

MOTOR TREND

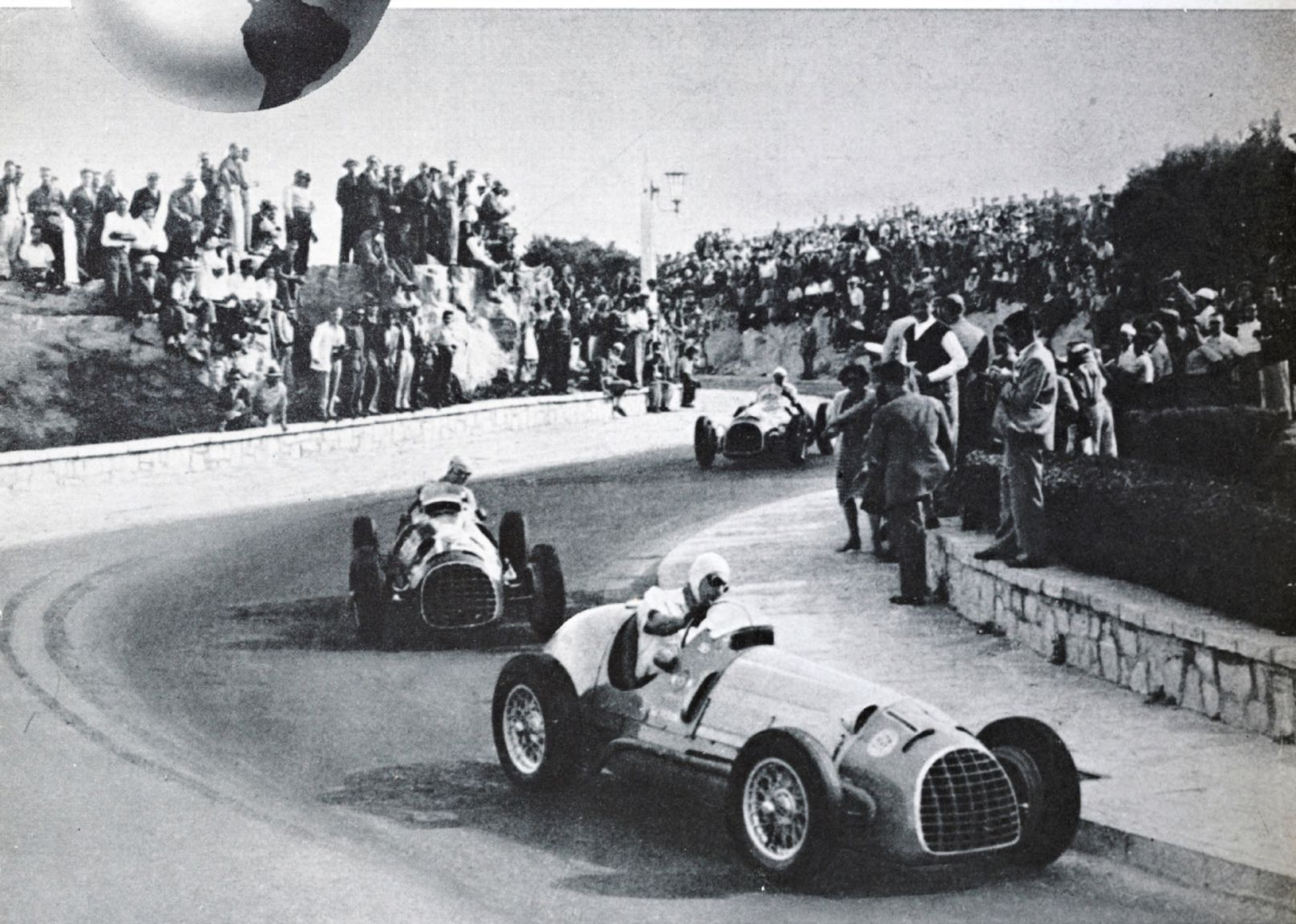
MAY 1950

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The Magazine for a Motoring World



• Will Gas Turbines Propel the Car of Tomorrow?

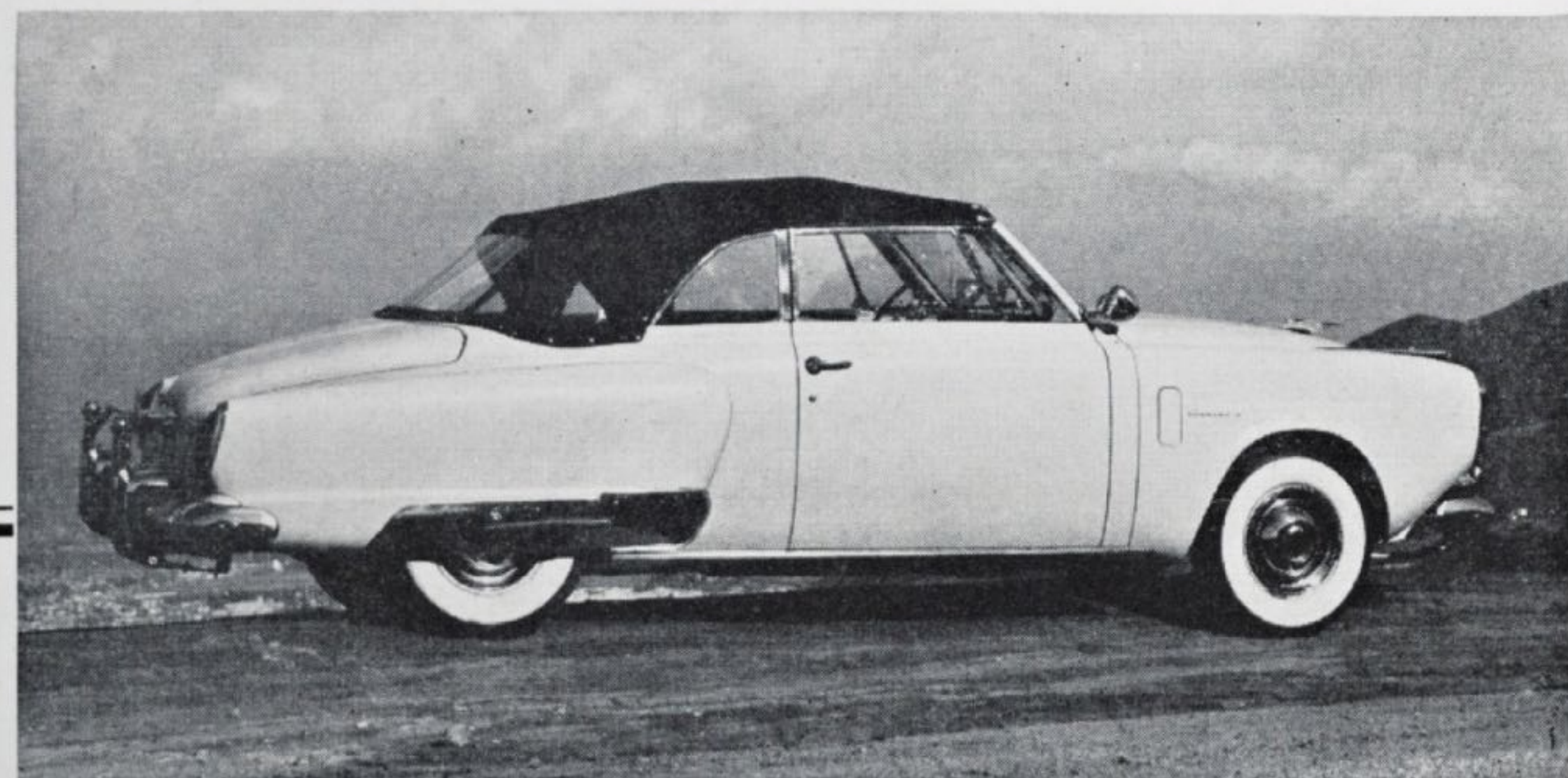
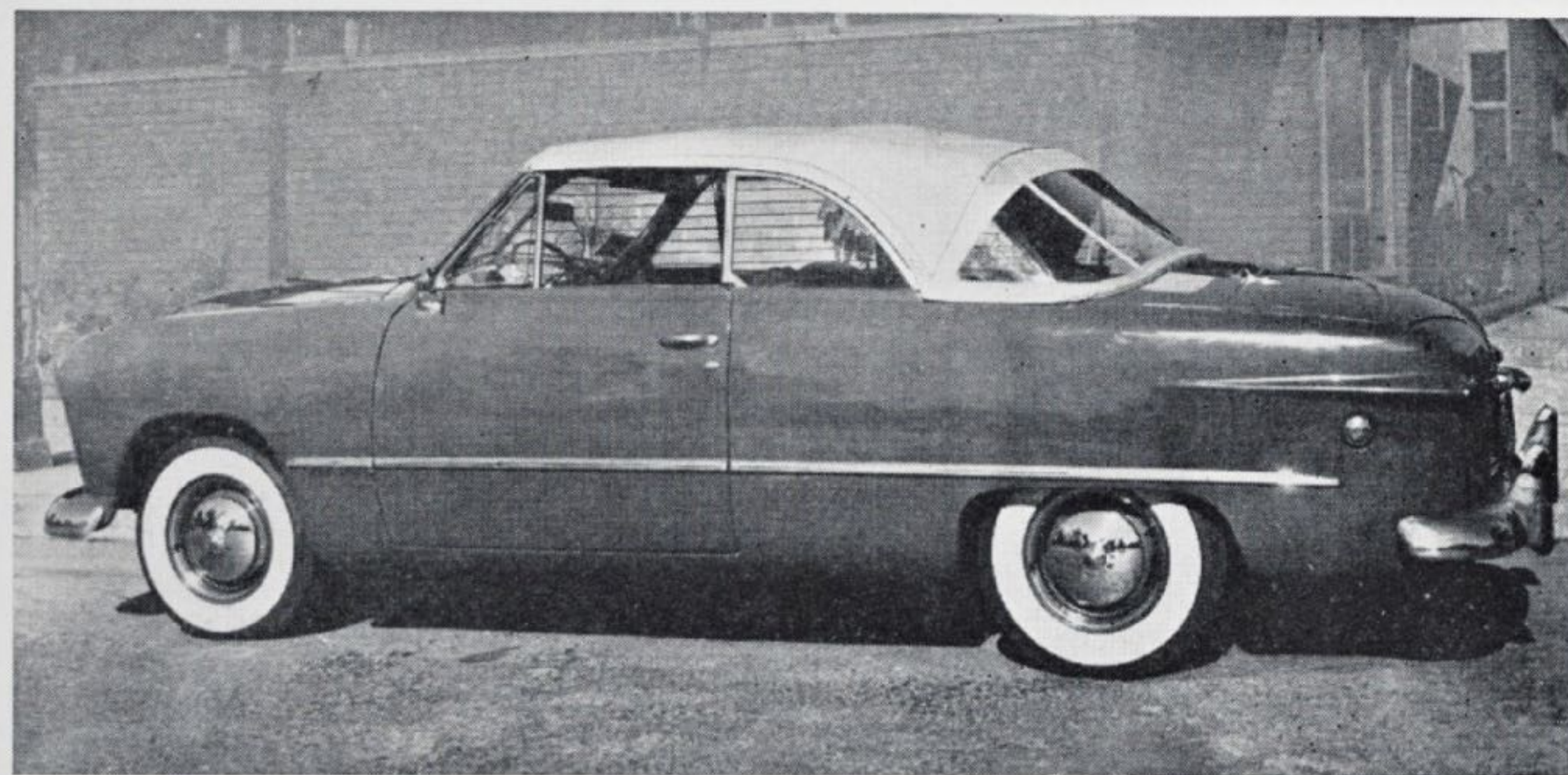
page six

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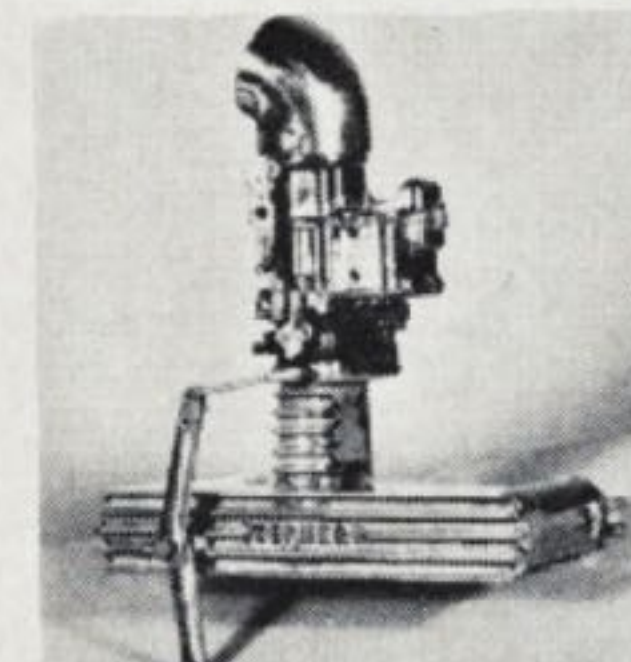


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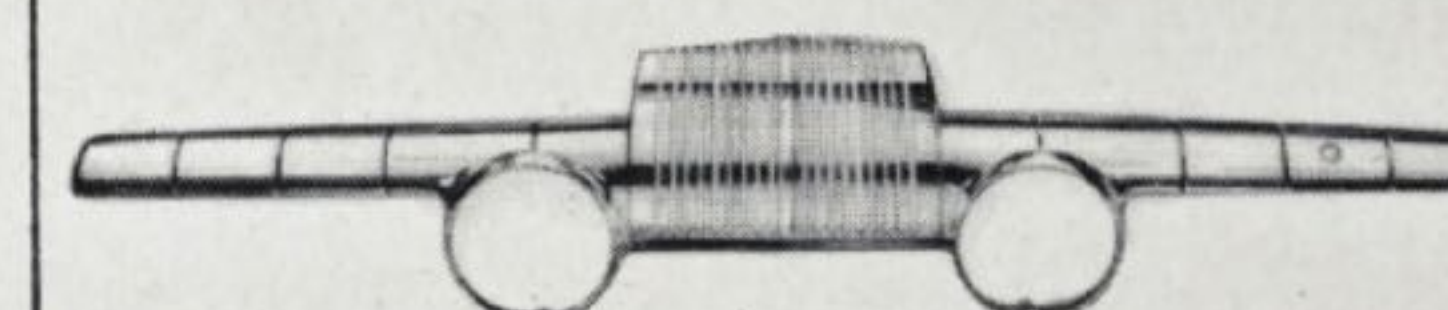
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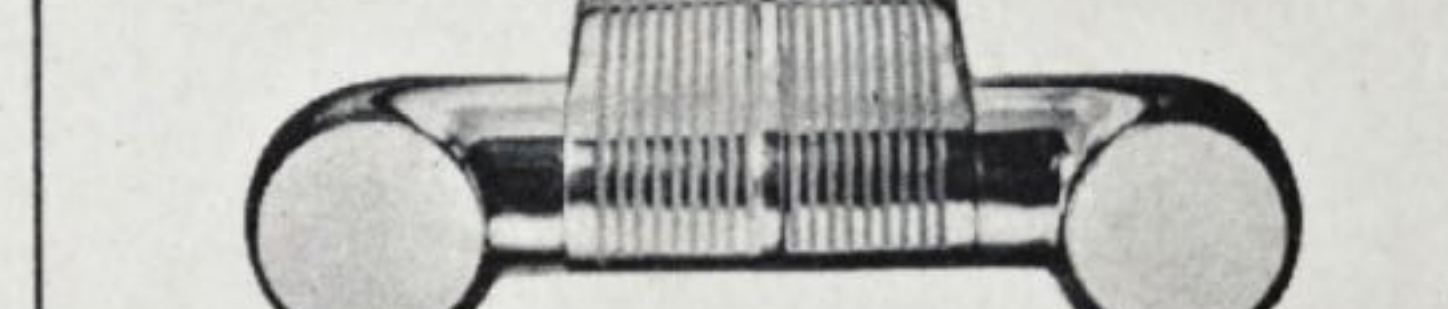
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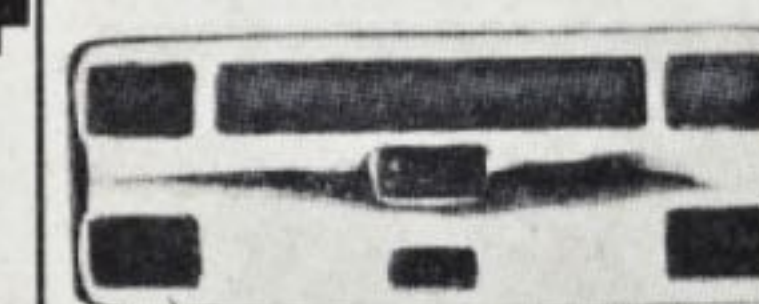
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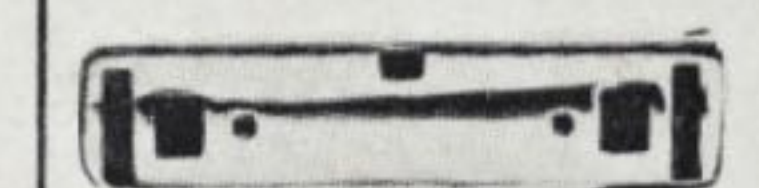
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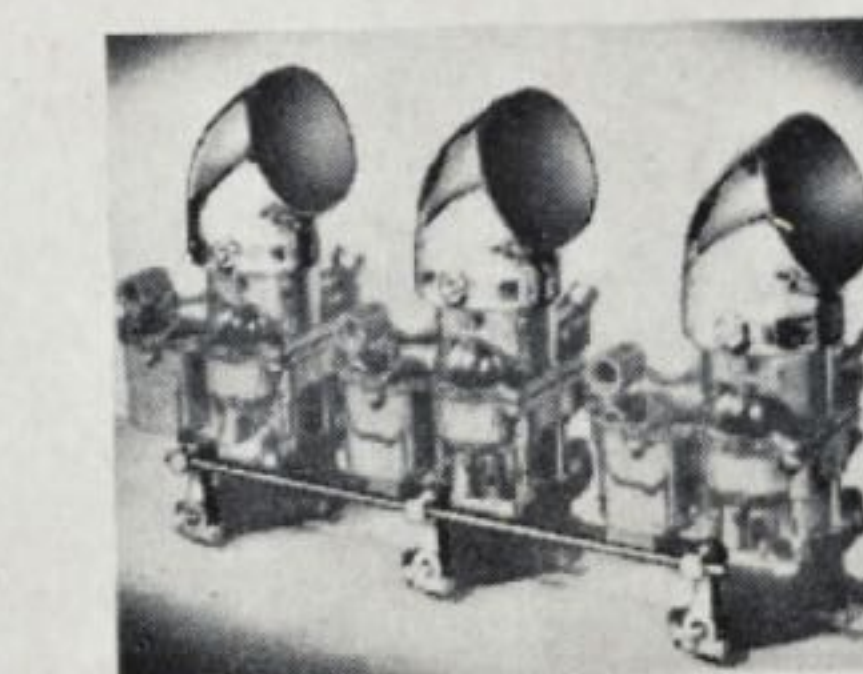
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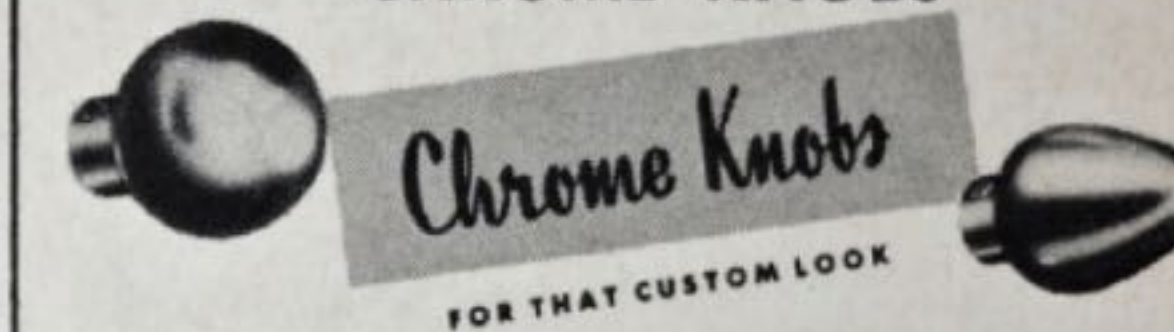
'41 FORD RADIO PANEL, \$3.45. SPECIFY PHILCO OR ZENITH



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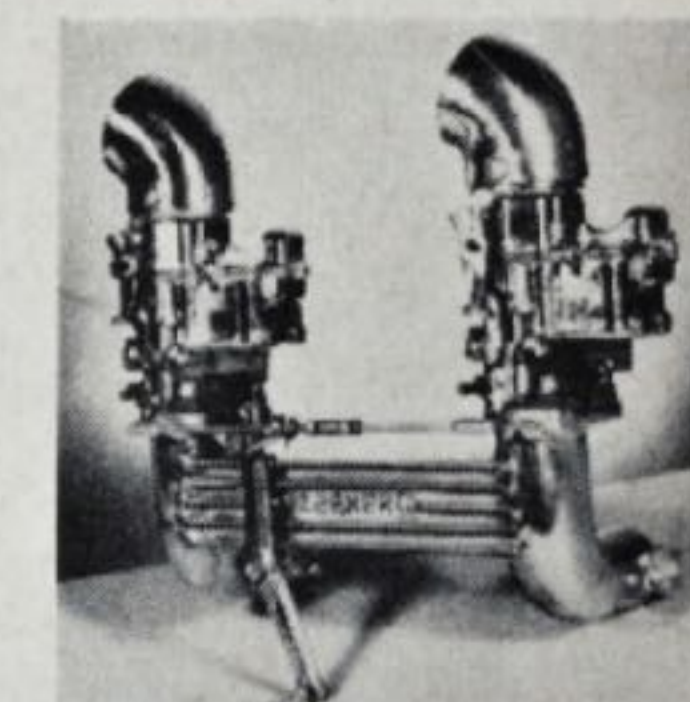
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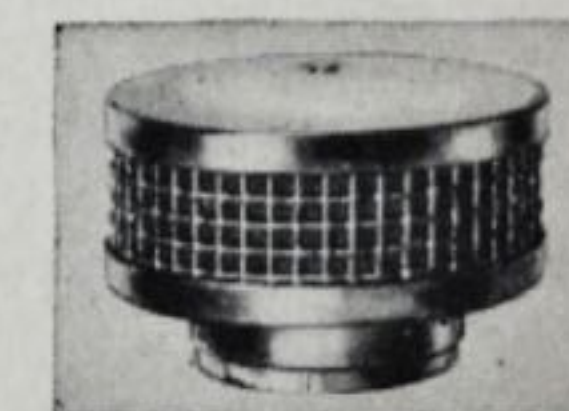
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The Magazine for a Motoring World

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PUBLISHERS • ROBERT R. LINDSAY, ROBERT E. PETERSON

EDITOR • WALTER A. WORON

ADVERTISING MANAGER • FLOYD J. WHEELER, JR.

ART DIRECTOR • ALBERT H. ISAACS, JR.

ADVERTISING ART • JACK PRESTON

STAFF PHOTOGRAPHER • THOMAS J. MEDLEY

STAFF WRITERS • GRIFFITH BORGESON, H. WIEAND BOWMAN, GEORGE FINNERAN



COVER: Front to rear in the Grand Prix Mar del Plata, Buenos Aires, Argentina, are Fangio, Alberto Ascari (the eventual winner), and Villoresi, all in Ferrari V-12's. Fangio and Villoresi had to retire following a collision. Photo by Keystone.

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things to come

IN THIS issue of MOTOR TREND, we take pride in presenting a look into the future of the automotive field. It is indeed gratifying to see improvements being made in a field as competitive and as interesting as this one—the one in which we, naturally, are most interested.

One of the inevitable things of life is that changes will be made. They must be made, if we are not to become stagnant. So it is in the automotive industry. However, producing a new or different article, is, in itself, not sufficient—it must be better than its predecessor if it is to be a success.

Much thought has been given to improving the efficiency of the internal combustion engine and the fuel that powers it. But we are an impatient lot—we want drastic changes that will assure us of unlimited performance, with impossible fuel consumption.

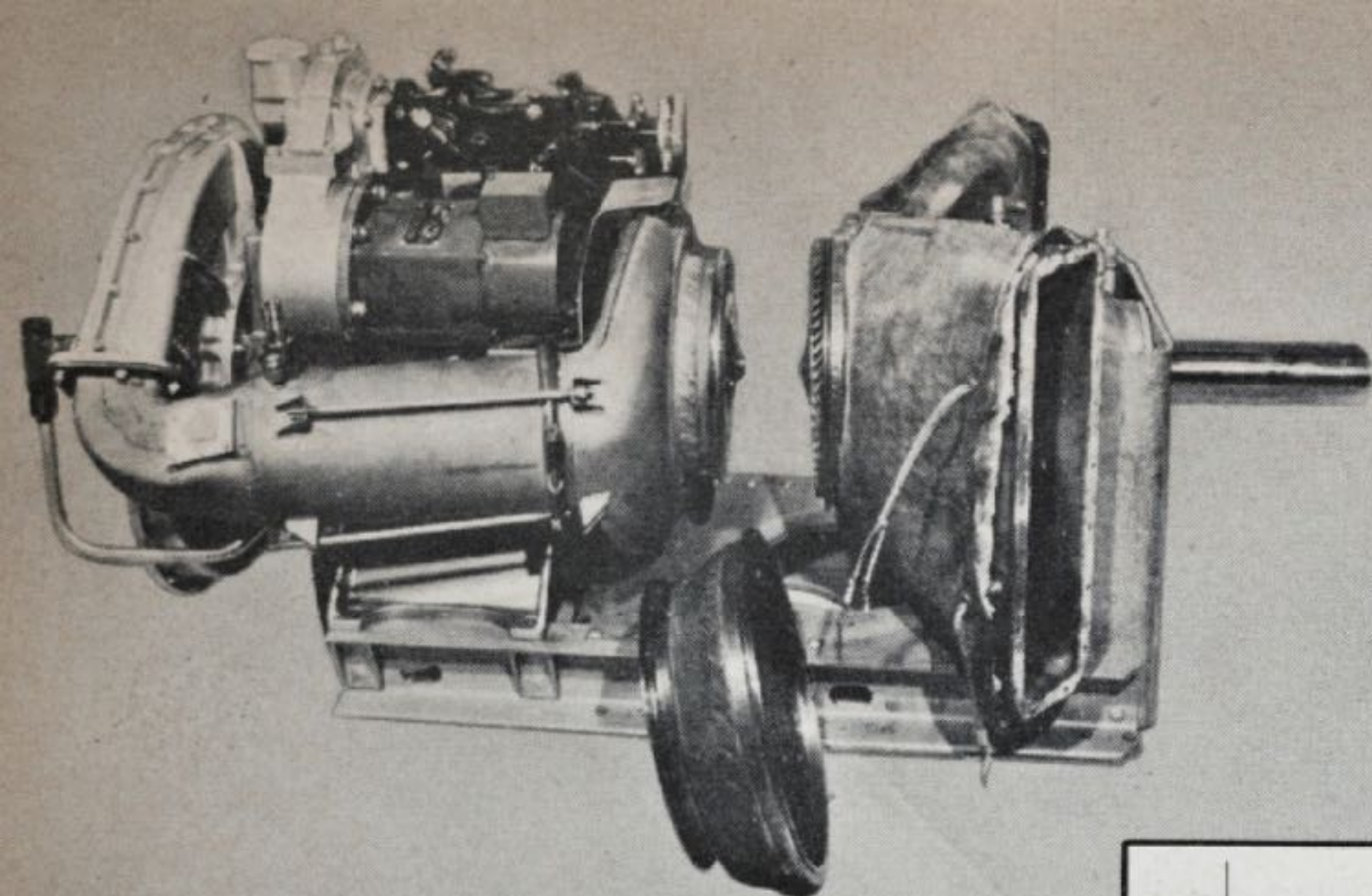
Perhaps, as was stated by a well-known automotive figure, the internal combustion engine of the reciprocating type is the most inefficient. If so, automotive engineers are to be commended for the great improvements that have been made in this "inefficient" engine in its short life span. But, maybe it is time that we revised our thinking.

The gas turbine could point the way . . . if not today, then maybe tomorrow. In any event, it is a certainty that the gas turbine will become a part of our everyday life. To accept such a radical achievement, however, the public must be offered performance that will equal or surpass the promised reciprocating engine of tomorrow. And what are the advantages of changing at this time—aren't we satisfied with present engines?

In the first place, the gas turbine engine is a simpler power unit than the reciprocating type. It has fewer moving parts, requires ignition only for starting, and should, therefore, provide easier maintenance. Further advantages are the wide selection of fuels possible and the reduced vibration.

On the debit side of the ledger is the high fuel consumption, the space requirements, the noise and heat of the exhaust, and the higher initial cost (to cover engineering).

In spite of these disadvantages, it is a certainty that our automotive engineers will devote much time and study to the development of the gas turbine. And we, whether we be engineers, technicians, or laymen, should view this, if not optimistically, then at least with an open mind.



