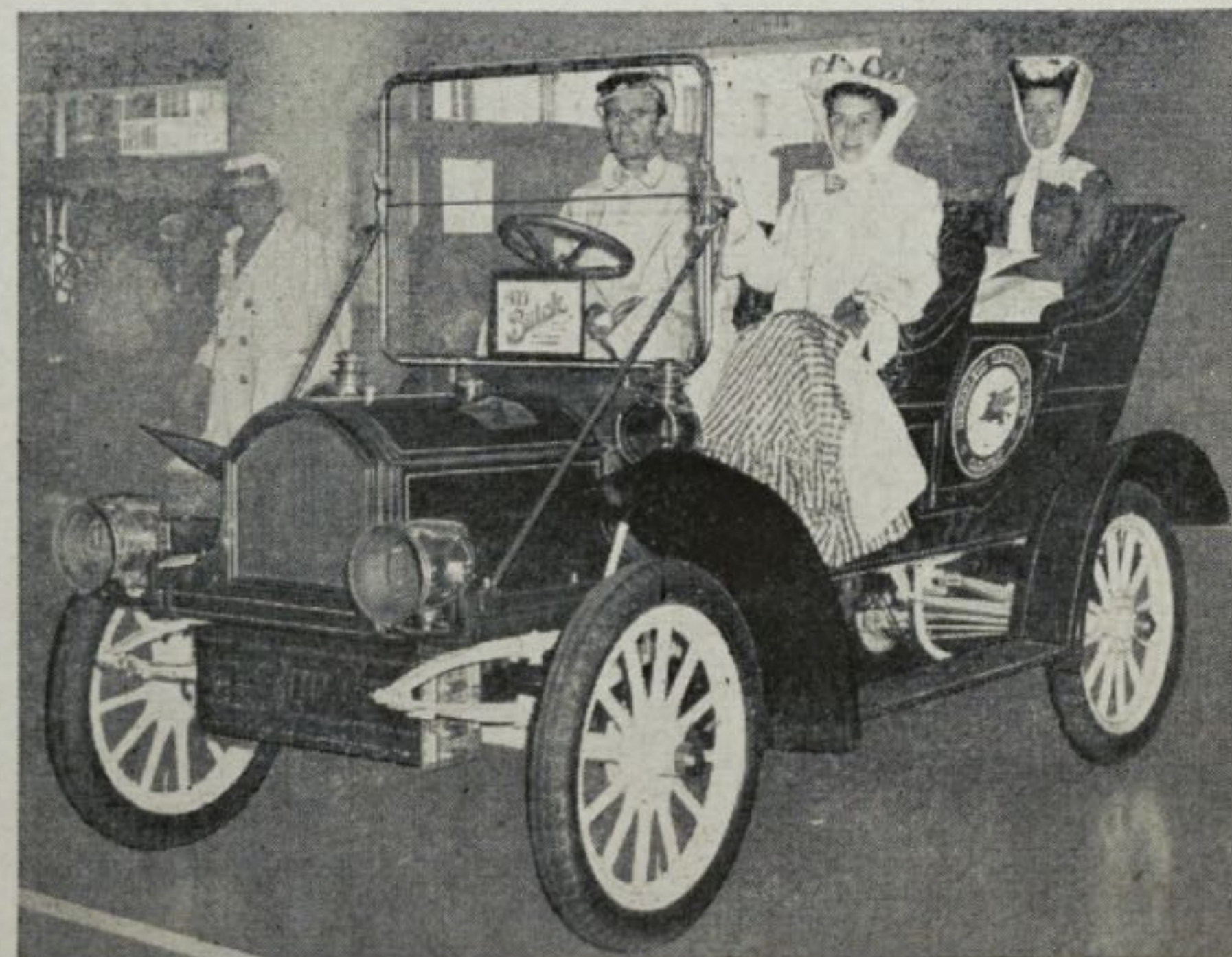
Considerable variety among the carriages was evident, in engines and body style alike. There were one-lungers, two-lungers, fours and sixes, with speedster, touring, and closed sedan bodies.

After breakfasting in the General Petroleum Building dining room, the members climbed into their cars, and with many a backfire, spit and cough, the cars chugged off, belching smoke as they left. All caravan members dressed in the period that their cars were manufactured in, and, together with the beautifully-restored jobs, presented a very colorful spectacle. All along the route people stopped to stare, while at stopping points curious onlookers swarmed over the cars.

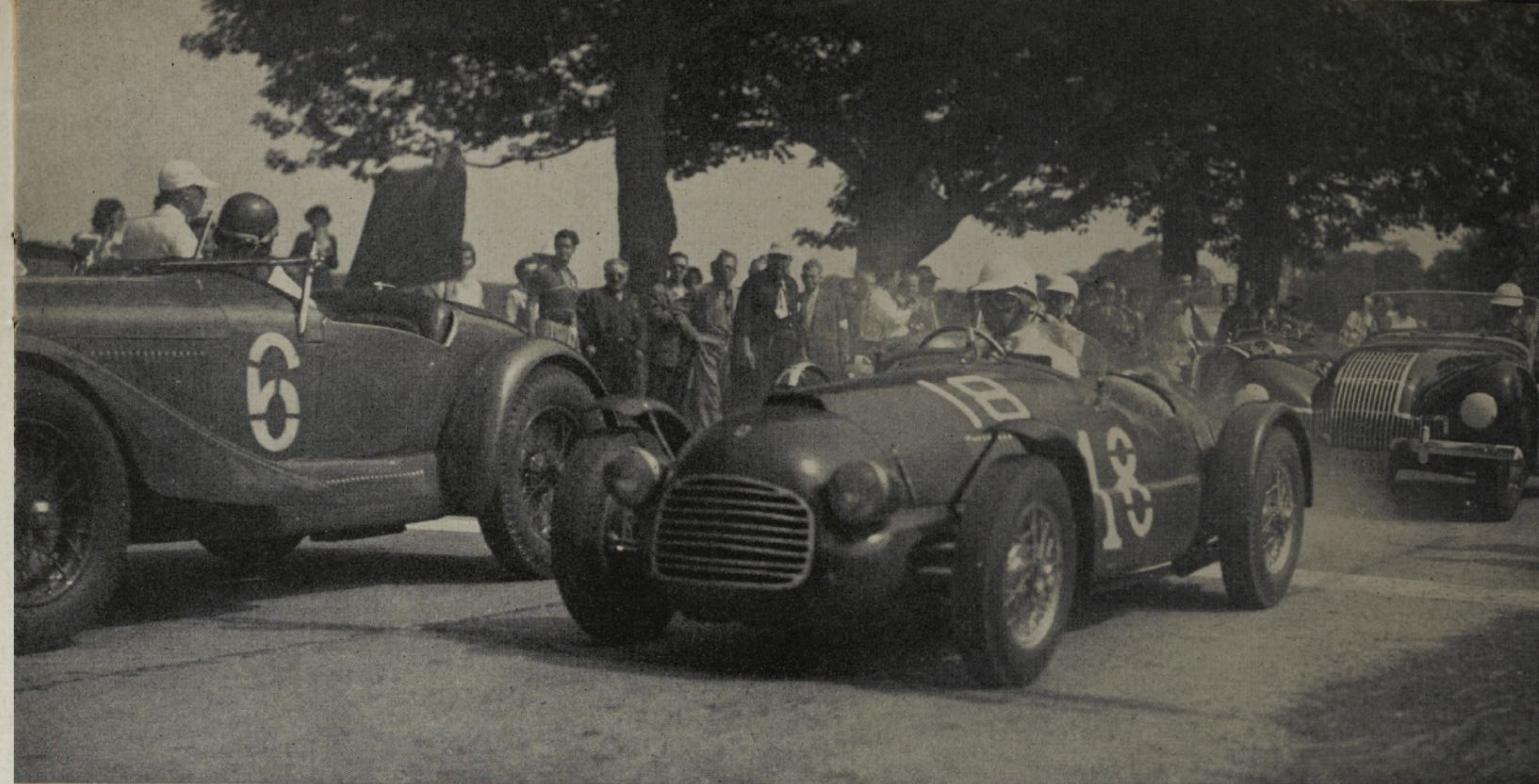
The lead car was a 1911 Rolls-Royce, formerly owned by the Royal Family of Russia and which is now owned by club president Lindley Bothwell. (In addition to this car, Bothwell owns many other cars, including a 1900 Crestmobile and a 1900 Baker Electric.) Although the pace held by the lead car was too fast for some and too slow for others, all cars arrived safely in San Diego with no major mishaps. With so many different types of cars entered, it would be almost impossible to set a pace that would be "right" for everyone.

At noon, the cars arrived in Long Beach, a distance of some 23 miles from Los Angeles, where they were met by civic dignitaries. After lunch, the members traveled along the Pacific Coast Highway to Laguna Beach, an additional dis-

(Continued on page twenty-six)



ART STREIB



Bridgehampton Road Race

by HANK OGDEN

THE QUIET, isolated little farming and resort town of Bridgehampton, located roughly a hundred miles east of New York City, was recently inundated by an estimated forty thousand road race enthusiasts from all parts of the United States. The reason was the first eastern U.S. road race since the Watkins Glen event last October 2nd. Early morning traffic from Freeport moving east was spotted with sports car owners headed for the races—Cords, Hollywood Grams and MG's were most numerous, with a sprinkling of Rileys, Jaguars, Hillmans, Simcas, Fiats, Renaults, a Singer, a Sunbeam-Talbot, a couple of Healeys, some really ancient-vintage Rolls-Royces, a maroon Bentley, several Alfa-Romeos and at least four Mercedes.

The race course was four miles in circumference and was formed roughly into a square. Saganack Road to the north offered slightly more than a mile of fairly straight racing road with a 120-degree turn onto Main Street that gently arced to the right on the eastern leg. The turn into Bridge Lane was sharp, about seventy degrees, and presented another long, fairly straight stretch interrupted midway by the bridge across The Pond. The stretch hit Ocean Road, the west boundary, at nearly right angles after a relatively steep downhill run for the last two-hundred and fifty yards. The start-and-finish line was midway along Ocean Road, a perfectly straight, level black-top stretch that ended with the first corner at Saganack Road.

The Bridgehampton course basically was flat as compared to the varied-surface Watkins Glen run that crams hills, a hairpin turn, railroad under- and over-passes and a downhill curving stretch on its 6½-mile layout. Last year Frank Griswold drove his Alfa-Romeo to victory in both the 26- and 52-mile events at an average of 62 mph in both events. As expected, speeds over the Bridgehampton course were faster.

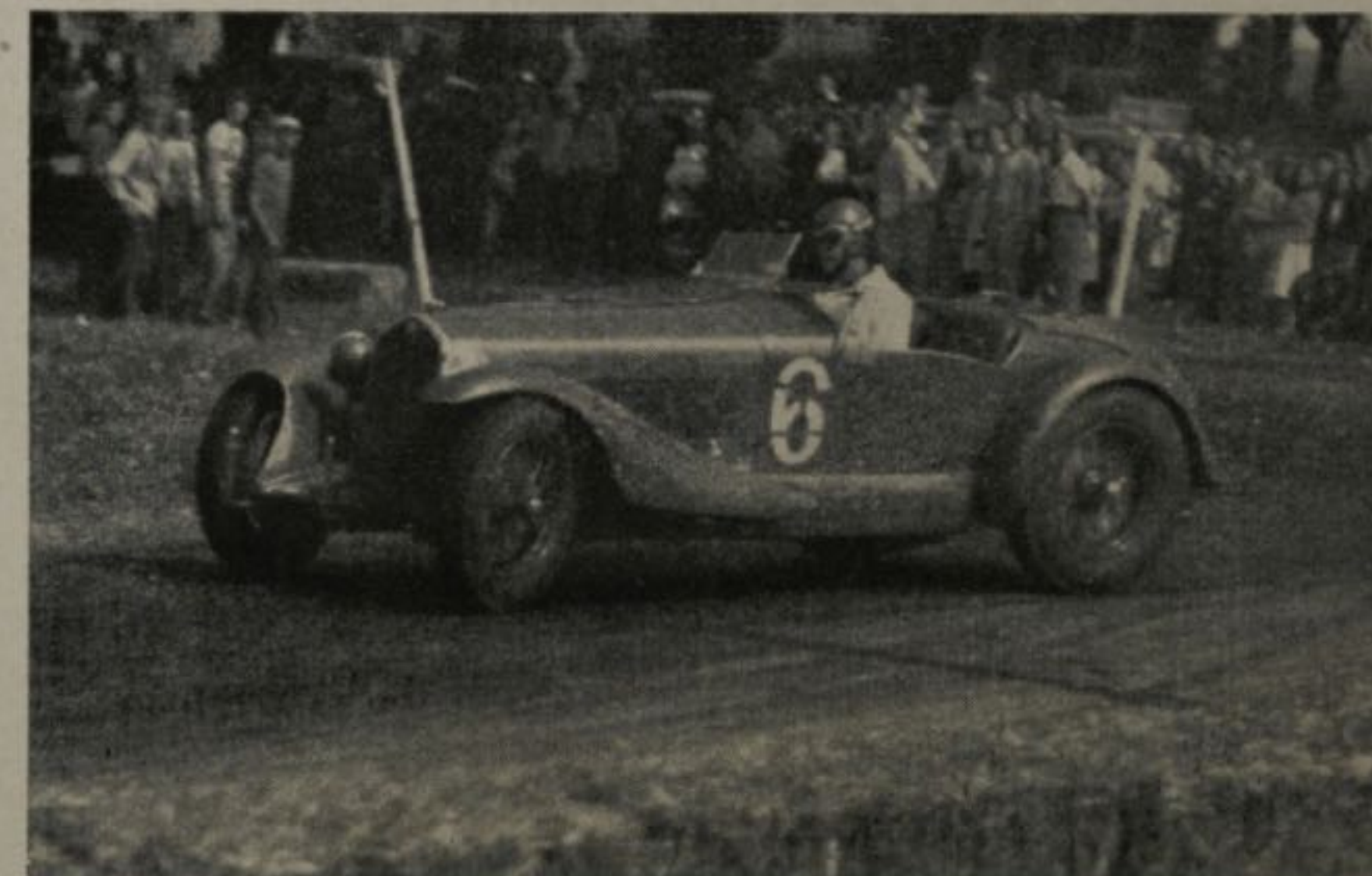
J. Bruce Stevenson of Sagaponack, N. Y., president of the MG Car Club (American Branch), was the originator of this year's race and served as general chairman of the race committee. The sponsors of the event were members of the Bridgehampton Lions Club under the general chairmanship of Albert Humblet of Bridgehampton. The parade and the three races were arranged jointly by the MG Car Club, Sports Car Club of America and Motor Sports Club of America.

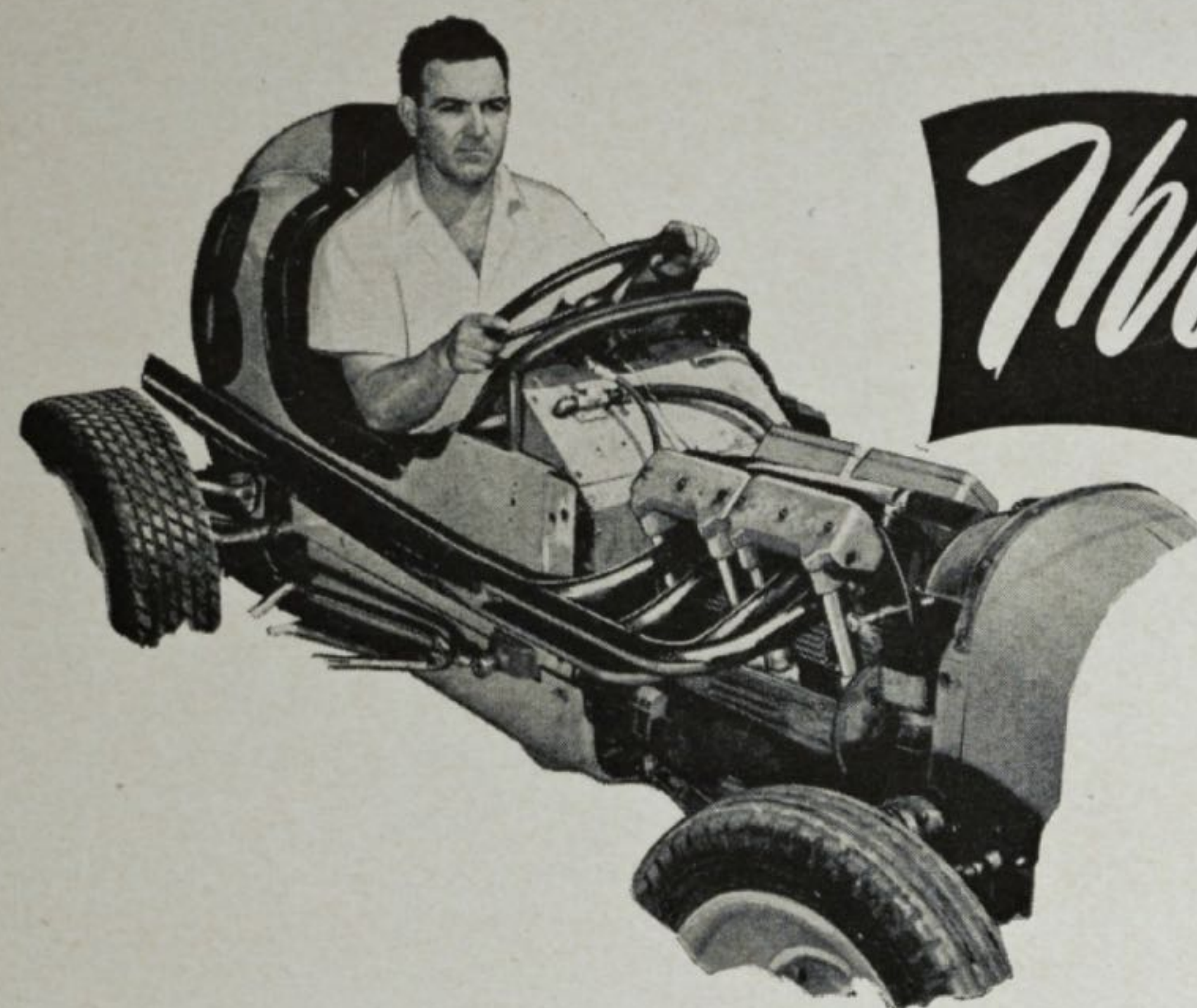
Pre-race activity was marked with bitter disappointment for car-owner Antonio Pompeo, importer of New York City. Pompeo had two Alfa-Romeos and a Cisitalia at Jim Pauley's Banksville, N. Y., garage. About midnight on May 27th a fire of unknown origin started at Pauley's garage.

(Continued on page twenty-four)

SECUNDO GUASTI in his Alfa-Romeo, taking the turn from Bridge Lane into Ocean Road.

HANK OGDEN





to the OFFIES!

by **ROBERT R. BARKER**
Automotive Designer and Race Driver

SOMETHING THAT the racing industry, and automotive industry in general, has been lacking for a long time is a new small engine. For that reason I am proud to announce the development of the Barker twin cam, rocker-arm, midget racing engine.

This new engine, completely new in design, but patterned after the European sports car engines, such as the Riley and Healey, will be used in midgets for racing purposes. However, it has been designed with the thought in mind of eventually using it in a sports car.

The engine was designed during three weeks of the off-season of racing in 1948. Actually, this was just the completion of the design, for it was in a formative stage for many months previous to this. Many long, sleepless nights were spent thinking over the design and poring over ideas, some of which were used and some of which were rejected.

In the course of testing in midgets, it will probably have many minor bugs that will have to be eliminated before the engine will be placed in production. The engine had no actual testing or proving period—from the drawing board the engine was made, tested on a dynamometer, and then placed in a race car against competition.

The first time that the engine was run in a midget, I qualified the car with the third fastest time, although I did not enter it in a race. That was at the Carpinteria Bowl in Santa Barbara, California. Since that time, two other engines have been placed in midgets and are being run in the Bay Cities Racing Association in and around Oakland. The original engine has been placed in competition against Ford V-8's and Drakes in the Red Circuit of the United Racing Association, running in the Southern California area.

The engine is four-cylinder, two-cam rocker arm, with a cubic inch displacement of 102.5 inches. The bore is three inches, while the stroke is $3\frac{3}{8}$ inches. Its

brake horsepower at 3500 and 5600 rpm is, respectively, 69 and 118. (I believe this to be a somewhat conservative figure, since the engine is capable of 7500 rpm and has not yet been peaked.) Dry weight is 250 pounds, completely equipped.

The mechanite-cast cylinder blocks have a full spherical combustion chamber, with a compression ratio up to 16:1. The crankcase and many other castings are made from No. 356 heat treated aluminum alloy to keep the overall weight as low as possible. The rods are made from fully machined chrome moly forgings. The pistons are high dome Jahns, with pins made from SAE 4620 hard chromed steel.

The connecting rod journal diameter is 2.062 inches, while the width is two inches. The chrome moly crank is supported on three main bearings, with a diameter of 2.093 inches, and widths of $1\frac{1}{2}$ inches for the front main, $1\frac{7}{8}$ inches for the center main and two inches for the rear.