BOEING AIRCRAFT

ONLY connection between driving and driven units is conical shroud, removed, in foreground

Will Gas Turbines Propel the Car of Tomorrow?

by Griffith Borgeson

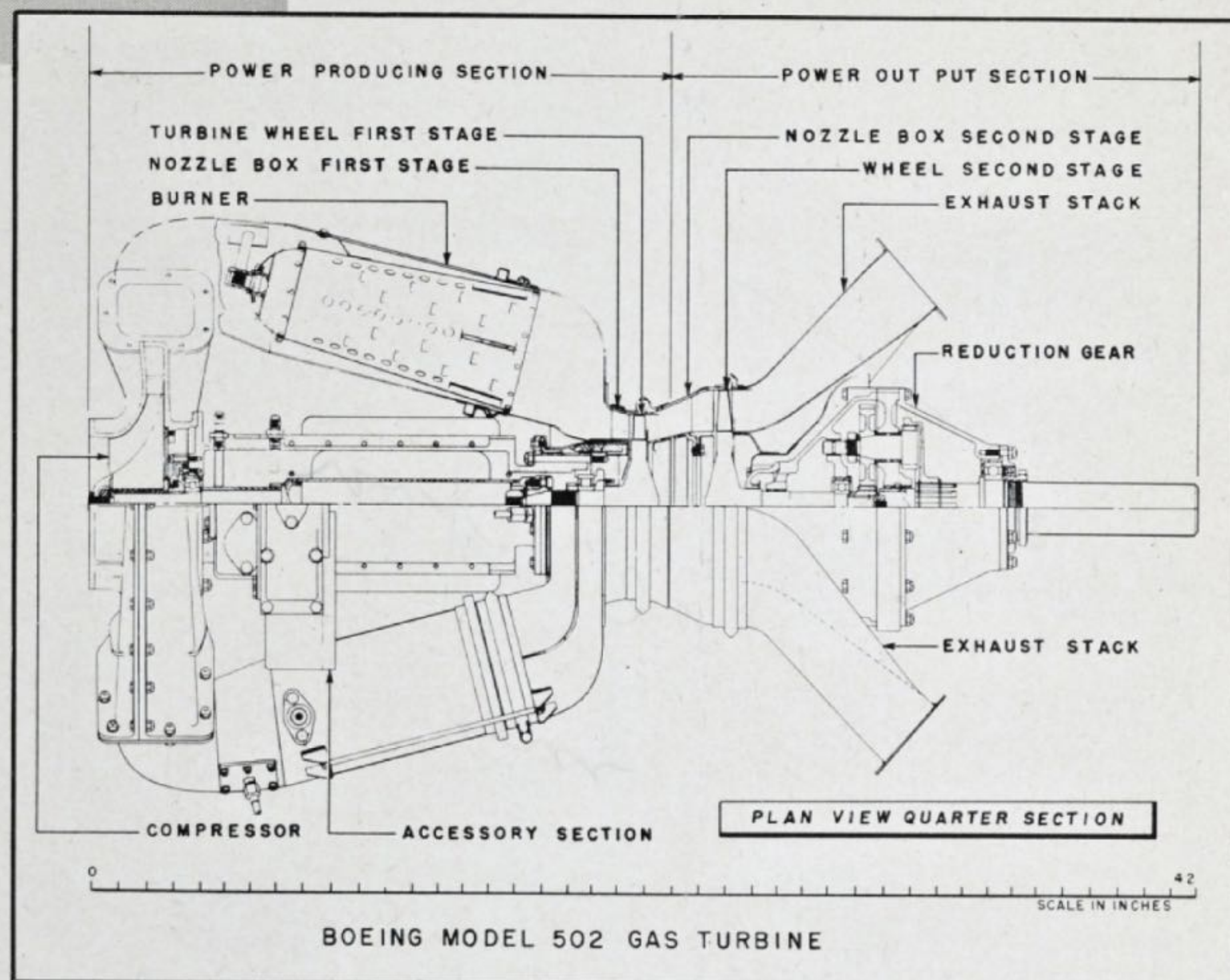
THERE'S no reason why not. That's right . . . none. You can even have one custom-built today. Its fuel consumption will leave something to be desired, but that's the case with lots of custom jobs. For a revolutionary type of engine, there'll be remarkably few bugs in it, but then there are only a couple of moving parts to develop expensive noises. Of course, authorities have said that practical performance can't be had from small scale turbines . . . but they said that diesel passenger cars were impossible, too. They were still saying that when Mercedes-Benz had sweet-running diesels on the road for a couple of years.

The gas turbine is here, just as surely as we have atomic fission. The gas turbine will, within the next few decades, become as revolutionary a force as the A-bomb. What's more, it's the ideal power plant to someday utilize the heat energy released in the fission process. What the up-and-down engine was to the period from the Industrial Revolution to World War II, the gas turbine will most certainly be to the foreseeable future. And this easy prediction applies to power plants of all types . . . on land, sea and, where the gas turbine is already supreme, in the air.

Why will the gas turbine revolutionize our technology and consequently our way of living? Let's just list some of its characteristics, compared with the good old up-and-down mill. It has vastly less weight per hp and vastly fewer parts. It can be made quickly and much more cheaply. It has fewer auxiliaries, less vibration, it's easier to work on, to transport, to install, and will operate at full efficiency almost without regard for altitude or surrounding temperature. It operates on any liquid fuel and is being adapted to solid ones. The list goes on and on.

We as much as said that the gas turbine-powered car is here. Where? Well, a Czechoslovakian company is said to have a 70 hp job on the road. The Société Française Turboméca has developed an efficient 140 hp plant. Centrax of England has a 160 hp unit which has a compression ratio of 5.8 to 1, turns over at 35,000 rpm, weighs 325 pounds

WHY NOT A GAS TURBINE CAR?



BLUEPRINT for the near future . . . basic layout of the Boeing 502 turboprop, a gas turbine

. . . a couple of pounds for every palfrey, which is sensational. England's Rover Company has exhibited an engine three feet long by one and a half feet wide, designed to make its home under the hood of the Company's popular medium-sized car. The five-inch diameter turbine wheel normally turns at 55,000 rpm, has reached 70,000 rpm on the test bench. Much testing, of course, will be done in the interval between the prototype and the production model. Austin of England is aware enough of the gas turbine future to be taking out patents on methods for getting turbine power to a car's driving wheels. In America, the Boeing Airplane Company leads the development field with its Model 502 engine which, with a compression ratio of 3:1 and rpm of 36,000, develops 160 hp, plus. It weighs 184 pounds . . . just about one hp for each pound of engine weight. We'll look at this more closely in a moment.

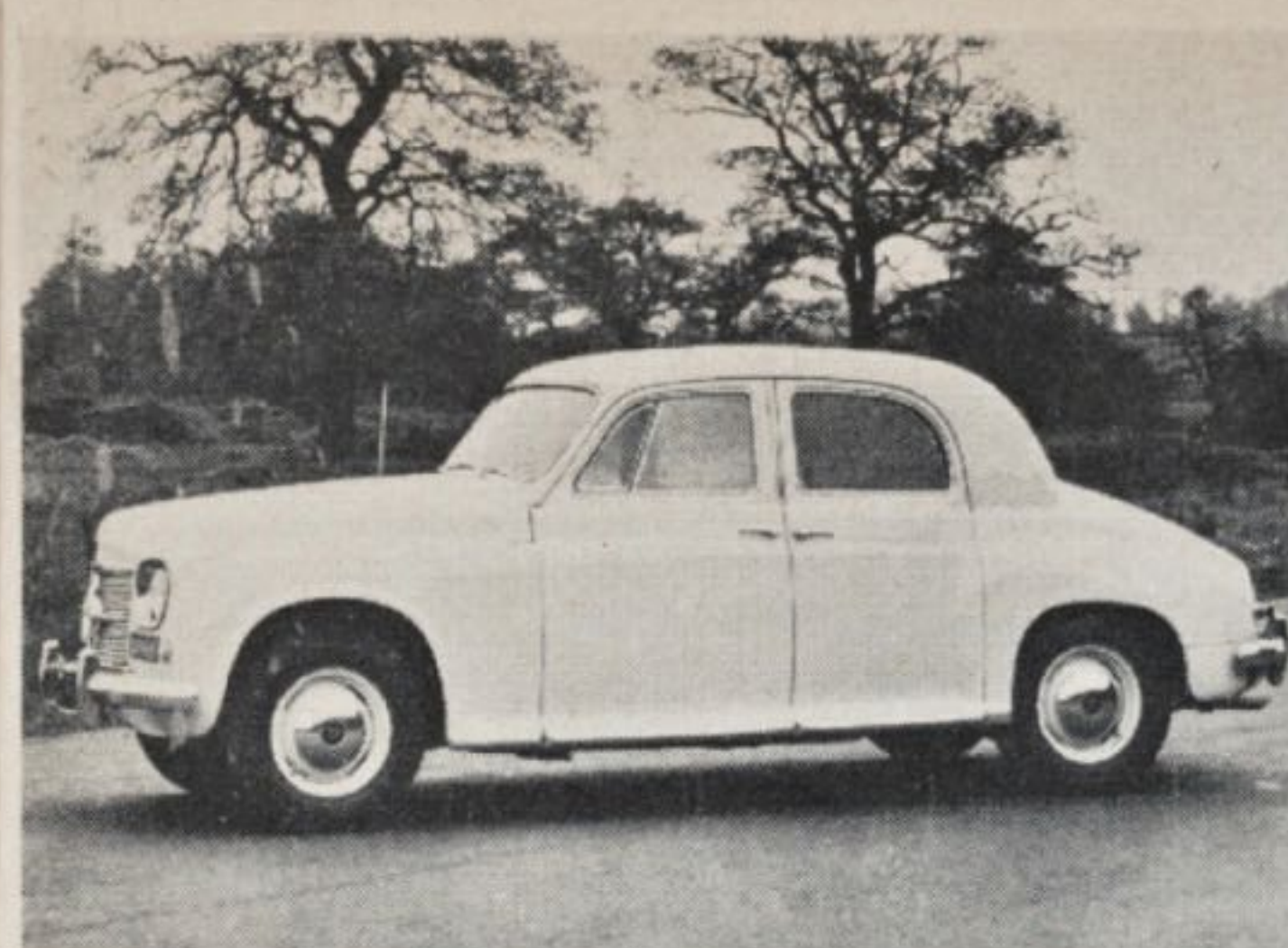
Boeing, Austin, and Rover, aside from the automotive activities any may have, are all airplane manufacturers . . . and they're the ones who are making no secret of their gas turbine research. But we can be sure that NO major auto manufacturer is ignoring the new power source in his plans for the future.

It was in the air, and in competition with German turbojets, that the present day product was born. Of course, the turbine idea is as old as the water wheel and the first

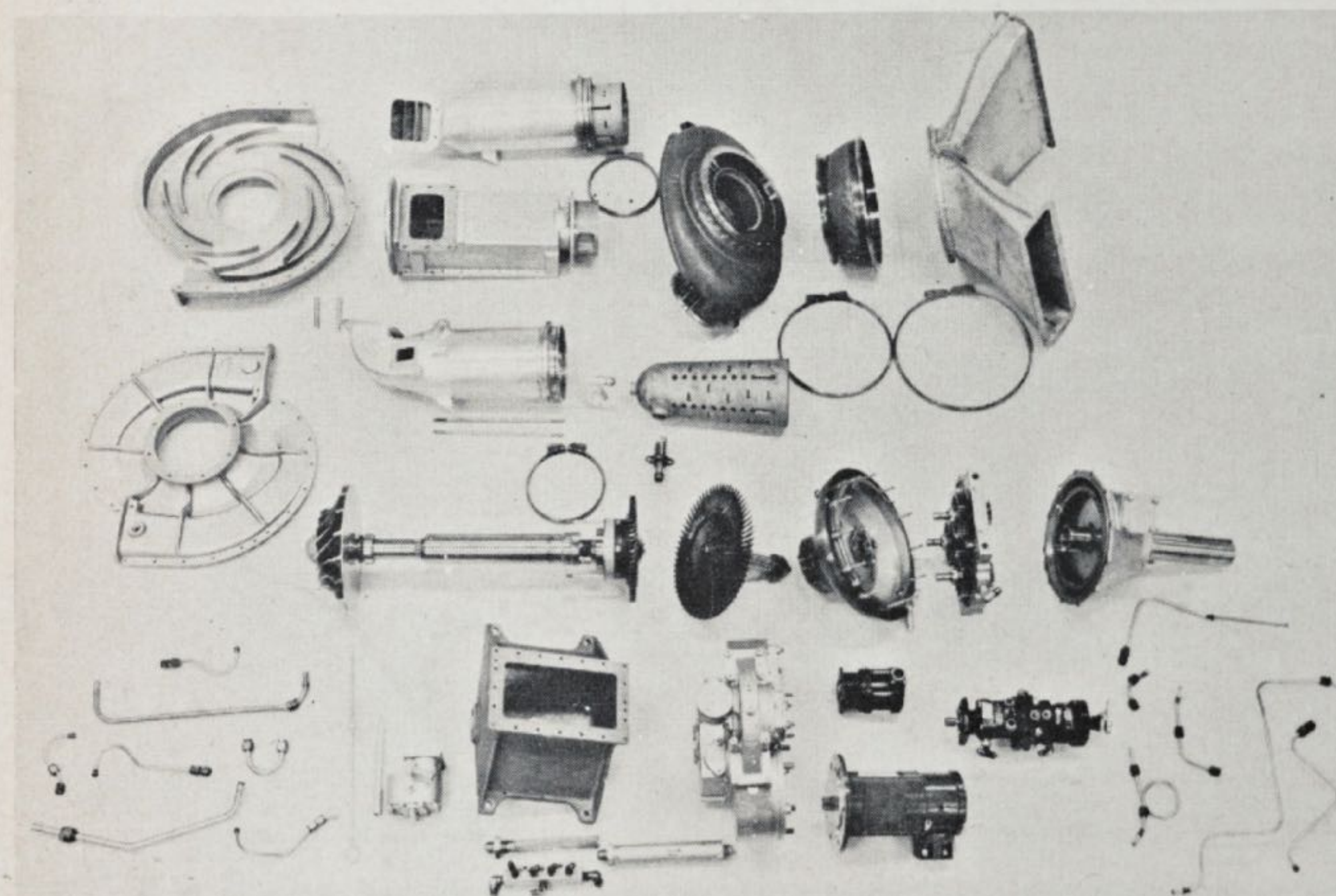
gas turbine we know of dates back to 130 B.C. The first patent for a power plant along modern gas turbine lines was issued in 1791. And good experimental models have been in operation since the '80's. But the efficient gas turbine of the future which is rapidly becoming reality was born when new, heat-resistant alloys were born during the recent war.

Why the future had to wait for this event can best be understood if the engine in question is understood. What is a gas turbine? Well, turbines in general are simply wheels with buckets attached to their rims. Spray something into the buckets and the wheel goes around. The wheel looks a lot like the driving gear on your wife's eggbeater. Put a casing around the bucket-wheel to recover more of the energy directed against it . . . and you have a turbine.

The most widely used turbines are steam-operated. They require all the auxiliaries required by an up-and-down engine: boilers, condensers, bevies of pumps. The gas turbine threatens the future of the steam version, too, since it neatly by-passes these auxiliaries which, on a ship for example, take up a couple of thirds of the engine room. Instead of releasing the heat energy of a fuel, transferring it to another medium (steam, mercury vapor, etc.), then transferring it to the engine itself, in the case of the gas turbine the products of combustion (the gases) go straight from the combustion



GAS turbine automobile need look no different than cars of this moment. One of new engines has been designed for this British Rover. It is possible for the gas turbine unit to be mounted either in the front or the rear of a car, in a like manner as conventional engines



BOEING AIRCRAFT

THESE few parts (above), making up the Boeing 502, deliver 160 bhp, plus . . . AND this staggering array of machinery (right) weighs five times more, produces 10 bhp less

lems are, generally, continued improvement of alloys and, automotively, getting the power to the wheels.

Since you may be saying in a few years, "I drive a Boeing," let's see what their product is to date. There are, in the aero field, turboprops and turbojets. T-props spin a shaft, T-jets discharge a blast, produce a gaseous "thrust." Boeing simply built a small T-jet, added a turbine to react to the thrust, added reduction gears and a shaft. And this probably is the car engine of the future. Although rated at 160 bhp, it pulls 200 if required. Primary stage, or gas-producer, is a pure jet engine: compressor, two can-type burners, a turbine wheel. Secondary stage is another turbine, which changes the thrust into shaft power. There is no mechanical coupling between the two turbine rotors: gas from the primary drives the secondary and this is a remarkable and desirable feature of Boeing design. It makes it possible to operate the two stages at any desired unequal speeds and makes for an infinitely variable transmission and very snappy torque. Acceleration,

How does a gas turbine work? A can is connected by a pipe to an enclosed bucket wheel. Fuel is burned in the can and the expanding gasses spin the wheel. To keep the temperature of the gases within the limits of the alloys concerned, air is inject-

Flash from England!

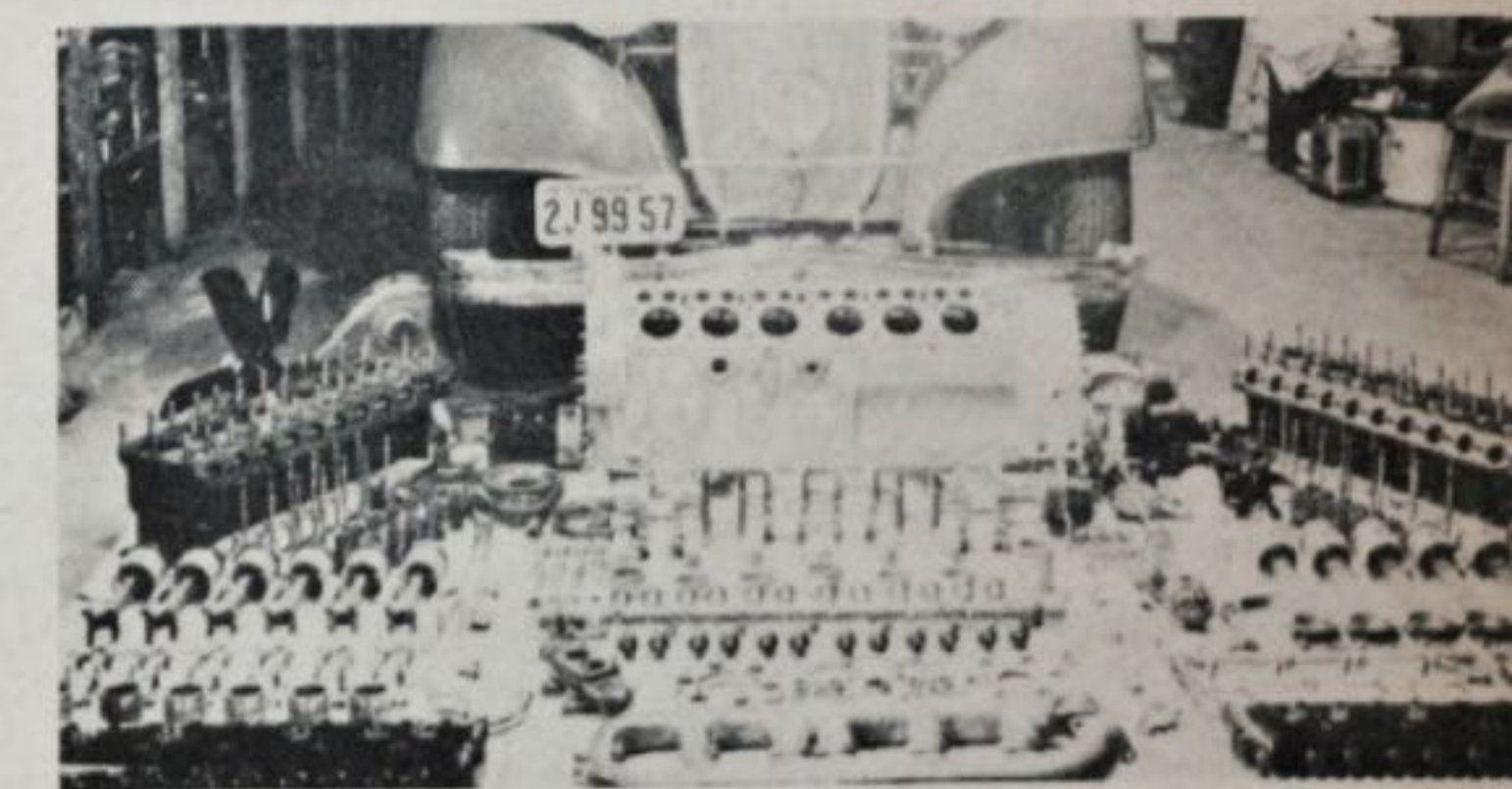
Word received from England as we go to press confirms the optimistic note of Mr. Borgeson's article. Rover has just tested an experimental twin-turbine prototype sports coupe of 111-inch wheelbase and 52-inch width. Two kerosene-operated turbines are mounted side-by-side behind the driver's seat. Air is sucked in through intakes in the side of the car, is compressed, burned, and then passes through the main turbine, which drives the wheels. Exhaust air escapes through an opening in the top of car. On its test, it took 13 seconds to start the power unit, and the car was ready to go a few seconds later. From a standing start, it hit 60 mph in 14 seconds. Top speed was around 90 mph.

For more details on this unusual jet-car, watch future issues of MOTOR TREND.—Editor.

in passenger cars or trucks, should be outstanding.

Two moderately husky men can easily remove the Boeing 502 from almost any commonplace installation, the engine having so little weight. A well-made gasoline mill of similar output weighs around 1000 pounds . . . a diesel about 2800. The largest spare part in the 502 weighs 25 pounds. Tests suggest that the 502 can be started up at 65° below zero, warmed up and opened wide in sixty seconds. It runs equally well on diesel oil, kerosene, or any grade of gasoline. Its exhaust temperature is no greater than that of a conventional automobile. And one of the biggest drawbacks, noise, has been whipped by Boeing-designed silencers. Boeing is not merely dabbling with this marvelous little engine. Production and testing in all types of installations are proceeding in an atmosphere of great optimism based on the knowledge that this type of power unit must soon take the place of the old reciprocating iron.

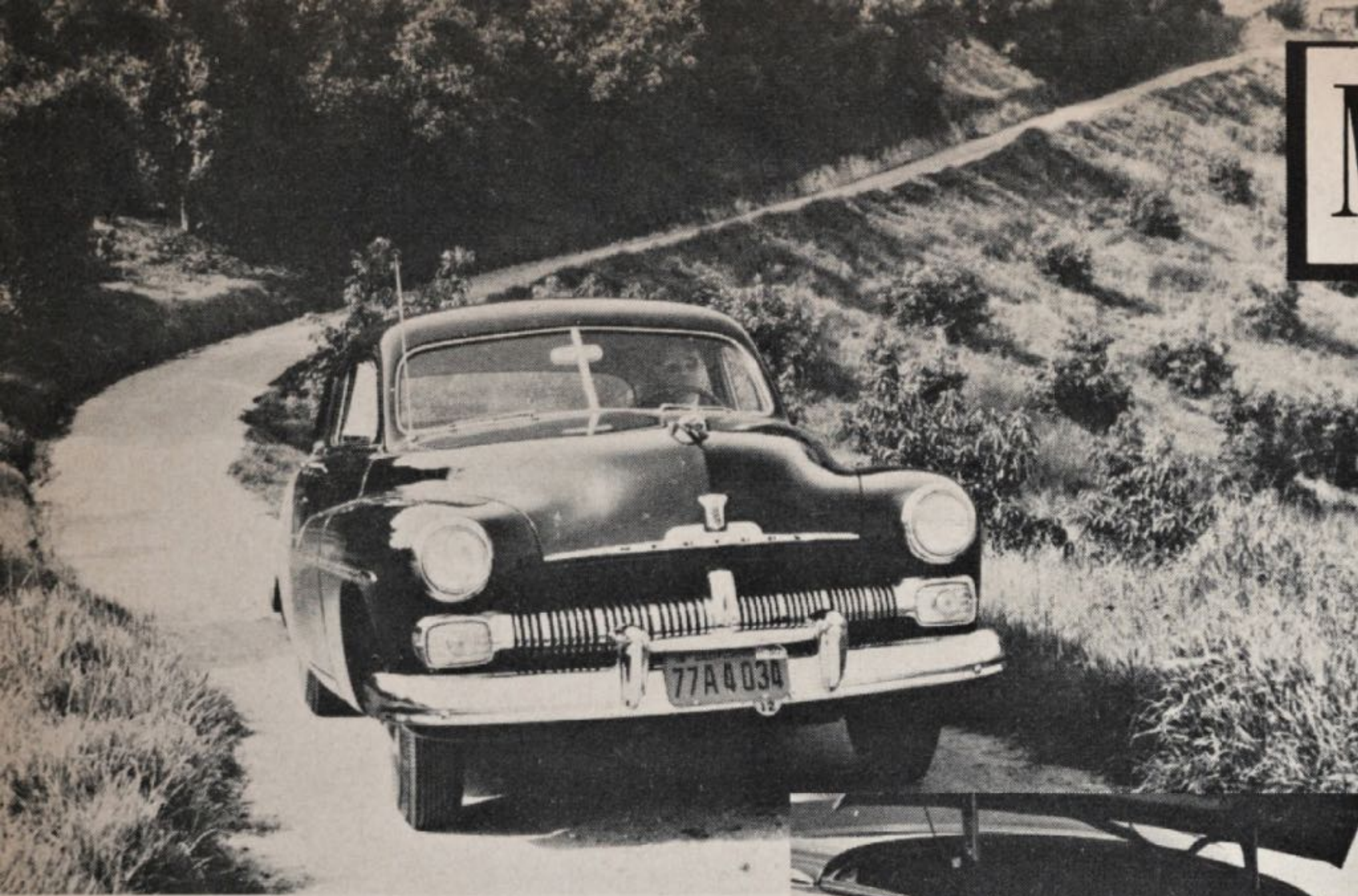
This, of course, is the revolution we spoke of earlier. The competitive life-expectancy of the good old internal combustion engine is predictably short. As so often happens in history, first solutions to problems are



GRIFFITH BORGESON

complicated ones, steadily simplified in practice until, one day, the original solution has only historical interest.

Certainly the world automotive industry is in for major reorganization down to the grass roots as, in the years immediately ahead, rotating shafts replace reciprocating pistons. Since the new engines will be simpler, there will be less work for service organizations. But, since the engines can be manufactured so inexpensively in mass, more cars will be sold and reduced engine maintenance should be largely compensated for by general servicing of the greater number of vehicles in use. At any rate, prepare to welcome the greatest prime mover development since Watt harnessed the tea-kettle and un-harnessed the horse.



DRIVING the 1950 Mercury through hills and over dirt roads is easy, with power to spare

By Walter A. Woron, Editor

IN THE recent Mobilgas Grand Canyon Run, the 1950 Mercury proved that for economy it is the car to beat. This made us wonder about the Mercury's other performance characteristics, for fuel economy is generally a good yardstick for judging an engine's efficiency. For this reason we arranged with the Public Relations Department of the Lincoln-Mercury plant in South Gate, California, for a road test of the new Mercury.

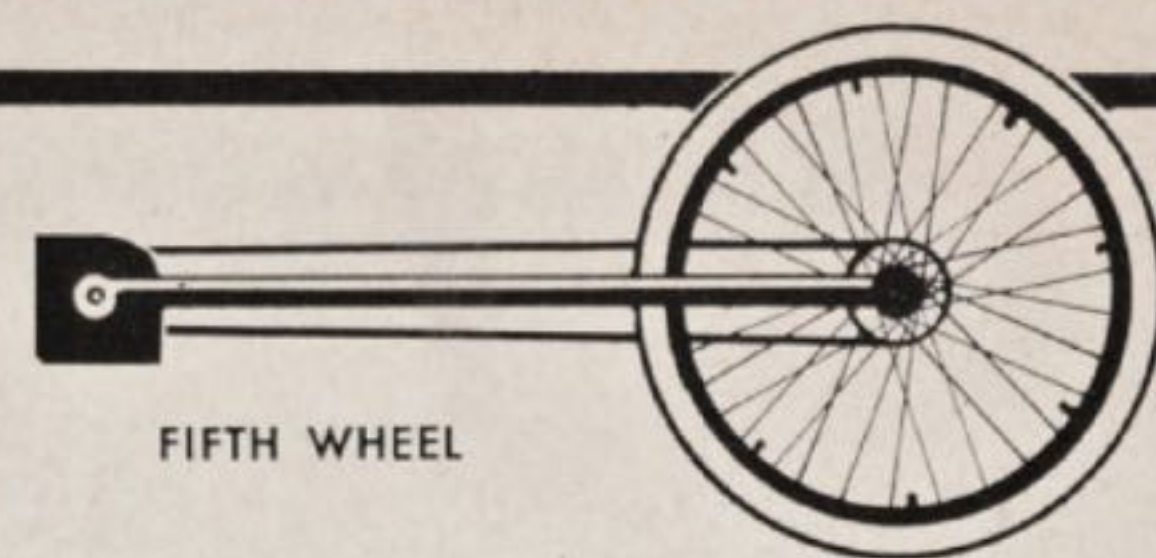
Early one morning, Technical Assistant Wally Parks, Photographer Tom Medley, and I met at the Lincoln-Mercury plant. Here we obtained a 1950 maroon, four-door, Mercury sedan for test purposes. The car used



was a company car with 1848 miles on the odometer, and had been driven by many different people in the short time that it rolled off the assembly line. A fuel and oil check was made, the tire pressure was checked, and then we were ready.

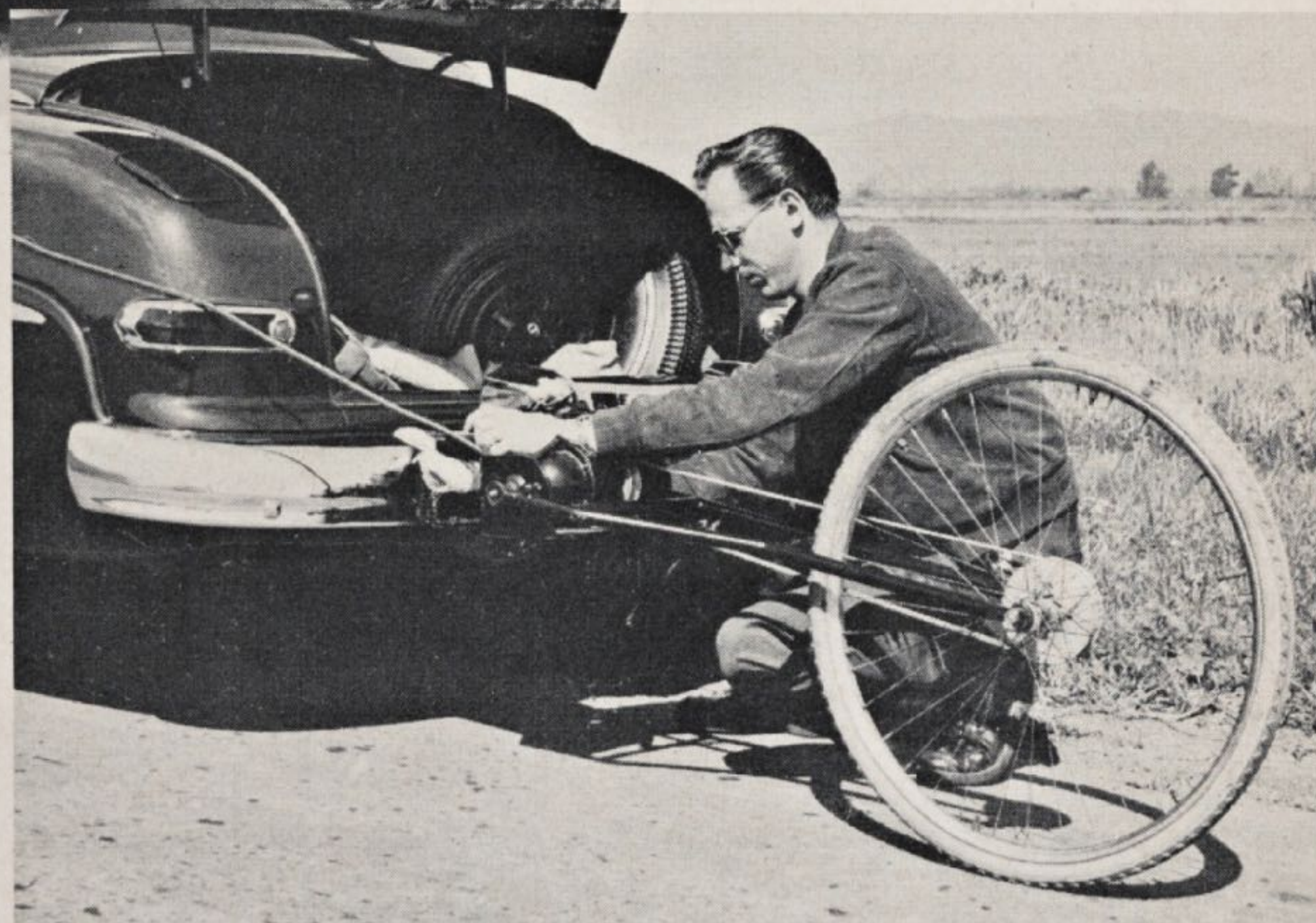
Before driving off, we appraised the car quite thoroughly from a car buyer's standpoint. The general appearance of the car is very good, since it is streamlined, yet functional. There doesn't appear to be an un-

MOTOR TRIALS



FIFTH WHEEL

TESTING THE ECONOMY-MINDED 1950 MERCURY



ATTACHING the fifth wheel to rear bumper of the Mercury, prior to making acceleration trials

necessary amount of chrome on the car and what chrome is there is used to advantage.

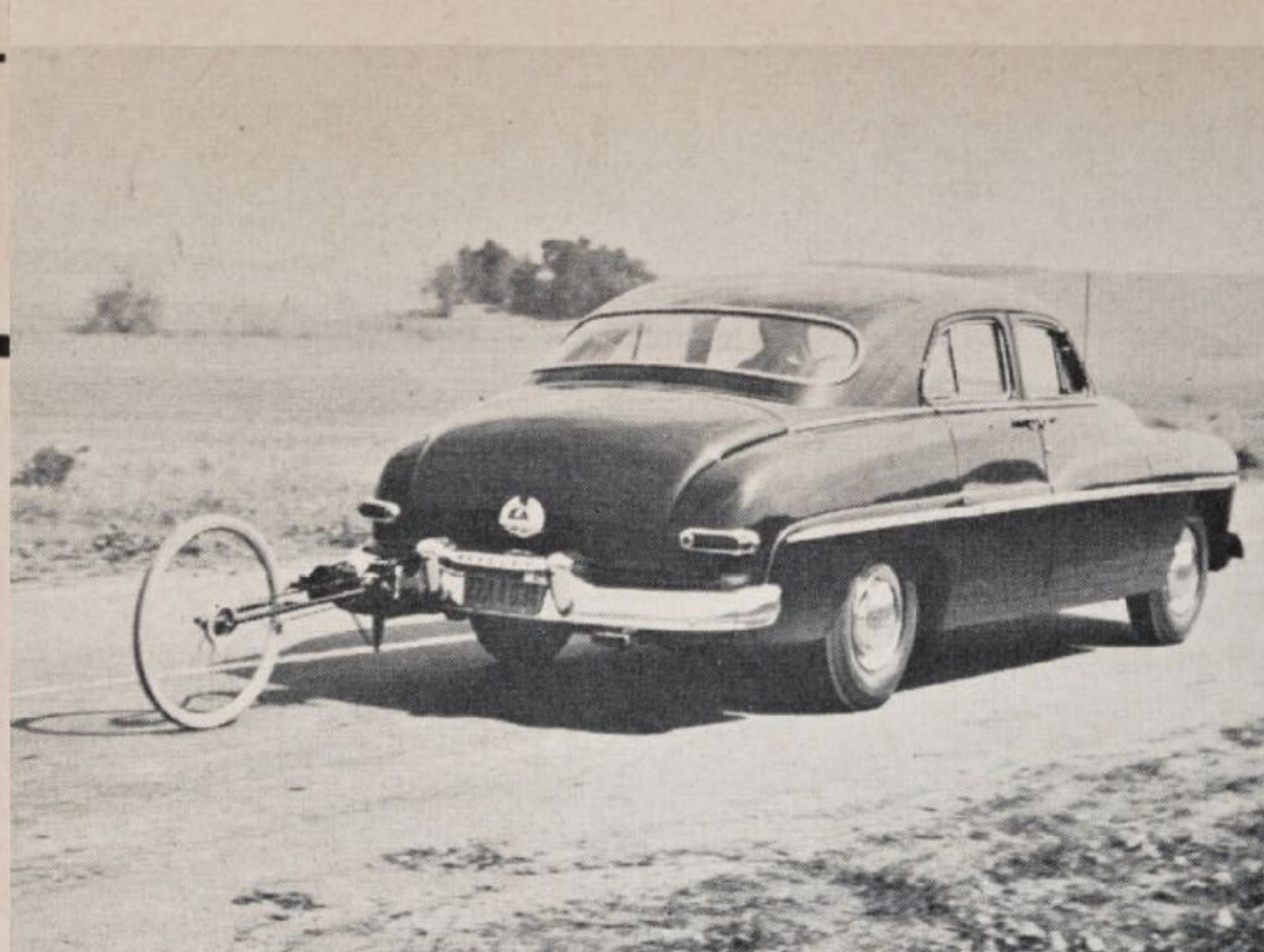
Entering the car, either front or rear, is quite easy, and the feel behind the steering wheel is very satisfactory. All controls are easy to reach, and vision is very good to the front, sides and rear. However, a wider rear window would improve vision to the right rear. The seat is comfortable and the wheel is set at a good angle. Sufficient leg and knee room is provided in the front seat at all times. Headroom is satisfactory both front and rear for the average person. The upholstery, instrument panel, and other interior appointments are all of high quality.

Stepping out and around to the front of the car, we opened the hood and found that the engine accessories were located in such a manner that a mechanic should have no trouble working on any of the components or the engine itself. There would be no difficulty in changing a tire since a jack can be placed in position under the front 'A' frame or rear spring hanger without the necessity of lying on the ground. The trunk compartment has one slight disadvantage in that the key must be left in place when the trunk is unlocked, although this can be construed as an advantage in that the key cannot be inadvertently locked inside the trunk compartment. A large amount of luggage space is provided.

From the plant we headed for the open highway, where it was soon evident that the car could roll along at high speeds with no difficulty. The suspension, like most domestic cars, is quite soft, providing the comfortable ride to which we have become accustomed. Naturally, this detracts somewhat from the car's cornering ability on sharp turns; however, there is not at any time the feeling that the car is laying over excessively. The steering system provides for extreme ease in handling and parking, although a faster ratio would be an advantage from the standpoint of giving quicker control. An improvement could be made in the firewall to provide more toe room when the clutch is depressed to the floor, although this may have been because of our big feet.

In the brake check we were quite surprised, since the brakes have a comparatively soft pedal. When they are pushed approximately halfway down they take hold with considerable force. Traveling at 30 mph in high the brakes were applied, and with wheels locked, the car stopped in 41½ feet. At 60 mph in high the car was stopped in 173 feet without burning rubber for any considerable distance.

Arriving at the test strip, we attached the fifth wheel to the rear bumper of the car, which, when used in conjunction with the Weston electric tachometer, permits us to



WITH fifth wheel in place on the rear bumper, performance is checked

read the actual mph to a very accurate degree.

After attaching the fifth wheel and re-checking the length of the course, we made our acceleration trials. The results of these trials are shown below. It may appear that the times are somewhat slow, for in a previous test over a ¼-mile strip, a 1949 Mercury from a standing start turned :18.85, compared to our test figure of :20.88. It was found that the fastest shift was possible going from overdrive second to overdrive high, bypassing conventional high.

TEST	ACCELERATION FIGURES	
	Without Overdrive	With Overdrive
Standing Start ¼-Mile		
0-30 through gears (low only)	:04.55	:20.88
0-60 through gears		:04.57
10-60 in high	:18.34	:15.98
30-60 in high	:10.36	

In the top speed test, with a limited approach and shut-off distance, we were able to attain a top speed of 83.75 mph in overdrive. Although this may not appear to be too

fast, with better tuning and a longer approach distance it is certain that the Mercury could turn a higher top speed.

A fuel consumption check was not made since it would be practically impossible for us to make as accurate a check as the General Petroleum Corporation made in conjunction with the AAA in the recent Mobilgas Grand Canyon run (April 1950 MOTOR TREND). In that run, the Mercury won the Sweepstakes Award on the basis of the most ton-mpg, which is the weight of the car and passengers in tons multiplied by the miles traveled, divided by the amount of gasoline consumed. The Mercury averaged 61.27 ton-mpg, or better than two ton-mpg over its nearest competitor. In addition, it had the second best economy figure in actual mpg of 26.52, only .03 mpg under the most economical car. This figure was four mpg better than the overall average of all 31 competing cars.

Coming back into town after the acceleration and speed trials, we drove the car through the hilliest section of Los Angeles, taking it up grades of almost 32 per cent



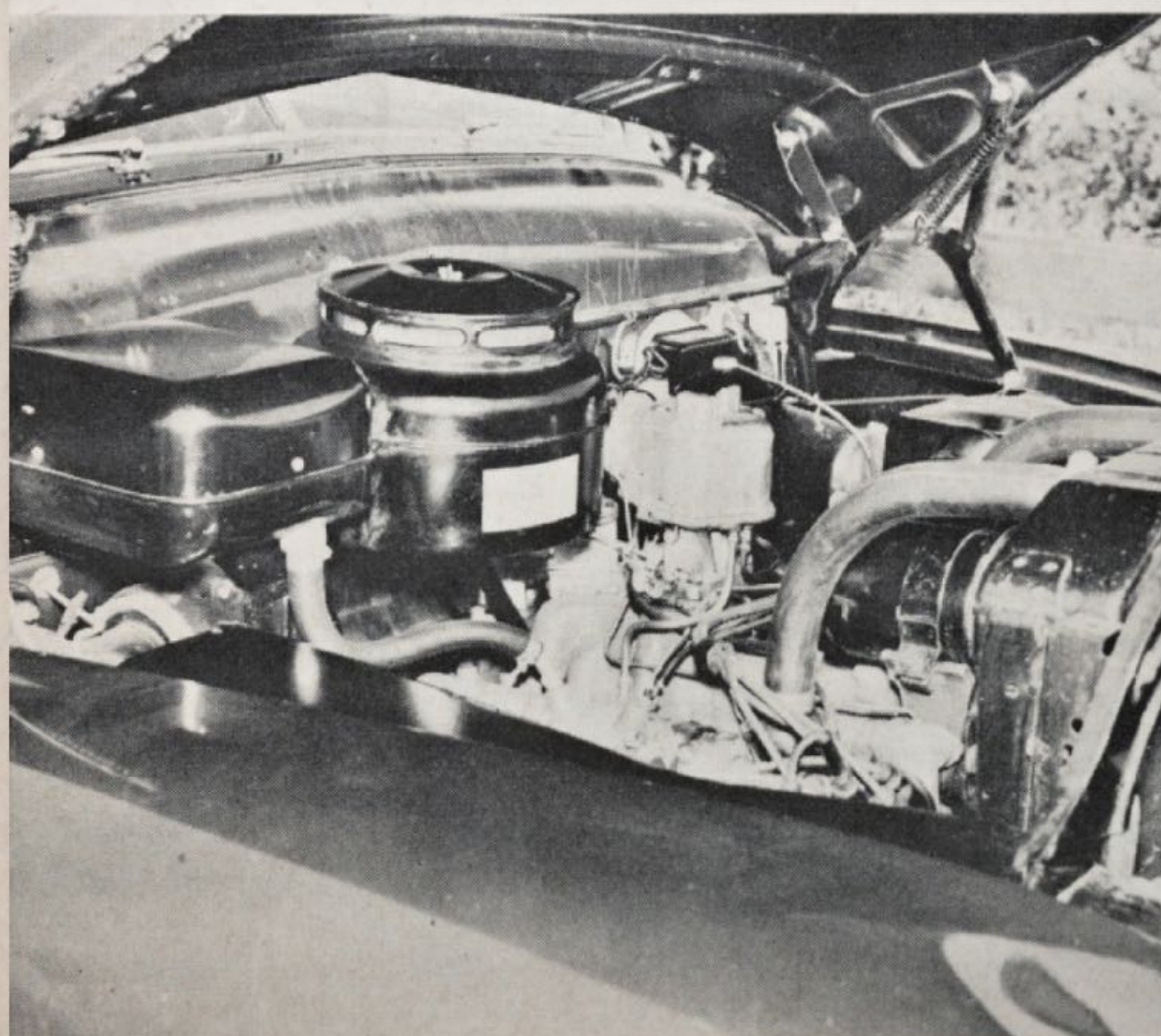
CORNERING characteristics of new Mercury are tried on sharp curve

(32 feet in height for every 100 feet ahead). On a 25.58 per cent grade, first gear was required, while the speed obtainable was 24 mph. This test was made with a fully loaded car. On another grade, which for the first portion was 24.9 per cent, and for the second half was 31.96 per cent, first gear was again required, while the speed maintained was 20 mph.

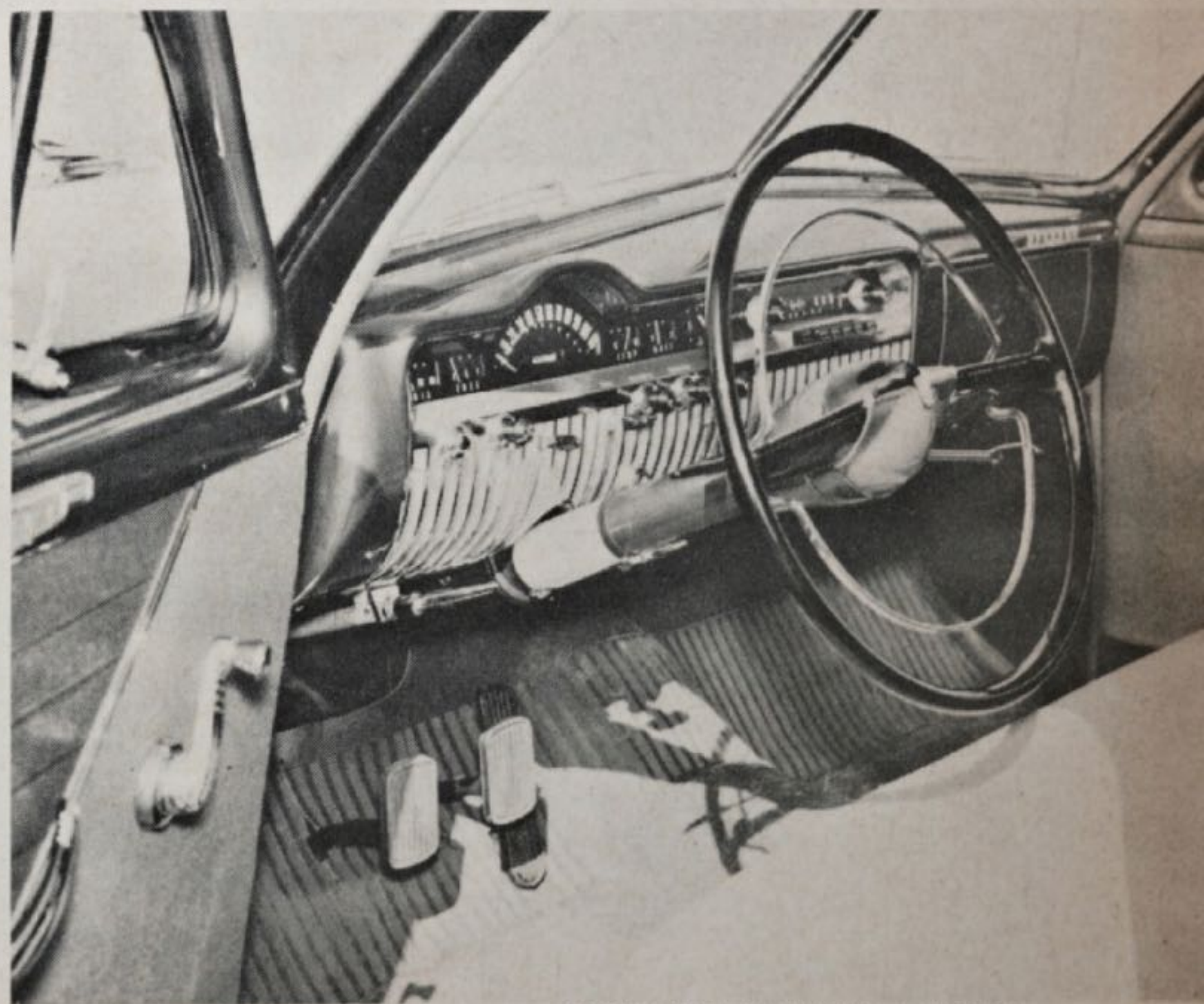
Returning the 1950 Mercury to the factory after eight hours on the road, having traveled 120 miles on open highway, over mountainous terrain, and through city streets, we felt that the Mercury had lived up to its advance billing. It is a car that any owner could well be proud of.

DETAIL ENGINE SPECIFICATIONS

Type.....	V-8, L-head
Bore and Stroke.....	3 3/16 by 4 inches
Stroke/Bore Ratio.....	1.25:1
Displacement.....	255.4 cu. in.
Maximum bhp.....	110 @ 3600 rpm
Bhp/Cu. In.....	0.43:1
Maximum Torque.....	202 ft. lbs. @ 2000 rpm
Compression Ratio.....	6.8:1



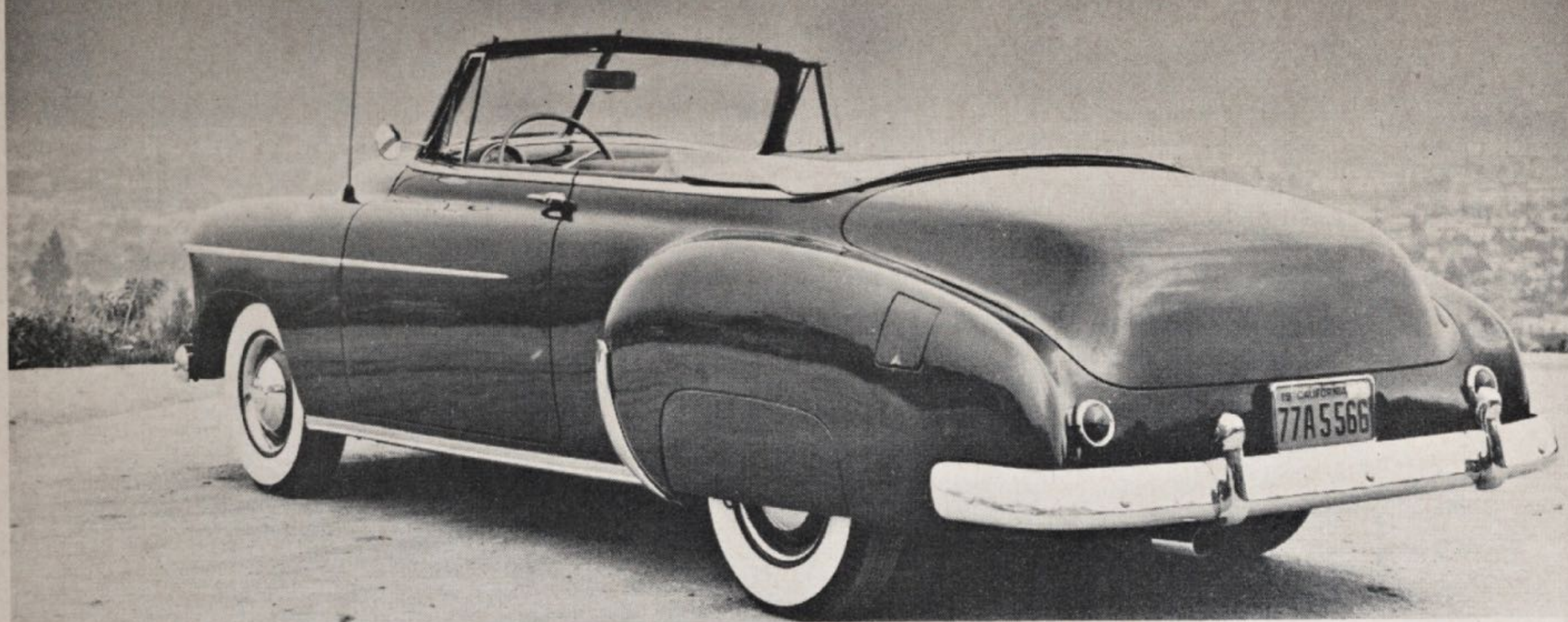
UNDER the hood of the 1950 Mercury—components are neatly placed



INSTRUMENT panel has aircraft appearance and aircraft-type controls

PHOTOGRAPHS BY THOMAS J. MEDLEY

CUSTOM CHEVYS



Restyled for Improved Appearance



PHOTOGRAPHS BY THOMAS J. MEDLEY

CHEVROLET owners have long felt that their cars are equal to, or surpass, other cars in looks, performance, and otherwise. To further their point, as far as appearance is concerned, here is a group of photographs to show that restyled Chevys can look as attractive as any other type of car.

The '41 Chevy club coupe is owned by Dick Arkline of Los Angeles, California, and was customized by Barris Kustom Shop. It has been completely dechromed, has push-button doors and a half-blanked grille. The nose has been shaved, the deck has been filled in, and the license plates have been placed in the center of the '48 bumpers. The rear bumper guards have plastic tail lights. The color is bluish, high ingredient purple (made by A & H Paint Co.) and has two casts—light and dark. The matching interior was done in blue-and-white diamond quilt leather.

The '46 Chevy club coupe is owned by Tony Longinotti of Los Angeles, and was customized by Herb & Chuck's, of West Los Angeles. (Standing alongside Tony's car is his girl friend, Nancy Bennett.) The car was partially dechromed, although a Chrysler chrome rub-strip was added along the bottom of the fadeaways. The rear deck was shaved and the license plate was set in a flush-mounted position on the rear bumper. The rear fender fins were made of sheet metal, formed over the old fenders,

SMOOTH lines of '49 Chevy convertible are seen here in this view. Note Pontiac tail lights

and a chrome strip was added from the windshield to a point just beyond the radius of the hood. The rear deck was smoothed off and the chrome along the top of the rear fenders was removed. Pontiac tail lights replace the original lights. The vertical bars in the grille were removed for a different appearance. The color is a beautiful opalescent "frantic" green. The license plate lights were removed and a Packard Clipper light was installed in the gravel guard.



TONY LONGINOTTI'S '46 Chevy Club Coupe

with the tail lights then set in vertically. To the hood, a reinforcing strip was welded, then sheet metal was formed into position, giving the "creased" or "finned" effect. The color is Cadillac blue.

The '49 Chevy convertible is owned by Milton Vogel of San Gabriel, and was customized by Custom Craft of Hollywood. The hood ornament was removed, then filled in



TWO views of a conservatively restyled '41 Chevy club coupe. Color is a bluish, high purple

LE SIMCA HUIT

INTRODUCED TO AMERICA
VIA FLORIDA

by Phillip Stiles

TAKE one Cisitalia chassis, enlarge the engine from 1100 to 1221 cc, shrink a sleek Farina-inspired Alfa-Romeo type convertible body to fit, and you have, in essence, the new Simca.

But wait! Look at that \$2495 price tag on a car which is essentially the counterpart of last year's \$7500 creations. These Frenchmen must have shaved costs somewhere along the line. So I decided to have a closer look.

I opened and slammed a door. Solid! I slumped upon a soft leather seat. No lack of comfort here, and this leather reeks quality. The steering wheel is slightly offset to provide better leverage, as are some Delahayes and Talbots. Still not convinced, I released the hood latch under the instrument panel, walked around to the front and practically disappeared into the boiler room. Die-cast aluminum head and engine mounts? Vertical oil bath front springs? Brass fittings all over the place? Hey, mister! Don't you have your prices mixed? Certainly I want to drive it. Let's go!

Wheeling a brand new car around that isn't yours requires the conservative approach, but I felt so much a part of this car from the start that the first unimpeded street corner found me in my usual position—a power slide. Boy! If this Simca won't corner with a Cisitalia you can serve me a side dish of metric nuts and bolts. The engine was too new to "wind," but had plenty of potential power in all gears and promised plenty of future performance. I stomped the brakes hard and was ready to get out and pick up the proverbial dime. These cars were developed and tested by Simca's famous racing team. It's every inch a thoroughbred. It keeps traction like a Maserati and rides like a perambulator. Visibility of the road and both front fenders is excellent.

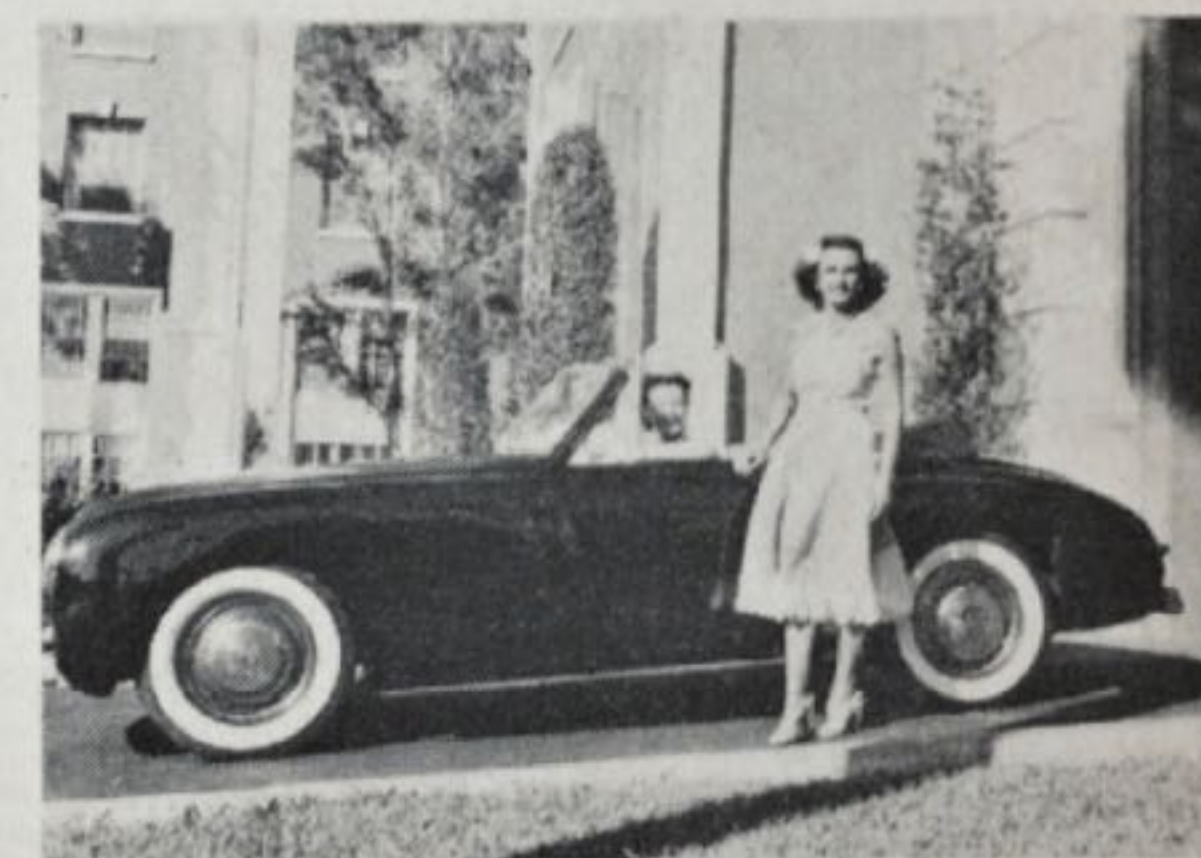
Following a few brief minutes of exhilaration I reluctantly returned to the showrooms and stepped behind the car to listen more

closely to that beautiful exhaust note. Twin pipes? I saw only one leaving the manifold, so I crawled under. One pipe halfway back branching into dual mufflers and it drones like a small Bugatti. There's a husky frame with four cross members under this steel-ribbed body.