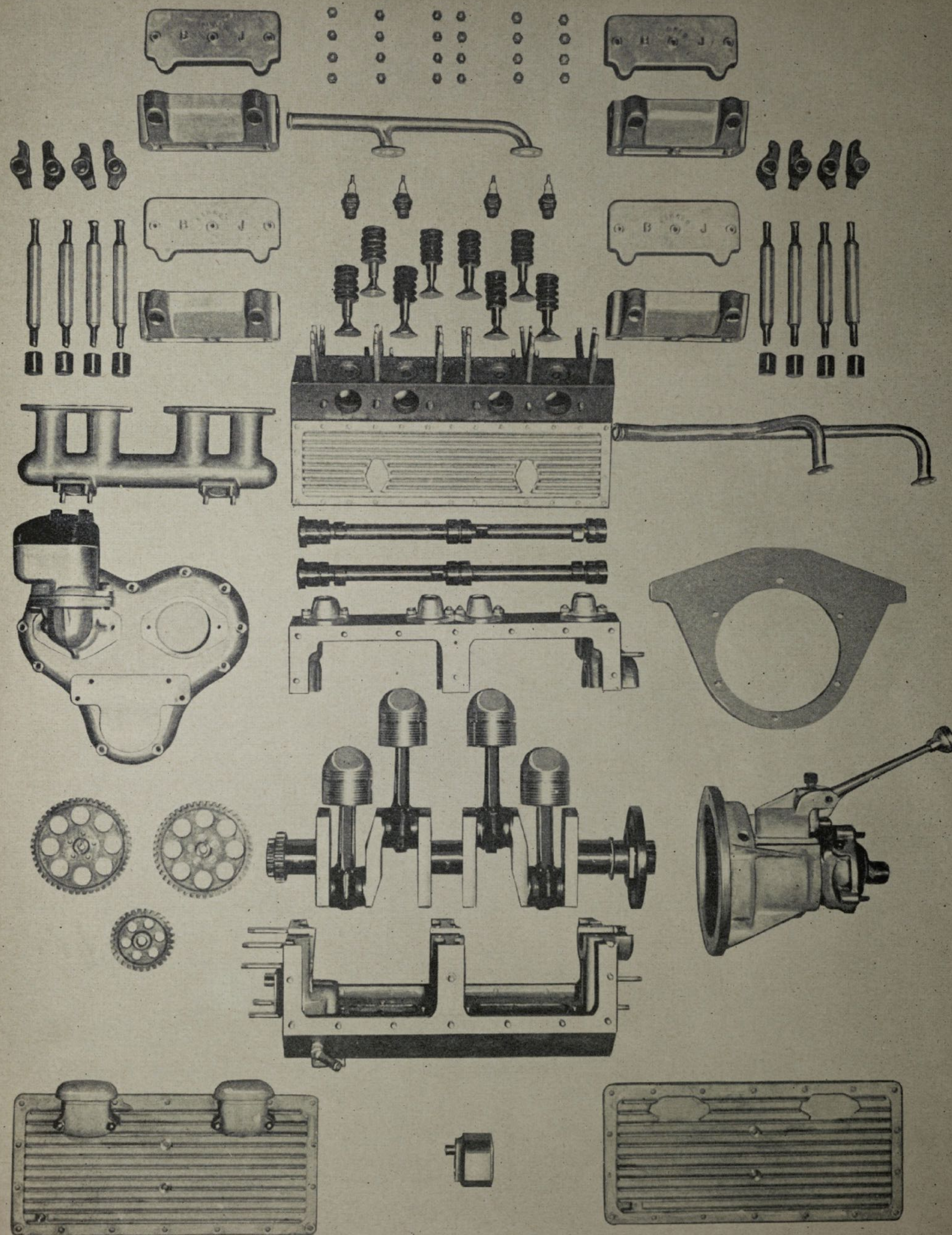
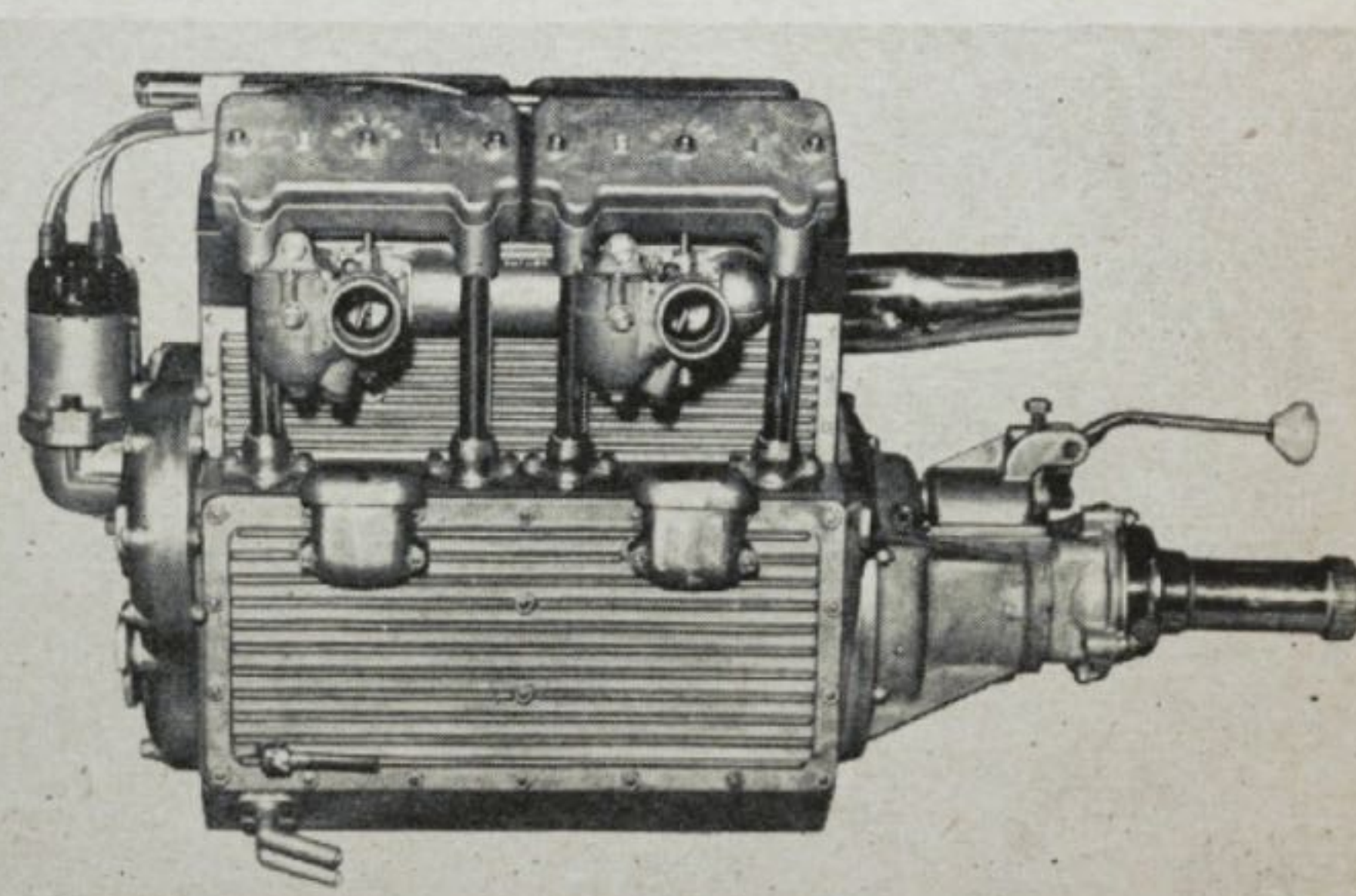
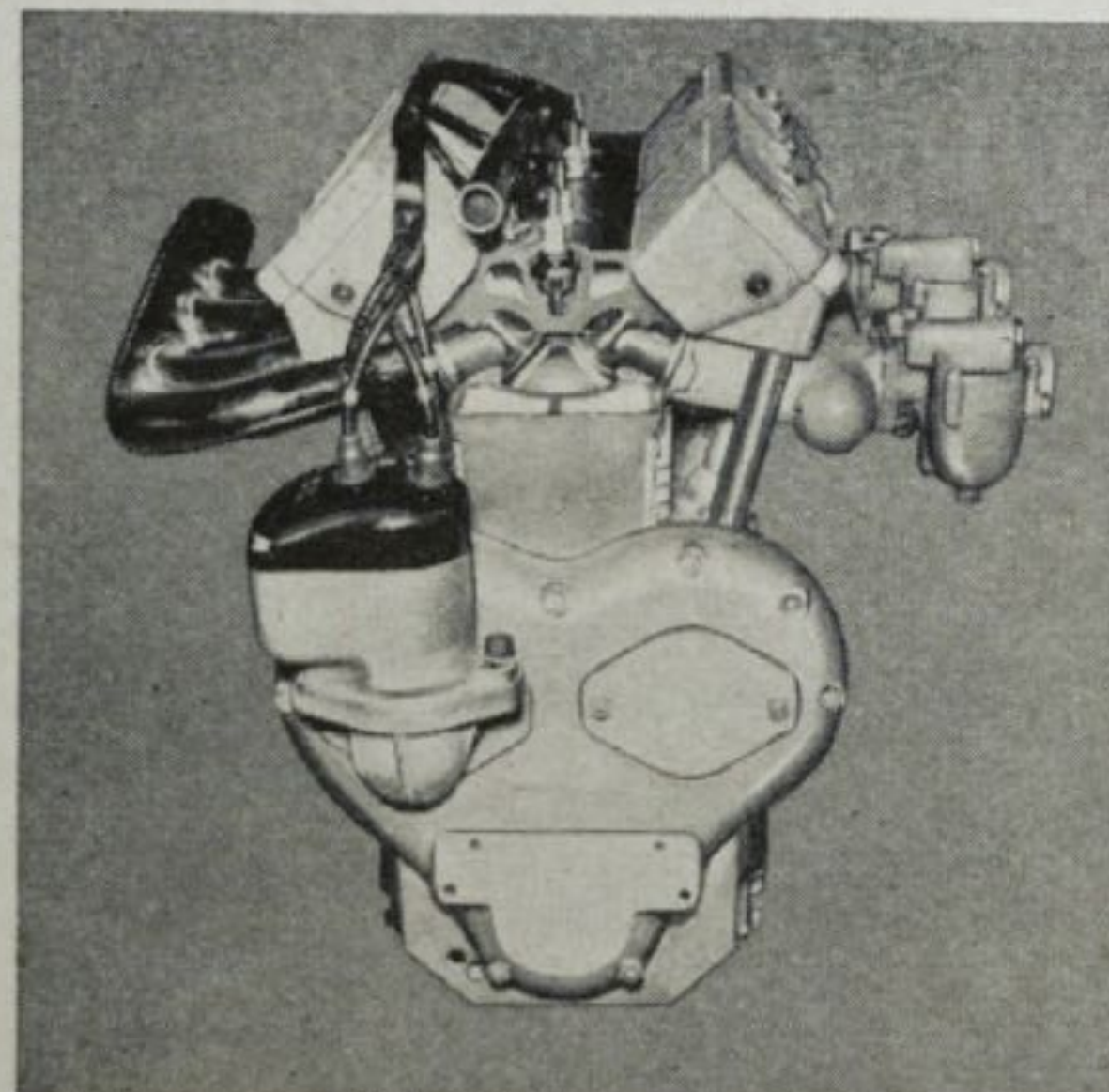
The SAE carburized camshafts are mounted on three bearings. (Continued on page twenty-nine)

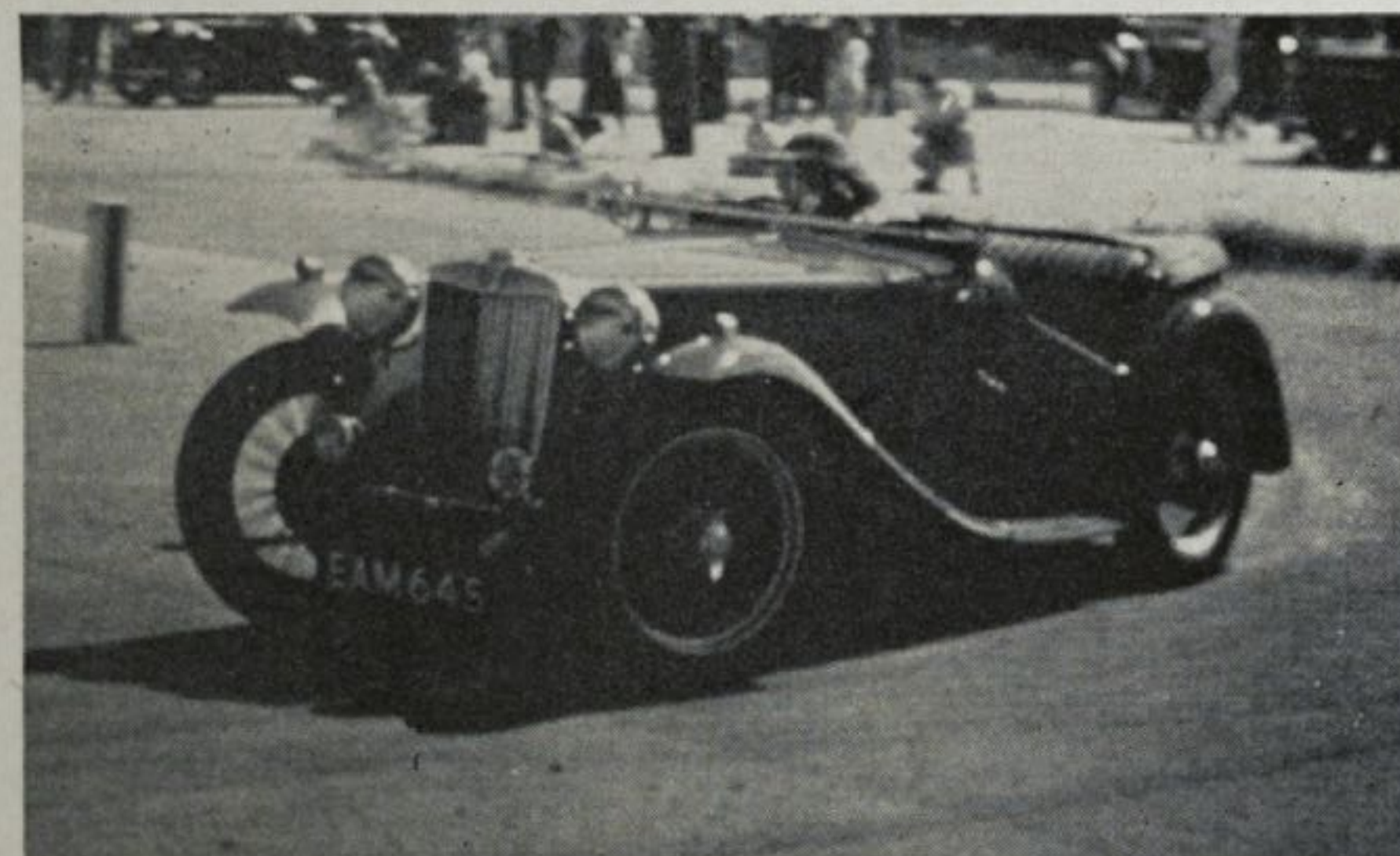
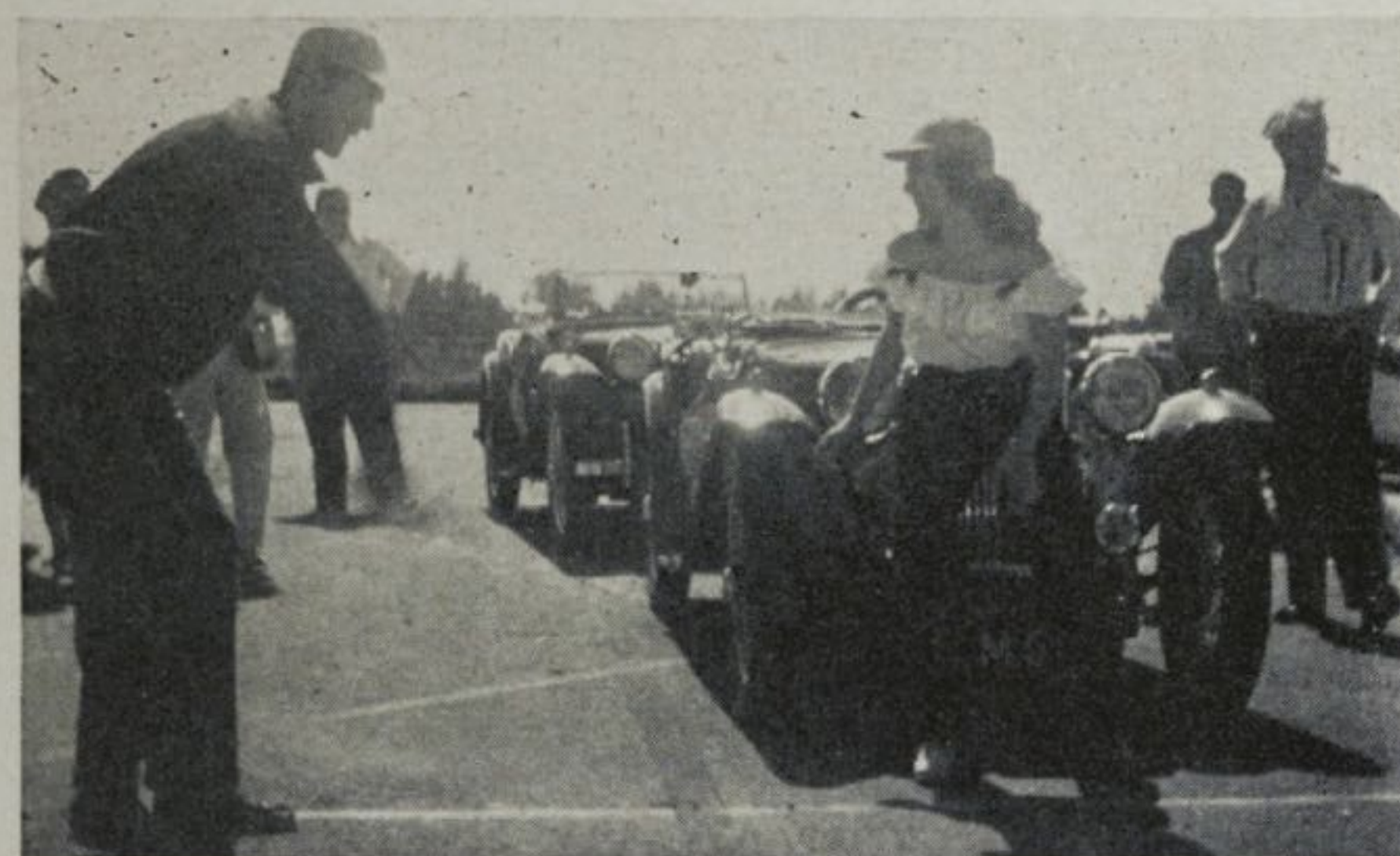
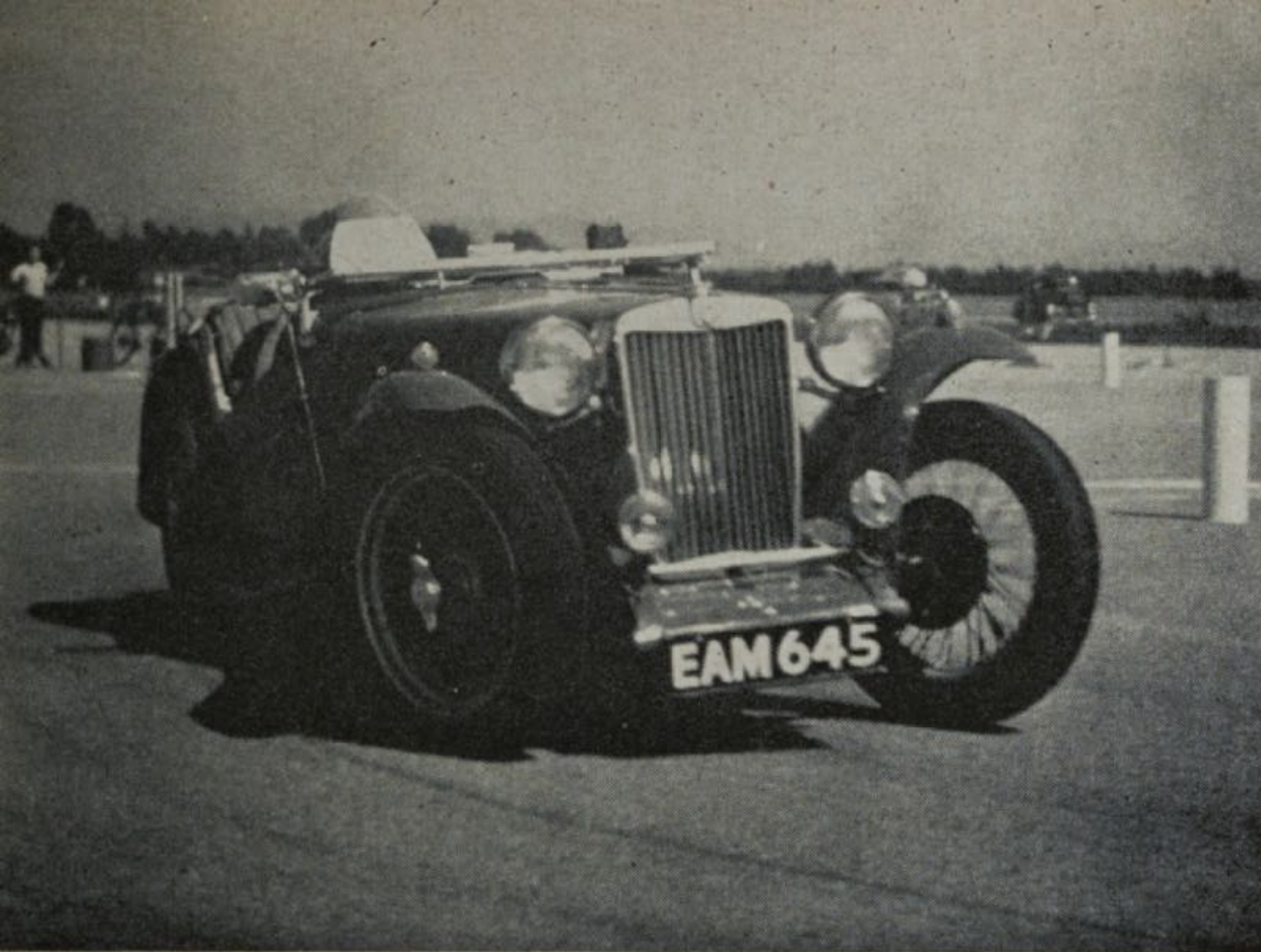
RIGHT—The Barker midget engine completely disassembled.

LOWER LEFT—Front view of engine, showing Wico magneto, with Barker drive. Twin camshafts are mounted high in the block.

BELOW—Left side view of engine shows two Riley carburetors mounted on dual intake manifold and aluminum side covers.

FLOYD WHEELER





A SUNDAY Gymkhana FOR SPORTS CARS

by A. J. B. CRUNDALL

TO PERSONS unfamiliar with the term, gymkhana (also spelled jimkana and gymkana), "A Gymkhana for Sports Cars" probably does not make much sense. For the benefit of these people, an explanation is in order.

A gymkhana, as defined by Webster, is "a meeting for athletic contests, mainly racing." As applied to sports cars, it is usually a trial over a set course to determine driving skill. Each contestant drives his car through the course and the one who finishes with the fastest time, without disturbing the obstacles or markers, is the winner. Points are taken away for knocking down markers, so the event is one that takes good handling as well as speed.

An event of this type was held recently by the Foreign Car Group, an organization of foreign car enthusiasts in and around Los Angeles. This group consists of about 60 active members, who own various makes of foreign cars—Jaguars, a Le Mans-Singer, Talbots, Renaults, a Morris Minor, a Rolls-Royce, a Lagonda, a Healey, an Aston-Martin, and MG's, which are in the majority.