Specifications

The four-cylinder engine closely resembles the 1100 cc Fiat and puts out 50 bhp. Other specifications are as follows: Overhead valves via pushrods; single Solex carburetor; rear axle ratio of 4.3:1; reinforced tires (5.25x15) with road racing tread; fuel tank capacity of 13.2 gallons; four speeds forward; hydraulic brakes with aluminum brake drums; and a catalog-quoted speed of 135 kmph (83.9 mph) on inferior French gasoline.

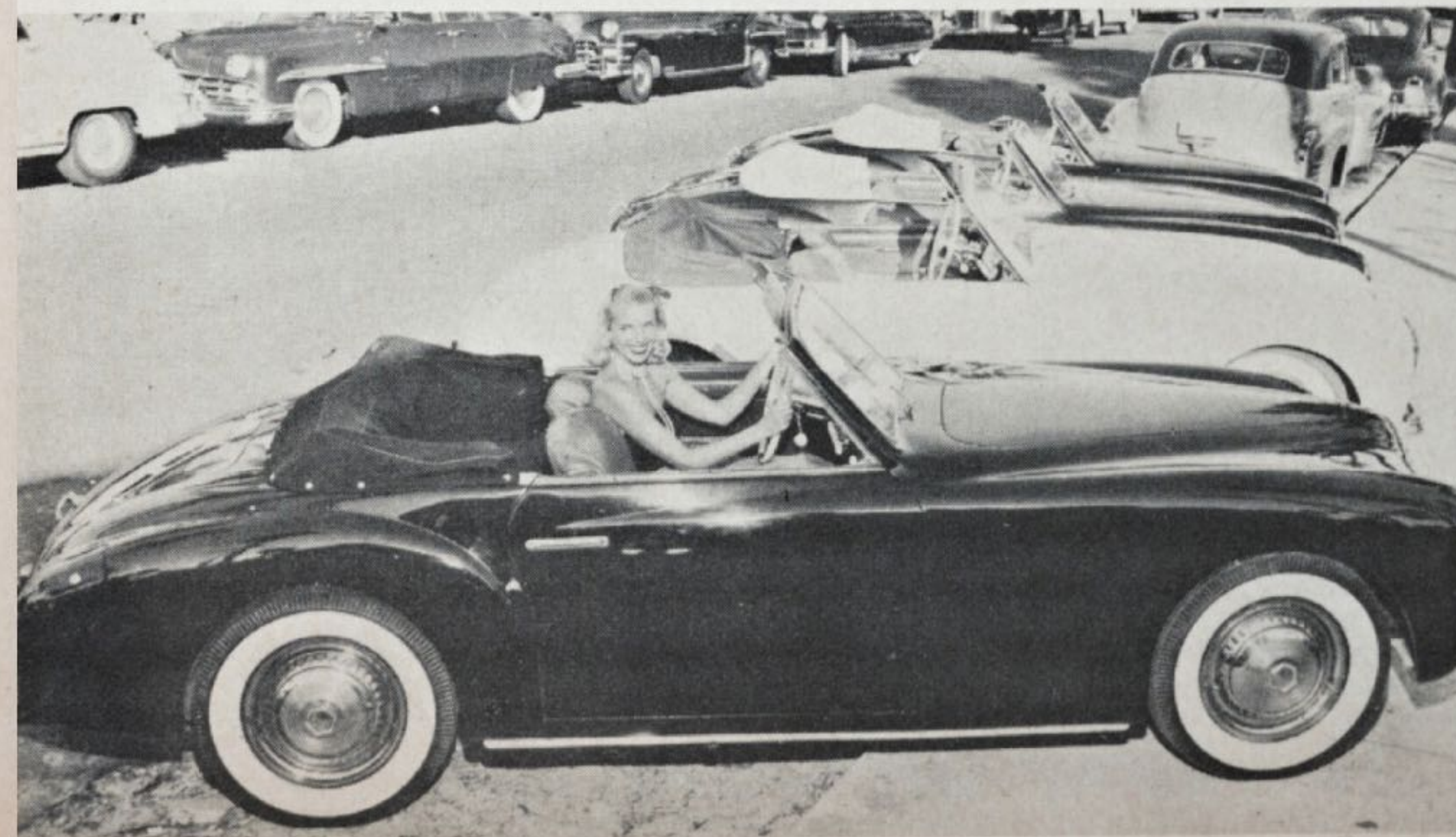
In France, these cars are sold with two small rear "jump" seats and floor gear shift, but those arriving in America do not have the rear seats. Instead, a spacious compartment suitable for extra passengers seated on cushions, or a fair-sized steamer trunk is provided . . . and the gear lever is on the steering column. They are left hand drive. Tools and spare are within the trunk, which has a conventional rear deck lid. Fenders are not detachable. The top lowers quickly with one hand and is covered by a



boot of the same high quality material. Top bows are well padded. Instruments are centrally grouped, except the clock, which is on the right. A glove compartment is to be found in each door. Exterior door handles are flush fitted.

The first shipment of fifteen cars was imported by R. S. Evans, who formerly owned the now defunct Bantam Car Co., originators of the Army Jeep. They were landed in Florida at Jacksonville. Several were sold by Palm Beach Foreign Motors and the balance at Evan's used car emporiums in West Palm Beach and Miami—but fast! To date, none have arrived in New York or on the West Coast, so if you want to drive one of these little gems it's time to start heckling your dealer. There is a wide selection of body, top and leather color combinations and the Marchal headlights are more than satisfactory.

Caution to married sportsmen . . . if your spouse drives, better order two. Women think they're "simply divine."





ABOVE—The pit gate a few moments before the start of a 1500 cc race. Note rim lightening holes in the wheel of the car at extreme right

LEFT—Two modifications of the popular 1100 cc Volkswagen: Vollmer (47), Furstenberg (57)

A REVIEW OF POSTWAR ACTIVITIES IN GERMANY

Text and Photographs by Dick Van Osten

SELDOM in the history of motor racing has the world seen anything to equal the prewar successes of the Mercedes and Auto-Union racing teams. With an interested government providing almost limitless financial support, and with the cream of Europe's drivers, regardless of nationality, competing under the star of Mercedes and the circle of Auto-Union, the German motor industry deeply embossed itself into the pages of auto racing annals.

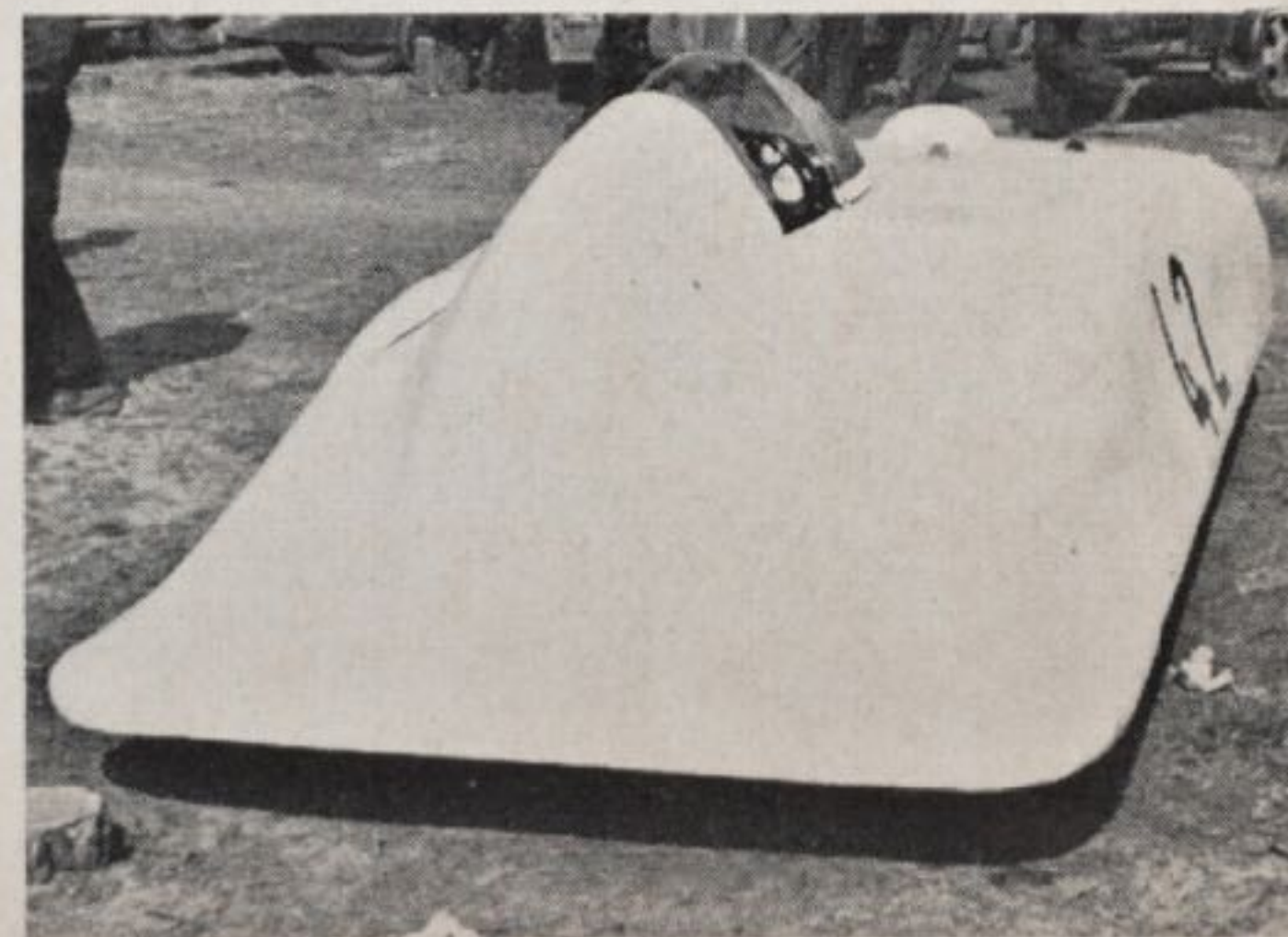
With Hitler's invasion of Poland in 1939, the international scope of Grand Prix racing faded. Europe was thrown into the net of World War II. The Grand Prix was being run for keeps. The swastika of Nazidom no longer appeared in the pits of Donington or Spa. It became a symbol of war, emblazoned upon the hulls of tanks, the wings of aircraft, instruments of destruction powered by engines developed upon these same courses of sport and sportsmanship.

In 1945, the war ended, leaving the German motor industry economically broken and factoryless. Germany itself was divided into four parts under the control of four nations. Auto-Union's sprawling plants at Chemnitz and Breslau fell into the hands of the Soviet Union; the Mercedes works near Stuttgart had been badly bombed; the future of German auto racing was indeed dim.

During 1946 many individuals retrieved their equipment from attics, barns, haystacks, secluded places where their cherished machinery had been hidden from looters, thieves and bombs. Many motor sport organizations reorganized, hoping to gather together the thread of their once enthusiastic following. It was a difficult time: no petrol, no tires, no parts. Military Government turned a deaf ear to all requests, being rightly more concerned in providing food and housing. However, several car and

motorcycle events were run during that year.

In 1947 the picture began to brighten. Many racing meets were held throughout the western zones with thousands of again happy spectators attending. With the transportation problem being as it was in that year, it was quite a feat to travel a few hundred kilometers merely to view a race, but they always came! Unfortunately, an accident



ONE of the most beautiful and original German competition cars, 1100 cc AFM/FIAT. The engine has an experimental dual ohc head

during a road race on the Bavaria Ring in Munich caused a cancellation of several planned events. Five people were killed when a BMW two-seater plunged into the crowd. As accidents are a seldom thing in European racing, this was quite a blow to reorganization.

In 1948 a great deal of progress was made. The Allgemeiner Deutscher Automobil Club (All-German Automobile Club), comparable to our American Automobile Association, was once again the controlling factor and established a point system towards a German championship. This was the beginning year for solid organized competition. Many new and interesting cars made their first experimental showings in 1948.

Perhaps you are asking, as did many of the German enthusiasts, where were the Mercedes and Auto-Unions? The Auto-Unions fell into the hands of the Soviet Union. At one time, an American Army unit controlled the area in which they were stored. When the order came to withdraw in favor of the Soviet occupation, they were left behind!

This writer has seen a letter in the possession of Hans Stuck, the famous Austrian driver, requesting him to assemble a crew of mechanics, come to Russia and prepare the Auto-Union cars for Grand Prix racing. Although Stuck is still the "meister" of mountain road racing and one of Auto-Union's original team, he refused the offer.

Mercedes found itself in somewhat like conditions. However, due to the fact that a great percentage of Mercedes capital was in Swiss francs and Swiss banks, its difficulties were basically economic.

Herr Alfred Neubaur, the brilliant director of prewar Mercedes racing teams, was a spectator at the 1949 Indianapolis "500." Several remarks he made were interpreted by bystanders to mean Mercedes would compete in this country in the not-so-distant future. This must be considered a rumor until

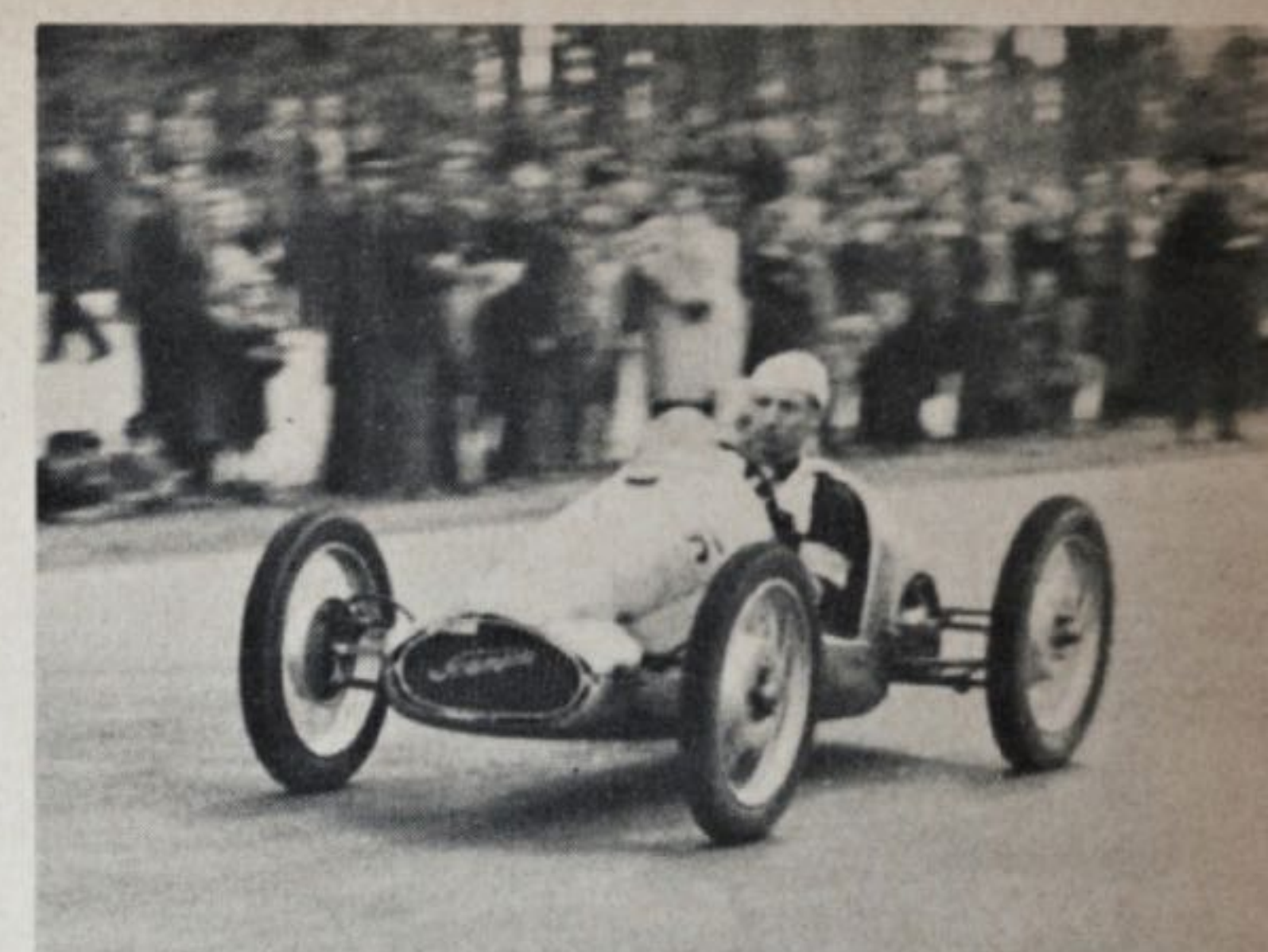
This was particularly true of prewar motorcycle events; i.e. the banning of superchargers. The third problem facing Mercedes is an extremely important one; against whom would they race?

The Federation Internationale de Automobile (F.I.A.) is the sanctioning body of Grand Prix competition. At present, there is no German representation in this governing group. A jurisdictional dispute between the A.D.A.C. and the O.K.M. (Oberkommission für Motorsport) has delayed the selection of a definite committee to represent the West German Federation. However, this is not the only difficulty. It must be remembered that Germany has not been reinstated to any type of international sport or athletic organization and there are many nations not particularly anxious for this to come about.

The sum total is this: Germany has no one against whom she may compete except herself. Quite naturally, the development of a new car would be an unwarranted expense.

Regardless of this loss of international recognition, many individuals and groups within Germany have done wonders in post-war development. The outstanding car of the year 1949 was the Veritas, developed by Ernst Loof, an old school racing engineer, from Model 328/329 BMW components; both the 1½- and 2-litre (91.5 and 122 cu. in.) models have had outstanding success in and outside of Germany. The flat airfoil-like body, tubular frame and independent front (BMW) suspension is a beauty to behold. Although the Veritas is classed as a sports car (headlamps, doors, etc.), its performance equals many of the two-litre racing cars.

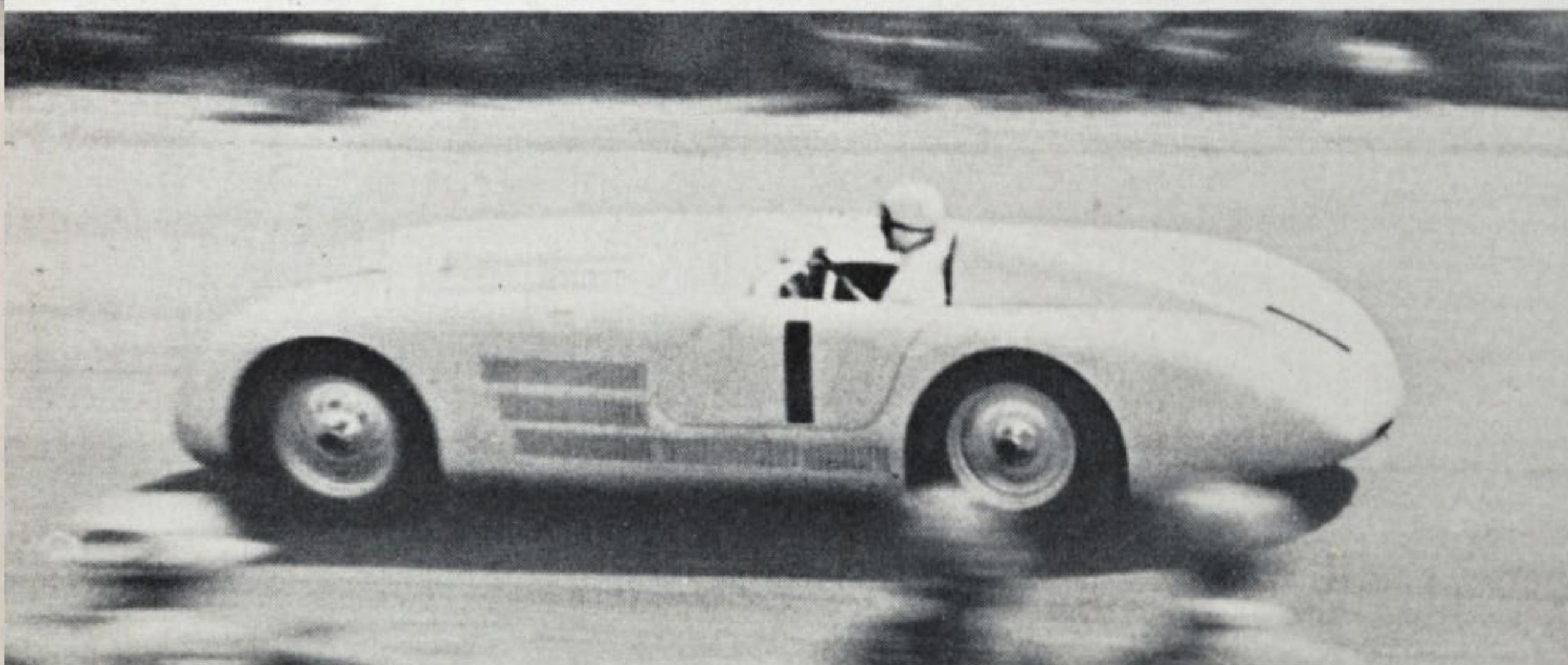
The 1½- and the 2-litre engines were much alike, six cylinder, unsupercharged, three carburetor power plants, developing 160 and 200 horsepower, respectively, at 5500-6000 rpm. The majority of the engines are of the rocker arm type with inclined



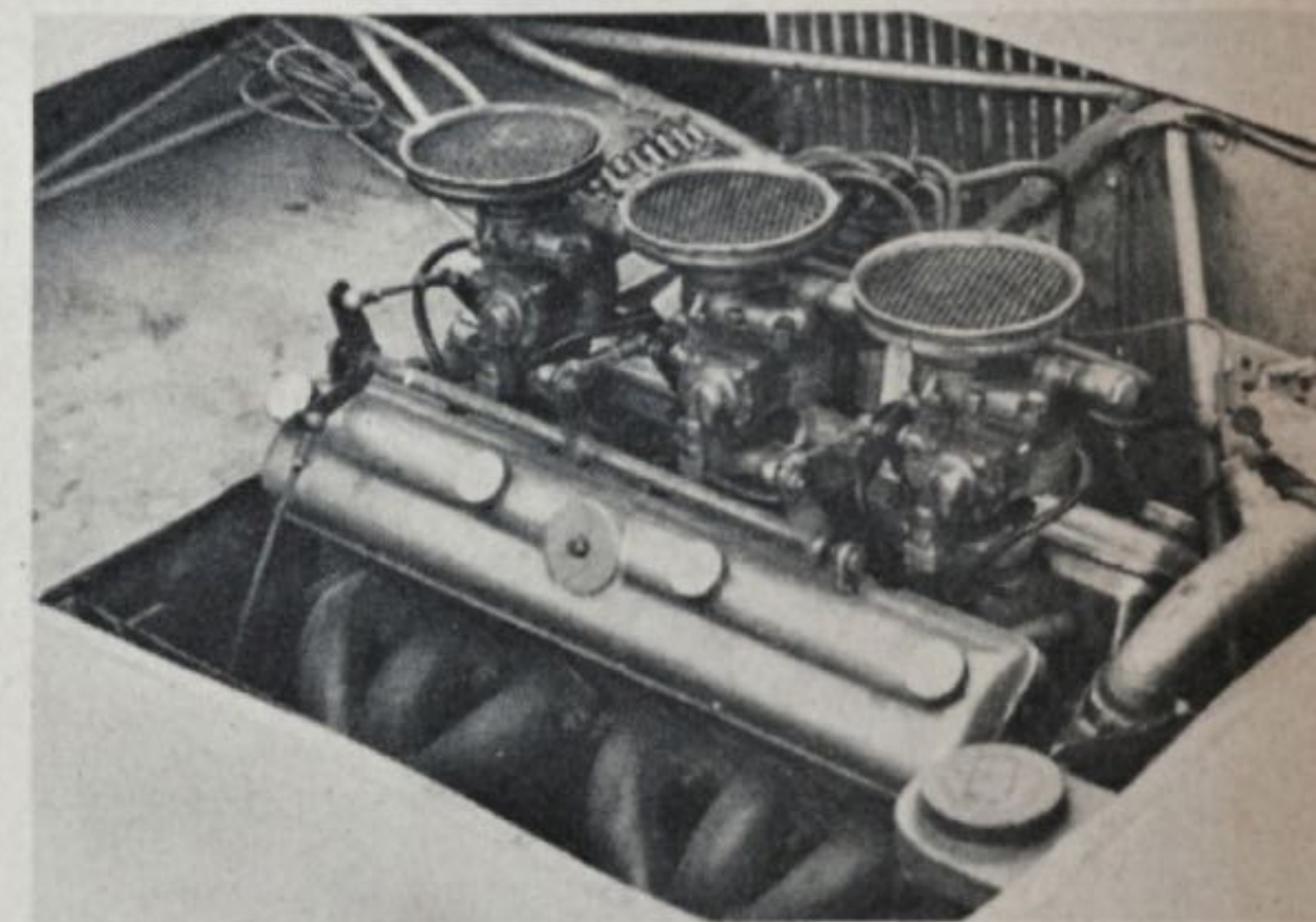
A GERMAN version of the British Cooper, the 750 cc "Scampalo." This type of car is called "Kleinstrennwagen" (littlest racing car)



TWO eager spectators give the "once over" to Kurt Kulinke's 1100 cc "Volkswagen." Note the ever-present, unconcerned 'hausfrau' (housewife)



KARL KLING'S Veritas, the fastest two-litre sports car in Germany today. This car has an amazing start/win ratio. It might prove quite interesting to match his car against an Aston-Martin or Frazer Nash—Bristol at Spa or Le Mans. Which would win in such an event?



A TYPICAL Veritas engine installation. Note the extremely thin air cleaners on the carburetors. These are necessary for hood clearance

more tangible arrangements have been made.

The few cars in the possession of the Mercedes works are not in the best of running condition and all effort is being made at present to meet export demands for the various models of the little four-cylinder "170" and large commercial vehicles.

Mercedes would like to build a completely new racing car, but there are several factors to be considered: first, the expense involved, secondly, the current vacillating International Formulae. The formula problem seems to have settled down for the time being, but it must be noted that England has had a tendency to establish rules, regulations and by-laws to suit the needs of the moment.

valves operated by very short push rods riding two camshafts high in the block, similar to the valve gear of the English Riley. However, there are many variations including several rocker arm designs with long push rods and one or two double overhead camshaft engines. Essentially a road car, the Veritas uses a four-speed BMW gear box along with standard BMW 16-inch wheels. It is interesting to note that these cars were developed from prewar components and without any engineering aid from the BMW works. Every major event in Germany for 1949 was won by Veritas, plus a place "in the money" at Rheims, France and a second at the Grand Prix de Vitesse in

Bruxelles, Belgium. In an event run upon the world famous Nürburg Ring near the Belgian-Dutch border, one major difficulty was encountered with the Veritas. The winding curves of this 13-mile course presented the drivers with the problem of negotiating turns at 130-140 mph. Not being able to see their front wheels, due to the complete and extended fender, several drivers of the Veritas' "spun out." Being able to view every degree of wheel turn is very important to the European cornering technique, the controlled power slide (on concrete!). As this seems to be the only major difficulty dis-

(Continued on page twenty-two)

NOTE—"Roscoe" Turner is well known as an authority on auto racing, having been connected with the sport since 1930. In 1938 he introduced a team of midget racers into New Zealand, this team consisting of such famous names as Swede Lindskog, Duane Carter, Paul Swedberg, and Roy Richter. "Roscoe" has held various posts in Southern California racing organizations, having been URA president in 1945 and 1948.—Editor.

THE 3/4 midget race car being a new entry into the auto racing picture—everyone is asking, "What is this car? What type of tracks will they appear on, why were they built, what are the aims of the boys who have built these cars and what are the specifications, types of power plants, wheels and tires, etc." I shall endeavor to outline briefly the 3/4 midget picture.

The T.Q.M.R.A. (Three Quarter Midget Racing Association) is a group of owners and drivers who plan to race this coming season on tracks no larger than 1/6-mile. Some of the tracks that have been asked for a sanction are Lincoln Park (Los Angeles), San Ysidro and Fresno, California. There is also the possibility of two indoor tracks at a later date—the Pan Pacific Auditorium in Los Angeles and the Orange Show Auditorium in San Bernardino, California.

The aims of the owners and drivers of the 3/4 midgets is to present highly competitive racing events on small-sized tracks, where the action is in the spectators' lap (so to speak) and which has been somewhat lost in the larger midgets of today. Also, the

speed will be lessened, which will contribute to minimizing serious accidents, for the members wish to prove that highly exciting races can be presented without extreme speed.

There are many who will not agree, but I, for one, want to see racing where serious injuries are completely eliminated. And I believe the 3/4 midgets are near the answer in this regard.