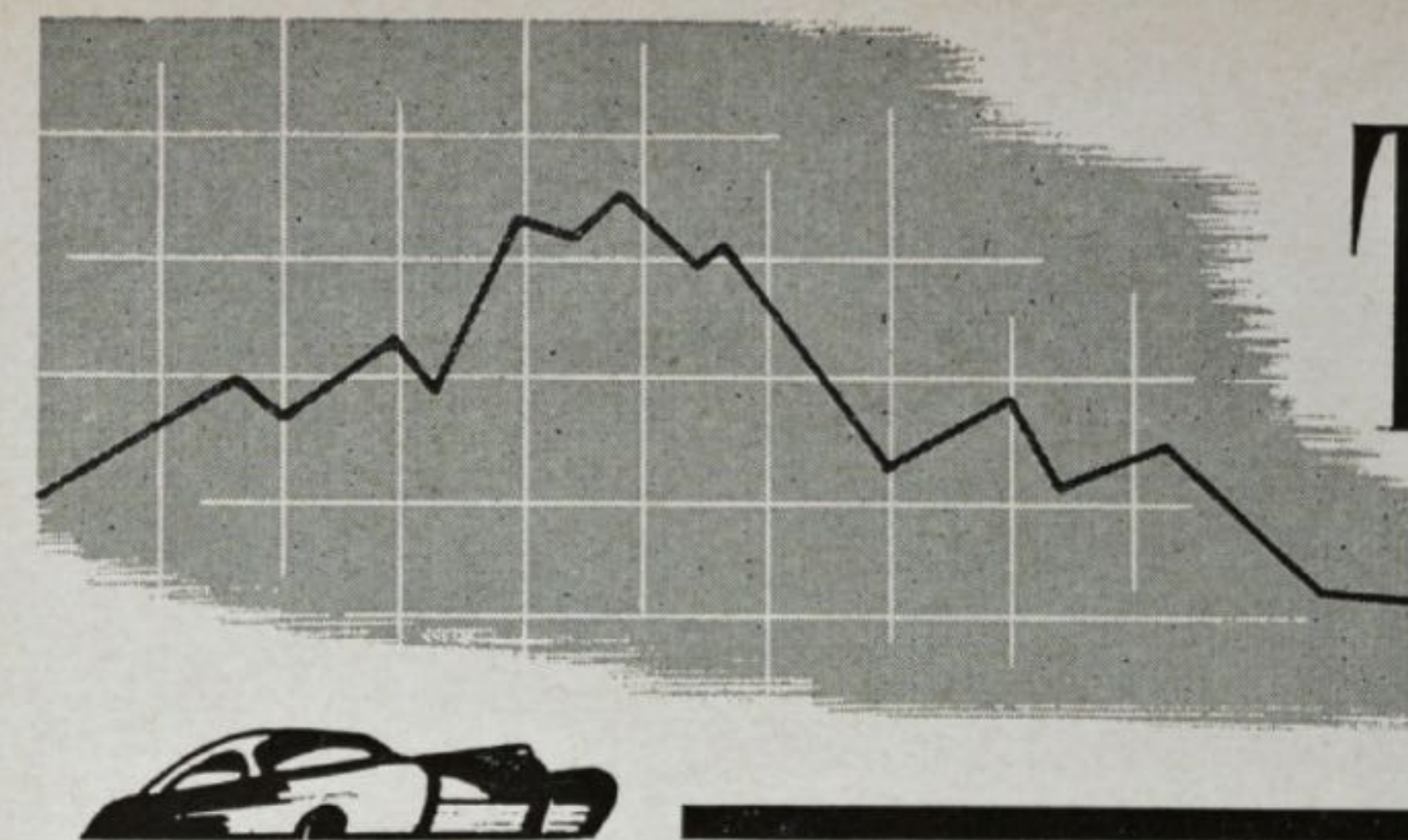
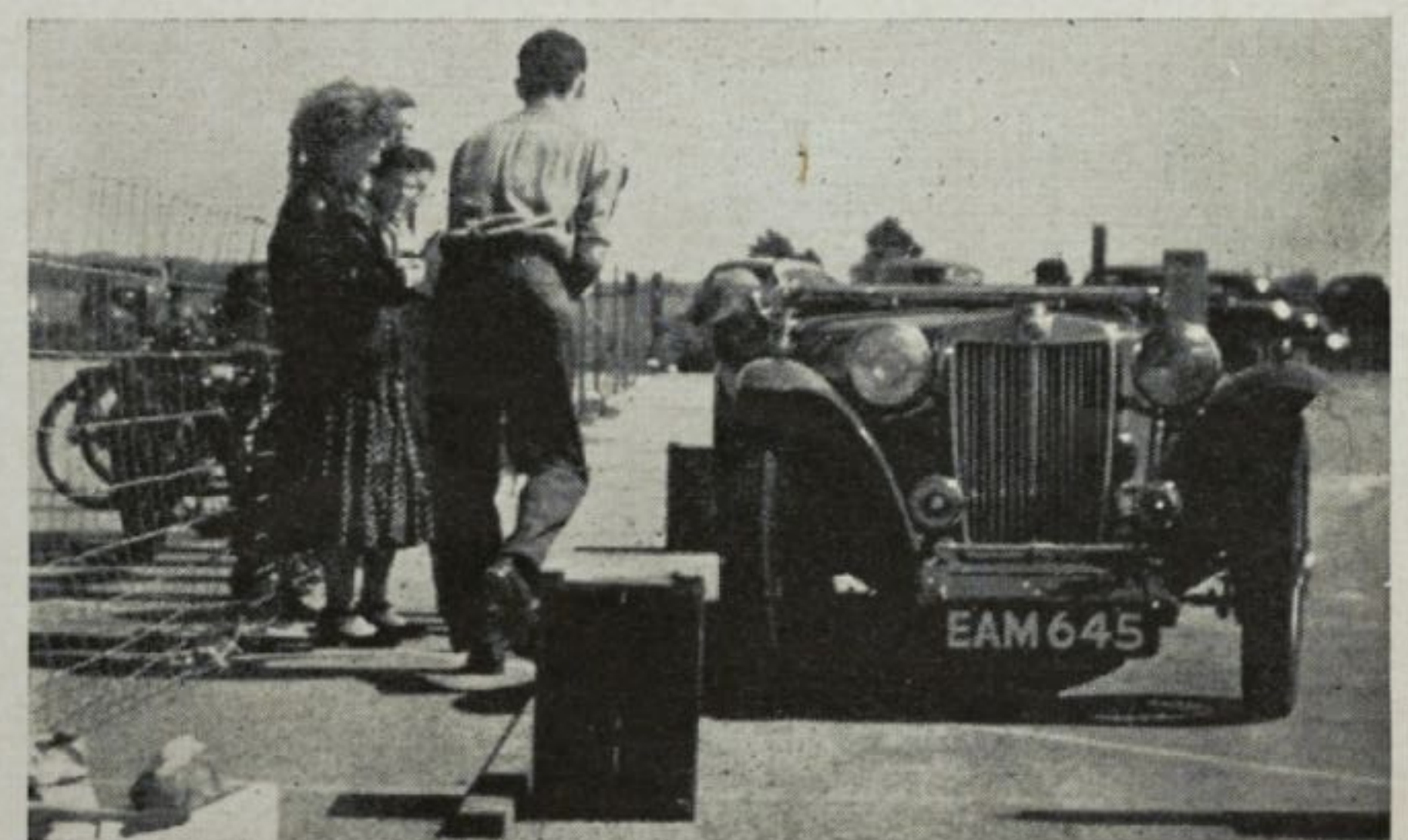
The gymkhana held by this group climaxed a reliability run to Oxnard, a coastal town some 60 miles northwest of Los Angeles. On this run, unlike the usual reliability run held by this group, there were no check stations. Instead, each driver checked himself between points against the predetermined average.

After all members arrived in Oxnard, they drove out to the Oxnard Airport where they set up the course for the gymkhana. There were two divisions participating—the men's and women's. At the start of the course the contestant stands in front of his car. When the starter drops his flag, the contestant runs around to the side of his car, jumps in, starts the car and is on his way.

The first test is driving the car into a close area, marked by flags or posts. After he drives in, the contestant backs out, and, in reverse, must make a tight left turn. From here the driver makes a short "S" turn, swings around to the right at a high speed and must then make a very sharp left turn. This left turn was the most difficult in the course.

After making the left turn, markers are set in such a position that the driver must make a complete circle. Upon com-

(Continued on page twenty-six)



TRENDS

AUTOMATIC
IN DESIGN • TRANSMISSIONS

by MARVIN K. WALLACH

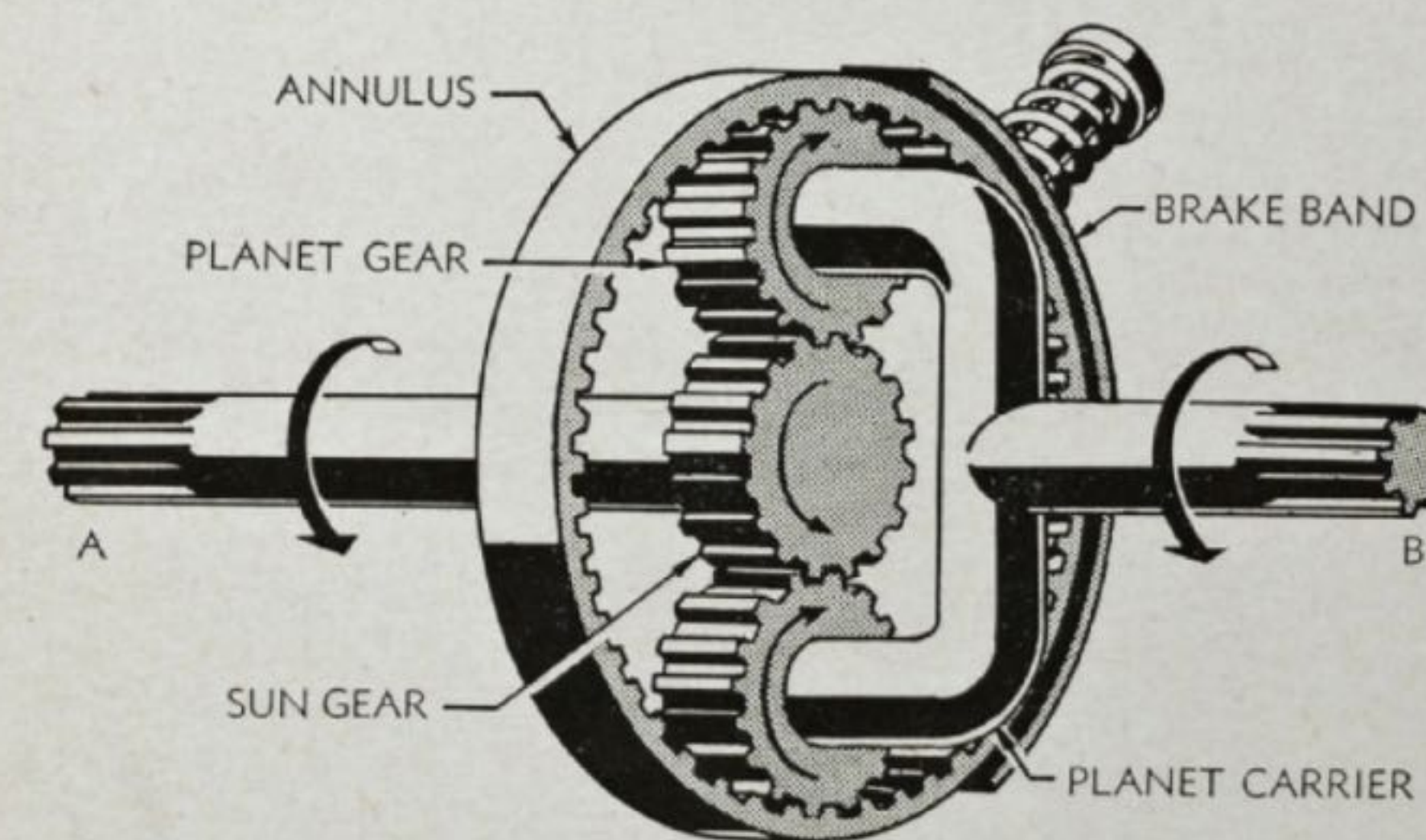
WITH THE apparent trend of automobile operation pointing toward simplicity, car manufacturers are turning toward automatic transmissions to further this aim. The public reaction has been one of interest and questioning—interest in the unit's operation, and questioning the feasibility of its design.

Actually this trend toward design simplicity is not new, as witness the Sturtevant transmission of 1904, which was one of the first known automatic units. It consisted of two automatic friction clutches—one clutch which engaged at low speed, while the other engaged at a higher speed and gave direct drive by clutching the main shaft to the crankshaft.

Before the introduction of the Sturtevant and since that time, many transmission designs have come and gone. Some of the units are of historical value only, but, in their day, were the answer to the difficult problem of keeping the hand and foot controls as simple as possible.

Belt Drive

As introduced on the 1886 Daimler, the belt drive provided a two-pedal control, having road and hill climb ratios. The engine was mounted transversely in the frame and had two pulleys mounted on one end of the crankshaft. Two pulleys, of different diameters, were bolted to the left rear wheel, while two loose belts connected them to engine. Both



REX BURNETTE

belts ran over idlers that could be raised or lowered.

By lifting the appropriate idler pulley, the belt could be tightened to engage the drive. No reverse was provided. The belt drive was in vogue until 1895, when the sliding gear transmission superseded it, and, by 1905, it was obsolete.

Sliding Gear Transmission

The French firm of Panhard-Levassor began manufacture of the Daimler in 1890 and made some radical changes in the design. Previous to its inception, automobiles had transmissions adapted from steam wagons and bicycles, but in the Panhard a new concept was introduced. This unit consisted of gears sliding in and out of mesh to vary the torque

and road speeds. Its adaption has since become almost universal and today, with detail improvements, is used in the conventional gear box.

The controls were hand-operated, with gear selection being progressive, it being necessary to shift through all gears. Reverse on later models was built into the aluminum gear box on a third shaft (still employed) which eliminated the external differential cross-shaft. Final drive was by chain to the rear axle.

The Cannstadt-Daimler was a German improvement of the original design. This transmission, designed by Wilhelm Maybach, was non-progressive, allowing any gear to be selected without shifting from low and on through the box ratios.

Electric Drives

At one time, the electric transmissions were hailed as the answer to the shifting problem. Not to be confused with battery-powered cars, these vehicles had gasoline engines hooked to generators large enough to light a house, electric motors and other power station equipment. The S.G.V. of 1913 used a system of this type with six push buttons on the left spoke of the steering wheel to select four forward speeds, neutral, and reverse. The cars never attained any degree of popularity because of their heaviness, their expense, and the maze of electric wiring.

Planetary and Epicycle

Planetary, or epicycle, gear trains are frequently used in modern gear boxes, for their use offers advantages over the sliding gear designs. They are always in mesh, wear very slightly, and lose a minimum through gear friction.

This type of gear train, however, is not new. Ptolemy, the astronomer, in 200 A.D., devised the Epicycle to explain the movement of the planets around the earth. (His nomenclature is still used to describe the component parts.) The accompanying illustration shows a simple one-stage unit, with shaft A being bolted to the flywheel and shaft B being connected to the drive shaft. Shaft A rotates counterclockwise, turning the sun gear, which rotates the two planet gears. The planet

(Continued on page twenty-two)

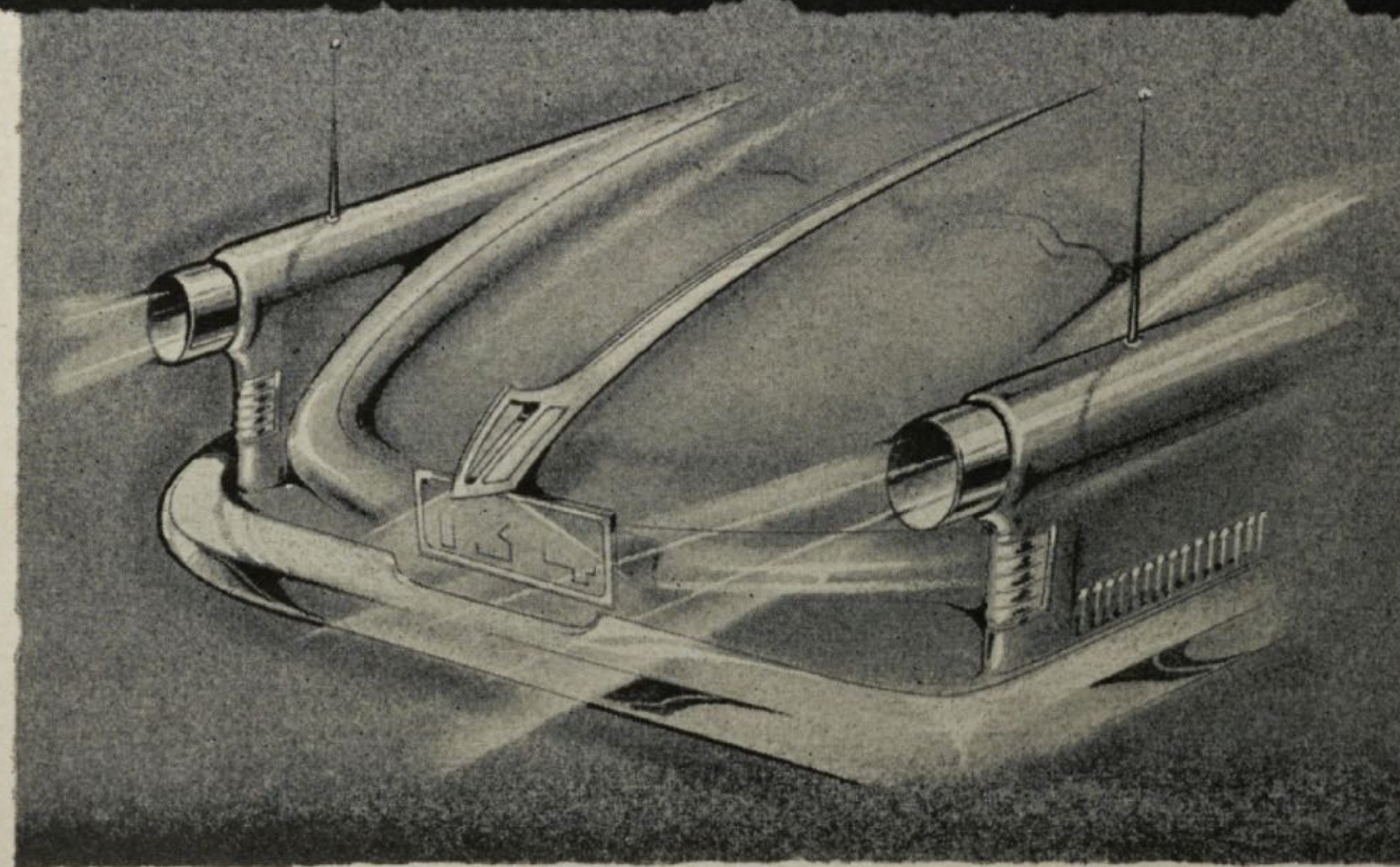
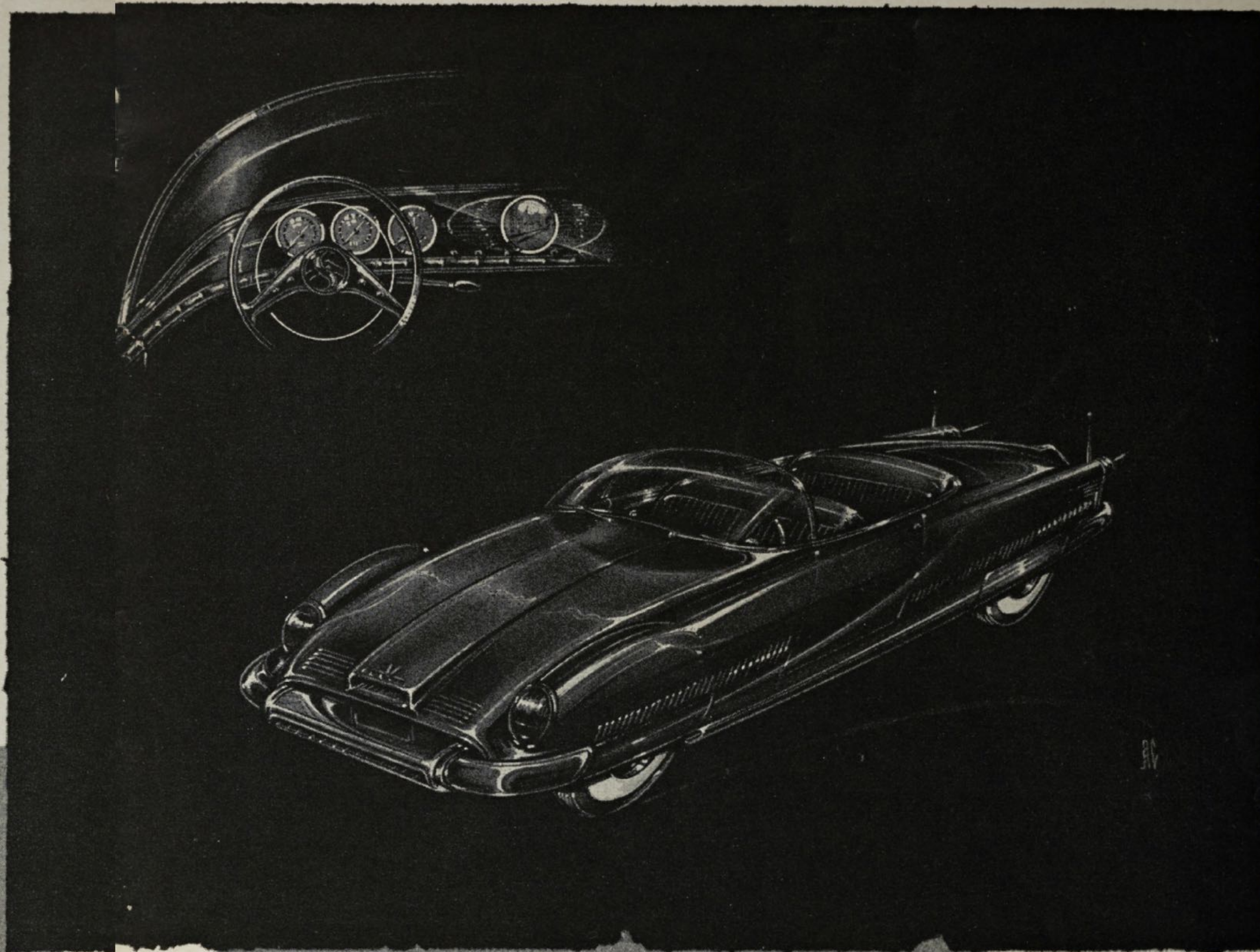
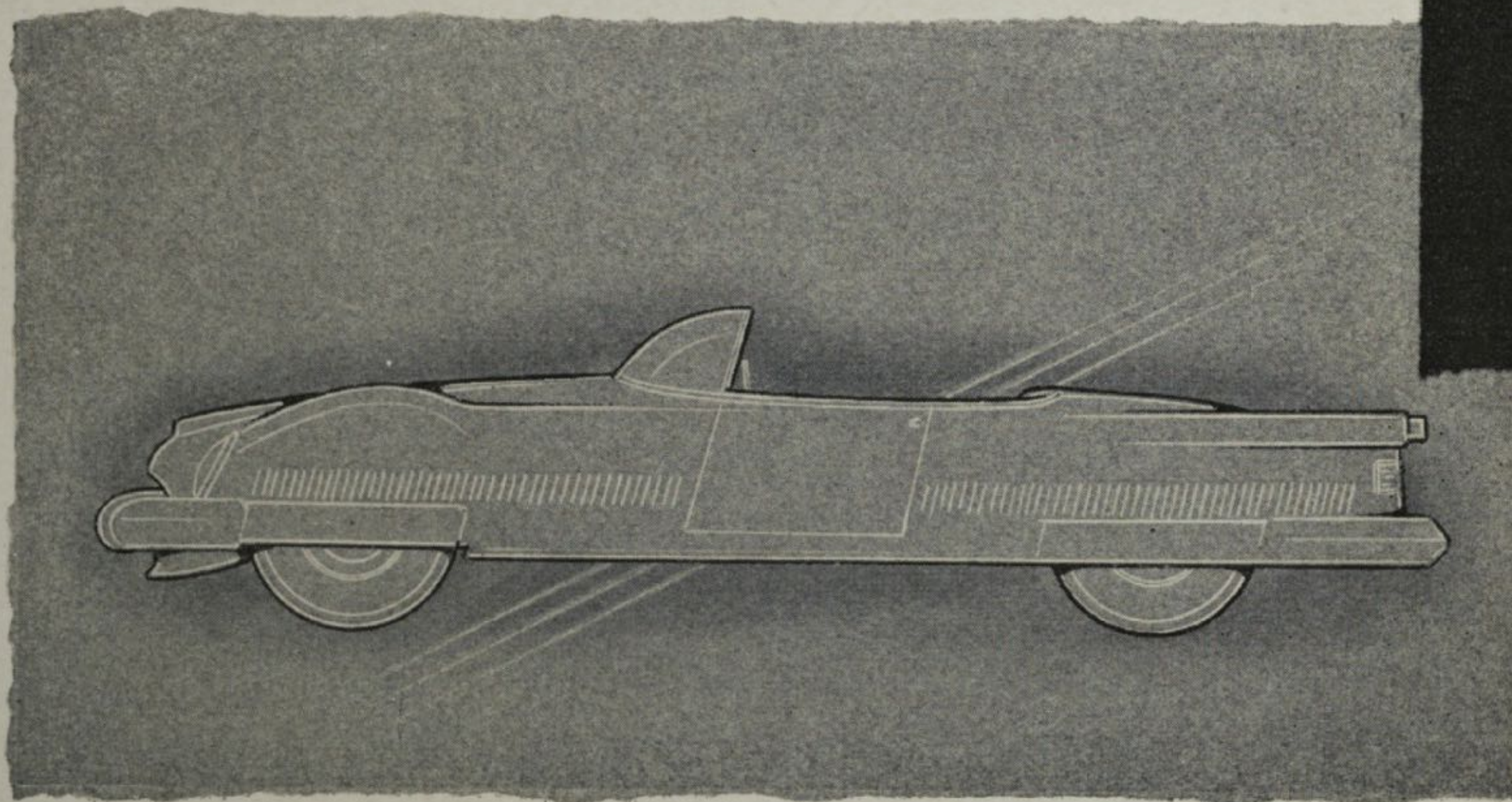
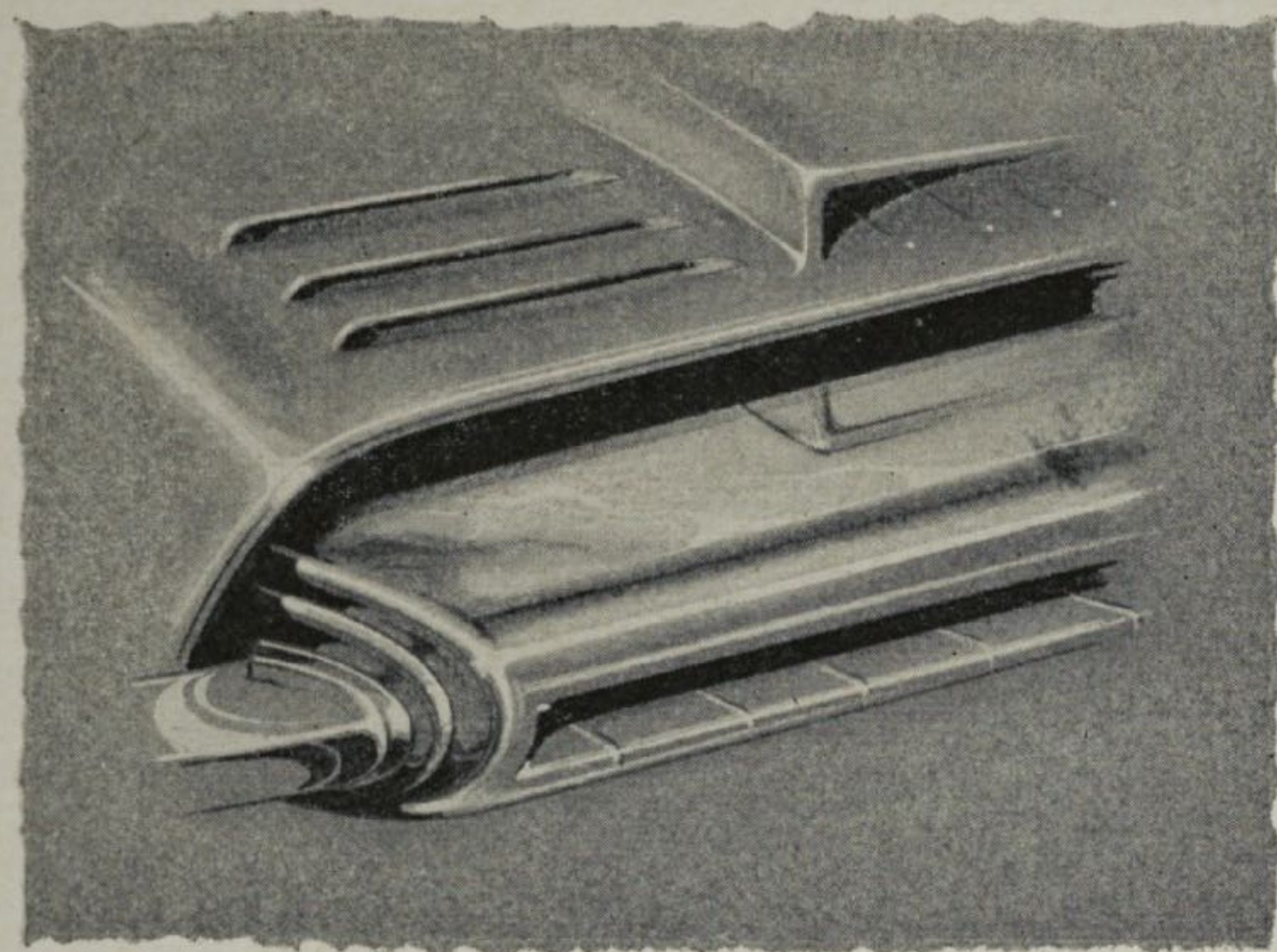
TREND OF THE FUTURE

On the following two pages, Colonel Alexis de Sakhnoffsky presents his version of the coming trend in automobile styling. Many readers will recall his futuristic designs presented several years ago in *ESQUIRE* magazine.