Some of the engines being used at the present time include the one-cylinder J.A.P. motorcycle engine, which is identical to the engines used by Cordy and Jack Milne in their short track racing motorcycles. Other owners have chosen the flat-head Harley-Davidson 45 engines; others, the Crosley single overhead-cam engine, sleeved down to meet engine size specifications. One of the most reliable and fastest cars in the group at present is powered by an English Triumph motorcycle engine, owned by Harley Camomile and Paul Sankey of Redondo Beach. This car has won most of the feature events which have been run. As a result many believe that the Triumph engine is the

most suitable for the 3/4 midget. This will undoubtedly be proven this coming season. There are various other English motorcycle engines being used and before the season is very old, it will be known what engine is the most suitable.

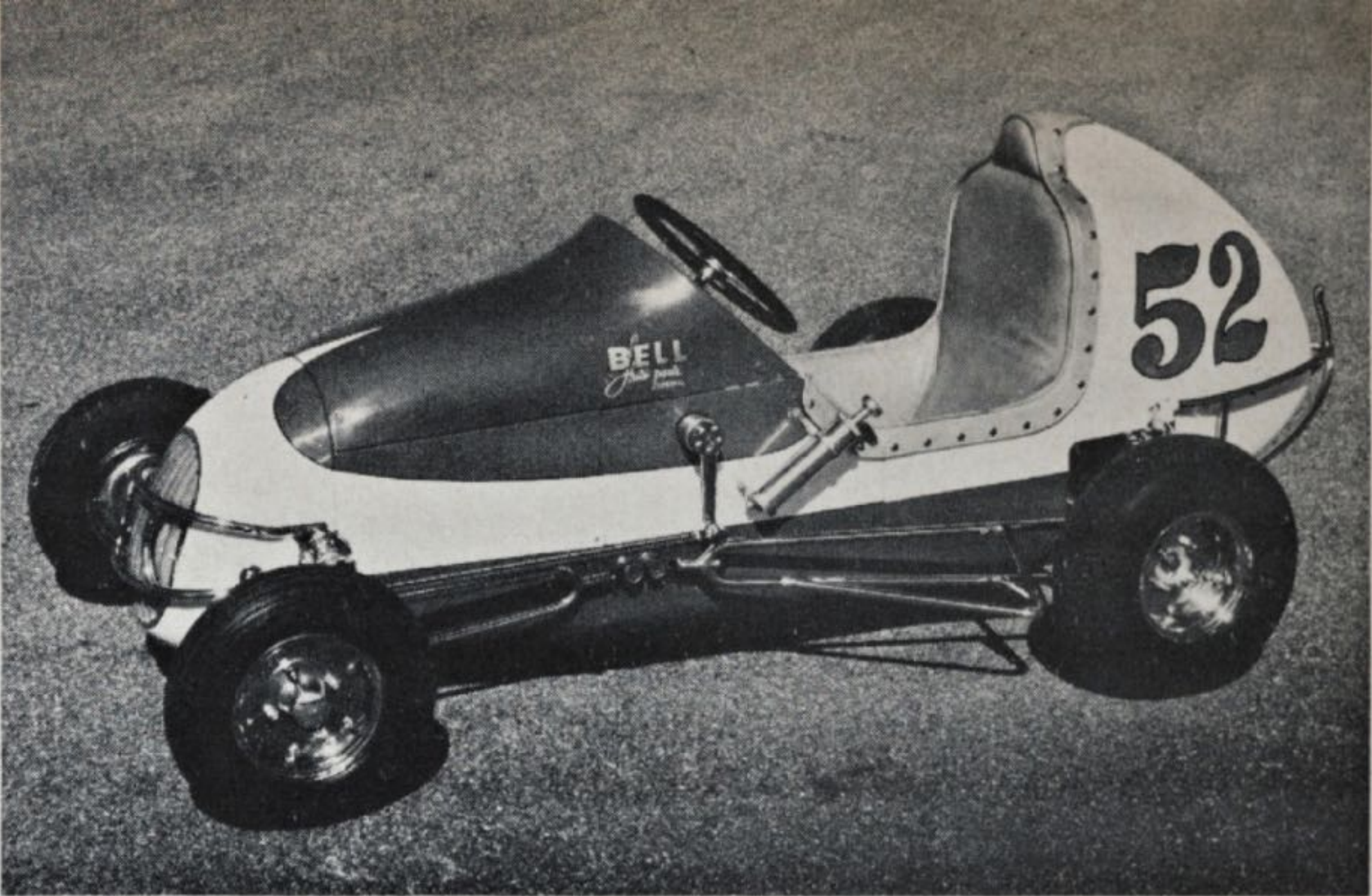
It is hoped that a number of engines will prove satisfactory, rather than have any one or two makes dominate the picture, such as in the case of the larger midgets which are powered by either the Offy or the Ford V8-60. Another item that will be of interest is that each car is built by the individual owner, thus reflecting individualism in each car, a feature that has been more or less lost since the war.

The wheels being used at the present time are of the industrial type, such as used on the Cushman and other motor scooters. Tires are 4.00x8 and 5.00x8 in tire and wheel size. Rear ends being used are Crosley, Austin, Fiat, 8 and 10 hp English Ford, while

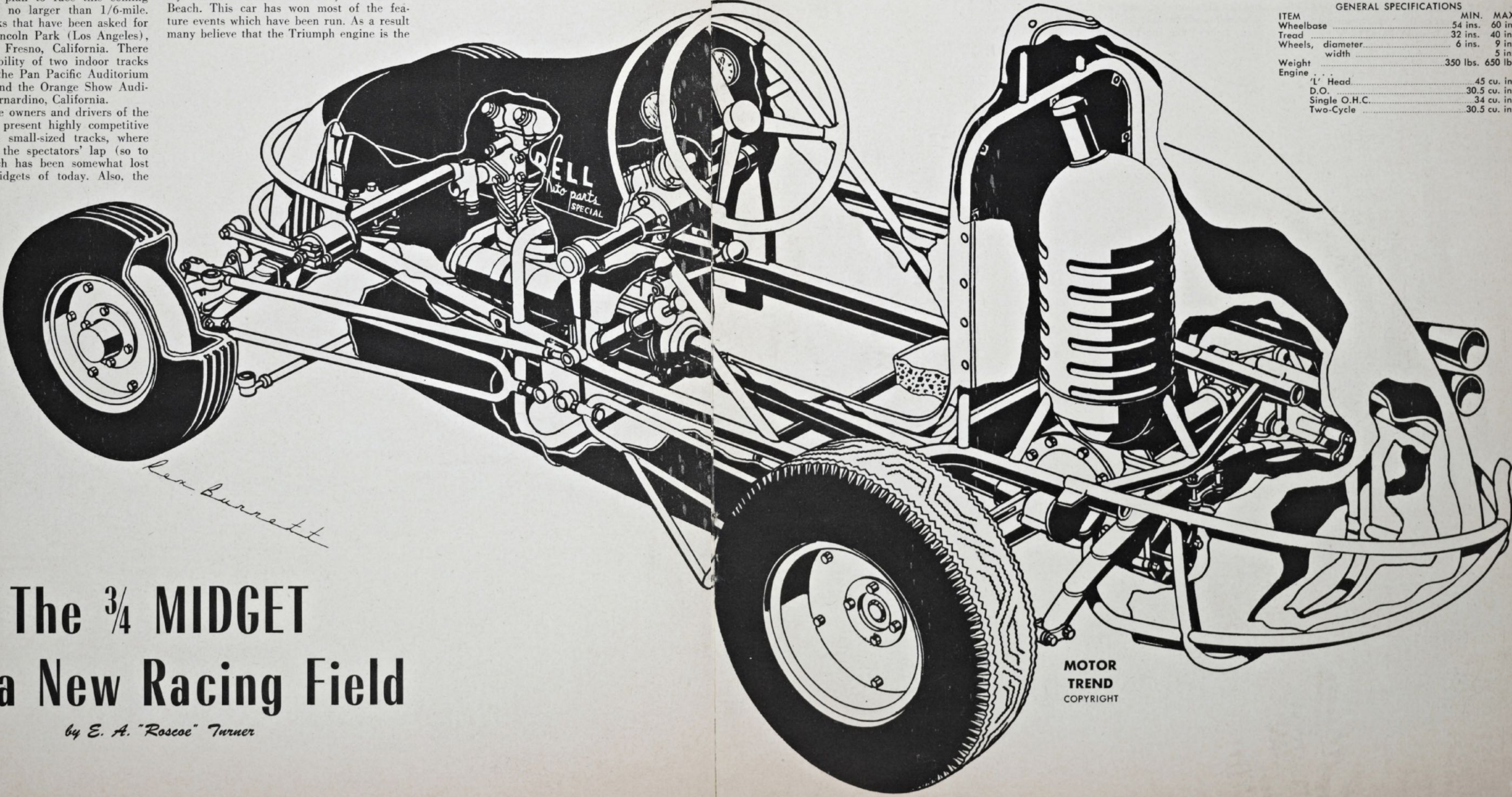
some have fabricated rear ends to their own design. Most of the mentioned rear ends present a problem as to proper gear ratios for the small tracks, consequently some of the racing parts manufacturers are building quick-change rear ends to meet the requirements. Special wheels are also being made, with wider rims for the 5.00 tire sizes. Frames, bodies, front axles, steering wheels, gears and many other parts for the 3/4 cars can be obtained in complete units and in kit form from racing parts suppliers.

The first race of the 3/4 midgets for the 1950 season was held at Lincoln Park Stadium in Los Angeles on Sunday, March 5, and featured many new cars which had been constructed during the past winter months.

From the many inquiries received from all parts of the country, the 3/4 midgets have a very promising future. No doubt they will be competing in many sections of the U.S.A. before the 1950 season is over.



GENERAL SPECIFICATIONS			
ITEM		MIN.	MAX.
Wheelbase		54 ins.	60 ins.
Tread		32 ins.	40 ins.
Wheels, diameter		6 ins.	9 ins.
Wheels, width			5 ins.
Weight		350 lbs.	650 lbs.
Engine			
L. Head		45 cu. ins.	
D.O.		30.5 cu. ins.	
Single O.H.C.		34 cu. ins.	
Two-Cycle		30.5 cu. ins.	



The 3/4 MIDGET for a New Racing Field

by E. A. "Roscoe" Turner

MOTOR
TREND
COPYRIGHT

BRITISH MOTOR SHOW

FROM April 15th to 23rd, New York City will be host to nearly a score of British automobile manufacturers displaying their cars at the British Automobile and Motorcycle Show. Choosing as a theme, "See British Craftsmanship on Wheels," these manufacturers will exhibit over 100 British cars at Grand Central Palace.

The automotive industry, the largest exporting industry in Great Britain, is staging the New York exhibition to show its products to U.S. dealers and consumers in the hopes of finding and developing new markets, thereby bridging the "dollar gap" by supplying good products at fair prices.

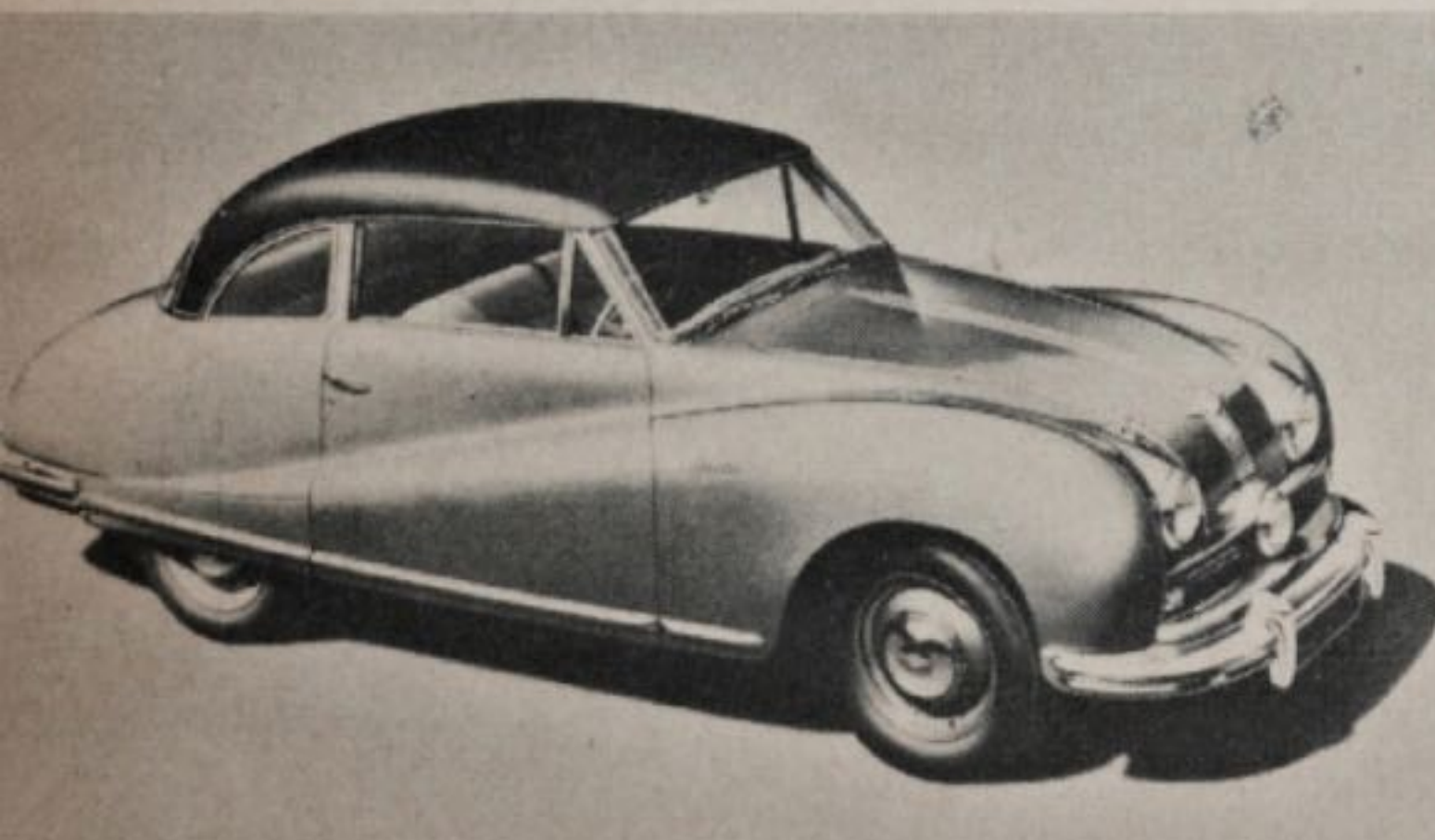
Specifically, items exhibited will be: automobiles, motorcycles and bicycles, full lines of diesel engines, accessories, garage equipment and related lines, and trucks, busses and trailers.

Special features and events will include record-holding race cars and motorcycles, continuous motion pictures, and radio and television programs. Present at the show will be British automotive leaders, famous race drivers, and world-famous figures of the automotive industry.

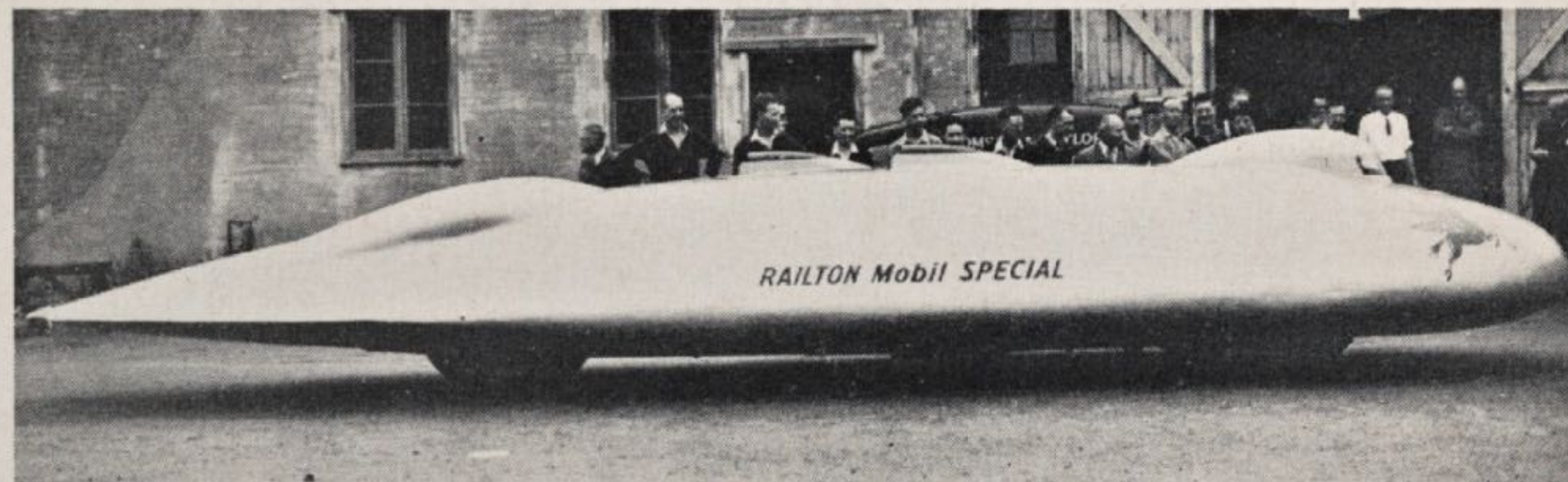
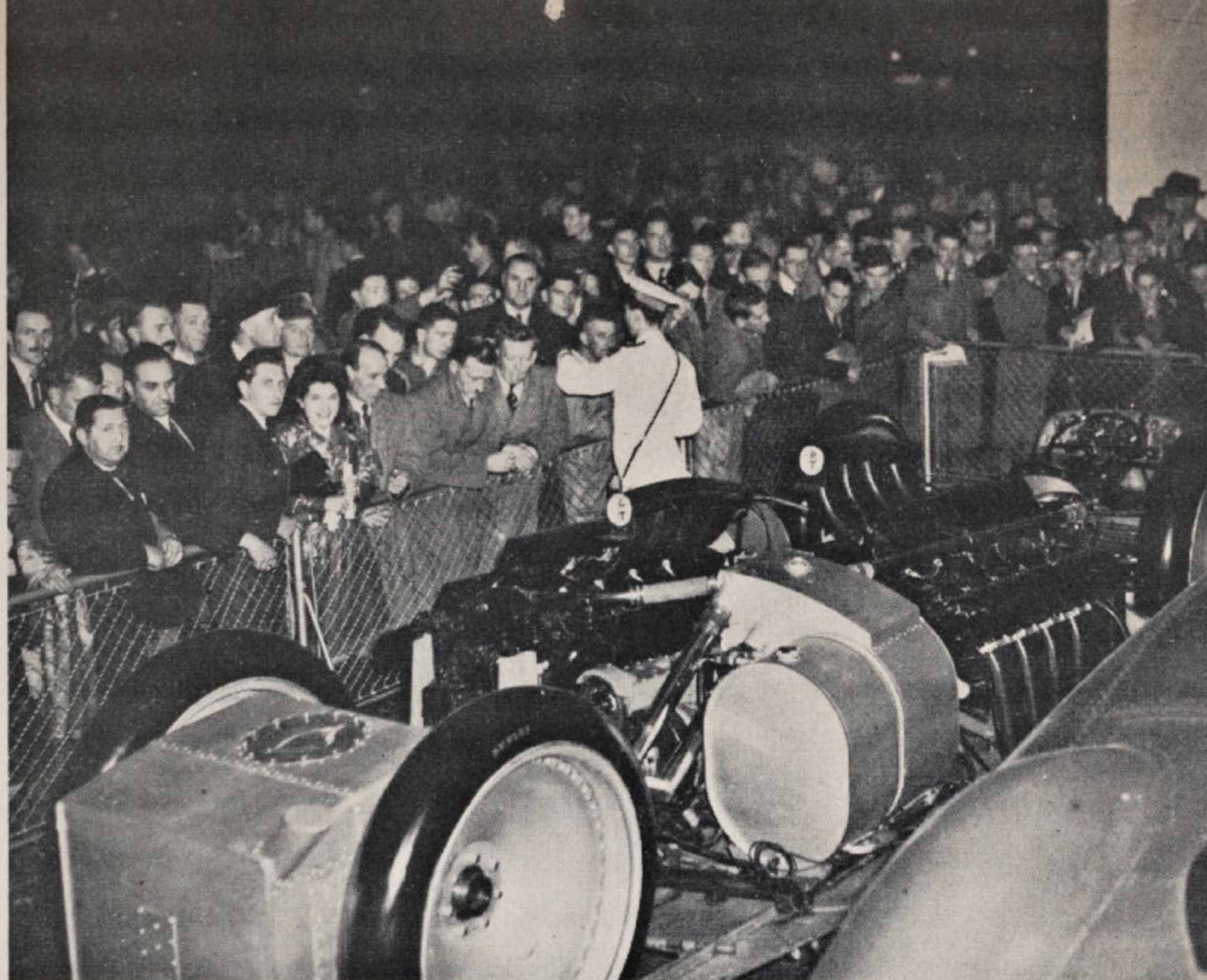
Motor car firms represented at the show will be: Allard, Austin, Bentley, Daimler, Ford, Healey, Jaguar, Jowett, Lagonda, Nuffield (MG, Morris, Wolseley, Riley), Rolls-Royce, Rootes (Hillman-Minx, Sunbeam-Talbot, Humber), Rover and Singer.



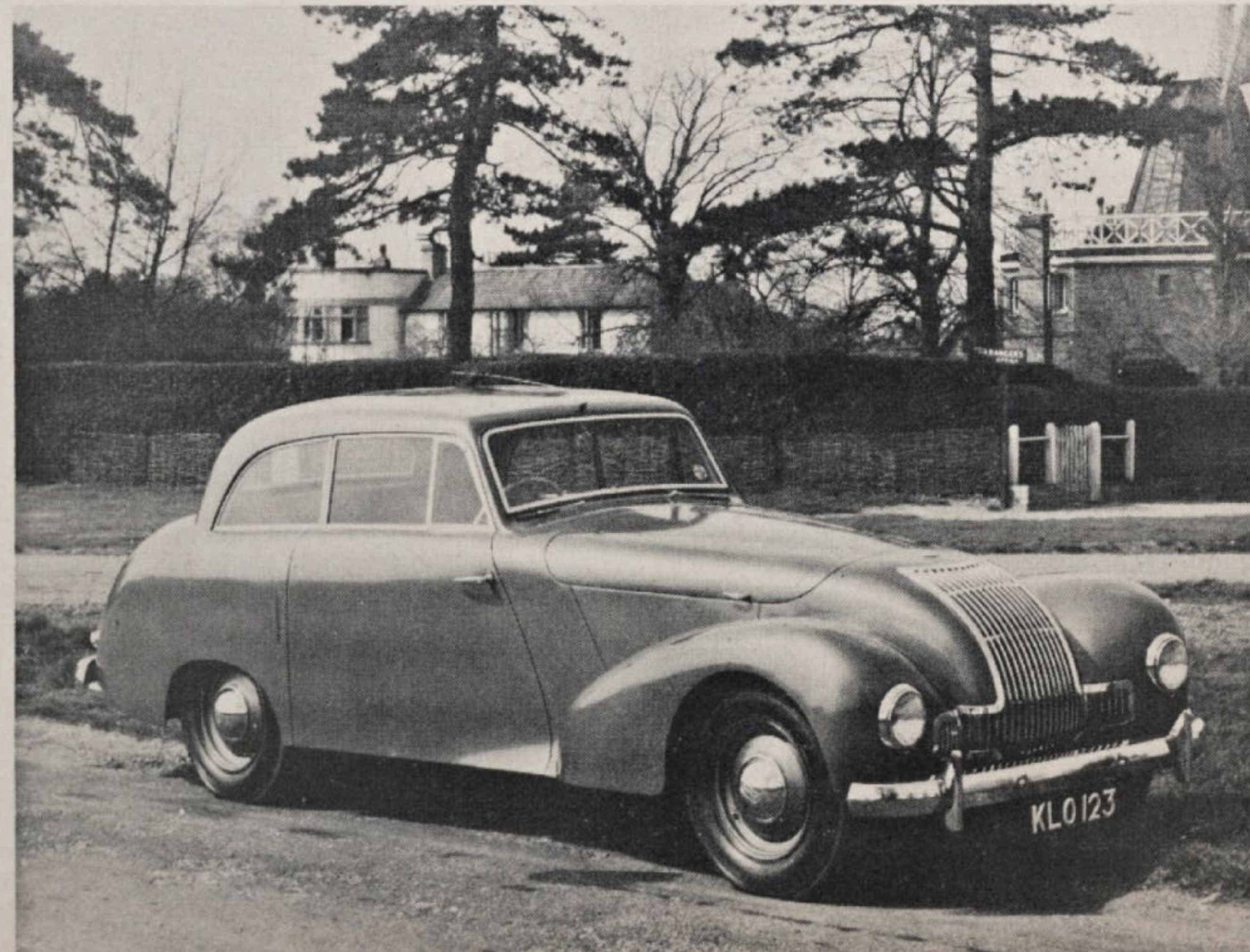
1950 ASTON-MARTIN will be unveiled for first time in U.S. at British Motor Show in New York



NEW Austin "hardtop" sports sedan, with 88 hp engine, resembles the Austin convertible



JOHN COBB'S Railton Mobil Special, which, 2½ years ago (on Sept. 16, 1947), flashed across a mile at Bonneville Salt Flats, Utah, to shatter all world land speed marks at 394.2 mph. This machine is powered by two blown Napier 12-cyl. engines, total of 23.4 litres (1427.4 cu. in.)



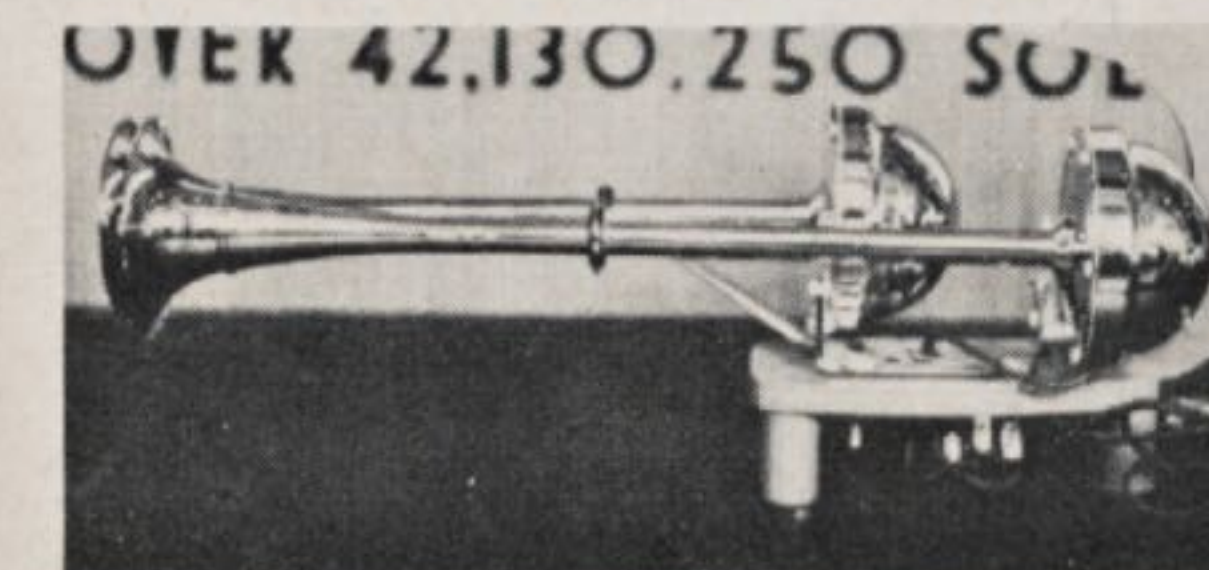
ALSO at the show will be the Allard coachbuilt saloon, which uses a Ford V-8 power plant. Suspension is by coil springs in front and transverse leaf in the rear. Top speed is around 90 mph

NEW ACCESSORIES

PACIFIC AUTOMOTIVE SHOW



ALMOST seven million vehicle registrations in eleven Western states account for the coming-to-life of a huge, close-knit automotive industrial empire on the Coast. This trend toward "recentralization" on a regional basis was amply demonstrated at the Second Annual Pacific Automotive Show in San Francisco, Feb. 16-19, where the West's jobbing and service trades were in-



NEW—de luxe Sparton air horns, complete as shown. All-electric tankless, chrome-plated, and brass, they are priced to beat competition

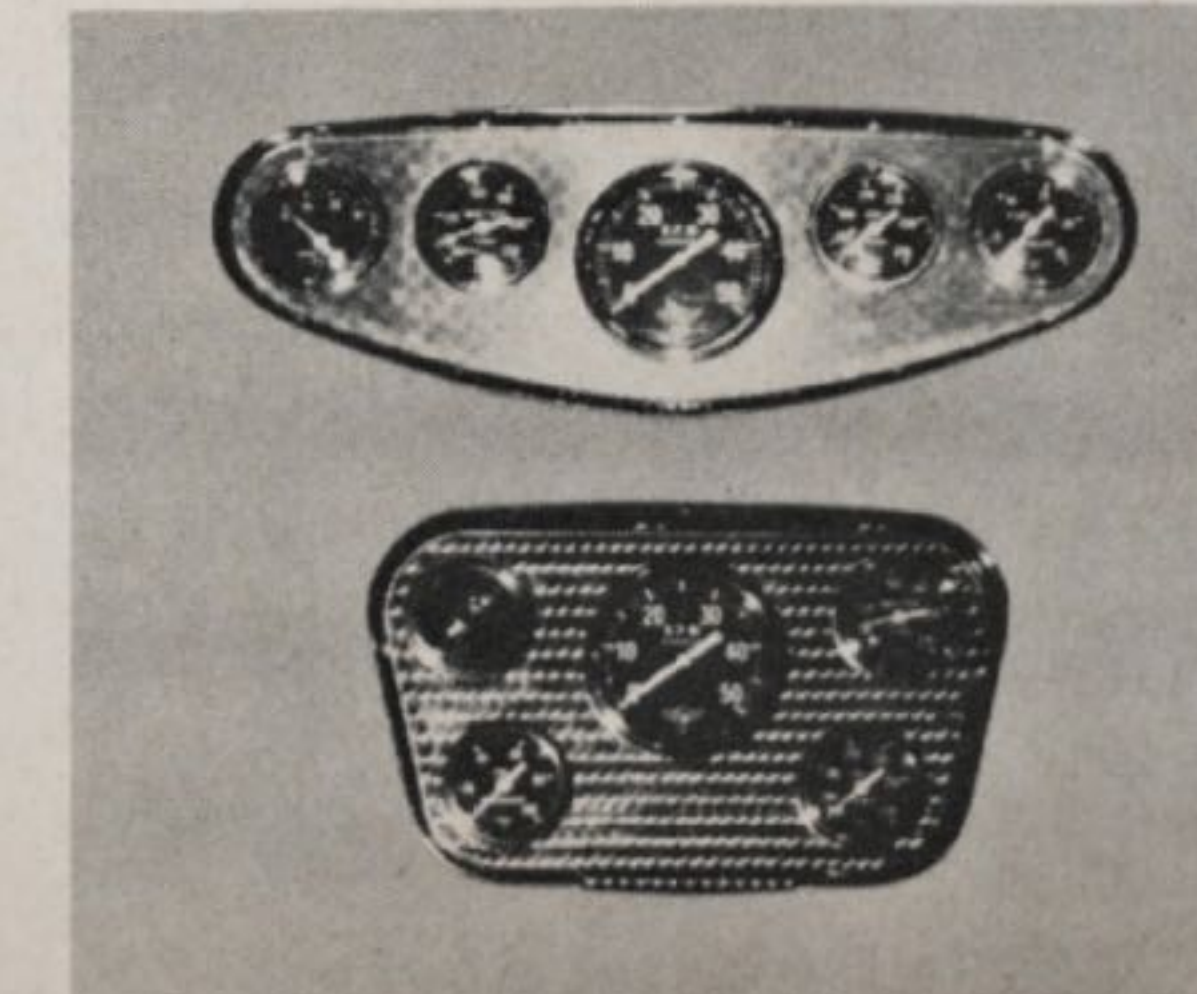
vited to see the newest and best equipment that 303 firms had to offer.