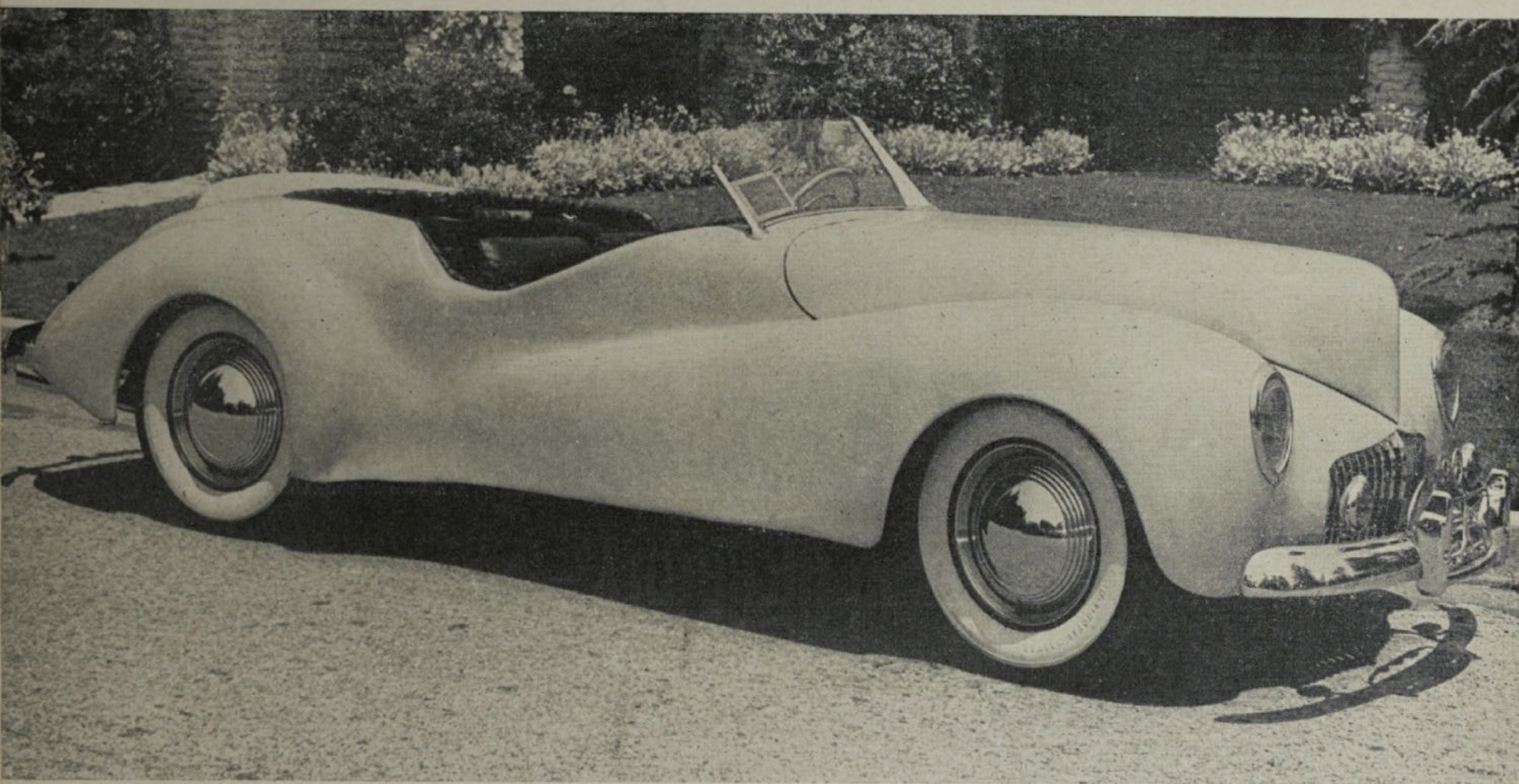
Some of the more important features of this design are the following: a "bubble" windshield, a rear deck handle integral with license plate light, a massively-designed bumper combined with air scoop, and "psychological styling" (suggesting speed) consisting of louvres and twin exhausts.

The instrument panel is composed of a large speedometer, a tachometer, and a matching round dial for other standard instruments. The round buttons on the steering wheel spokes are blinker lights to indicate that gas or oil supply is low. Center of the panel has a combined radio grill and round television screen.

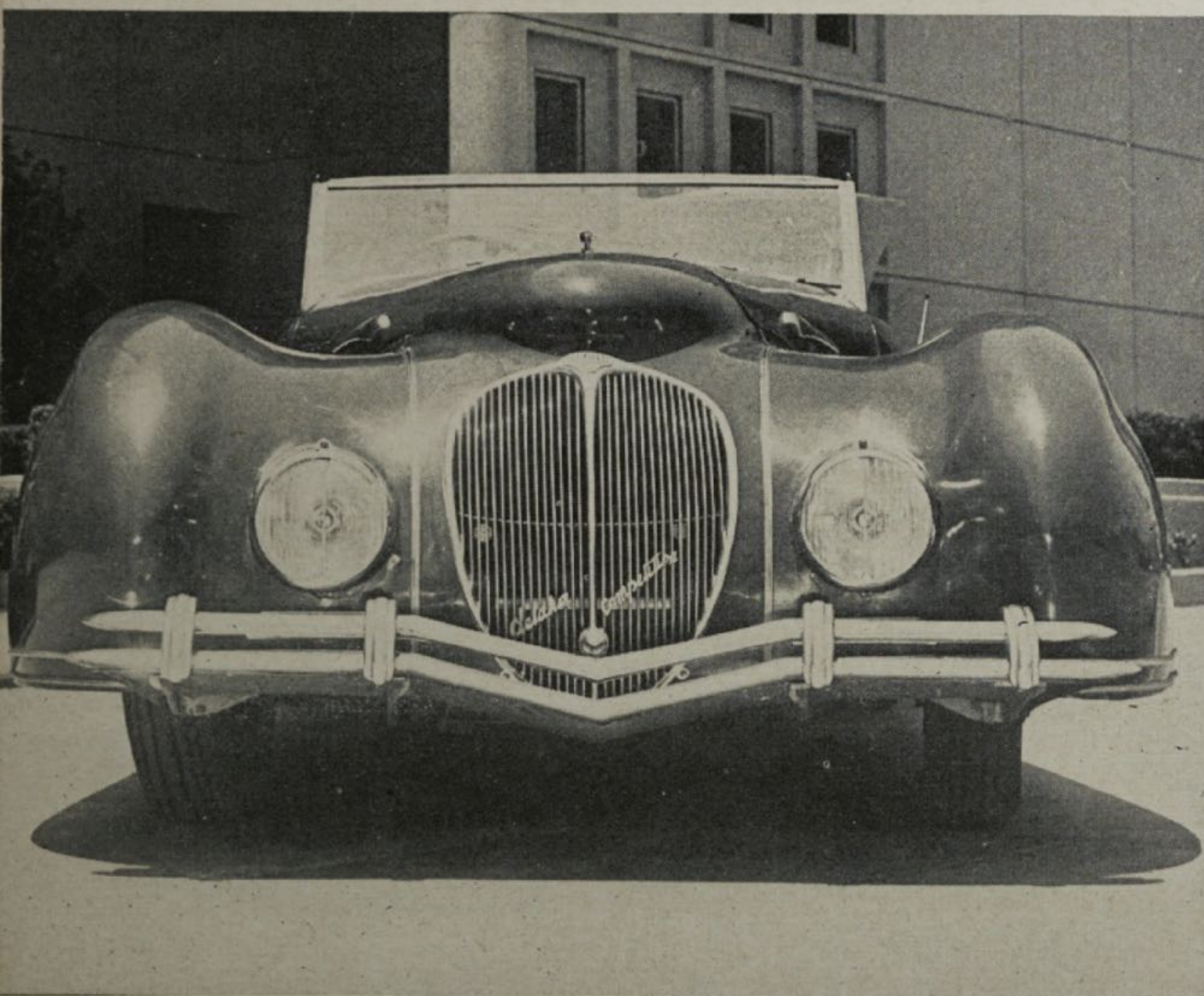
● *Trend of the* future



DRAWINGS BY COLONEL ALEXIS DE SAKHNOFFSKY

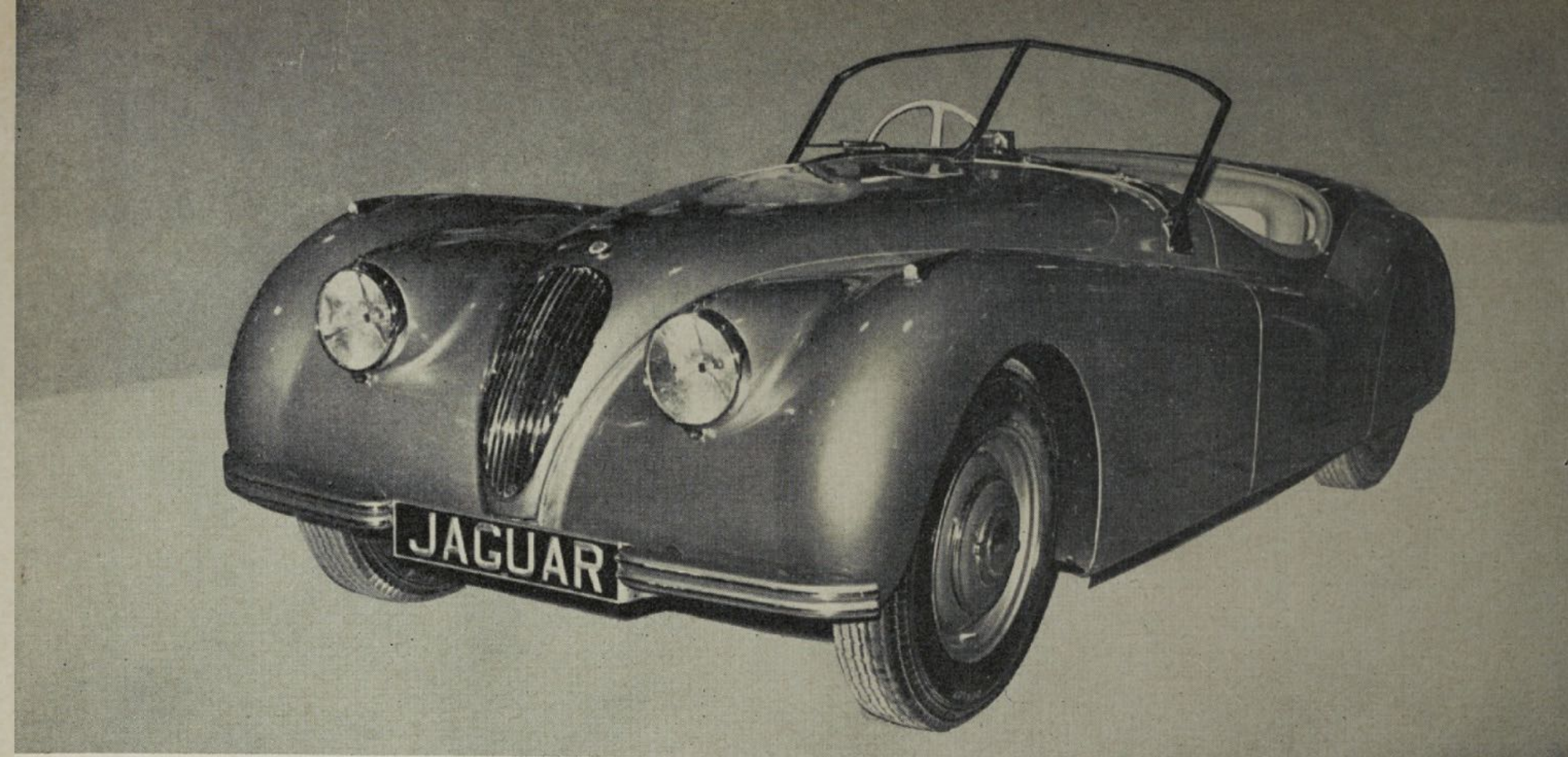


R. E. PETERSEN AND FLOYD WHEELER



CUSTOM SPEEDSTER—A special built custom car, designed and built by C. H. Peterson of North Hollywood, California at a cost of \$3500 over a period of 18 months. The car is registered as a 1940 Ford-Willys Custom Speedster and uses a '40 Willys frame and a full-race '36 Ford V-8 engine. The crown of the hood is from a '41 Ford, while the crowns of the front fenders are from a '40 Willys. The rest of the body, outside of the '46 DeSoto grille, and '42 Ford bumpers, was all hand formed. The interior is leather-upholstered and seats 4. No doors are used on this custom speedster, the sides being cut away for easier entry. When the red canvas top is placed on the car, it is raised back electrically to allow entry into the car. The top is then lowered.

DELAHAYE—This popular French car is a Paris Salon model built in 1946. It is powered by a 3.3 litre (201.4 cubic inch) competition six-cylinder engine. Using three Solex carburetors, the engine develops 140 bhp, while the car has a top speed of close to 110 mph. The transmission in this car consists of a Cotal electromagnetic gear box with a frictional fluid clutch, and has an efficiency of 99.5 per cent in fourth gear. The Cotal gearbox draws 2.5 amperes to energize the electromagnets (about equal to that for a headlight bulb). In first, second, and third gears, the box has an efficiency of 96.5 per cent. This type of gear box was originally used without a clutch.

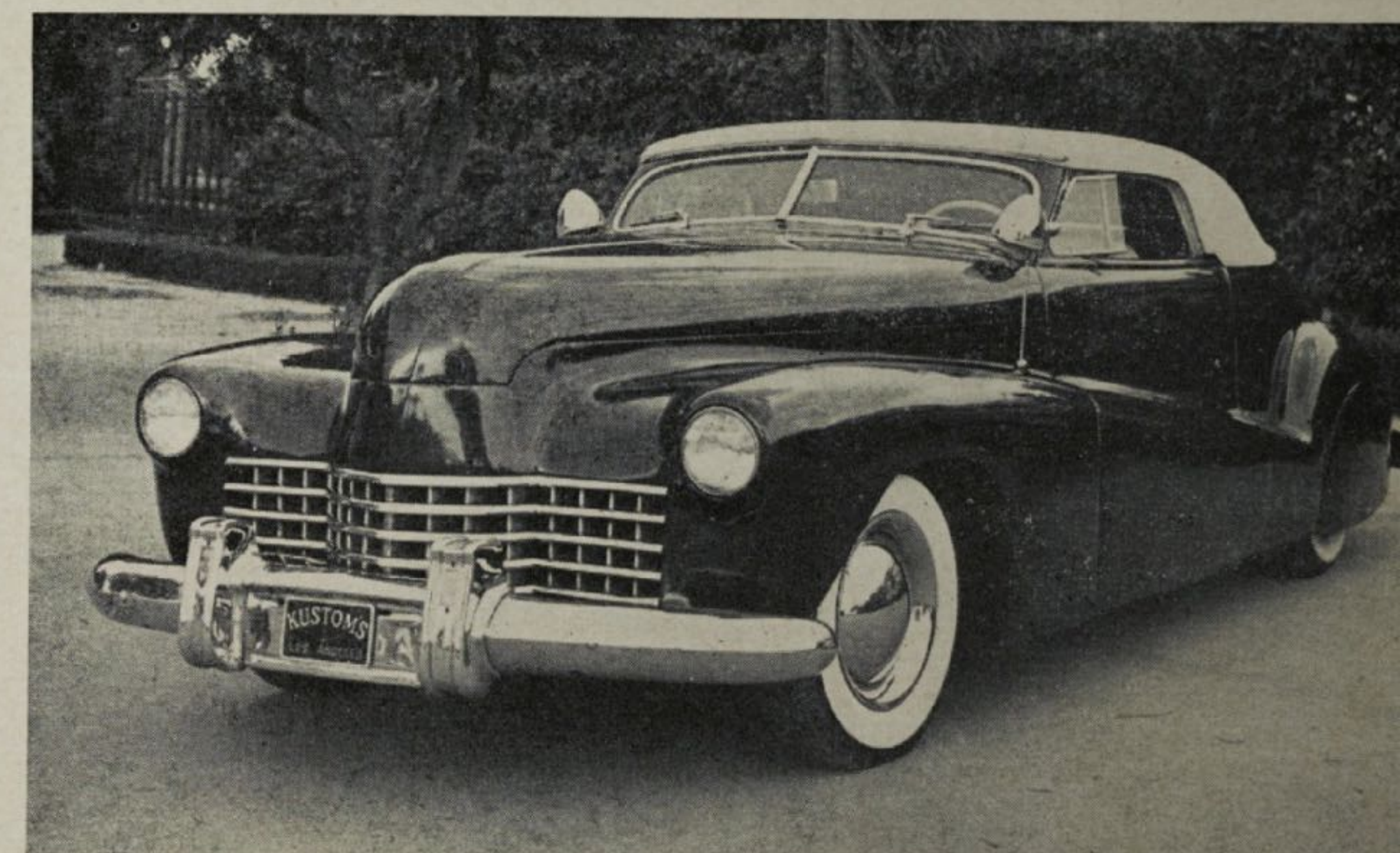


COURTESY OF INTERNATIONAL MOTORS

JAGUAR SPORTS CAR—New Jaguar XK 120 Super Sports Model, of 3½ litre capacity (213.6 cubic inches), which in May of this year broke the flying mile record for production cars. This car, powered by a six-cylinder, twin overhead camshaft Jaguar engine, develops 160 bhp at 5000 rpm. The new record of 132.6 mph was observed and recorded by the Royal Auto Club of Belgium on the Jabbeke Motor Road. This speed is the highest speed ever recorded by an unsupercharged normal production model. Another version of this car, the XK100, uses a 2 litre (122 cubic inch) engine, and when placed in a race car, set the 2 litre record of 176 mph.

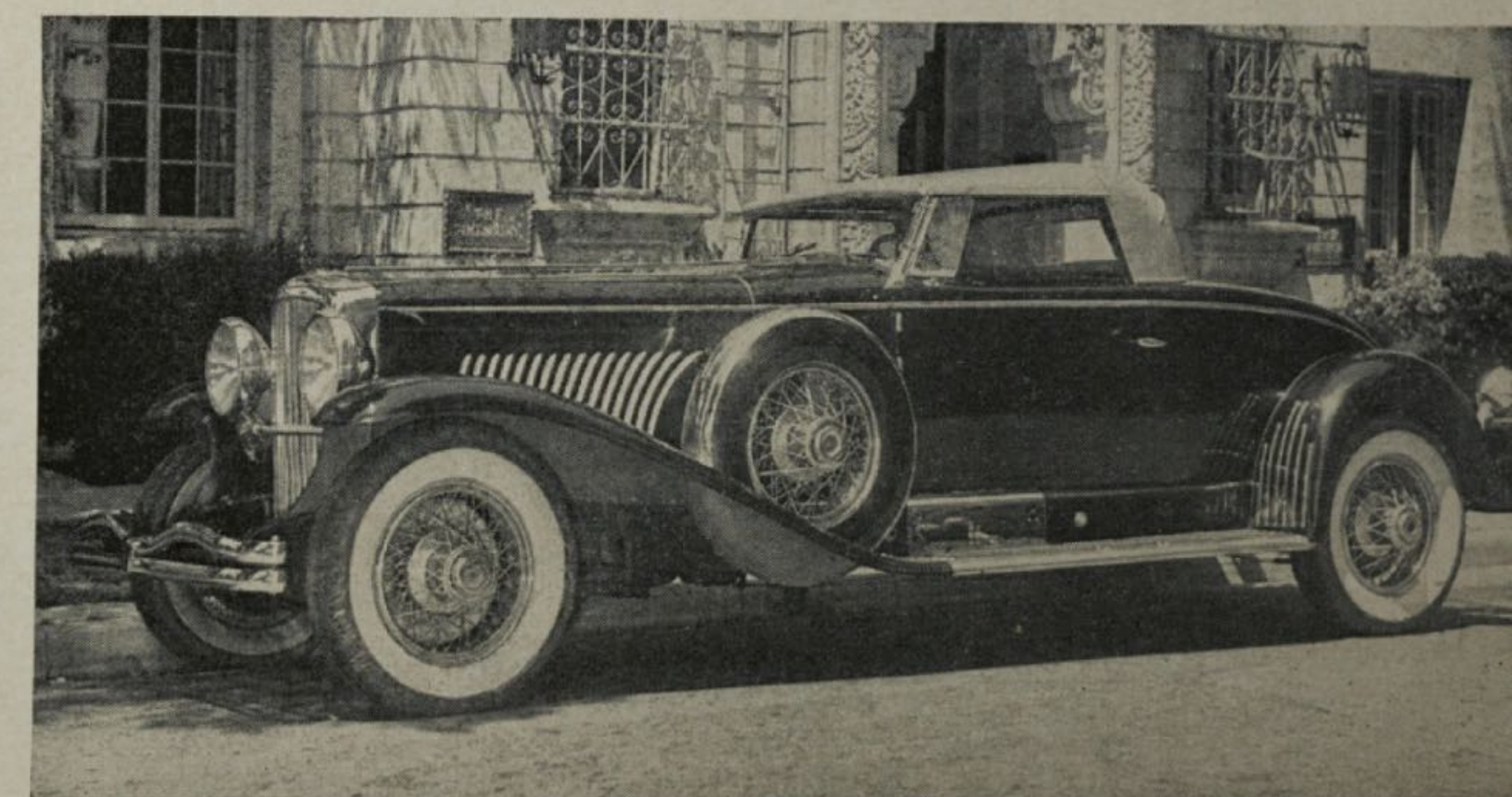
1941 BUICK—This Buick is now hardly recognizable as such, since it has been channeled and otherwise customized. The height of the car is only 4 feet 10 inches. Powered by a 225 hp Roadmaster Buick engine, the car features a cocktail lounge-type rear seat, a grille made from Cadillac grille bars, Oldsmobile bumpers and tail lights and parking lights in the bumper guards. The headlights are molded into the fenders, which are sealed into the body.

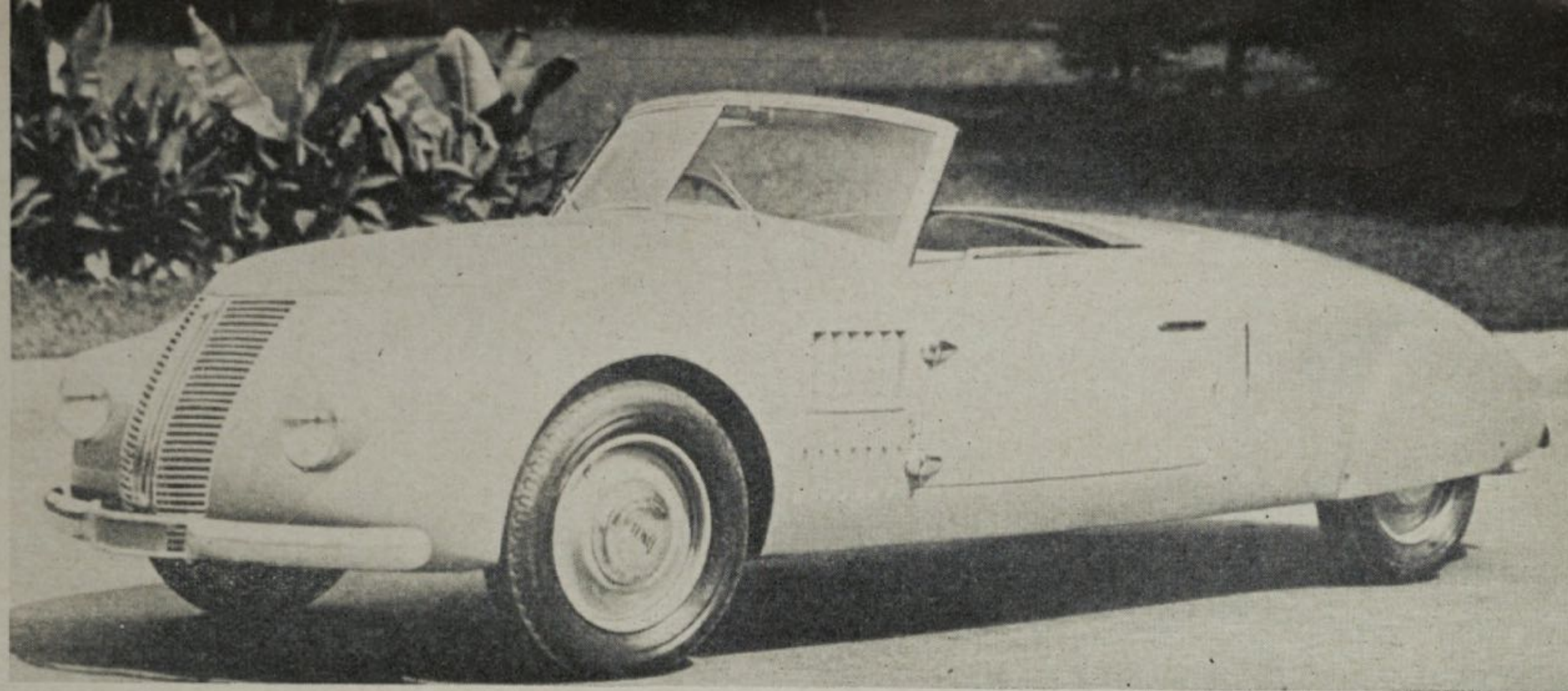
1930 DUESENBERG—This sleek old-timer has a wheelbase of 142½ inches and weighs 5250 pounds. The long hood houses an eight-cylinder, double overhead cam engine of 420 cubic inch displacement, that develops 265 horsepower at 4200 rpm. Originally, the chassis (including fenders) running boards, hood, dash, and tires) sold for \$9500. The present body was made by Murphy of Pasadena, California. The car was recently delivered to Dr. Glenn Harrison of Waukegan, Illinois, by Bob Roberts of Hollywood. The crankshaft in this car was chrome-nickle manganese and had cartridges in the checks filled with mercury to act as dynamic balancers. The shaft was then balanced statically to 1/100 oz. Shaft was then dynamically balanced.



COURTESY OF GEORGE BARRIS

FLOYD WHEELER



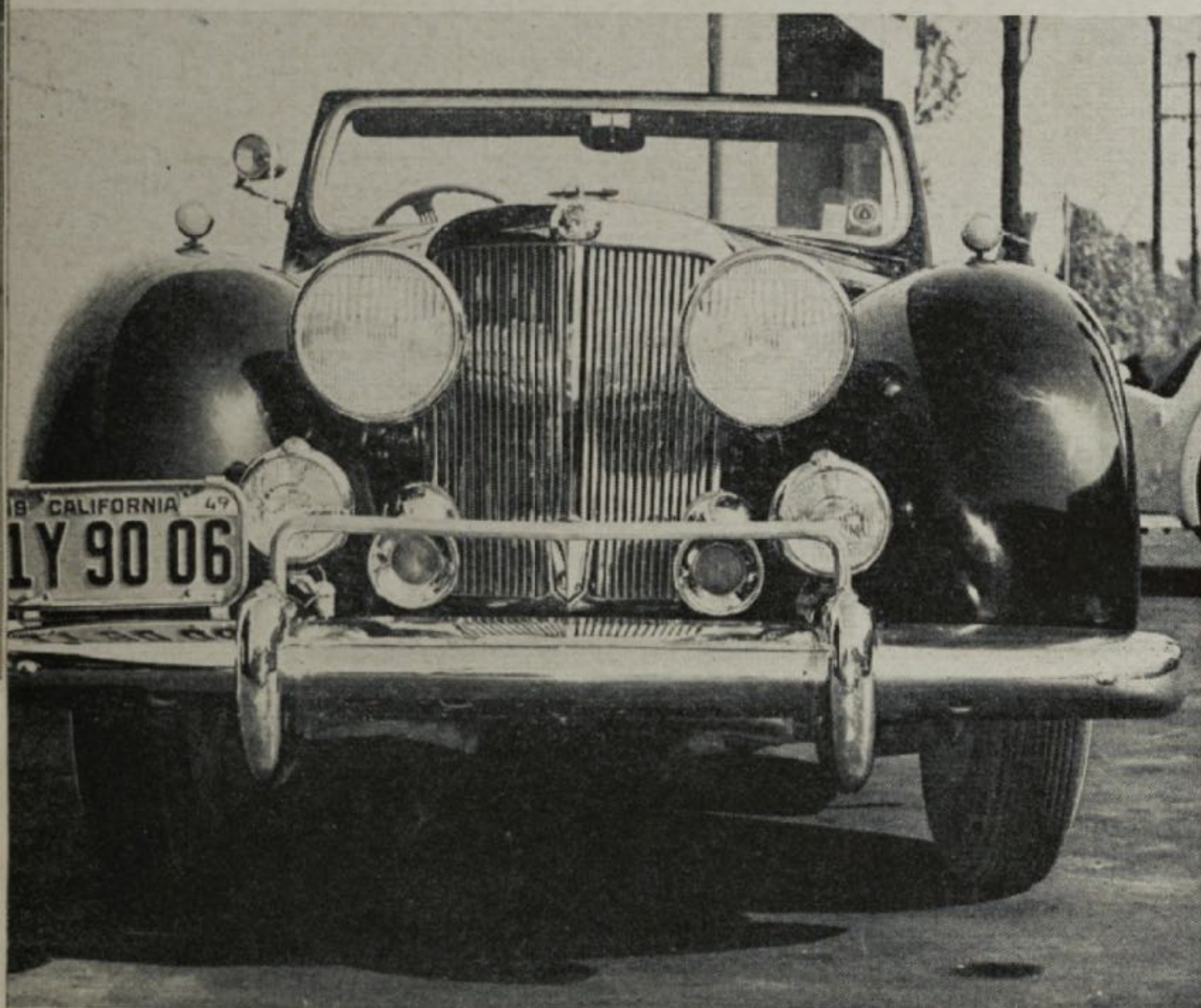


COURTESY OF MARVIN K. WALLACH

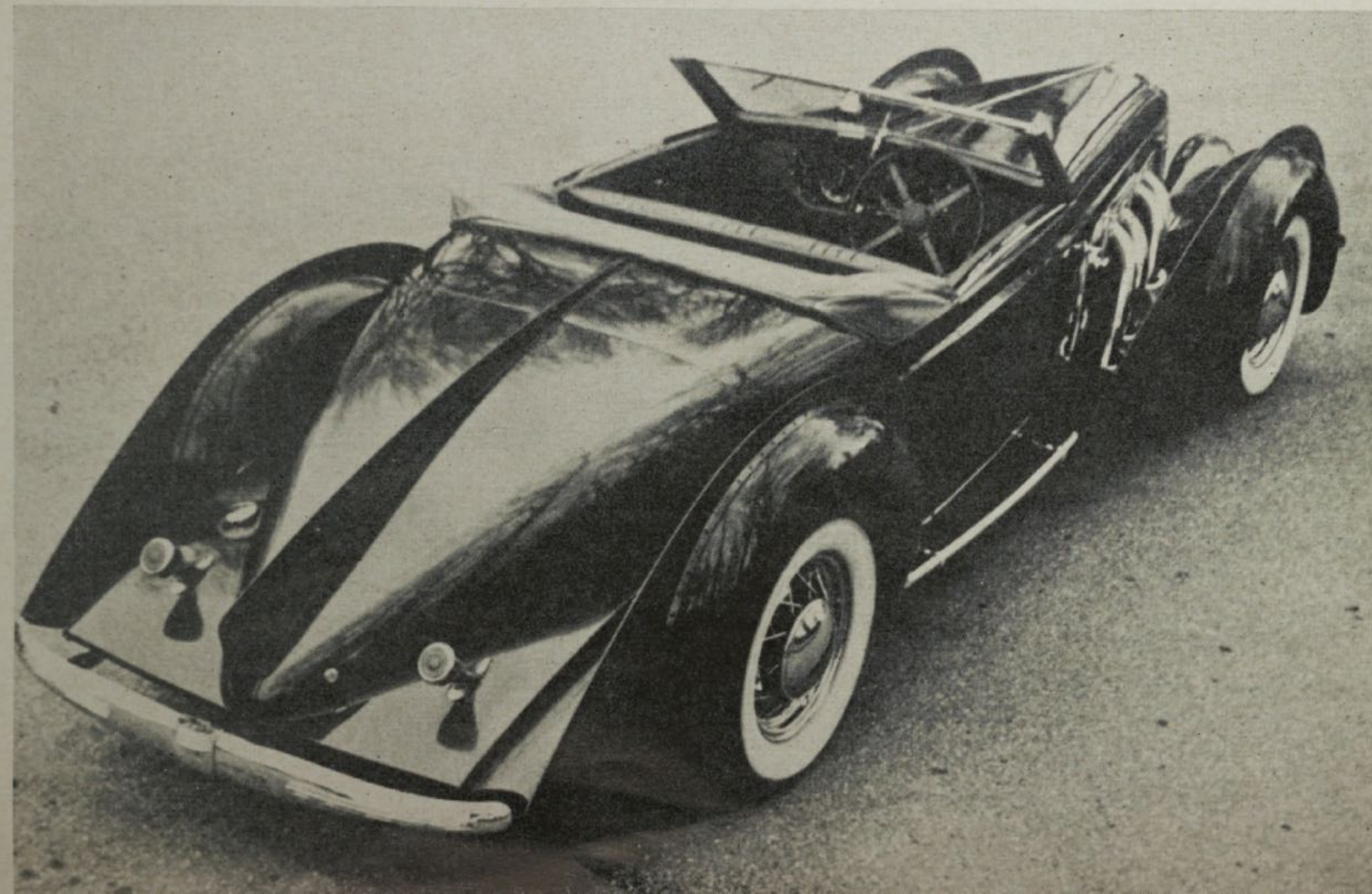
LANCIA APRILIA — This small car, with body by Pinin Farina, is of Italian origin, produced in 1939. It is powered by a 1500 cc (91.5 cubic inch) V-4, overhead valve engine, with the cylinder banks spaced 20 degrees apart. The car features independent front suspension, a disappearing convertible top and flushed door handles.

TRIUMPH—This late model Triumph, with a sports car appearance but lacking the power of one, is equipped with a standard Vanguard engine of 1800 cc (109.8 cubic inch capacity). The 1949 models, however, are powered by an engine of 2.1 litre (128.2 cubic inch) capacity and cruise at 70.5 mph, as versus 61.6 mph on this model. Two folding seats are provided in the rear, which are normally in a stowed position. When swung backward, the forward section of the turtleback also lifts forward to form a windbreak for passengers.

DELAGE D8-120—A car which, although not as popular with the coachbuilders as the Delahaye, nevertheless has an excellent reputation for performance. The car is powered by an eight-cylinder engine of 4 litre (244.1 cubic inch) capacity and develops 120 bhp. These cars are not blown.



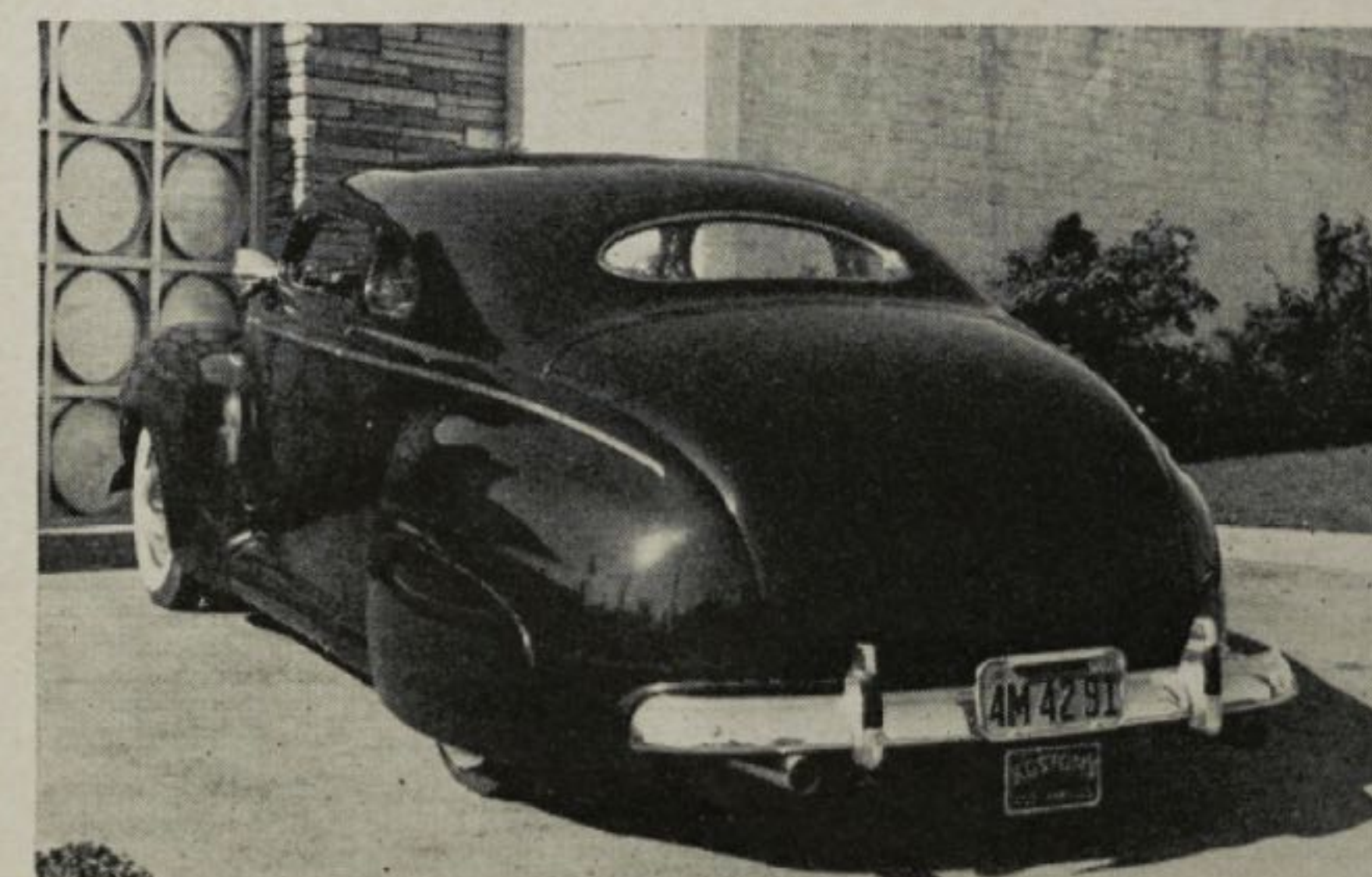
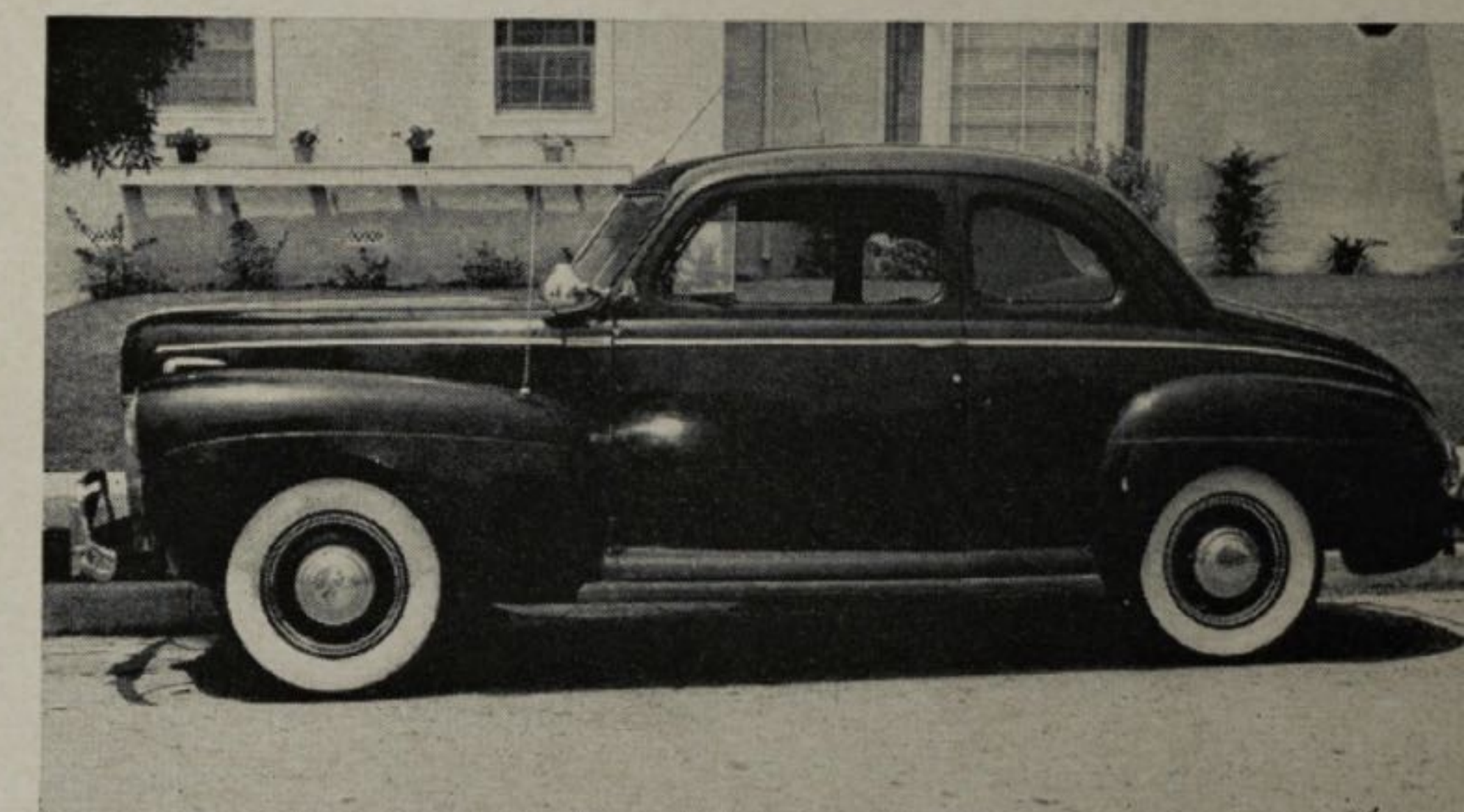
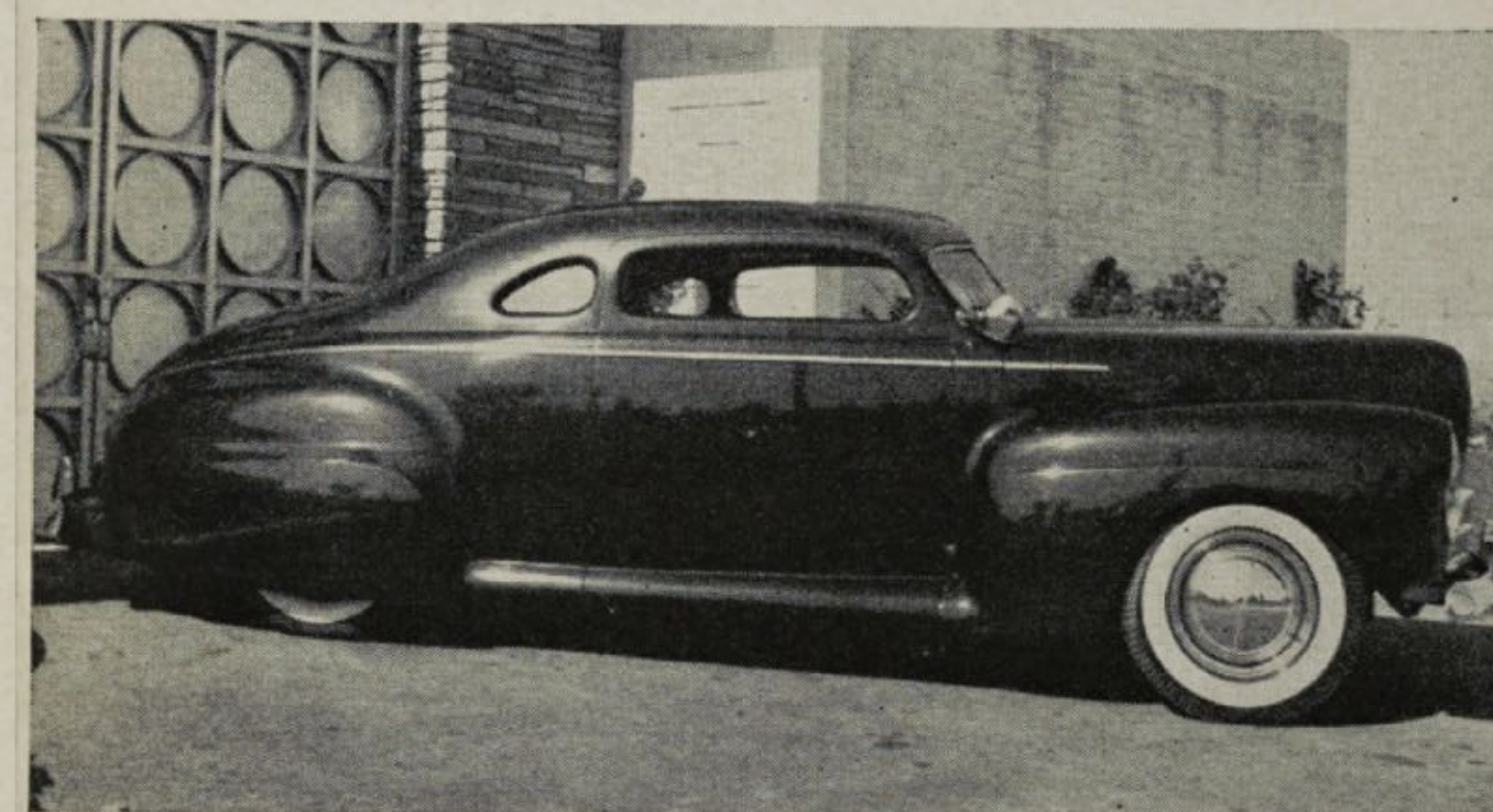
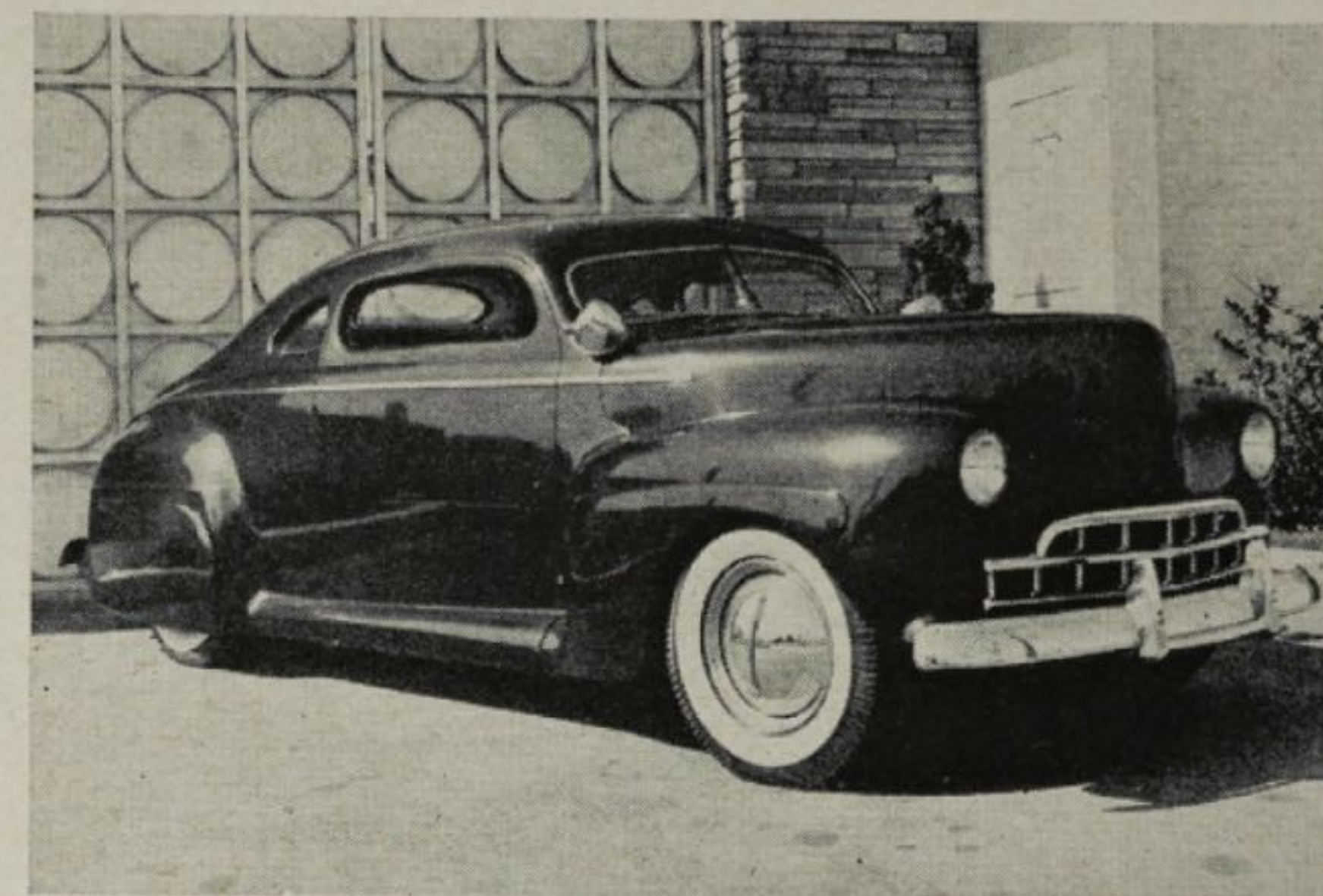
R. E. PETERSEN