Primarily designed to be a meeting between the Nation's biggest firms and the West's most forward-looking automotive businessmen, there was, nevertheless, much to interest the motorist-in-the-street at the accessory and hand tool stands, although these accounted for just a fraction of the four million dollars' worth of equipment on display.

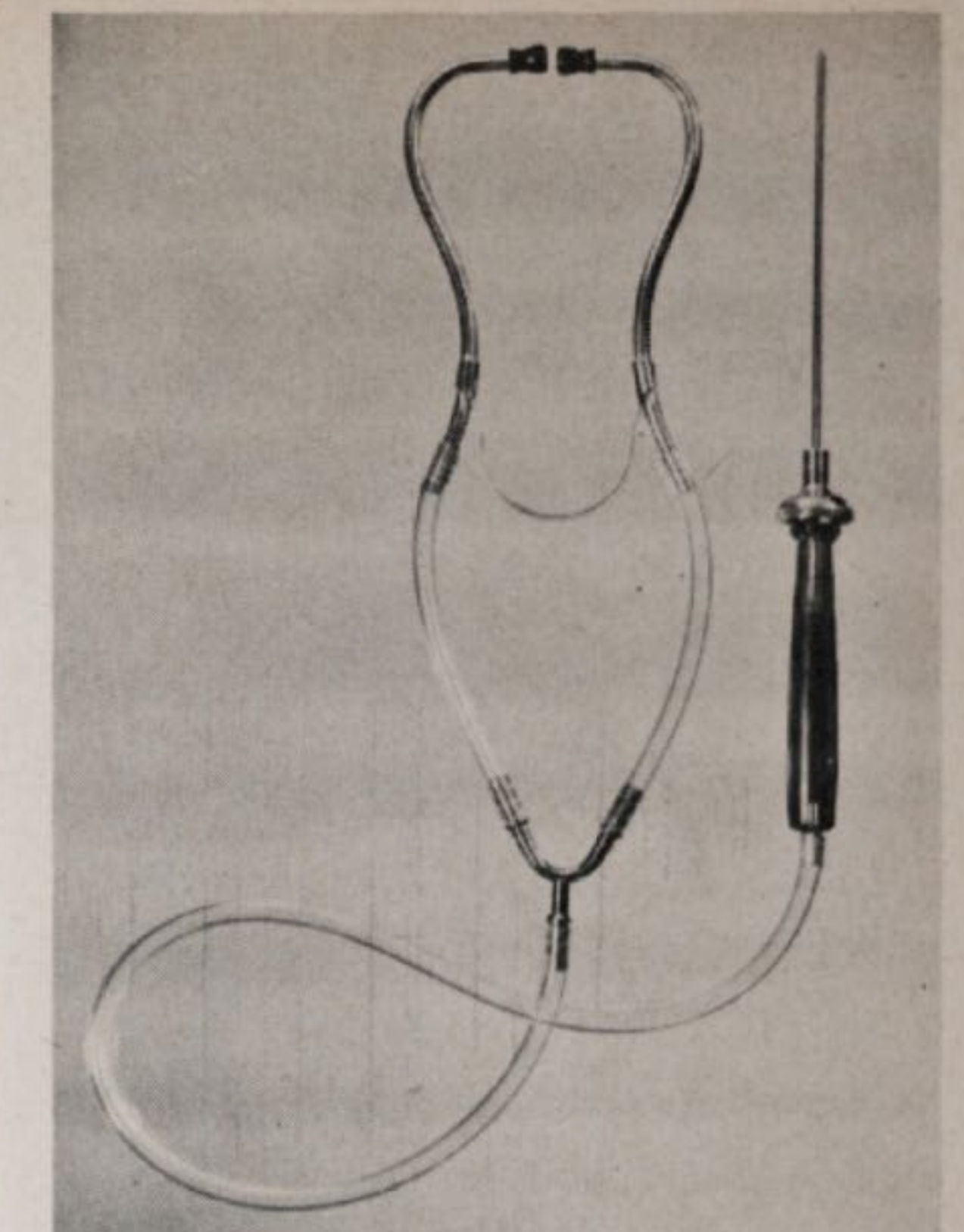
Sparton scooped the air horn field with dual, all-electric, tankless, chrome-plated brass trumpets priced to shatter competition.

ONE corner of 90,000 crowded square feet at the Pacific Automotive Show at San Francisco shows the many items on display and the crowd

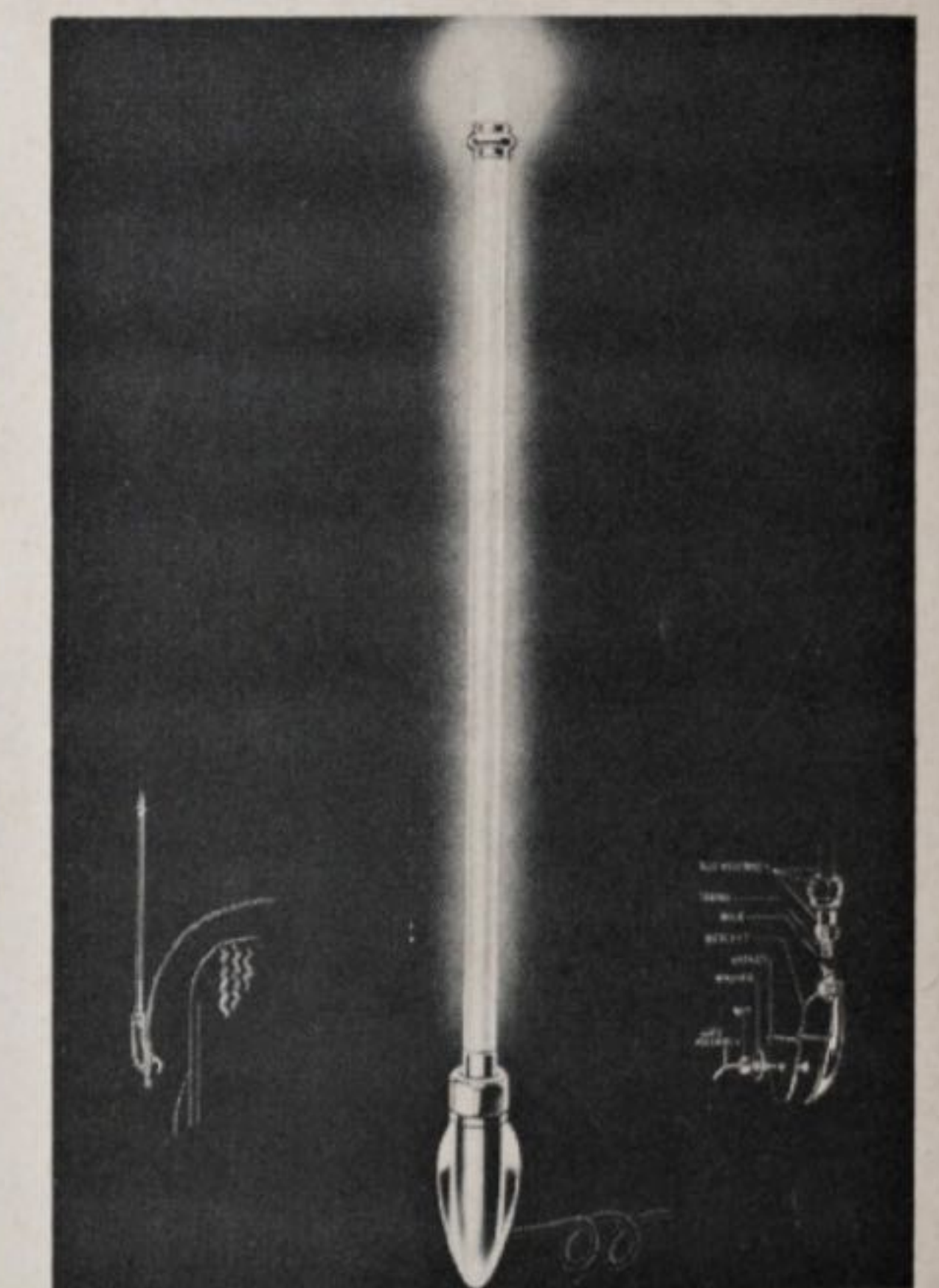
The same firm featured a true polaroid rear-view mirror which will be standard equipment on at least two makes of '51 cars. . . . Two gasket makers offered material from which you can cut your own impossible-to-buy types. Felt Products of Chicago offered a new, neat, inexpensive kit of gasket-cutting dies. . . . Stewart-Warner displayed an assortment of beautiful and functional "marine" instrument panels which were quickly discovered by the restylists present. . . . Fram Corp. of Providence, R. I., (known for oil filters, air cleaners) showed off their answer to the very important problem of crankcase ventilation: a positive, electrically



MARINE-TYPE instrument panels by Stewart Warner lend dash to the dashboard of any car



AN efficient scientific bug-chaser for car doctors —Multiscope, made by Helbrand, Fremont, Ohio



LUCITE fender guide, which radiates soft, silver light. Made by Casco, Bridgeport, Connecticut, it is easily installed on any car fender

driven centrifugal blower. . . . Bar's Leaks of San Francisco demonstrated the startling efficiency of their radiator compound by sealing perforated tin cans within ten seconds. . . . Also in the miraculous class was a new, waterless hand cleaner by Laird, Inc. of Los Angeles. It has all the efficiency of an ammonia-base cleaner, none of the bite. . . . Imperial Brass, Chicago, featured the perfect flaring tool. Needle bearings in the cone burnish the flares on any type of tubing to a mirror finish. If you're interested, they'll send you, free, a fine 31-page tube working handbook.

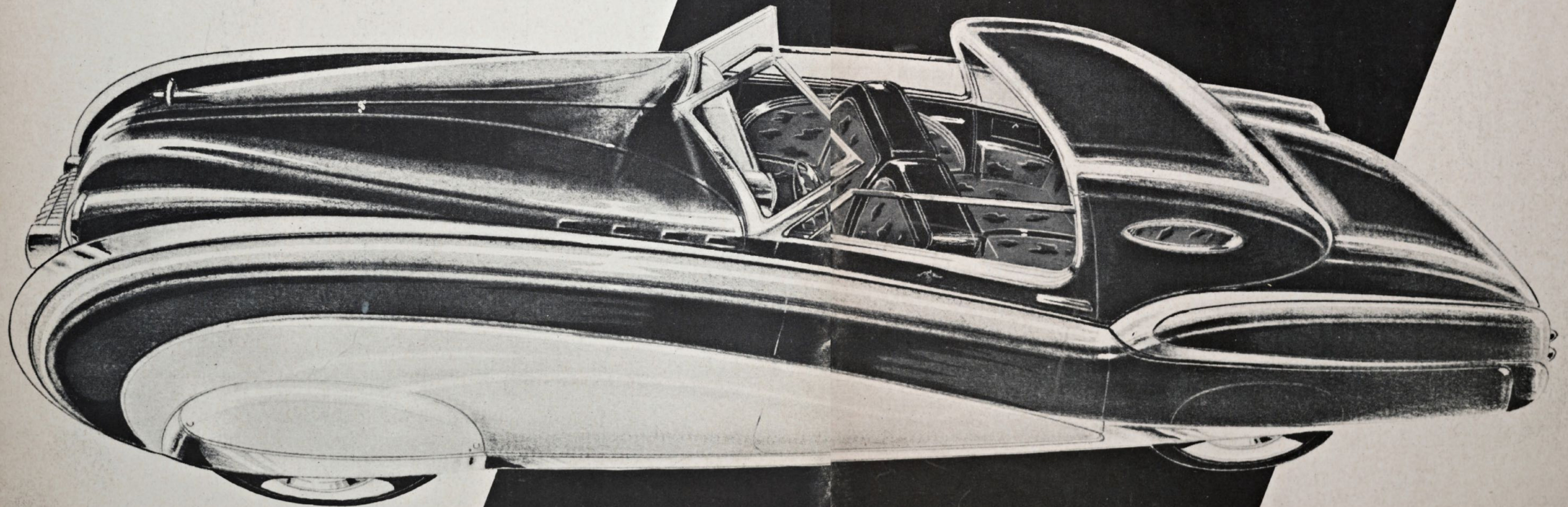
And so on, through 478 exhibits ranging from half-ounce wheel balance weights to locomotive-sized surface grinders for diesel heads, all indicating one thing in common: that the motorist's vast consuming power fosters a growing source of wealth not only for his nation, but also for the neighborhood in which he lives.

A BUICK IN PARIS

A car that could well have been designed by a French carrossier in Paris is evidenced in this rendering by Colonel Alexis de Sakhnoffsky.

It includes the following French ideas in design: great emphasis on front fender prominence; sharp color contrast to bring out the streamlined effects on front fenders; headlights in the hood-fender valley; long hood with instrument panel board close to the steering wheel; elaborate use of chrome ornaments to underline design features; exaggerated (to the American eye) downsweep of the waistline towards the rear fender; comparatively short deck; exquisite interiors, beautifully tailored with unusual upholstery materials such as black and white patterned unborn calf, brown shaved pony fur, lizard, etc.; and emphasis on bucket type seats rather than bench type.

This type of body, composed of a stationary metal back portion and convertible front, is generally referred to as a "Victoria," although the British have created the name of "Sedan de Ville." The windows are of the convertible chrome-channel edged type. The leather top covering over the front seat fastens onto the front of the rear portion of the roof, extends on the sides up to the top of the windows and is fastened to the windshield header. When not in use it is rolled and stored away.



TREND in TRIALS...



ALBERT H. ISAACS

RELIABILITY AND DRIVER SKILL TESTS

by G. Thatcher Darwin

ENGLISH trials comprise a brand of competition unknown to the average American sports car owner. This type of event, which enjoys wide popularity in Great Britain, is intended by its organizers to provide a very searching reliability test of the machines entered and an equally difficult trial of driver skill. Each club of motor enthusiasts has its own regular schedule of events, and the history of some of the more important meets can be traced back to the very early days of motoring.

For example, last December witnessed the 31st running of the famous Gloucester Trial, sponsored by the Northwest London Club. This Club has been in operation for no less than 45 years.

Naturally, each annual running of a big trial attracts nationwide interest in the motoring world. Keen individual rivalry is sustained since many of the trials are open meets, so that the same drivers frequently compete against each other on several successive weekends.

Perhaps it is more accurate to say that the drivers compete against nature rather than each other, since the trials season begins in fall and extends on through the winter months, with weather conditions exerting an important influence on the results. The average English trial consists of several hills which must be climbed along a route interspersed with water crossings and other hazards that are either natural or have been created artificially for the event. Only rarely can the hills be taken at speed, for their surfaces are rough, slippery or extremely steep with sharp bends to be negotiated. Sometimes competitors are required to stop and restart on the very worst part of a grade, and occasionally an "observed section" is included which is difficult enough to "flunk" the entire entry! Rainy weather that leaves the hills coated with mud or wet leaves is the trials organizers' delight. Should the day of the event turn out dry and sunny, officials and competitors alike consider the affair a fiasco!

Awards are based on the number of hills or "observed sections" successfully negotiated. If it is not possible to determine the outright winner on the basis of hill performance alone, he must be chosen by a series of tie-deciding tests held at the end

of the route. These consist of acceleration, braking and maneuverability contests and awards are based on the best times. Usually there are trophies for the outright winner and for the class winners in two or more cubic inch displacement divisions, trophies for best performance from the organizing club, for the best visitor, team trophies, and others. In addition, first class awards in the form of dashboard plaques or ribbons are given to all entries successfully completing the course; second class awards are made to entries registering only one hill failure, etc. The climax of the trial season is reached in the annual contest between the northern and the southern experts, while the individual's performance in certain R.A.C. sanctioned events counts toward the Royal Automobile Club's annual trials champion award.

It is quite natural that such specialized competition conditions would in time evolve a highly specialized breed of cars. All-out speed and acceleration is of questionable value except, of course, in the tie-deciding tests. Far greater importance is attached to sensitive steering, adequate ground clearance, good brakes, visibility, correct weight distribution, a versatile suspension system and the ability to lug steadily at low speeds over severe obstacles. All these features must be embodied in a machine that combines lightness with exceptional strength, if one is to be effectively equipped for modern trials.

During the pre-war years the average British light sports car with a few modifications could be converted into a satisfactory *trialswagen*. The usual rework consisted of lowering the rear axle ratio, raising the compression ratio or fitting a blower, removing all excess weight and either "bobbing" the stock fenders or substituting with the light cycle-type. A sports car thus prepared would, if capably piloted, be very much "in the game," and successes were occasionally scored by such renowned makes as MG, Riley, HRC, Singer, BMW and Frazer-Nash, competing in perfectly standard form.

But now the days when stock sports cars could succeed are gone, and since the war we find a clearly defined trend toward the "special." There were, of course, some hy-

brids in the earlier days, but these were in the minority, and only recently do we see the trials special emerging as a distinct type. In these circumstances it is not surprising that we find American engines predominant among the specials.

In the immediate pre-war years, the very successful creations of Sydney Allard gave strong impetus to the special builder's art. These cars were built first for Allard's personal use, but their outstanding suitability to trials conditions caused other leading drivers to request copies, and soon Allard found himself in full-scale production of his famous special.

The Allards were built around the popular Ford V-8 engine and the chassis was constructed almost entirely of Ford components. One important modification was the adoption of independent front suspension, which was effected by the ingenious expedient of dividing the stock Ford axle in the center and pivoting the inner ends of the two halves to the front crossmember. This caused the front wheels to assume grotesque angles in moments of stress, but nevertheless proved remarkably stable and rugged. The sturdy Allard chassis used a simple two-seater body, with the whole car giving an appearance of blunt efficiency.

From their first appearance, the Allard specials have been regarded as tough competition, and since the war have achieved many important victories. Frequently their success is shared with other V-8 engined "mud pluggers" built by individual enthusiasts.

In the trials world there is also a strong contingent which pins its faith to the smaller engined, light-weight models. In this category, we find the four cylinder Ford of 1172 cc (71.5 cu. in.) displacement the dominant type. The firm of Delingpole & Lowe has followed the Allard example with its Dellow, produced commercially for enthusiasts and utilizing the small Ford engine. A supercharged version is available at a slightly higher price.

The Nordec, produced by the North Downs Engineering Company, is another four-cylinder Ford special, featuring a Roots-type supercharger and independent front

(Continued on page twenty-five)

CARS OF CHARACTER

THE ROLLS-ROYCE SILVER GHOST

by Griffith Borgeson

THEY CALL it "The Best Car in the World," and it probably is, all counts considered. Still, it wasn't the product of a large organization of college-trained engineers but, like the Bugatti, was the brainchild of a single man who had never seen the inside of a technical school.

Somewhere along the line, probably at birth, Frederick Henry Royce developed an unyielding and fanatical passion for what engineers call "practical utility" which, on the highest level of engineering practice, translates as "perfection." He used to say, and it was even carved on his mantel-piece, "Whatever is rightly done, no matter how humble, is noble."



ROLLS-ROYCE Silver Ghost series can be identified by its horizontal radiator shutters. Shell is of solid nickel silver. Note huge headlights

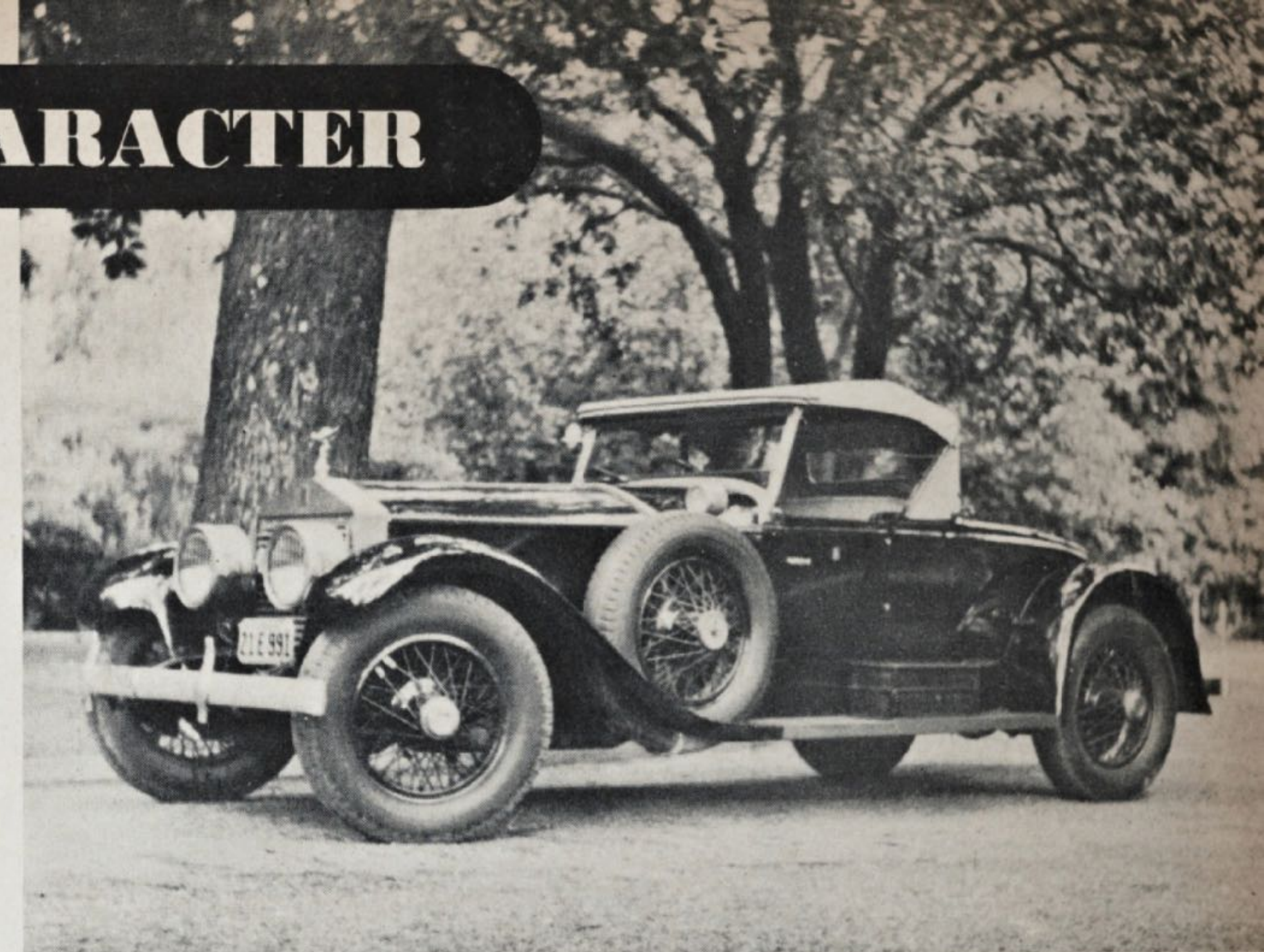
As self-made as a man can get, Royce had no noticeable formal education and was self-supporting at the age of seven. He was apprenticed to a railroad machine shop at fourteen, studied mechanical and electrical theory on his own limited time. With £20 capital he went into the electrical manufacturing business and by 1903 had become so fascinated by automobiles that he decided to produce his own.

Royce was a seer, an engineering prophet. He started his first two-cylinder car late in 1903 and finished the first Silver Ghost in 1906. He was untrained for the field by any formal standards, yet his insight was so penetrating that within three short years he produced perfect two, three, four, six, and V-8-cylinder cars. The six was his masterpiece and was so advanced in every respect that, for the following nineteen years, only a few small details of the basic design were altered. And that is a world's record.

The first 40/50 hp six had an RAC rating of 48.6 hp. Its bore and stroke were a square 4½ inches, changed in a couple of years to 4½x4¾. The original show model had silver-plated engine parts, aluminum body and, alluding to its silence . . . comparable to a steam turbine . . . it was called "The Silver Ghost," a name which stuck.

Some of the specs for the typical 4½x4¾ car run like this: Displacement: 453.3 cu. in., 80 bhp at 1800 rpm, two side valves per cylinder, 4:1 compression ratio, seven main bearings, leather-lined cone clutch running partly in oil, gas consumption 11 to 13 mpg,

May 1950



SOME nice things were done a few decades ago . . . this '24 Rolls-Royce, for example

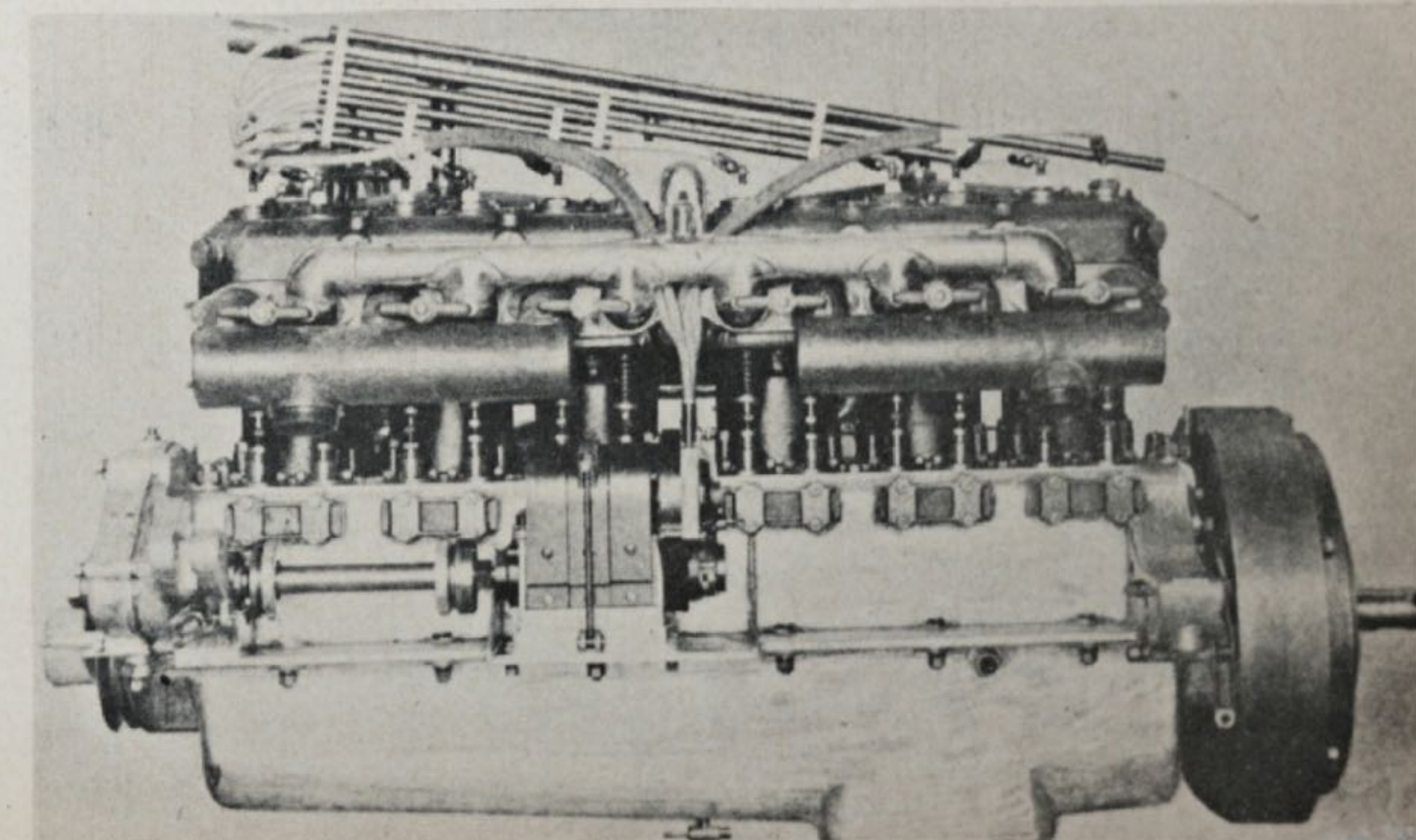
143½-inch wheelbase, weight with touring car body about 3760 pounds.

Naturally, there's little here to awe the reader. But there is in the car's behavior. Before the Kaiser War the Silver Ghost was clearly the champion of the Austrian Alpine trials, which involved 1600 miles of impossible roads and trails up and down nineteen mountain passes. The 40/50's won these heroic events on all counts from speed and economy to never having to add a drop of water to their radiators. And this was against the finest cars in Europe. It's important to note that no souped-up Rolls-Royce ever ran in competition; all were stock.

The stock Silver Ghost was chosen by the British Government during the first war for their armored cars. With no alterations, these chassis, which were intended to carry 1600 pounds of coachwork, bore up to three tons of armor. Under this load they attained 70 mph and there was never a case of a distorted or loosened frame. What a safety factor!

In August of '07, a Silver Ghost ran in a general reliability test conducted by the RAC over what included the fiercest roads in Britain. The car came to a voluntary stop after doubling the existing record at 15,000 miles of continuous, flawless running. The RAC tore the car down and found that to restore it to like-new condition would cost about ten dollars! As we said, the specs don't tell us much, but something was responsible for such remarkable behavior in an age when "Get a horse" was still a practical, though nasty, bit of advice, and in many cases, rightly so.

The key to Rolls-Royce excellence lies in a few simple facts and attitudes. "Produce each component part in a super-excellent manner so that the sum total of the supreme attention to detail will result in a supreme product." This was not a statement released for publicity purposes. It was the inflexible policy of Rolls-Royce, Ltd., and the supremacy of the product advertised. (Continued on page twenty-seven)



THE Silver Ghost engine illustrates the highest refinement of an essentially simple basic design

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German Racing

(Continued from page thirteen)

covered in the entire design, the Veritas can be truly considered one of the finest sports cars of our day. It would prove quite interesting to match the Veritas, Frazer Nash-Bristol and Aston Martin at Spa or Le Mans!

Another two-litre car, constructed too late in 1949 for much experimentation, is the AFM. This is also designed around the 329/85 BMW by Alex von Valkenhausen, the builder of a most successful double overhead camshaft, 1100 cc Fiat. The AFM does not



TWO-LITRE Veritas coupe built for export. The approximate dollar price for this car is \$7,000

have the horsepower of the Veritas, but it is much lighter.

In the smaller class, 1100 cc (67.1 cu. in.), two outstanding cars are the aforementioned Fiat with a magnificent aerodynamic body and the equally streamlined Volkswagen of Peter Max Muller. The 1100 cc Fiat seems to be the "hot rod" of Europe, there are so many versions in design and so much speed equipment manufactured for this engine. The Cisitalia and Gordini Simcas are also built from Fiat components. As high as 90 horsepower is claimed for these unblown 1100 cc engines when using alcohol based fuels.

The Volkswagen (people's car) is the much talked about (in Germany) car for which the Germans paid taxes to receive and never did! Developed by the cream of German automotive engineers, including Dr. Porsche, designer of the Auto-Union Grand Prix cars, it was part of the Nazi plan for the people. The few that were built were delivered to the Wehrmacht, a German conception of our jeep for use by the "Afrika Korps." As time went by, a few fell into the hands of enthusiasts and were naturals for small sports cars.

To begin with, the Volkswagen engine is in the rear, four-cylinder, horizontally opposed, air-cooled. All this is set in a completely torsionally suspended chassis. The body, as currently produced, is somewhat flimsy by American and British standards, yet it is of all-steel construction, light enough to be pushed along at 65-70 mph with four passengers. This writer has never driven a better handling four-seater car of small size as the Volkswagen.

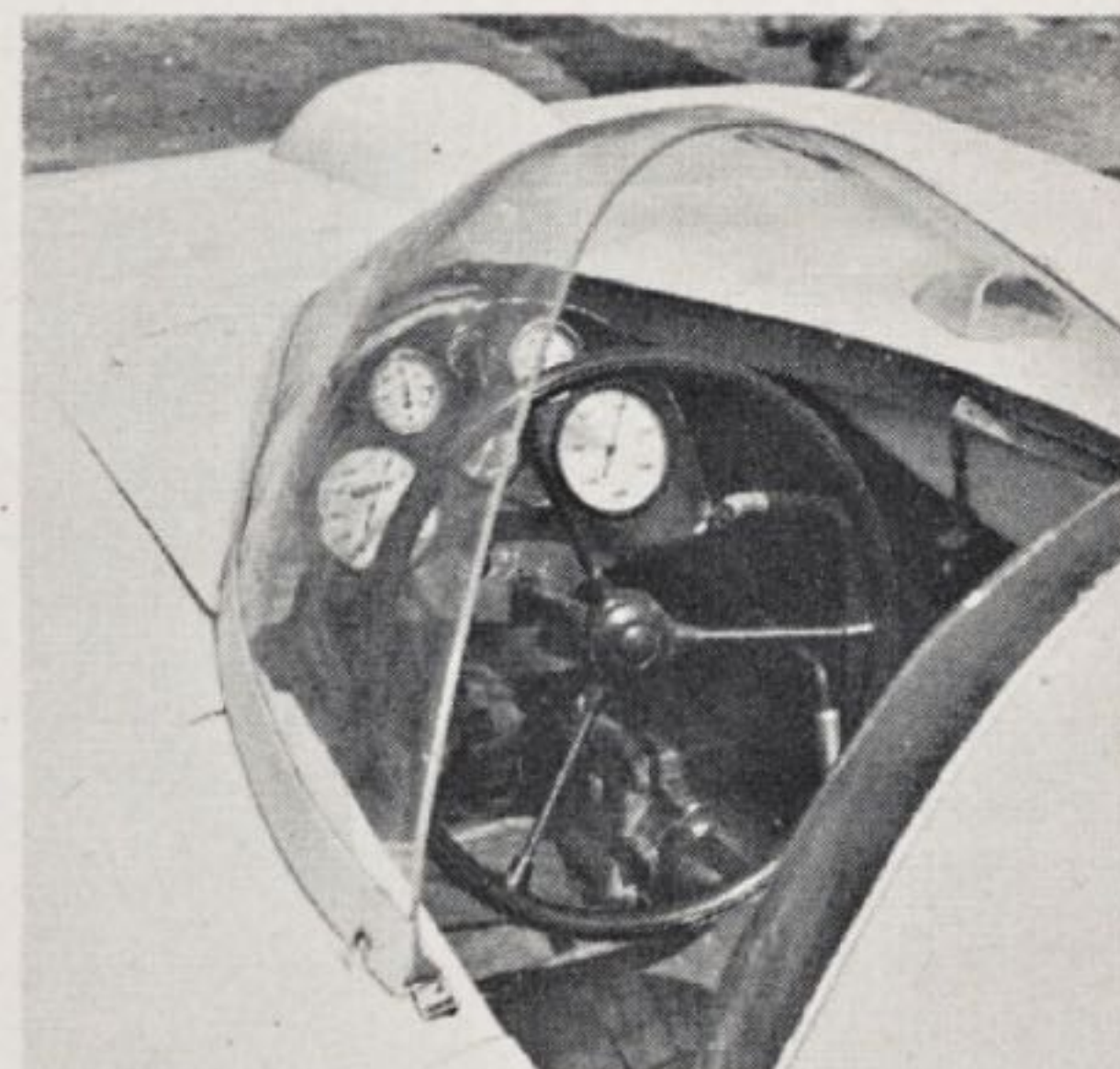


AN EARLIER model of Veritas without head fairing is Fitzgerald's No. 13, a seldom-seen no.

This was a perfect base for further development. There are many, many versions of this as a sports car. The single carburetor is replaced by two and sometimes four, larger valves, etc., all the normal power increasing procedures. However, the bodies are the most amazingly diversified group of designs ever seen. There are no two alike. Like any rear engine or front wheel drive type car, the absence of a torque tube brings the body level down to nothing. It would be impossible to describe these cars in a coherent manner. The Volkswagen does not seem to be extremely fast in competition form, perhaps 90-100 mph at the very best, but its lack of temperament and low cost of replacement parts have made it a very popular class in German racing.

The 500 cc (30.5 cu. in.) class so popular in England at the present time has no exact counterpart in Germany. A 750 cc (45.75 cu. in.) class takes the place of 500 cc's, being comprised mainly of 600 cc (36.6 cu. in.) and 750 cc BMW motorcycle engines. These are known as the "Kleinstrennwagen," or "littlest racing cars."

What will happen in 1950? It's very difficult to predict at the moment the shape of



COCKPIT of Emil Vorster's AFM/FIAT. The performance of this car compares with appearance

things to come. In the event Germany regains recognition by the F.I.A., the white and/or silver of Germany's cars may again appear on the starting lines of Grand Prix racing. In the meantime, whatever the decision may be, the engineers, designers and enthusiasts of German motor racing are building and developing cars that may once again take their place in the field of motor sport and sportsmanship.

CALENDAR OF EVENTS

Date	Event	Place
April 9—	SCCA (So. Calif. Region) Field Meet	Undetermined
April 15-23—	Society of Motor Mfrs. & Traders, British Auto & Motorcycle Show	New York, N.Y.
April 16—	California Sports Car Club Road Race	Palm Springs, Calif.
April 25-28—	New England Automotive Show	Boston, Mass.
May 5—	Mexican Pan-American Race	Juarez, Mexico
May 11-14—	Midwest Automotive Show	Chicago, Ill.
May 29-June 9—	International Trade Fair	Toronto, Can.
May 30—	Thirty-fourth Annual 500-Mile Auto Race	Indianapolis, Indiana

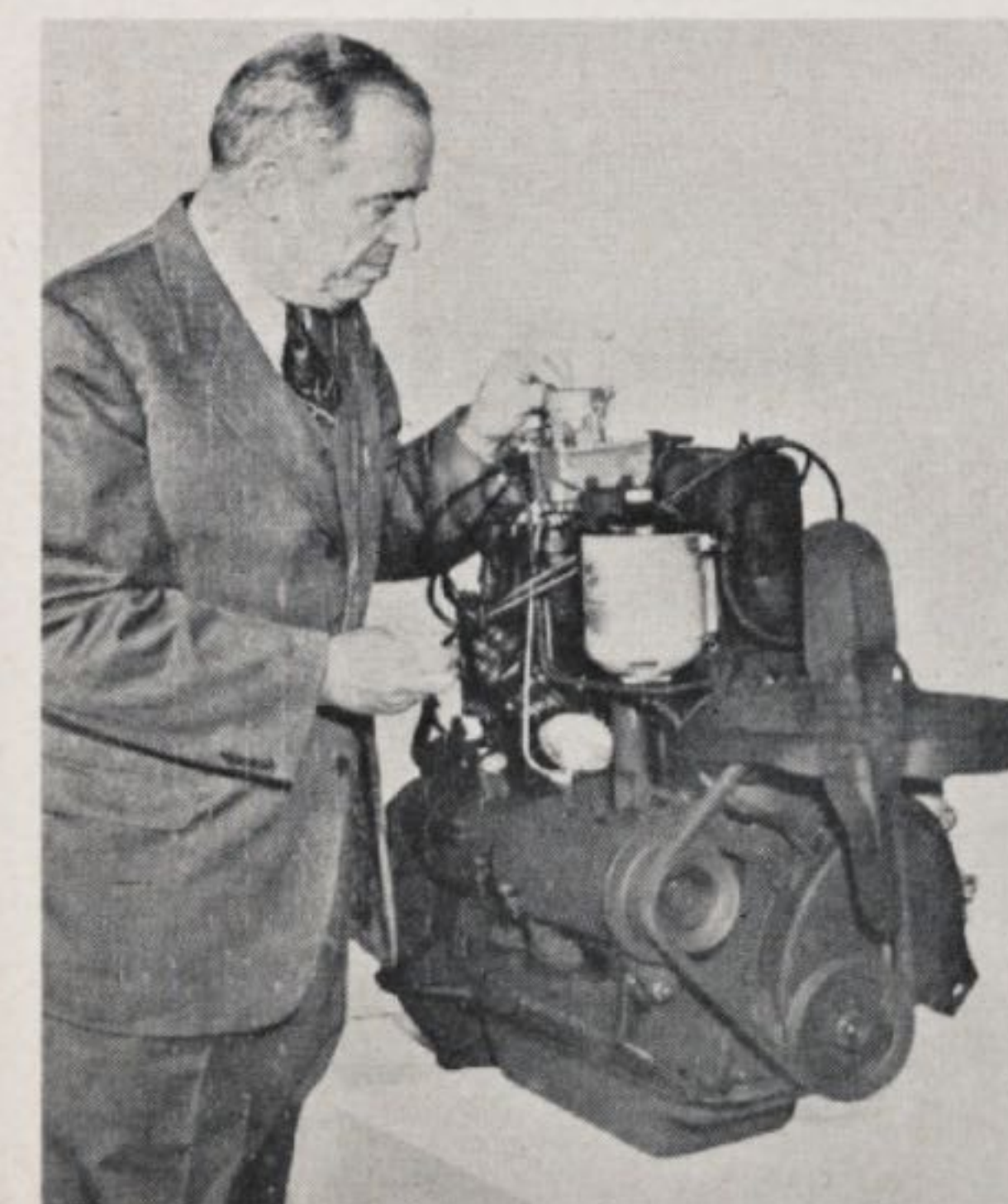
Motor Trend

Spotlight on DETROIT

FROM Toledo, Ohio, on March 30th, came word that Willys-Overland was continuing in its traditional field—the utility and economy automotive market. Their new models are changed in appearance, but most interesting is that a choice of a four or six-cylinder engine is possible. Changes apply to Willys-Overland four and six two-wheel drive station wagons, jeepster, four-wheel drive truck, and panel delivery.



The new four, called "Hurricane," is an "F" head (intake valve in head, exhaust valve in block), has a displacement of 134.2 cu. ins., compression ratio of 7.4:1, and delivers 72 hp at 4000 rpm. Willys engineers believe this engine is one of the most significant advances made in automotive engineering, making possible better performance, endurance and fuel economy. An "F" head engine allows an increased intake charge at cooler temperatures, and higher compression without detonation. Output of this engine is 536 hp per cu. in.



The six, called "Lightning," is an "L" head of 161 cu. ins., compression ratio of 6.9:1, and maximum hp of 75 hp at 4000 rpm. This engine available as option in the Jeepster and conventional two-wheel drive station wagon.

PREDICTION: Within the next year, at least two major companies will be announcing new overhead valve engines, both of which will be V-8. Also, there will be a gradual swing-over in favor of ohv V-8's by most manufacturers.

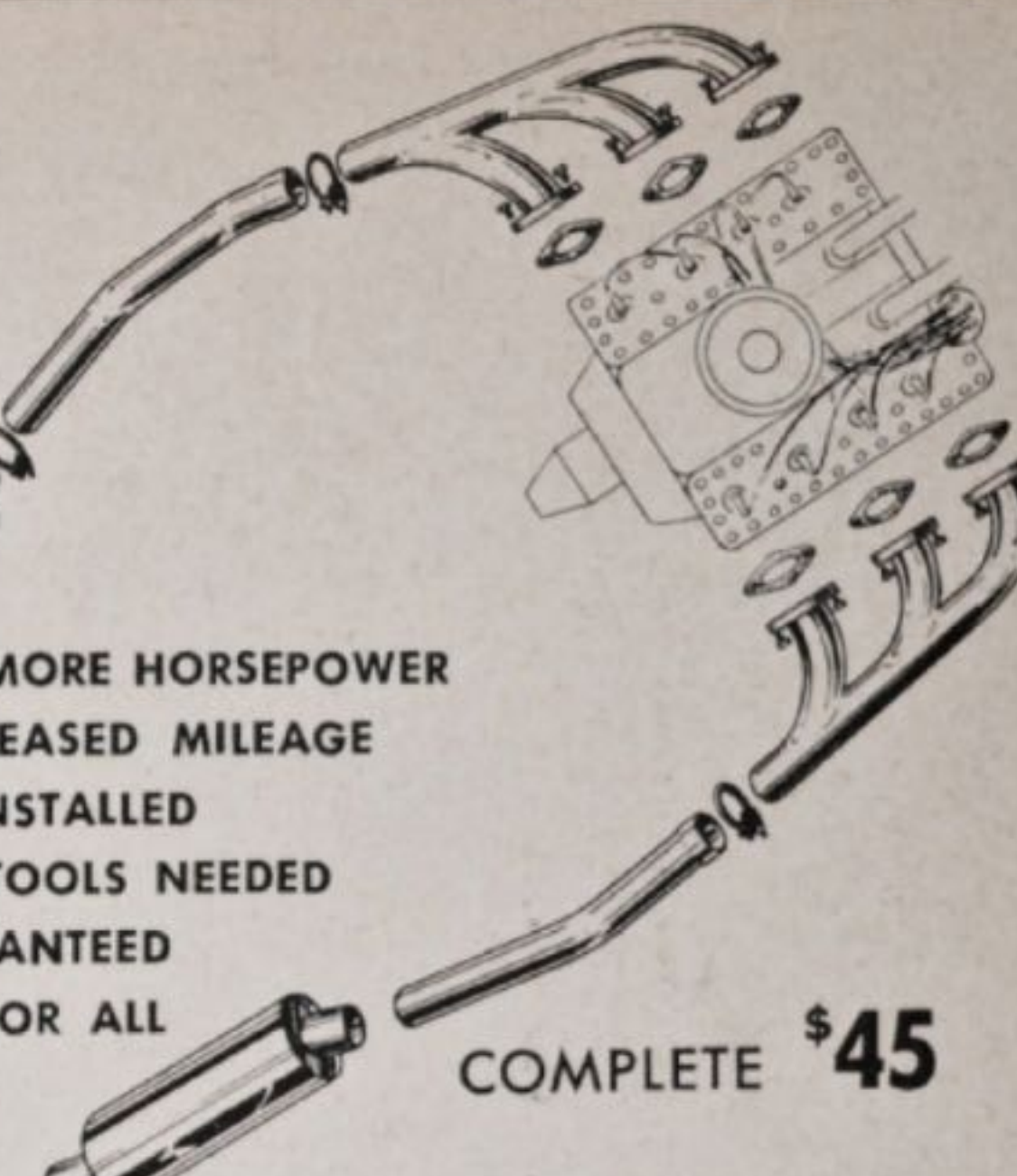
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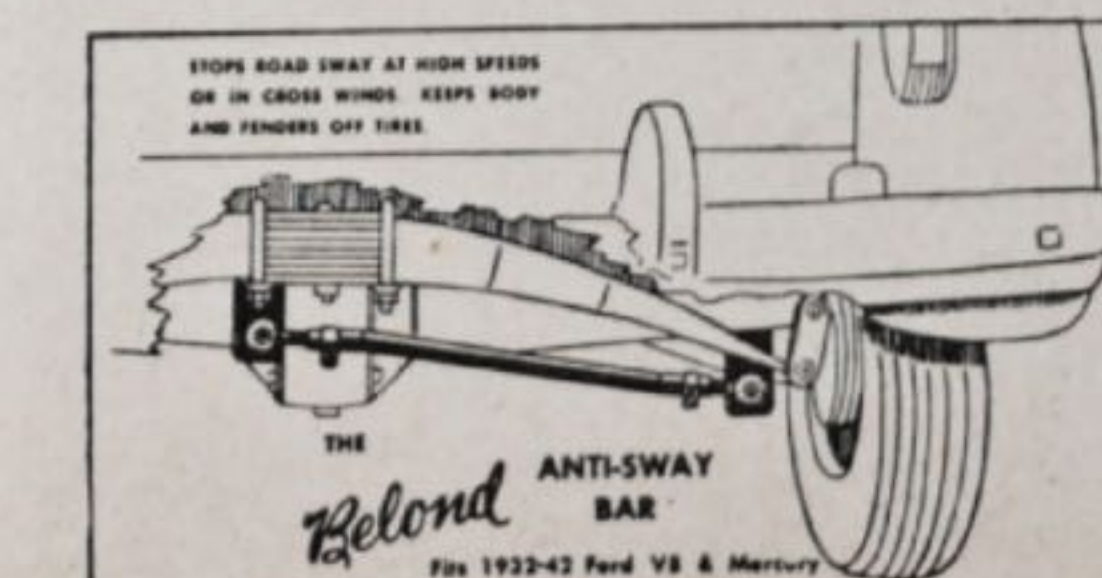
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(Print name and address clearly in margin)

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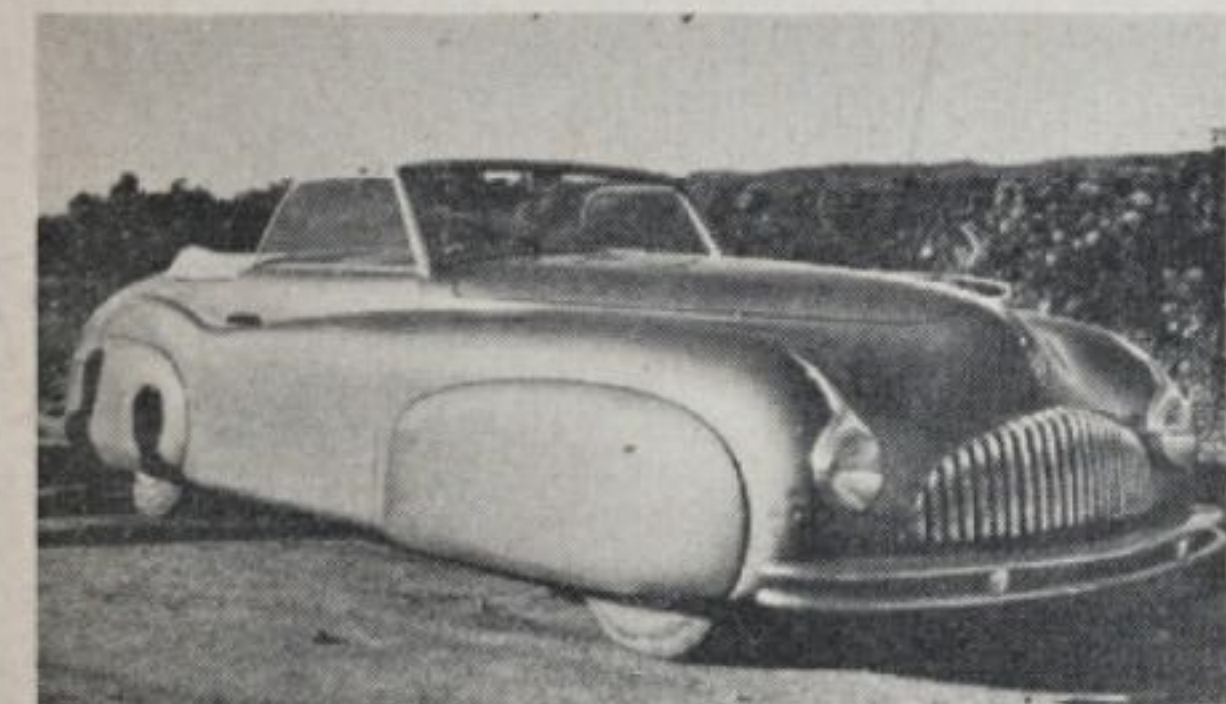
TRANSATLANTIC



NEWSLETTER

by A. Devereux

MONTE CARLO: The second postwar Monte Carlo Rally was high adventure for the drivers of 282 starting cars, who made the grueling cross-continental ordeal through mountain blizzards and icy roads. Only five cars came through without loss of points, and these—a Hotchkiss, a Humber, and three Simcas—were the cars eligible for the final regularity and speed test held in the hills above Monte Carlo. The Hotchkiss' genuine sport car design brought it home in front of the rest, making the seventh M. C. win for the *marque*. A fact the press preferred to underplay is that the winning car was a '39 model. The big Humber placed second, and an 1100 cc (67.1 cu. in.) Simca edged out its 1221 cc (74.5 cu. in.) sisters. The *Concours de Confort* was won by a Rolls-Royce—of course. The BBC went all-out on



FIAT 1500, with body by Ghia, has typically sleek lines, as can be seen in this photograph

coverage of the rally, using an Allard to dash from place to place with the contestants.

FRANCE: Latest report (*Autocar*, London) has it that the much-discussed Bugatti vest-pocket engine with one-inch diameter pistons was just a device for funneling German-occupation manpower into futile channels. Only a genius could have engineered such a plausible will-o'-the-wisp. It looked good, but the news from Molsheim is that the item has been shelved, and the factory is operating full blast on railcar engines.

GERMANY: The abundance of American vehicles here is directly affecting 1950 design. Mercedes, for example, is following U. S. practice by adding tubular shocks and rubber-bonded parts. . . . Volkswagen, its pre-war shell-game tactics (the \$240 car that seldom got delivered) largely forgiven, if not forgotten, is booming. Production jumped from 700 in '46 to a predicted 70,000 for this year, and an efficient service organization is being established throughout the continent. Wonder-designer Dr. Porsche is still associated with the firm. . . . The Robert Bosch works at Stuttgart (fine ignition equipment), almost totally demolished during the war, are now revived to the extent of employing 10,000 workers. . . . The first postwar German Grand Prix will

be run on the Nürburg Ring, August 20th of this year.

ENGLAND: Standard Motor Co., of Triumph associations and Nash NXI ambitions, has opened a South African assembly plant. . . . Incidentally, their chances with Nash look very good. A small but important point in their favor: Standard uses American threads. . . . The E.R.A. Javelin, made by Jowett and shown at Earl's Court's last event, will appear on the market soon as the Jowett Jupiter. This is the car with the tubular frame and remarkable suspension designed by the Austrian, von Eberhorst. . . . Two of the finishing Monte Carlo Rally cars plowed through the ice and snow on Wyre-soles, a metal-impregnated tire reminiscent of the steel-studded racing rubber of the roaring pre-Twenties.

AUSTRALIA: As far as we know, the first car to be entirely produced here is the recent Holden, a General Motors-backed venture. Now there's another Aussie home product, the Hartnett. . . . both are adequately powered family-style jobs stressing low fuel costs.



JOWETT Javelin Jupiter, newest of Britain's sports cars, which will be seen for the first time in the United States at the British Motor Show. The Jupiter is adapted for road racing as well as for regular use, with full convertible coupe equipment—sliding windows, a snug top, and top performance in low and high speed ranges. It seats three. Engine is four-cyl., horizontally-opposed, of 90.59 cu. in. displacement, delivering 60.5 bhp. Top speed is over 90 mph, acceleration good

ITALY: There's another 1100 cc sports job on the scene, the Leone. Ferrari-esque in appearance, it has all the desirable details of suspension, tubular frame, and high-winding mill. . . . Some of the most formidable Italian drivers plan to invade Indianapolis this year and super-cars are being built for the event by Ferrari and Maserati. Talk is that Farina will drive an 8-cyl. 3-L Maserati, Villorosi and Ascari will be in 2-litre blown Ferraris. Alfa-Romeo is expected to do little this year, for financial reasons.

GADGETS: . . . From England: The Terry Leaf Spring Greaser (about \$2) levers the leaves open, forces grease down the full length of the opening. . . . Lucas, the British accessory specialists, have produced a glare-proof rear-view mirror, using an adjustable prism by which reflection intensity can be instantly regulated. . . . about \$5. . . .

AND BOOKS: The Third Edition of the *Autodictionary* is out, with 25,000 terms in English, German, French. Reasonable, from Albert Nauck and Co., Gutenbergstrasse 3, Berlin-Charlottenburg, 2, Germany. A colossal stock of new and used automotive literature, mags, and photos is listed in a catalog which will be sent you by George Final, 15 Nashleigh Hill, Chesham, Bucks., England.

Trend in Trials

(Continued from page twenty)

suspension of the same type employed on the Allard. This system, developed by Leslie Ballamy, is now available on the Nordec by virtue of that company having acquired the Ballamy patents.

It would be almost impossible to catalog the great number of small Ford specials created by individual enthusiasts. The appeal of the Ford engine to the British special builder is easy to understand when one realizes that he places value on the same qualities as does his American counterpart. Low original cost, simple sturdy construction, easy accessibility for maintenance, and ease of obtaining replacement parts, all influence the designer in his choice of a powerplant and other purchased components.

The clear cut recognition of these advantages and the distinct superiority of the American engines over their contemporaries is best illustrated by comparing the results of very recent trials with those obtained in earlier years. For example, in the Northwest London's Classic Gloucester Trial of 1936, the Gloucester Cup was won by the noted trials expert C.A.N. May on a blown MG. Other makes figuring in the results were: seven more MG's, four each BMW and Singer, and one each Aston-Martin, Austin, and Allard Special (the last piloted by the redoubtable Sydney himself).