COURTESY OF
MARVIN K.
WALLACH

RESTYLING

A 1941 FORD CLUB COUPE



PAT LA NARZ



R. E. PETERSEN

ORIGINALLY, the '41 Ford in the photographs above was like any other production model, but by the clever use of welding torch, power hammer and other sheet metal working tools, the car has evolved into a distinctive custom car. Designed and built by Barris Kustom Shop for Jesse Lopez of Bell, California, the car has been chopped, channeled and sealed from bumper to bumper.

To obtain the overall height of 4 feet 11

inches, 6 1/4 inches were taken out of the top, a dropped front axle was installed, the body was channeled, and the frame was "kicked up" over the rear axle. The car is sealed from bumper to bumper — the fenders, the headlights, the doors, and the running board strip. The fenders have been rolled to clear the tires, with the fender skirt being only four inches from the ground. The grille is from a '48 Cadillac. Plastic tail lights are built

into the rear bumper guards. The doors, hood, and deck lid are operated by electric push-buttons, the power source being a 21-plate battery, with cells separated by glass. Interior trim is all chrome, while the seat upholstery is green and white leather to match the dark green organic body paint. This car is powered by a '41 V-8 three-quarter race engine, with Offenhauser heads and manifold, and a Weber cam.

September 1949

Twenty-one

TRENDS IN DESIGN

(Continued from page fifteen)

carrier does not rotate because of gear and drive shaft resistance. Gear torque is then applied to the annulus. This is, in effect, the neutral position. To turn shaft B, the annulus must be held stationary and then the planet gears and planet carrier can revolve. The annulus is held by a "V" shaped brake band, which reduces shock loading. In effect, it is the same as engaging a foot-operated clutch. The clutch is eliminated on most planetary designs although a fluid coupling is occasionally used for smoothness. In most instances, the flywheel is not needed for the mass of the rotating parts is sufficient to maintain balance.

Foreign Planetaries

The Wilson pre-select transmission is the most widely used of the European planetary designs and was first introduced in the early '30's. It has five epicycle gear trains for four forward and one reverse positions. Gear selection is made by moving a selector arm in a quadrant on the steering post. After moving the arm to the desired gear, a small pedal on the floor is pressed and the gear engages. While in that gear, another gear may be pre-selected, and by again pressing the pedal it is engaged. Pre-selection is done by spring-loaded triggers in the box, and brake shoe adjustments on the annulus are automatically taken up. The rapidity of shifts is so effective that the Wilson has been used successfully on European racing cars.

Cotal

The Cotal is a French design that operates the brakes by electromagnets. In place of brake shoes, magnets are used which are actuated by the steering-post hand selector and lock the respective gear trains. The actual operating mechanism is simpler than the Wilson and uses two epicycles and four magnets for four forward speeds. Reverse is another single-stage epicycle. It has also been used in racing and sports cars in Europe and is very light and compact.

Laboratory tests of this design show a gear and friction loss of only 0.5 per cent in fourth gear, dropping to 3.5 per cent in first. Gear and friction losses of most American gear boxes vary from 5 to 8 per cent. The current consumption is 2.5 amps, about that required for a headlight bulb.

Chrysler Fluid Drive

The Chrysler unit is an interesting compromise between conventional and fully automatic transmissions. It consists of a fluid flywheel or coupling, a plate clutch and a four-speed gear box. Engine manifold depression shifts the gears

between first and second and between third and fourth. The plate clutch is used for first, second to third, and reverse.

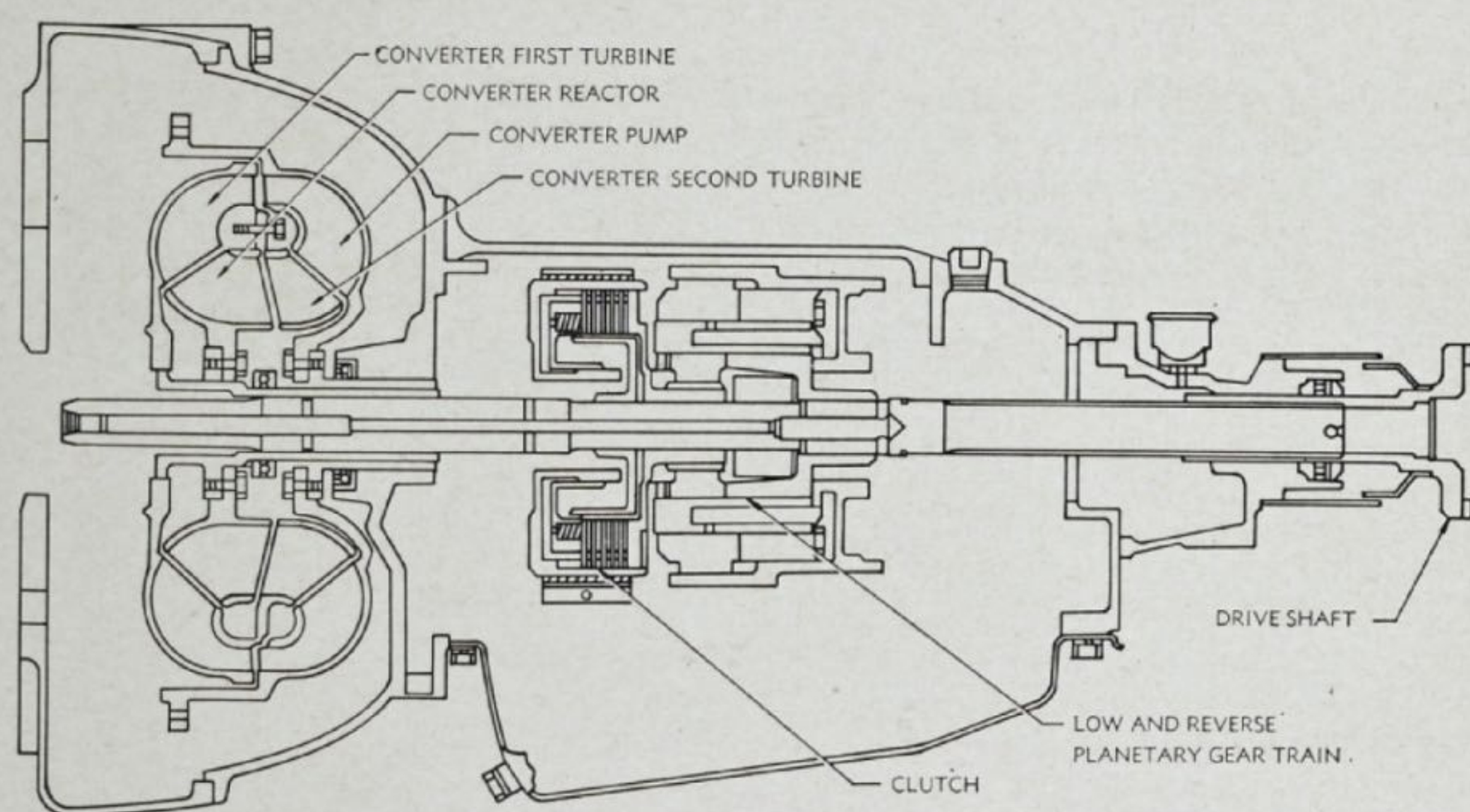
The Chrysler design incorporates a "kick down" shift from fourth to third for emergency use, and which can be engaged by pressing the accelerator past full throttle. This energizes a solenoid which opens a vacuum diaphragm to atmospheric pressure and the shift is then made by the vacuum unit. For ordinary driving, the shift down is made when the car speed drops to 13-15 mph, when a centrifugal governor energizes the solenoid. The fluid coupling is then necessary for the car is stationary, but third gear is still engaged. At idling speed, the engine does not transmit enough torque through the paddle wheel and oil to turn the rear paddle. When accelerating, the engine builds up torque through the oil to the other paddles and then picks up

is where engine torque and gear ratio mathematically meet and is where the shift should be made. This, in theory, prevents the engine from over-running or straining at low speeds in high gear.

Hydra-Matic

The G. M. Hydra-Matic is both planetary and automatic. It consists of a fluid coupling and four forward and one reverse speeds. The two forward speed epicycles are hydraulically controlled by two oil pumps which open or close the brake bands. The bypass and metering control arms are hooked to the accelerator pedal and are adjustable for crossover point. The reverse is manually operated.

In normal operation first gear is engaged at idle speeds and the fluid coupling allows slippage to prevent the car from creeping. The coupling has 48 radial vanes and the "paddles" are $\frac{1}{32}$ in. apart at the faces.



Cutaway of Packard torque converter, which is a three-element converter with one reactor stage for torque multiplication up to 2.4:1.

REX BURNETTE

speed. The slippage at idle is very high but as the speed increases the paddles rotate as a unit.

Automatics

An automatic transmission, regardless of design, is arranged to shift gears or vary the torque according to road and engine conditions. During acceleration, the engine puts out torque and horsepower. The torque, or rate of work, rises with rpm and upon reaching a critical point falls off sharply. The horsepower, or amount of work, may continue to rise even after the torque decreases, but the torque determines the shifting point.

An example of this condition would be when accelerating in second gear. The initial pickup is good but slows down as the engine turns up additional rpm, until finally the car will go no faster, or may even lose some speed. The crossover point

Although its general appearance is similar to that of the fluid coupling, the torque converter differs in operating principle. The "paddles" are called dual reaction stators, which means that the oil is passed back and forth twice between the paddles and thereby increases the output torque to twice that of the input. The fluid coupling can only approach 1:1 torque conversion under ideal conditions due to the stator design. Slippage and oil churning further reduces the torque by several per cent, so that it is never 100 per cent efficient.

The fluid torque converter could be used alone but for best results a two-speed forward, plus a reverse planetary is incorporated. The fluid unit cuts out at about 50 mph when the top epicycle gear is automatically engaged. Neutral, low, drive and reverse are selected by oil

(Continued on page twenty-eight)

SPORT CAR SHOW

(Continued from page nine)

stock, gives better than 20 mpg, and the roadster has the reputation of being one of England's foremost sports cars.

But its rival, the little four-cylinder Healey roadster, was present too. Known as the Mille Miglia model for having won that race in its class last year, it was recently clocked at 111.8 on a four-way mean average and at 115 one way. Fuel consumption has been determined to be 28 mpg at 68 mph and 22 mpg at 80.

Prima donna of the Austin exhibit was the A-90, a combination sport and economy car which recently did 11,875 miles at Indianapolis and averaged 70.68 mph and 22 mpg. The convertible body is smart, although the chrome gingerbread is carried rather far and the rear seat has everything but leg room. As an excellent performer the car deserves much credit.

Two worthy British veterans were a Triumph roadster and a Lagonda convertible sedan. In both cases the coachwork is far above criticism. The Triumph is powered by a four-cylinder, overhead valve, 65 bhp engine which is hardly adequate to its body load. The Lagonda, on the other hand, carries a 165 bhp V-12 overhead cam engine, cleanly conceived and executed, and exuding a promise of immense smoothness and power. Both were late pre-war cars.

Italy's representation consisted of a single car: a spanking new 1100-S Fiat with coupe body by Castagna of Milan. The body-maker's name for this model, "Vistotal" (a contraction of "total vision"), was well selected. The ingeniously cantilevered top sweeps forward to grasp a $\frac{1}{2}$ -inch-thick windshield of relatively indestructible glass which floats between cowl and top without benefit of corner posts. The body design shows an abundance of creative technical imagination in every detail. The 1090 cc, four cylinder engine has achieved considerable recent fame due to its being the basic power plant of the spectacular little Cisitalia. Italian automotive craftsmanship was well represented by this single car.

France's offerings were quite different: upper-middle-class austerity transportation. The cars on view were the Citroen "15" and the Peugeot "203." The latter proclaimed itself to be "the most admired car at the Paris Automobile Show" . . . a depressing thought if true, in view of the car's 1935-Detroit-type coachwork. The four cylinder, push rod, short stroke engine delivers about 35 mpg. Some fea-

(Continued on page twenty-seven)

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Twenty-four

BRIDGEHAMPTON ROAD RACE

(Continued from page eleven)

The following morning when the final flames were quenched, no part of Pompeo's three road racers was worth salvaging. Including cars and tools, the fire loss was estimated at \$50,000.

Aside from Pompeo, one of the most disappointed spectators at the Bridgehampton race was Norman Ulrich of Stamford, Connecticut, ex-boat and midget auto driver who was slated to drive the Pompeo-Cisitalia. This was the Cisitalia driven in 1946 at Turin, by Tazio Nuvolari. It has a four-cylinder 1090 cc (66.5 cu. in.) engine with double vertical push-rod activated overhead valves, a three-speed gearbox with pre-selector and automatic gear change, with an exceptionally light tubular frame supporting a single-seater body. The Cisitalia was one of the numerous new Cisitalia's that were first created at Turin in 1946 by sports car driver Piero Dusio with the aid of Fiat's designer Giacosa. The Pompeo-Cisitalia was one of three CTs entered in Class I events for unsupercharged cars up to 1250 cc (76.3 cu. in.) engine capacity.

Irwin Goldschmidt, also of New York City, whose Chicago-built hot rod had been turned down by the technical committee, was selected by Hoffman to drive the Lea-Francis.

The Lea-Francis cars are two-seaters with cut-away doors and come with two types of engines, 11.9 hp and 13.95 hp R.C.A. ratings which rate them at 1496 cc (91.3 cu. in.) and 1767 cc (107.8 cu. in.). Both engines are four-cylinder, overhead valve gear with special cams and steel connecting rods. The engine is equipped with dual manifold and carburetors with a four speed ahead gearbox with synchromesh on second, third, and high gears. The wheelbase for both models is 8 feet 3 inches with a 13-foot overall length.

The pre-race entry list for Class I included 17 MG's, three Cisitalia's (one already destroyed by fire), a Fiat (also damaged in the Pauley fire), a Morgan and a Singer. The latter two, and of course the former Pompeo-Cisitalia, failed to compete.

Ferguson's Cisitalia took the first event with an elapsed time of 44 minutes and 56 seconds for the 48-mile distance. The No. 20 Cisitalia, with its rigid body and over-all lightweight, performed flawlessly. Charles W. Kouns, III., New York City, was second driving No. 40 MG to the day's closest finish that earned him the checkered flag less than a car's length behind the Cisitalia. Richard Lange, Jr., of Leonia, N. J., was third in the No. 14 MG, with fourth spot going to Gus Ehrman of Green-

wich, Connecticut, an auto dealer who had Norm Ulrich in his pits. John Fitch, Brewster, N. Y., placed fifth in No. 5, an MG, with Neal Allen of Pacific Palisades, Cal., in sixth in the No. 84 MG; J. Bruce Stevenson, Sagaponack, N. Y. in the No. 2 MG, came in seventh, followed by Denver B. Cornett, Jr., Louisville, Ky., in the No. 72 MG.

The Class II race, also for a 48-mile distance, was open to supercharged cars up to 1250 cc (76.3 cu. in.) and unsupercharged cars to 1950 cc (119 cu. in.).

Briggs S. Cunningham of Green Farms, Connecticut, entered his No. 15 Type-TC blown MG with Sam Collier, Everglades, Florida, as its driver. Collier, son of Baron Collier, subways advertising king, turned the fastest 4-mile lap in 3:25 for an average speed of 70.2 mph. Collier won the race, followed by Donald F. Millager, N.Y.C. in an MG; T. L. H. Cole, Jr., of N.Y.C. was third in an HRG with Peter Iselin, also of New York City, in the No. 26 HRG in fourth. There were only four finishers in this 48-mile race.

An Offenhauser, 97 cubic inch, mounted in a Lea-Francis chassis was to have competed in this class but inexperience on the part of the car-owner in running too-cool plugs found the Offy fouled-up consistently and she never made Bridgehampton. Briggs Cunningham's other MG was forced out on the fifth lap along with the MG entered by Philip H. Stiles of Palm Beach, Florida.

Prior to the running of the 100-miler, the Class III event for supercharged cars up to 1950 cc and unlimited for the non-blown models, there was an exhibition run of three laps by a group of vintage sports and racing cars. The most interesting entry was the 1906, 30 hp Stanley Steamer entered and driven by concert singer James Melton. Known as a "Gentleman's Speedy Roadster" Melton's car carried Connecticut plates bearing the initials, GENT.

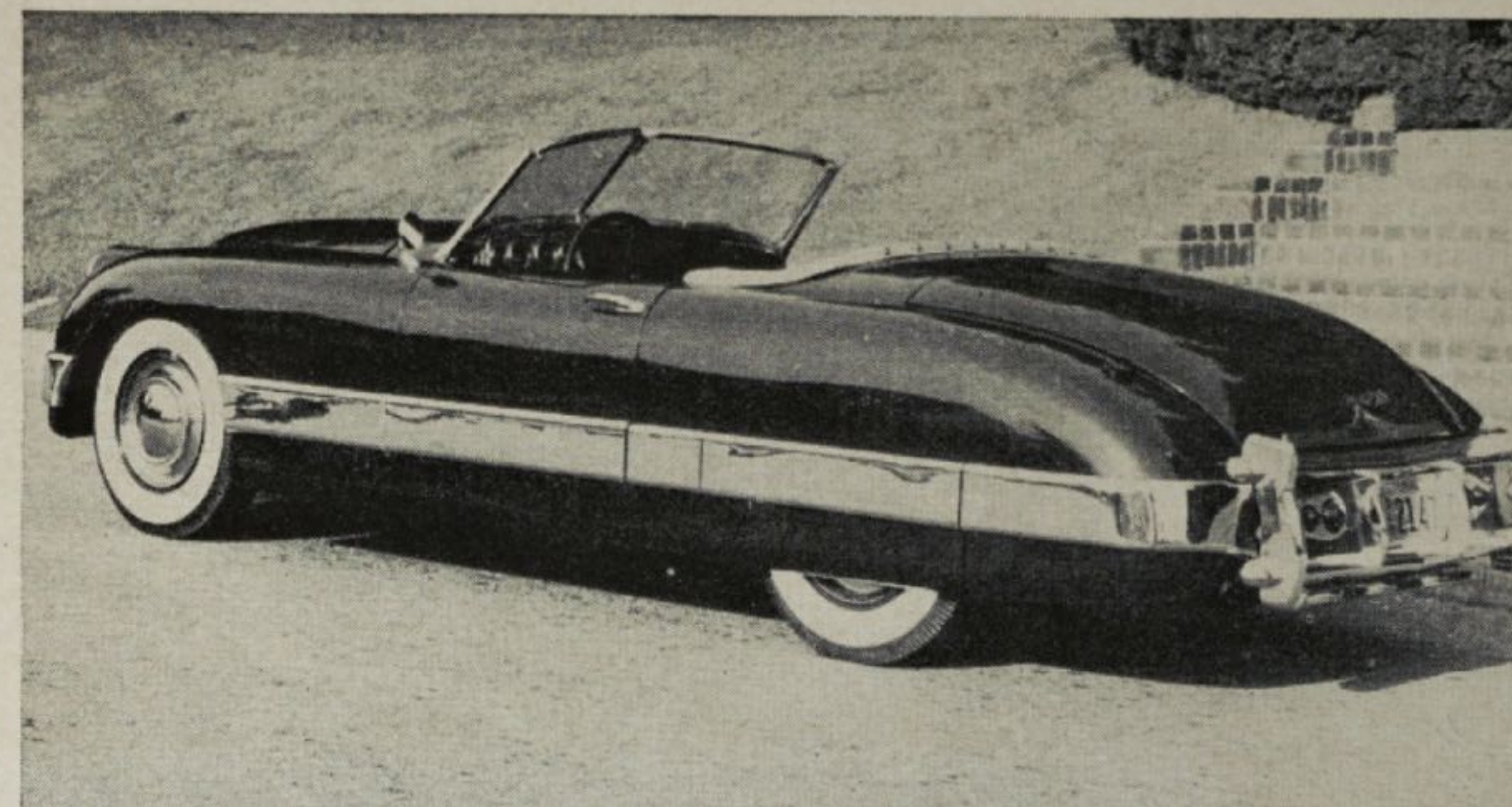
The Class III event was the race in which most of the spectators interest was centered. Seventeen entrants lined up for the standing start of the 25-lap, 100-mile final event.

By far the best performing entry in the race was the Ferrari owned by Briggs Cunningham and driven by George Rand of Delray, Florida. The happy combination of car and driver put this entry out in front at the start and gave the spectators a show of peak speed with skillful driving in the turns. This car is a Formula B job and is a duplicate of the Ferrari that set a Class E World

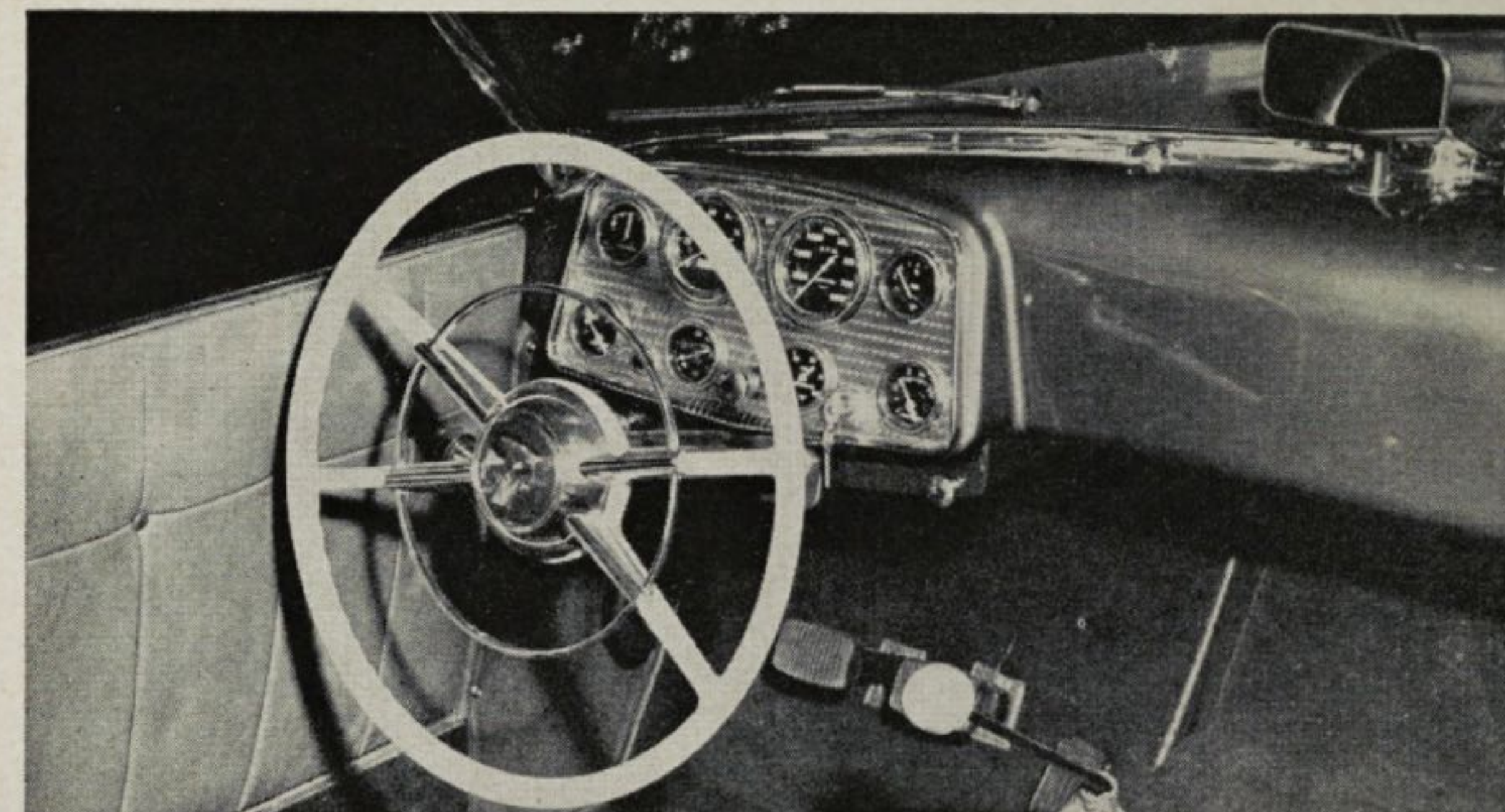
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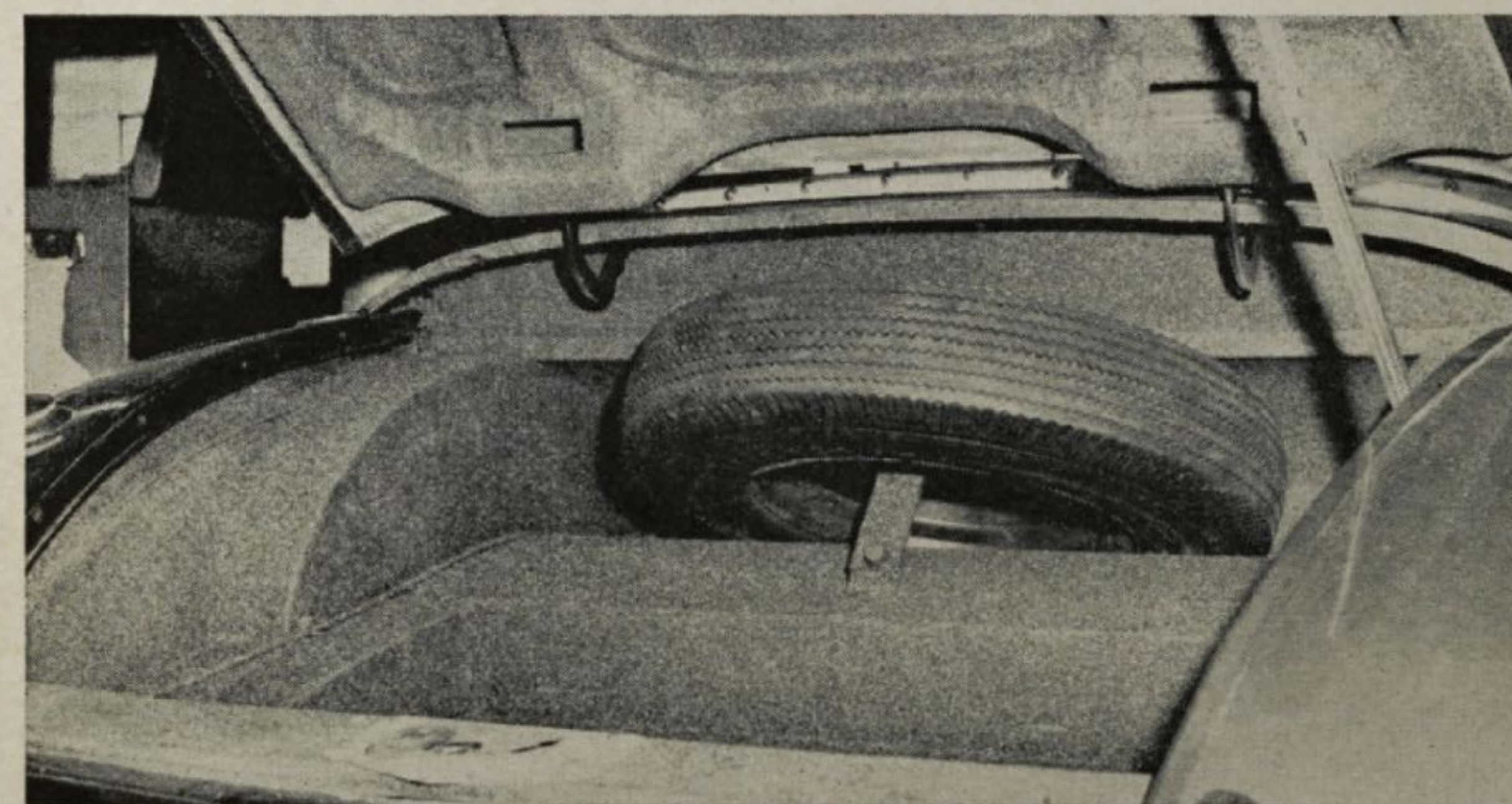
(Continued from page seven)



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A SUNDAY GYMKHANA

(Continued from page fourteen)

pleting the circle, the contestant pulls into an area in which he must turn around without touching the two walls facing each other. Going forward from here, the driver parks in another tight area, and then, in reverse, must make an "S" turn and back into another close area.

The driver then goes forward, pulls up alongside a parking area and parks the car, without touching the two markers at each end of the area. He must end up within 12 inches of the curb. When the contestant gets out of the car, his time is recorded.

Fastest time turned in the men's division was that made by Carl Blackwell in an MG sports car. His time was 1:21.1 minutes. Other places went to: Alan Moss (the club president), also driving an MG, in 1:22.7 minutes; Jack Fancher (MG) in 1:29.1; and Dan Dickinson (MG) in 1:30.2.

First place in the women's division was won by Joan Fetterman, driving an MG for the first time, in 1:44.7 minutes. Second, third, and fourth places went to, respectively, Marilyn Speck, in 1:50.3; Lotus Jacobs, in 2:24.6; and Betty Mac-Millan, in 2:28.9. These women were all driving their husband's MG's.

TIME NOR TIDE

(Continued from page ten)

tance of 34 miles. Here the members stayed overnight, while the cars were parked in the Elks Club parking lot.

Leaving Laguna Beach at 9 the next morning, the antiques made a long hop (about 73 miles) to La Jolla, the mecca of San Diego, and ferried across the bay to Coronado, where they were greeted by the U. S. Naval Band. The cars were displayed briefly in Del Coronado Hotel, and were then taken across the bay to San Diego proper.

In San Diego that night, the cars were again put on display in the City Chevrolet Company showroom. The next morning, the cars began the return trip home, members dropping out along the way, as they approached their homes.

Typical cars in the caravan included a 1905 open touring two-cylinder Buick, a 1908 two-cylinder Maxwell, a 1912 Model T Ford, a 1913 Lozier limousine, and a 1913 Buick. Unfortunately, the oldest car in the club, an 1899 Haynes-Apperson two-seater with wooden frame and leather fenders, was unable to make the trip.

Interest in these fine antique cars has been growing and since the last caravan, the Horseless Carriage Club office at P.O. Box 503 in West Los Angeles (25) has been receiving many applications for membership.

BRIDGEHAMPTON ROAD RACE

(Continued from page twenty-four)

Record at the Monthelery Track in Paris at an average speed of 126 mph under the deft wheel handling of Luigi Chinetti. Like the other post war Ferraris, the Cunningham-owned racer was built at Maranello, Italy, a few miles from Moderno, under the supervision of ex-Alfa-Romeo designer Ing. Colombo and at the plant of Enzo Ferrari. The first Ferrari, turned out in 1947, was a V-12, 1500 cc (91.5 cu. in.) unblown job with independent front wheel suspension and a five-speed gear box. With F. Cortese as its driver, the car, a two-seater, made an excellent record of wins for itself.

The Cunningham-Ferrari is equipped with a more powerful engine than the original 1947 Ferrari and has a cylinder capacity of 1900 cc (115.9 cu. in.) which puts it into the two-litre class. The No. 18 maroon car arrived in the states less than ten days before the race, with two mechanics from the Ferrari factory. The engine is a V-type, 12-cylinder, equipped with twin Marelli magnetos, Fimac fuel pump, and quad Weber carburetors. It is equipped with four camshafts and reportedly is good for 135 mph.

The car had never been raced before and it was no surprise to either Cunningham nor Rand to have No. 18 develop bugs on the 17th lap after building up a 54-second lead on the second car. The Ferrari did clock the day's fastest lap at 3:08 for an average speed of 76.5 mph, which, considering time lost in the right angle turns meant straight-away speeds well in excess of 100 mph.

The ultimate winner of the 100-mile event was George Huntoon of Miami, Florida, in the No. 33 Alfa-Romeo, a blue two-seater that was well driven throughout the race. Even if the Ferrari had lasted, Huntoon might well have grabbed off the lead because his pace picked up after the midway point and he averaged 74.876 mph for the entire 100 miles, covering the distance in 80:07.90.

T. L. H. Cole, Jr., of New York City, finished second in the No. 35 S. S. Jaguar, which, like the Ferrari, was untried in the United States, having arrived on the Queen Mary just before the races.

The real surprise performance of the day was that of Sam Collier in the 1250 cc MG, owned by Briggs Cunningham. Not only was the tiny midget never lapped by the larger and more powerful jobs, but Collier was able to bring it home in third spot. This was the blown TC-Type MG.

Fourth place winner was Robert S. Grier of New York City in the red No.

(Continued on page thirty)

SPORTS CAR SHOW

(Continued from page twenty-three)

tures are overdrive, worm drive rear end, rack and pinion steering.

The Citroen's body is equally undistinguished. Only unusual feature is its front wheel drive.

In testimony of France's erstwhile automotive glory, there were a Bugatti, a Talbot-Darracq, and a Delage. The Bugatti convertible sedan was produced in 1938 by the late Ettore Bugatti for, it is said, his personal use. The body is remarkable for the narrow lines this make of car has always favored. The chassis is the usual EB work of art. Classic EB radiator, 3.3 litre (201.4 cubic inch) engine with eight cylinders, twin overhead cams, stock supercharger. To complete the composition, the car is equipped with the famous and superbly functioning Cotal electric gearbox.

The small, low, beautifully-bodied Talbot-Darracq coupe, although it is only the size of an MG Midget, is powered by a relatively enormous six cylinder, overhead pushrod, dual carburetor engine. Its low center of gravity, firm springing, rack and pinion steering, short wheelbase, and huge power plant suggest amazing performance on the open road.

The Delage was a big pushrod eight graced by a fantastic and lovely body by Henri Chapron of Paris. The hood, louvred top and sides seemed almost interminable, the passenger compartment close-coupled but comfortable. The car was literally breathtaking for those responsive to the romantic period in automotive coachwork.

The German craft was represented by a single vehicle, a '37 Mercedes-Benz Type 500 with Singlefelder convertible sedan body. This beautiful automobile is in very clean condition and stands as an adequate example of just where Germany (Mercedes in this case) ranks in relation to the golden period of the twenties. This was the same Type 500 that was placed on the market in 1933. Its most outstanding feature is excellent independent suspension on all four wheels. Power plant is a blown, eight cylinder, 5018 cc (306.1 cubic inch) push rod job of 37 RAC bhp.

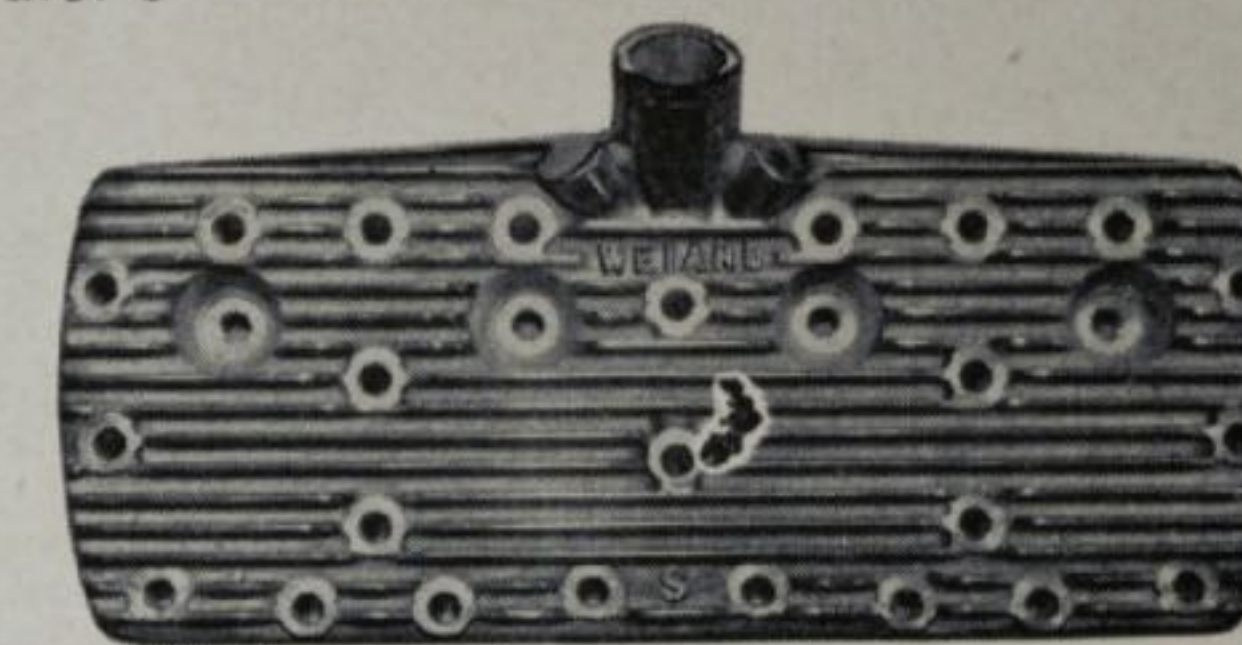
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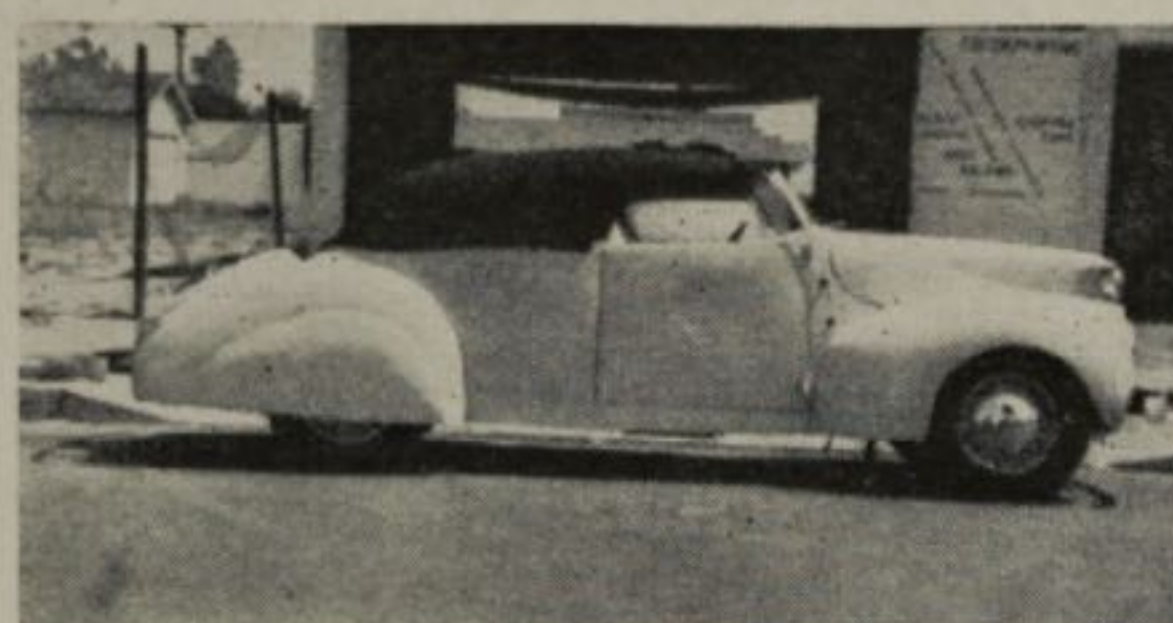
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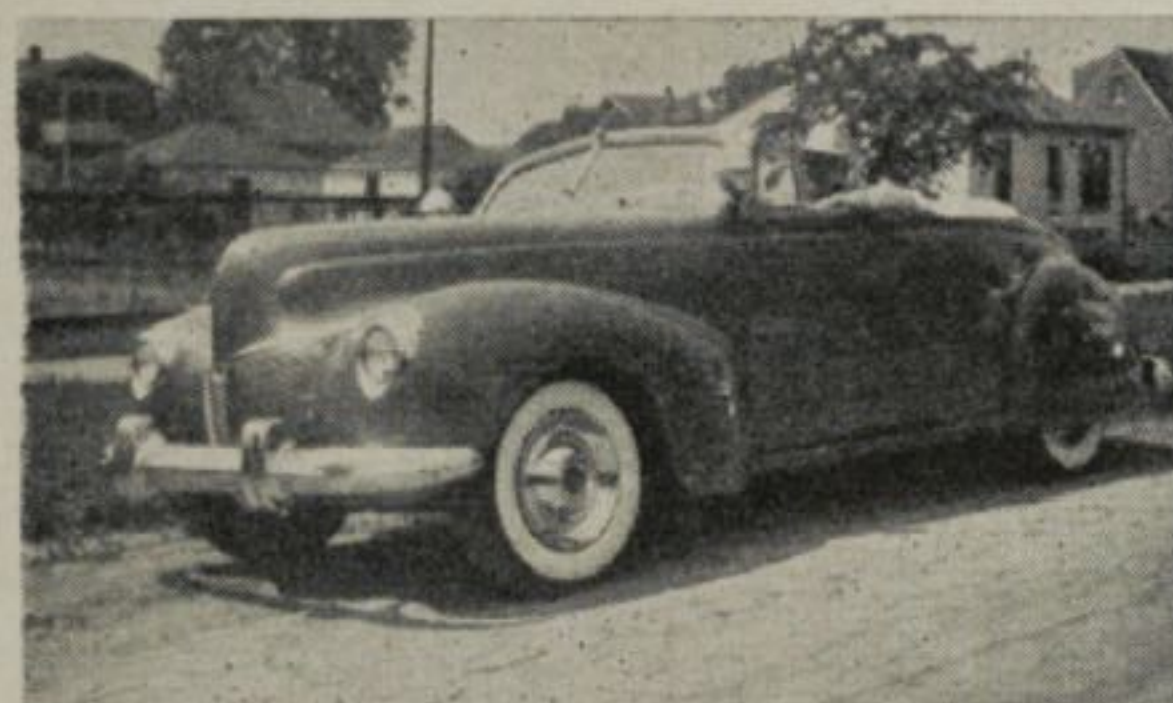
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Twenty-eight

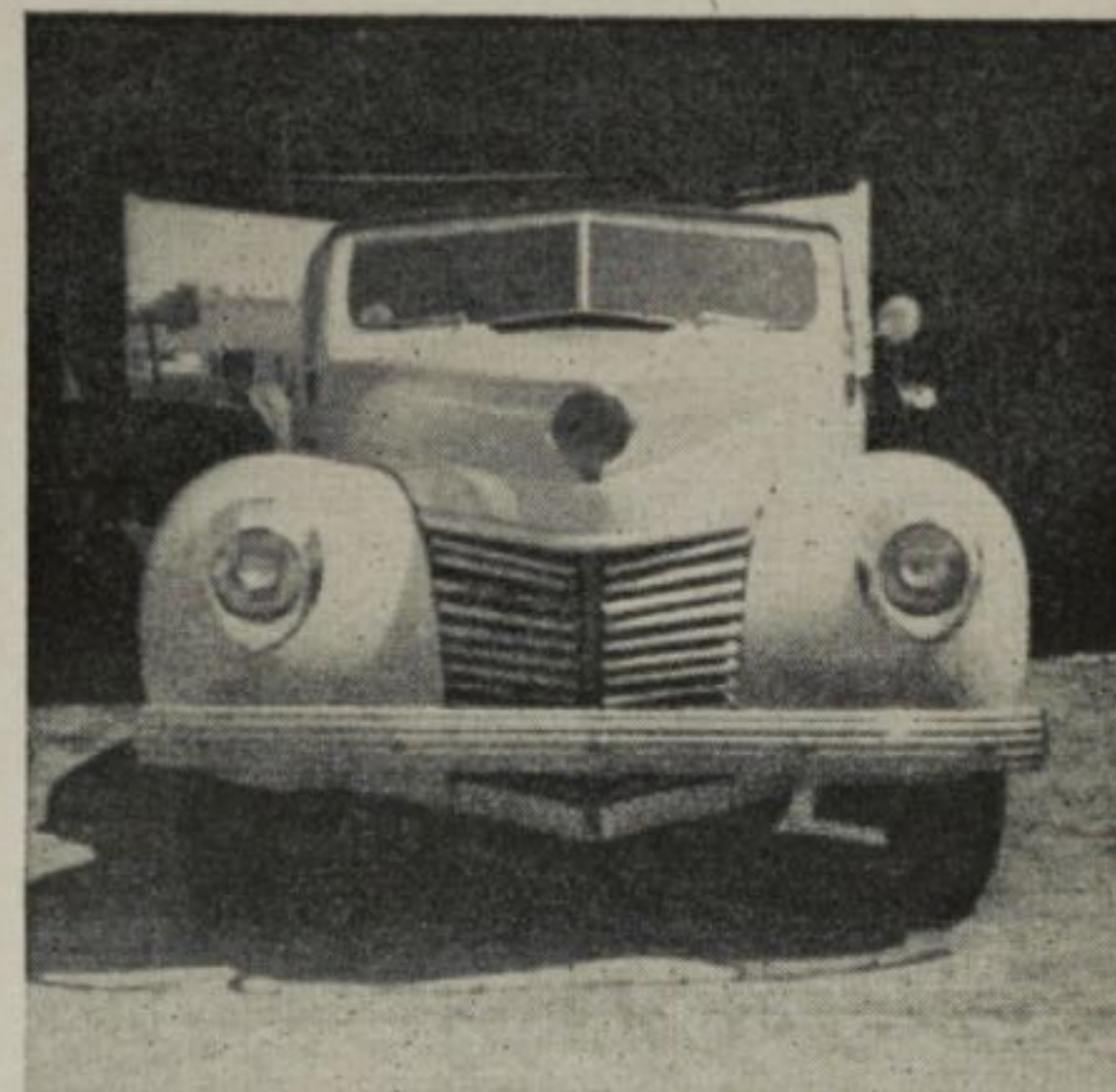
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WEIRD-LOOKING car from Sacramento, California, features a Cyclops eye that turns with the wheels and a grille that works like a venetian blind to regulate the airflow through the radiator. The car was originally a '40 Ford Tudor sedan. The turtle-deck has been made up special, with the spare tire sunken in.



A '39 MERCURY convertible, customized by Jack's Trim Shop of Detroit, Michigan. Hood and turtledeck have been smoothed, with the fenders leaded in. All controls are concealed. The Oldsmobile bumpers have parking lights and tail lights in the guards.



TRENDS IN DESIGN

(Continued from page twenty-two)

pressure from two pumps in the casing.

A similar type torque converter is also being used on the latest series Packards. This unit is a three-element torque converter with one reactor stage for torque multiplication up to 2.4:1, and a mechanical direct-drive clutch. The converter is used only for acceleration, being cut out by governor and throttle pressure when the direct drive clutch is applied. A planetary gear train is used for reverse and emergency low.

Future Trends

The adaption of semi- and automatic transmissions on new model Lincolns, Mercurys and Studebakers, and the anticipated use by Chevrolet, Ford, Nash, and others, indicates an awareness of the necessity to simplify the operation of the automobiles. On the other hand, European cars are now being introduced with five-speed manual gear boxes, which seems to be the direct opposite of American practice. These trends are governed by several important factors — the small high-speed engines, which work best when revved high, the road conditions

that demand a full series of ratios, and, finally, the flat-out driving induced by no speed limits.

It would be foolhardy to state that semi- and automatic transmissions do not have advantages, but it must be remembered that a mechanism by definition cannot think. A quick gear change is sometimes necessary to avoid danger. When such a situation arises, the driver may find that his automatic transmission, since it cannot anticipate road changes, will not respond quick enough. A close ratio manual gear box allows the driver a gear ratio instantly available and suited to the condition.

A definite advantage of the fluid coupling is found in driving through congested city traffic, for it allows start and stop driving with a minimum of work. Whether this ease of operation makes up for the increased gasoline consumption is one of individual taste. At present the field is too new to select one type of transmission that will emerge superior above all others. Only the constant introduction of new designs will bring forth the best; however, all are welcomed as variations on Lavassor's statement about his transmission, "It's brutal, but it works!"

Motor Trend

THREAT TO THE OFFIES

(Continued from page twelve)

ings each, of 1½-inch diameter and drive 8-inch pushrods, made from 7/16 by .031 chrome moly steel rod. The rocker arms are made from SAE 4130 induction hardened steel, while the rocker shafts are carburized and hard chromed to reduce wear. The cam followers are inverted cups with a hard chromed base.

The intake and exhaust valve head diameter is 1 11/16 inches. The cam provides a valve lift of .375 inch. The valve spring tension is 102 pounds closed and 230 pounds open. The grind of the cam provides for an intake opening of 20 degrees BTDC, a closing of 48 degrees ABDC, an exhaust opening of 48 degrees BBDC, and a closing of 16 degrees ATDC. This gives a valve overlap of 36 degrees between intake opening and exhaust closing times. The intake duration in degrees of crankshaft rotation is 248, while exhaust duration is 244 degrees. The engine is so arranged that the timing can be set or changed without removing the front gear case.

Spark for the Champion R-1 plugs is provided by the Wico magneto with Barker drive, mounted on the camshaft gear case. The firing order of the engine is 1, 3, 4, 2, while spark advance is 36 degrees BTDC.

Dual Riley carburetors are used with the dual intake manifold, mounted on the left side of the engine. Fuel is provided to the engine from a hand air fuel pump.

The dry sump oiling system has a two-quart case capacity, and a total capacity of 10 quarts. With SAE 50 oil, a hot oil pressure of 75 to 85 psi is provided.

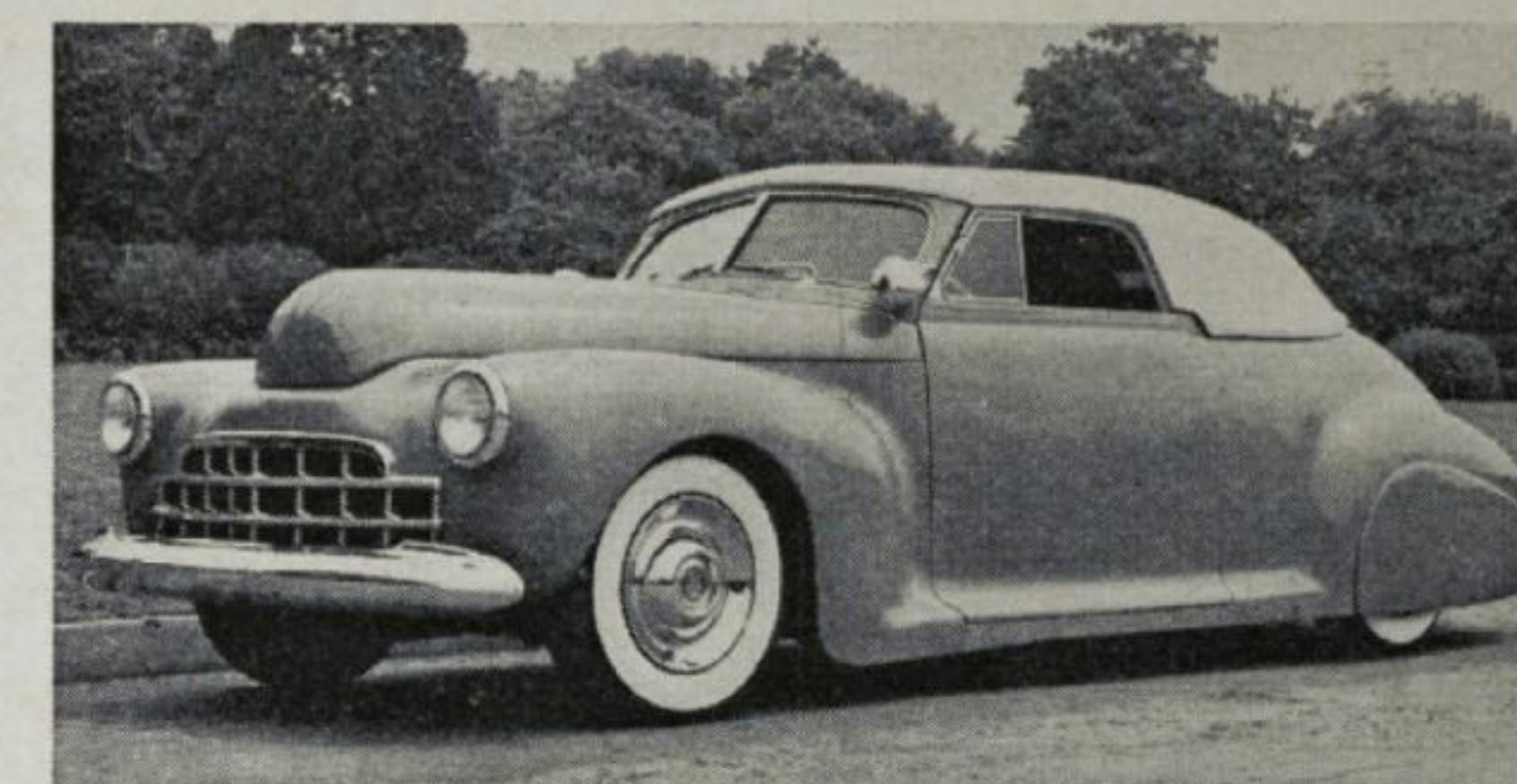
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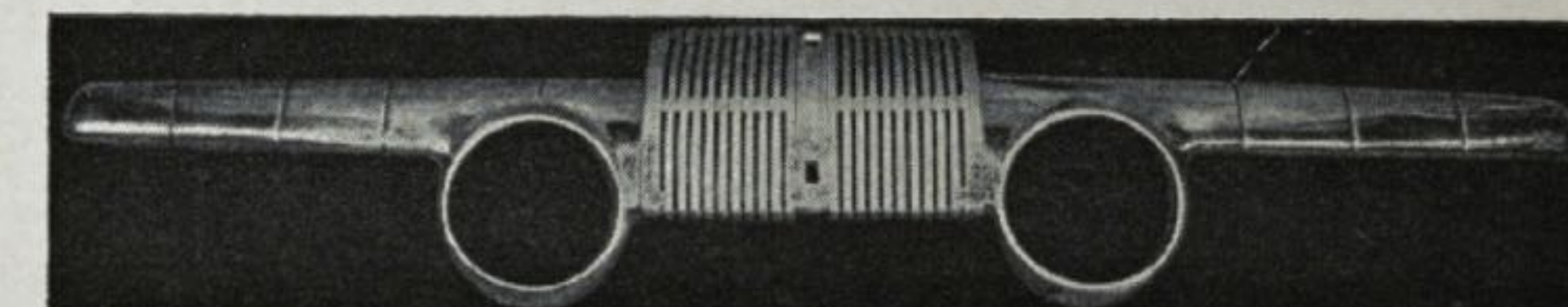
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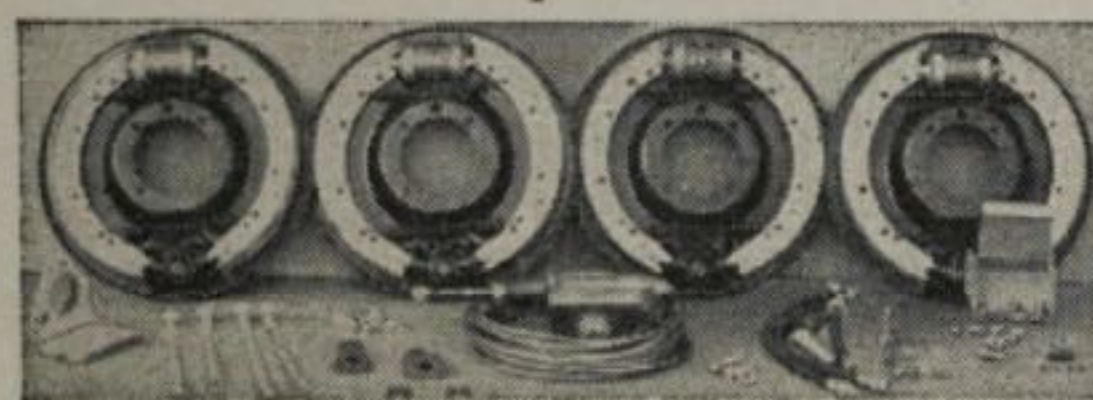
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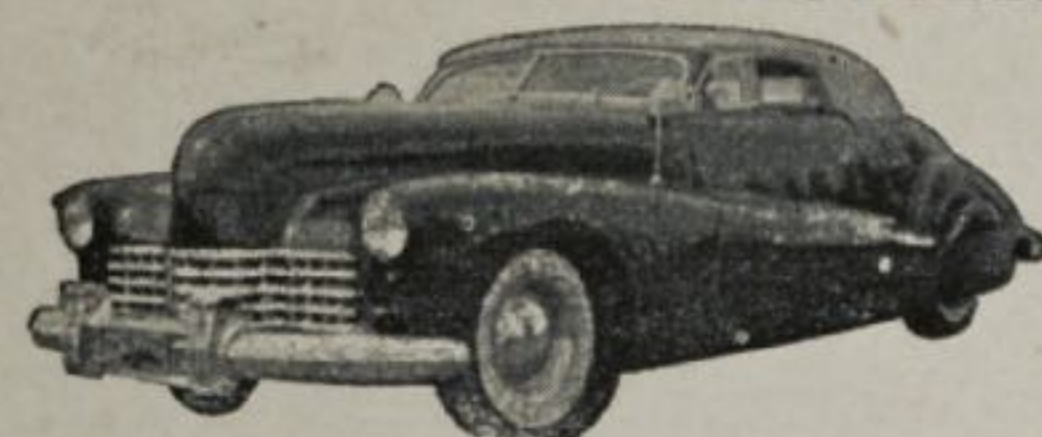
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FROM OUR READERS...

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LIKES FOREIGN JOBS

While in Europe I became extremely interested in the Continental and English sports and racing cars: Alfa-Romeo, Frazer-Nash, Bugatti, Cisitalia, Mercedes-Benz, Maserati, B.M.W., Healey, M.G., Tatra, Bentley, Veritas-B.M.W. and many more. I am planning to make a two seater sports job somewhat along the lines of the foreign machines, one of those lush dream jobs that one sees a drawing of now and then...

Enclosed is a snapshot of a hand-made and hand-fitted foreign job—a Bugatti.

John Richardson
Grand Cane, Louisiana



HOW ABOUT STOCK CARS?

How about an article about the stock car time trials? Seems a lot of us are curious about how, when, and where they are running. Also, how about information on their records?

Norb Mandolf
San Diego, California

... I think it would be swell if you could have a page every issue about new stock cars, such as the Davis, Keller, Kurtis, etc. ...

R. R. Edlund
Rock Island, Illinois

As new models come off the production line, we shall endeavor to give you full information about them.—Ed.

BRIDGEHAMPTON ROAD RACE

(Continued from page twenty-six)

7 BMW Grier's Bavarian Motor Works car, a six-cylinder, push-rod activated valve set-up with three carburetors, was slower getting off the turns and although it lacked the rigidity of the Alfa or the Ferrari in the turns it was well driven to take fourth spot.

Fifth place went to the No. 24 MG originally slated for Sam Collier. In sixth was Miles Collier whose car was a Ford V-8 85 mounted in a Riley chassis.

No other entrants completed the 100 miles. Dr. R. N. Sabourin of Flushing, N. Y., dropped out in the No. 63 Lagonda on the third lap. Secundo Guasti, in the No. 6 grey-painted Alfa-Romeo

RESTYLING DETAILS

... I would like to know how to customize my '40 Mercury club coupe. I prefer to leave the engine stock.

Jack Fisher
San Mateo, California

A regular feature every month will be the one on restyling which will show how a stock car can be customized to advantage. In addition, articles will be written by well-known body specialists on their methods of restyling.—Ed.

KURTIS SPORTS CAR

I see Frank Kurtis has completed his sports car. How about something on that? It really deserves it.

Rus Jacobs
Akron, Iowa

We think so, too. See page six for a story on it.—Ed.

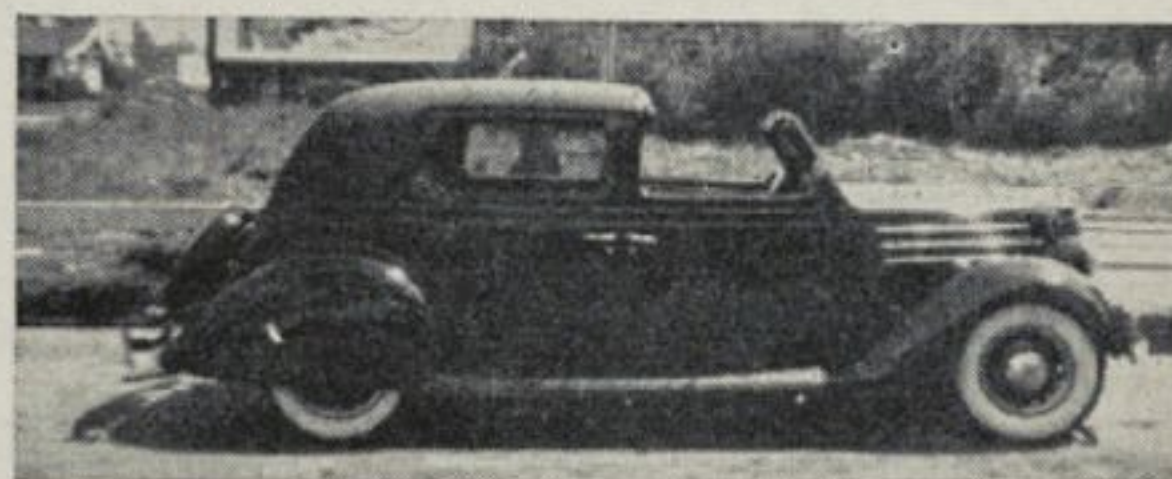
CUSTOM CAR FANS

I like pictures of customized cars, so how about a few more in your magazine? I'm sure there are plenty of people who agree with me.

Glyn Verzatt
Salem, Oregon

... I am particularly interested in customized cars like my own (see enclosed snapshot). It is a '36 Ford V-8 Town Sedan, with a '41 Mercury engine and a frame that has been lengthened 14 inches. Tacoma is becoming more and more car-minded. There are many fine custom '35, '36 and '37 V-8's around here...

Greg Loomis
Tacoma, Washington



For those of you who agree with the above readers, this magazine should be your answer—we'll feature a considerable amount of custom cars each month.—Ed.

went out at the end of forty miles. His car was a 2.3 litre (140.3 cu. in.), 8-cylinder, blown, double overhead cam job. Logan Hill, Riverside, Conn., dropped out in the seventh when his No. 36 Alfa-Romeo overheated.

In general, the Bridgehampton Sports Car Road Race was successful and should become an annual affair. Like any event that has not been conducted for a number of years, there is room for improvement. Notable flaws were in timing, policing of the course, public address system notification and pit facilities. However, these basic criticisms can be easily remedied and are minor in comparison to the fine over-all job that was accomplished by all committee members in their effort to make an interesting and highly successful race meet, which certainly warrants repetition in 1950.

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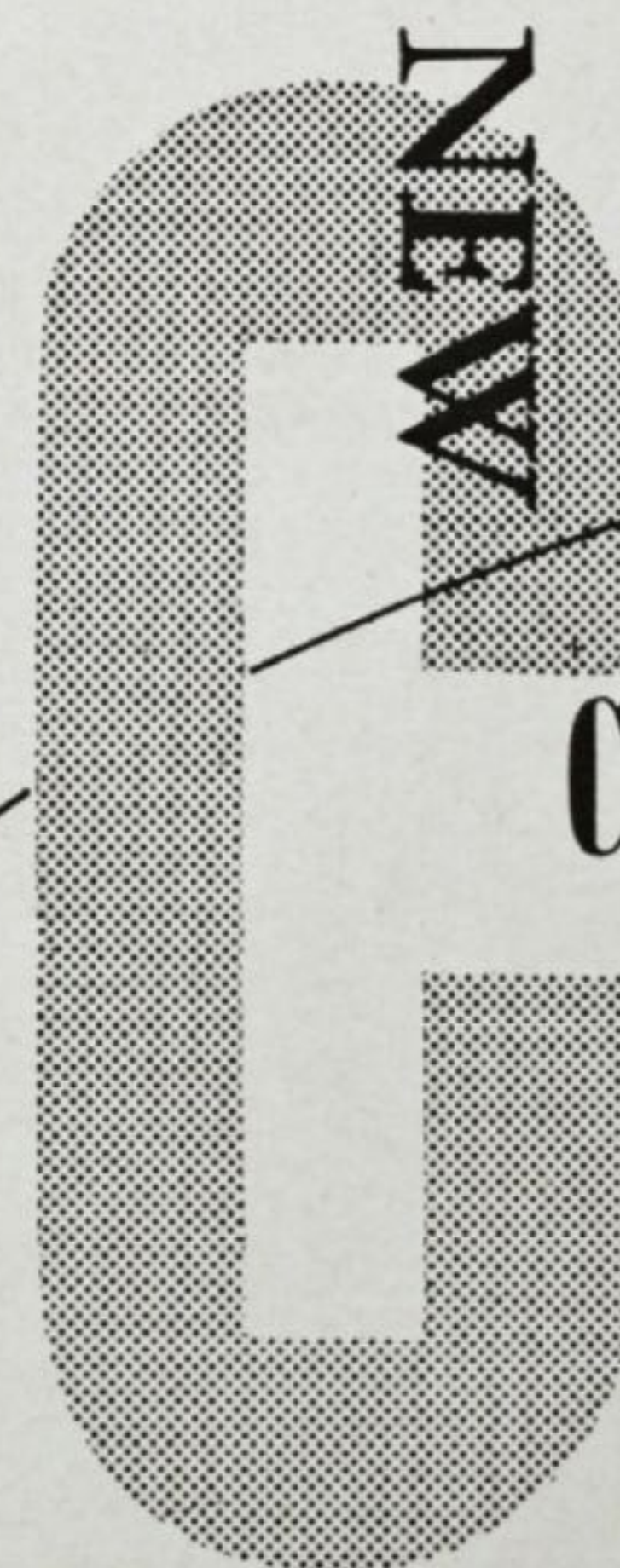
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BOX L-6, EAGLE ROCK STATION
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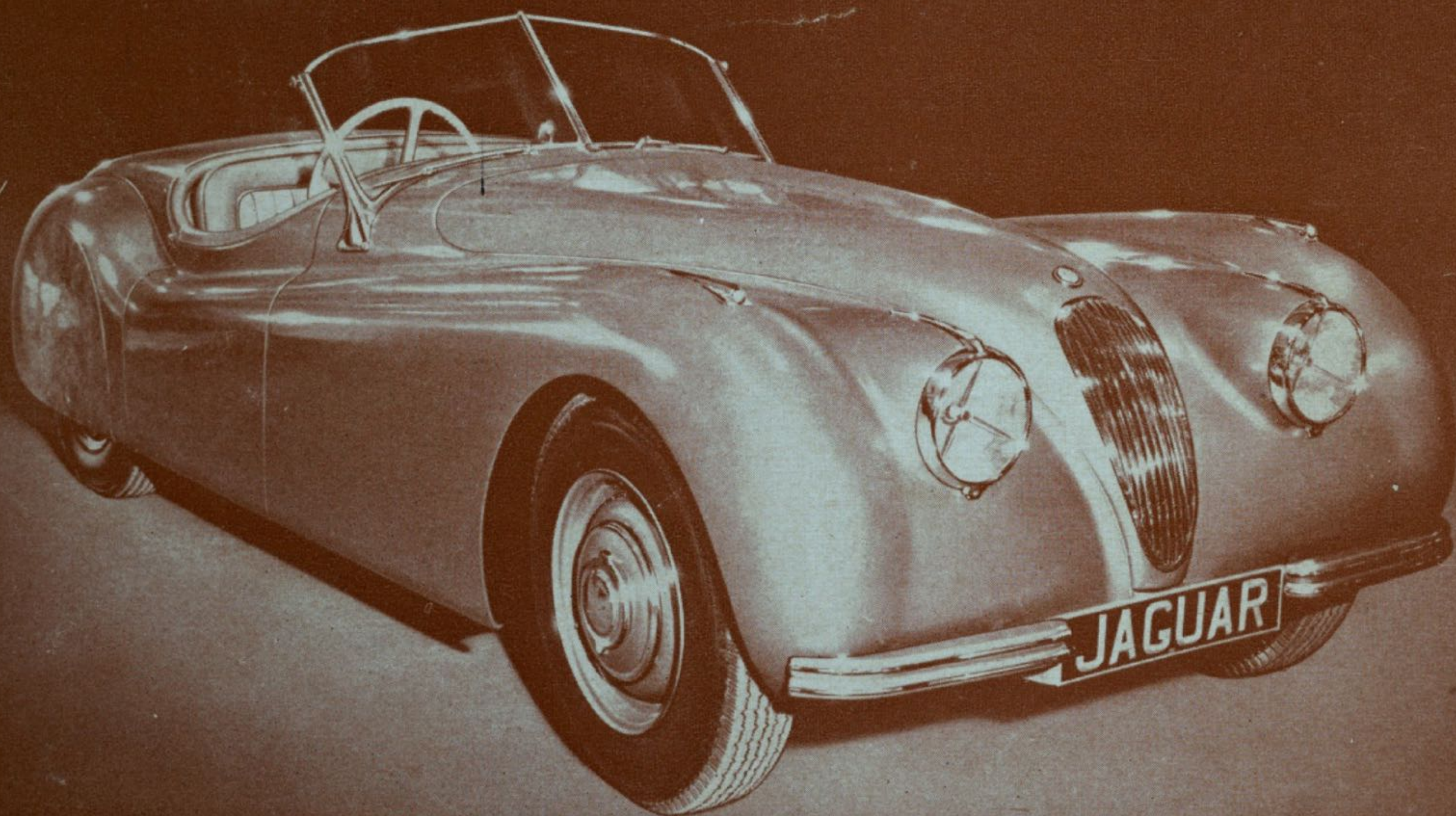
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