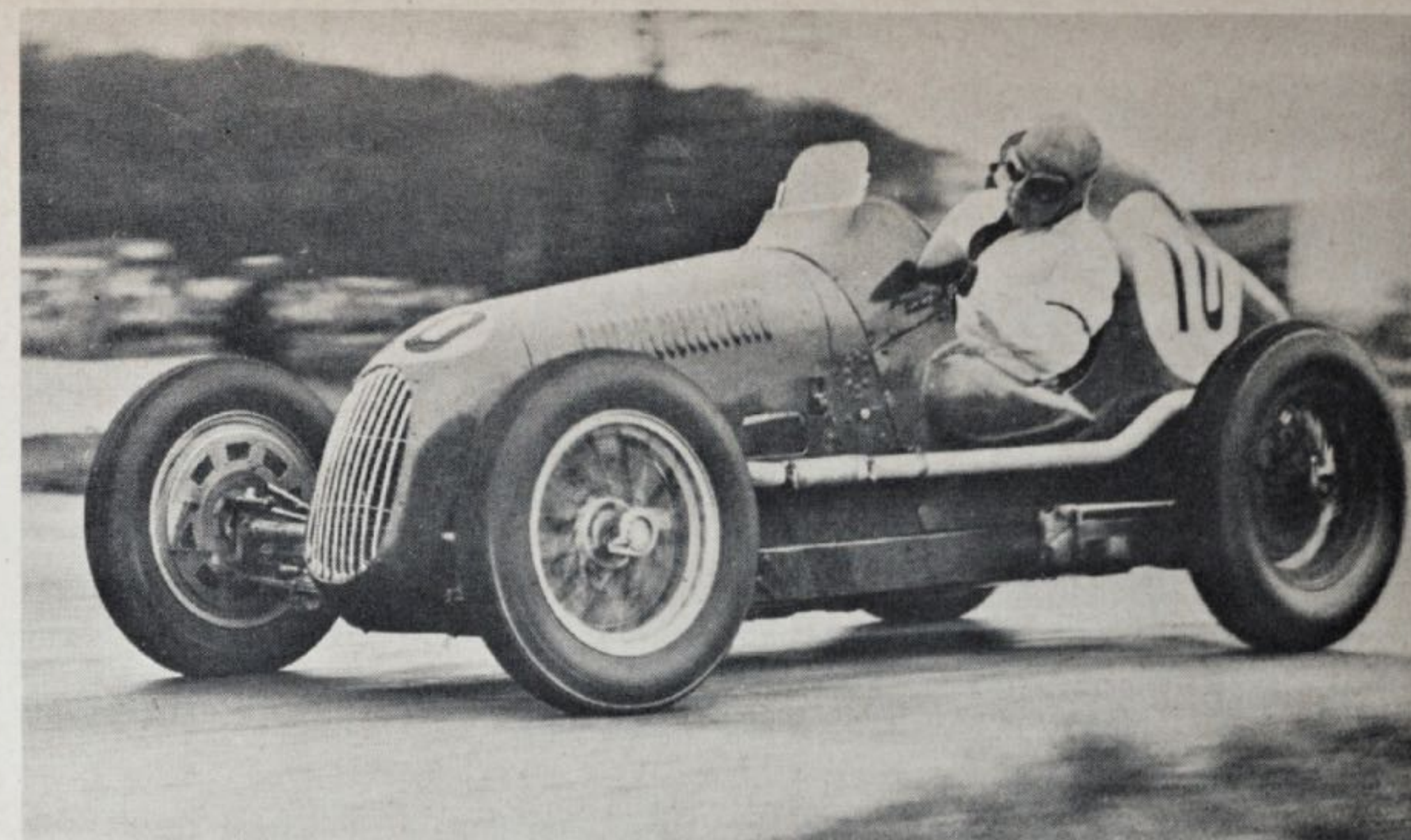
Counting out the war years, when of course no trials were run, we find six years later, in 1949, the results as follows: Winner of the Gloucester Cup, Ken Wharton in the 1172 cc (71.5 cu. in.) Ford engined Wharton Special. Of the remainder of the list, sixteen more specials were powered with the small Ford, (including Dellow's) ten specials with Ford V-8 engines (including Allards), three Austin specials, two each Morris and Riley specials, one Vauxhall special, and three unidentified specials. To sum up, in this event Ford engines powered over twice as many cars as all other makes combined.

This is not an isolated example. In the '49 Fedden Trophy trial run by the Bristol Club, Fords won thirteen of eighteen places. In the Sunbac Club's Vesey trial the score was eleven out of thirteen, and in the M.C.C. Sporting Trial, Ford Specials made a clean sweep of eight out of eight places.

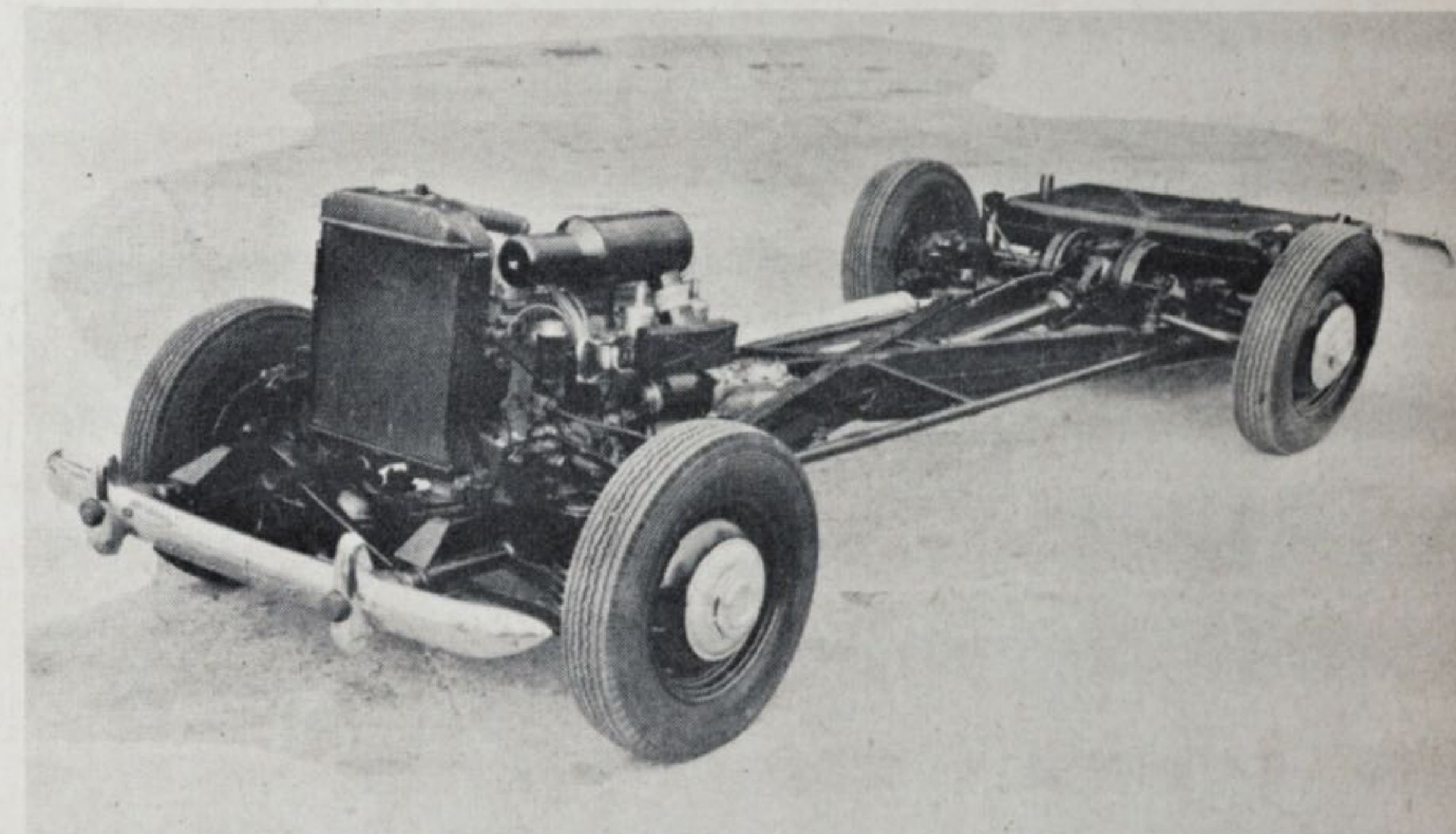
The years since the war have brought about a great renaissance in amateur motor sport in the United States. Sports car competitions formerly enjoyed only in England and on the continent are becoming increasingly popular here. 1950 will witness an impressive variety of speed hill climbs, gymkhanas, rallies, reliability runs and all-out road races. It is encouraging to see how enthusiast organizations, notably the Sports Car Club of America, have revitalized popular interest in each of these branches of the sport.

Will this trend continue to the establishment of English type trials here as well? There is every reason to believe that such a movement would receive strong support. Our British cousins have proved that we have the makings of the necessary equipment, and our immense store of individual enthusiasm is ready to rush into any new channel that opens up. Throw in a few muddy, near vertical slopes, a water splash or two, and a few stretches of crooked cow paths and boulder-strewn fire breaks, and we're in business!

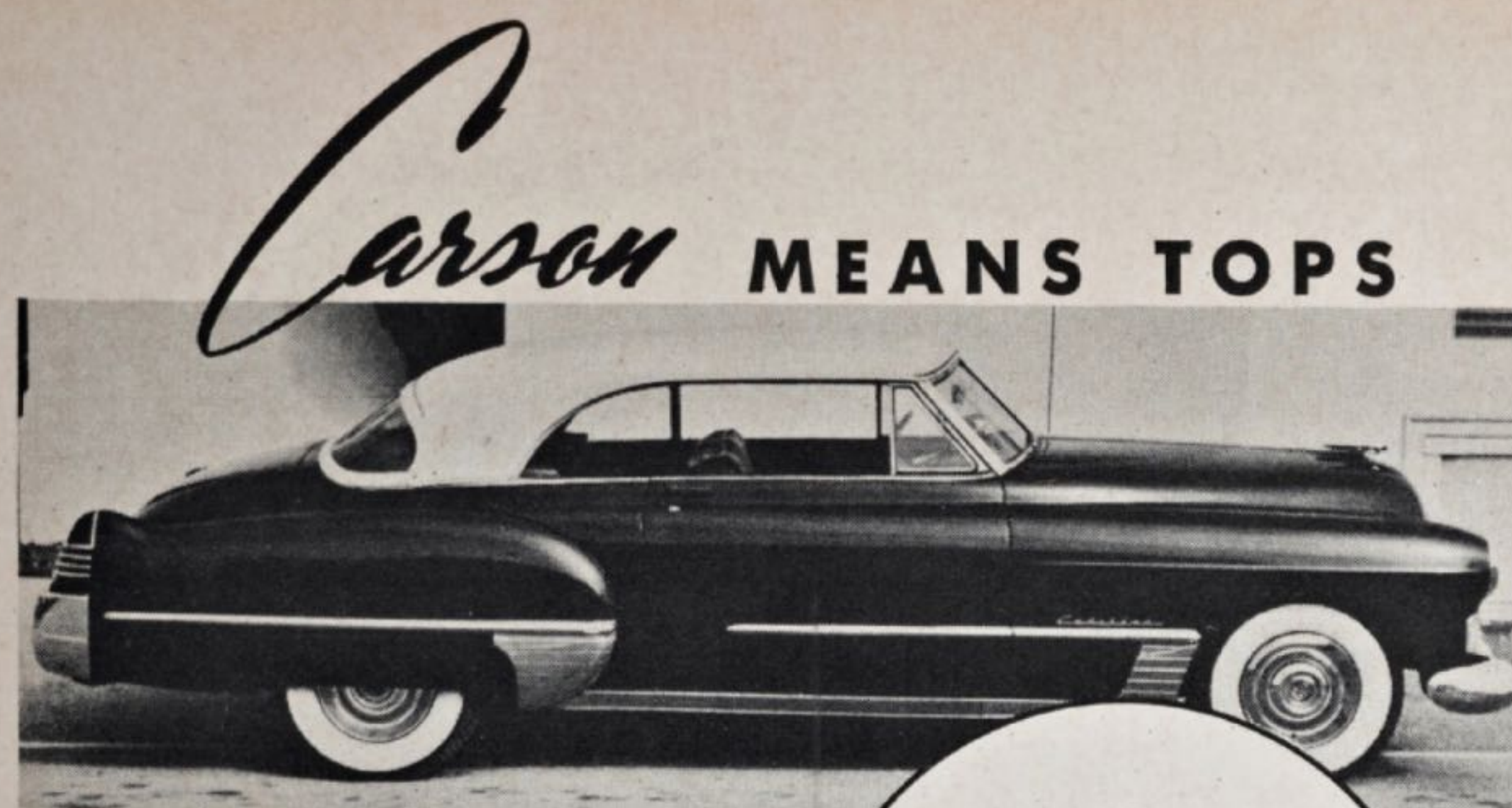
May 1950



CORNERING prewar at Donington in the Austin ohc, 750 cc "Racing Seven." This car will be viewed by fans for the first time in the United States at the British Motor Show. Built 14 years ago, this car achieved outstanding successes in European road racing and hill climb events. Between 1936-1939, it held all existing records in its class. The 4-cyl., 45.4 cu. in. engine delivers 116 bhp



LAGONDA 2 1/2-litre sedan is entirely new throughout. With a six-cyl. engine of 163-cubic-inch capacity, power delivered is over 105 bhp at 5000 rpm. Compression ratio is 6.5:1. Like the Jaguar, twin overhead cams are used. The wheelbase is 113 1/2 inches, while the tread is 56 3/4 inches. An "X" frame is used, with independent suspension at all four wheels. Four speeds forward are provided, with a rear axle ratio of 4.56:1. Lagonda seats five or six passengers comfortably



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Tempest in Tulare

PHOTOGRAPHS BY R. E. PETERSEN

CREATING quite a storm in and around Tulare, California, is the weird custom car owned and built by Manuel Avila of that city.

Bearing some resemblance to the original Topper Car (December 1949, MOTOR TREND), the car is basically a '40 Ford V-8. It uses a '40 V-8 frame, stock rear end and transmission. The powerplant is a stock '50 Mercury.



The body is of special build, with the front and rear fenders having been made from airplane belly tanks. Extra ornamentation includes portholes, an Oldsmobile radiator ornament, twin air horns, and twin rear view mirrors.

This car bears evidence to the fact that individuality—no matter in what form—is one of America's proudest possessions.



Cars of Character— the Rolls-Royce Silver Ghost

(Continued from page twenty-one)

tised itself. So let's forget about the size of this and that and look at a lank, long, sinewy old Silver Ghost.

Working from the ground up, we notice that the wheels are of the costliest wire type and that the spokes form a very deep cone. This combines the greatest lateral strength with the lightest weight . . . lightness of every part was, believe it or not, one of Royce's most fanatical obsessions.

The frame has longitudinal members of very deep section, of carefully heat-treated alloy steel, and they are underbraced by forged, heat treated, nickel-steel tie-rods. The frame isn't riveted together, it's fastened with nickel steel, heat treated, tapered bolts passing through reamed, tapered holes. The Compleat Engineer, Royce, before he built his first engine, bought a small furnace and did his own metallurgical research. This extended to the heat treatment of eggs, cooked for quick lunches on the same furnace.

Then there are the springs, the long, thin-leaved, cantilevered assemblies which always characterized a Rolls. The flexibility of these springs was held to an accuracy of plus or minus 1½ per cent, tolerances found elsewhere only in scientific measuring devices. The eyes, for attachment to shackles, are solid forged, instead of wrapped, as in all other practice. This detail alone ups the cost 100 per cent, but no other design will survive the bludgeoning of the Bumping Machine.

This merciless contraption was created by Royce in 1912 to beat his cars to pieces in the shortest possible time, thereby exposing every possible point of failure. At the very beginning, he tested every part to total destruction first. He made the part indestructible within the wildest limits, and then refined it.

The I-section front axle, like all R-R forgings, carries a test piece at each end. Before any machine work is done on the part the test pieces are removed and carefully analyzed. To stop inferior metal at the source, R-R inspectors tested every melt of steel at the mills.

The rear axle is an amazing piece of machinery in itself. It's of a very large diameter but is stiff and light and every part of it is a forging. Its elements are held together by an incredible number of small bolts . . . the expensive way, but the only way that passes the destruction test.

And the transmission . . . to ensure silence and durability there's a bearing between every gear. The gears themselves are exceptionally wide and are of a special case-hardened nickel steel.

The foundation of the huge, three-point-supported powerplant is of aluminum alloy, supporting two blocks of three cylinders each, with integral heads and cage type valves which can be removed and replaced in the jig time of four minutes. The seven bearing crankshaft is of chrome nickel steel and, since slight distortion develops in the machining of any such unit, it is reground after every machining operation . . . 15 times in all! A massive vibration damper is mounted on the forward end of the crankshaft. Although this was one of the features that made the smoothness of the Royce engine possible, Royce never bothered to patent it.

(Continued on page twenty-nine)

May 1950

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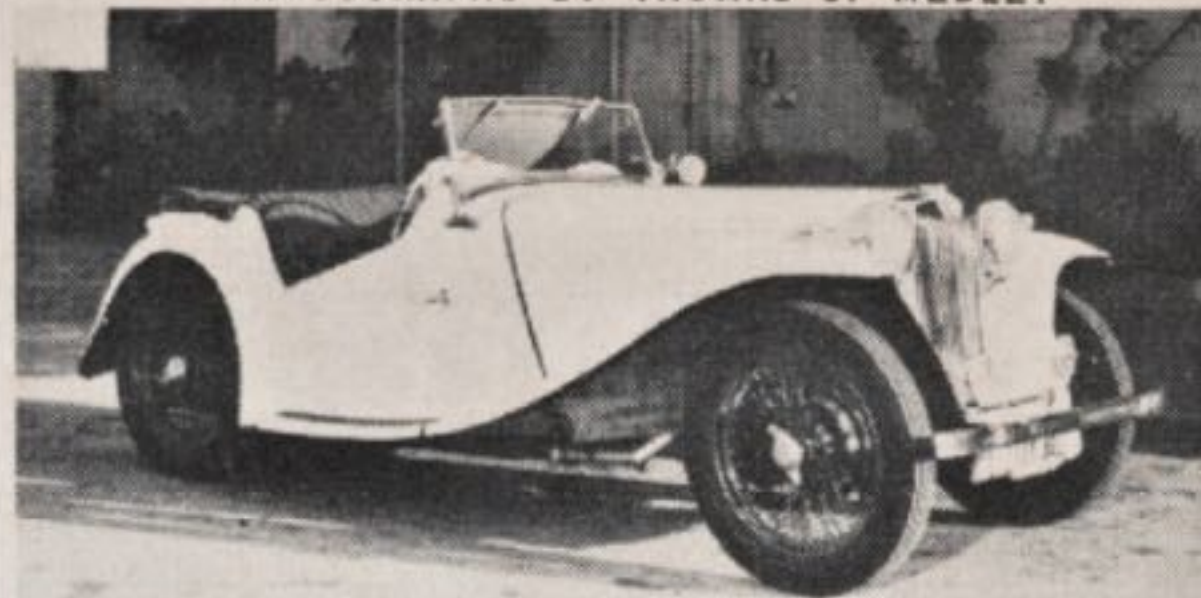
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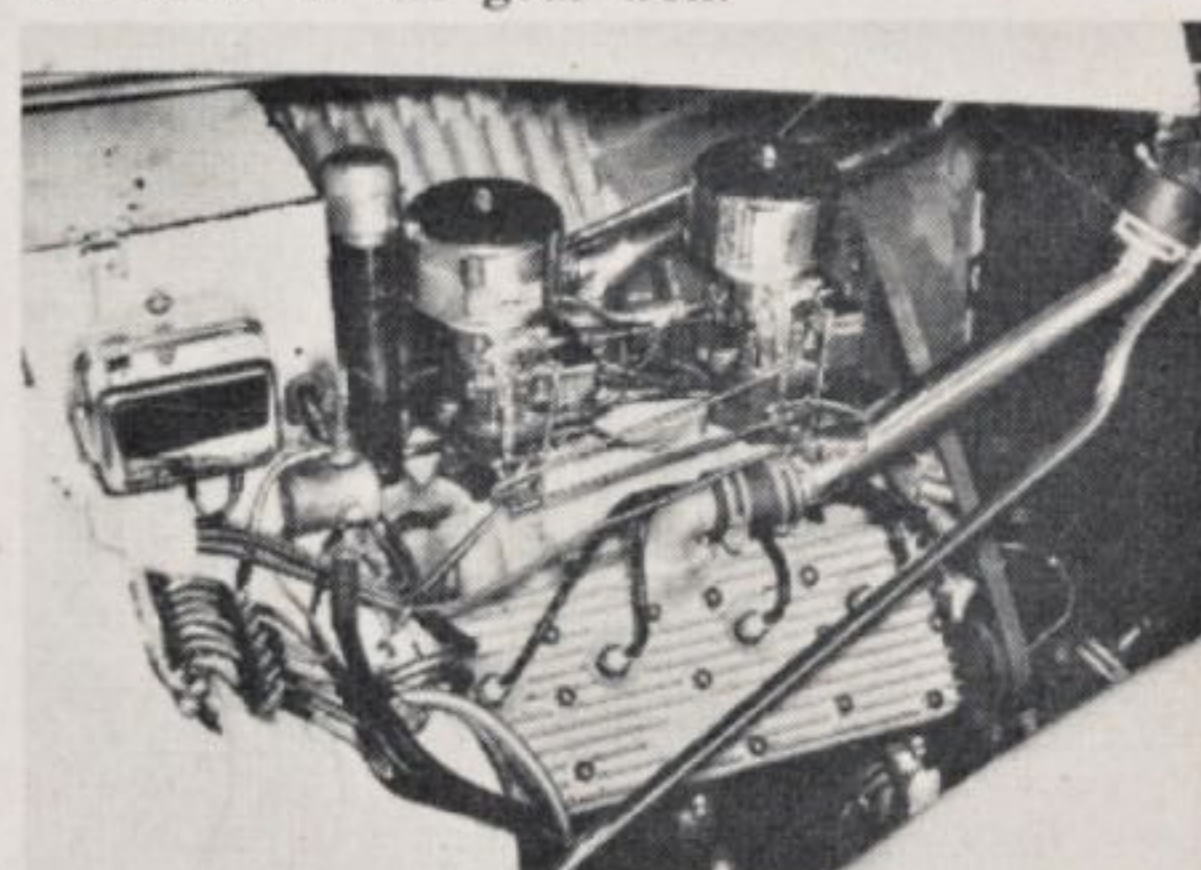
A HYBRID MG

PHOTOGRAPHS BY THOMAS J. MEDLEY



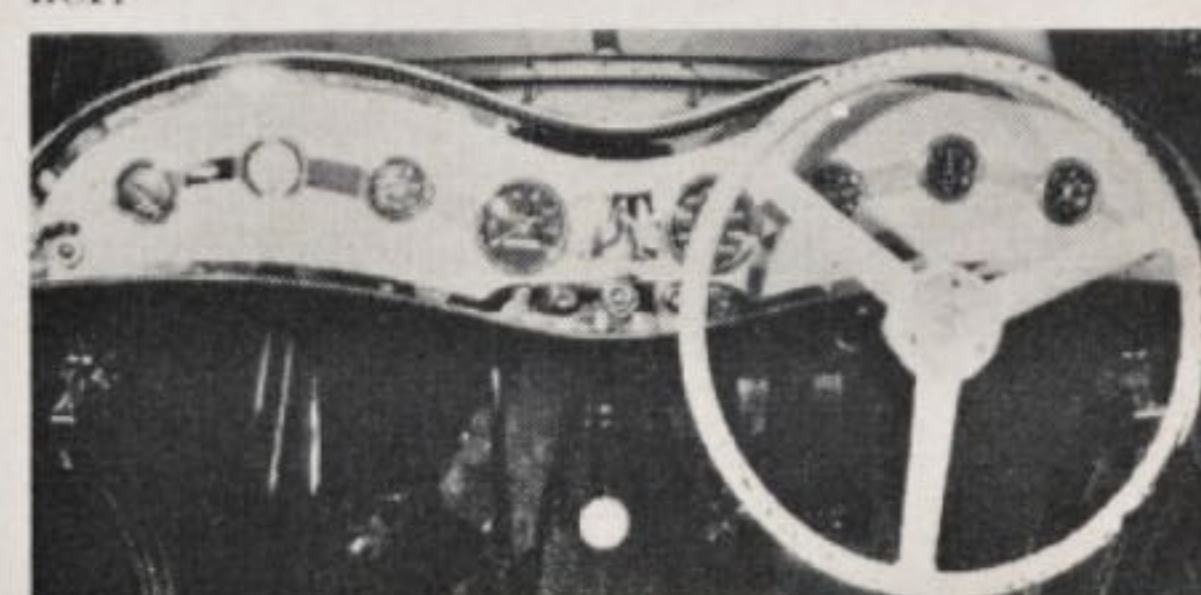
MG OWNERS have various beliefs—those who swear by their MG and its stock engine; those who tune them for more performance through engine changes or the addition of a supercharger; and those who like its handling characteristics, but prefer the performance of other engines. Paul Trousdale is apparently of the latter belief, for his MG is powered by a Ford V-8-60, which was installed by the So-Cal Speed Shop.

To install this engine, special mounts were made. The MG drive shaft was cut off and replaced with a Ford drive shaft with universal joint. 26-tooth Zephyr gears are used in the gear box.



The engine has been bored .100-inch over, has a stock stroke, and has been ported and relieved. JE Pistons are used, along with Edelbrock heads of 9:1 compression ratio and an Edelbrock manifold. A Winfield R-11-S cam completes the special equipment. The ignition system consists of a Ford starter, generator, voltage regulator, solenoid, etc., and has been rewired throughout for six volts. A Spalding igniter and H-9 commercial Champion plugs are used. All wiring has been coded for ease of maintenance.

The steering column has been moved down and backward so as to clear the engine. The steering rods were bent accordingly so that full steering is provided. The headers are special So-Cal made and are used in conjunction with a 22-inch steel-packed muffler.



The instrument panel is unique in that it was originally nickel coated, then masked off for sandblasting and then chromed. Indirect lights are used to illuminate the instruments.

Acceleration characteristics of this MG-V-8 are improved over the original MG-TC. In high gear the car appears to have as much acceleration as the MG-TC had in third gear. Handling characteristics are unchanged.

**Cars of Character—
the Rolls-Royce Silver Ghost**

(Continued from page twenty-seven)

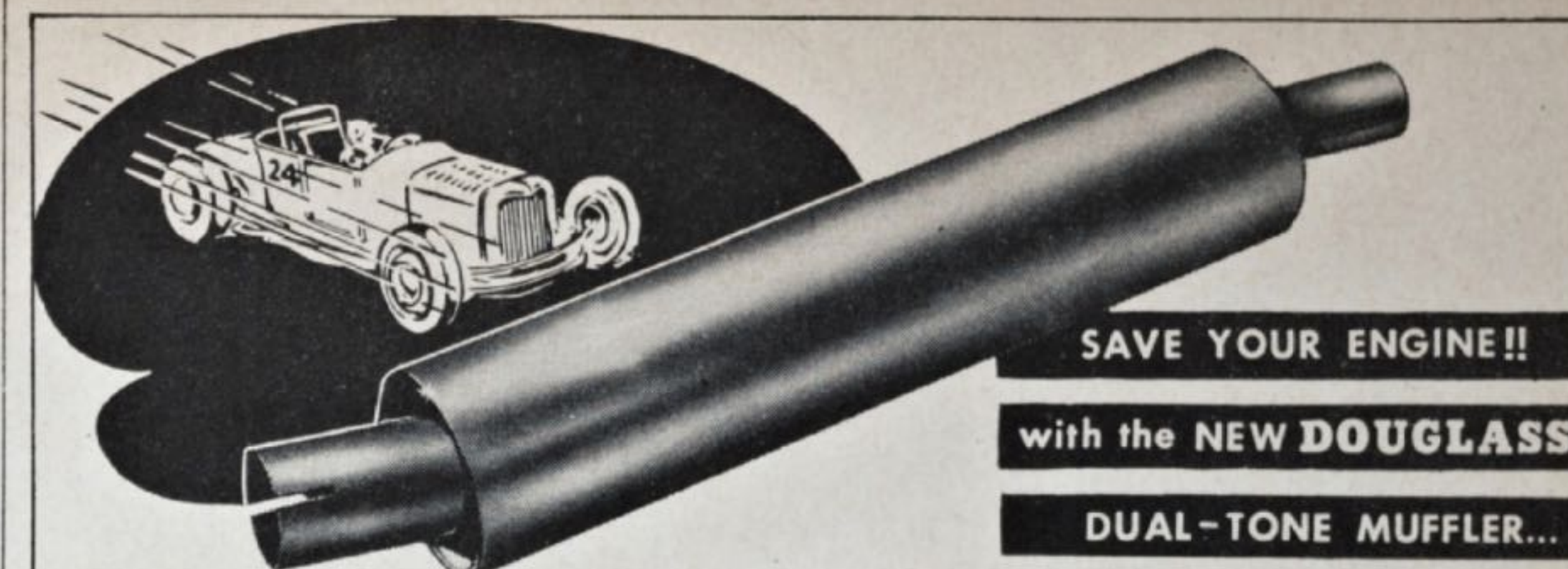
The H-section connecting rods start out as eight-pound forgings but are machined down to a final weight of two pounds, so that only the flawless core of the forging is used. Oil is pumped under pressure to the one-inch diameter wrist pins, which are thin, light, remarkably strong shells. Every moving part is carefully pressure-lubricated or sprayed with oil. The aluminum pistons are cam and taper ground and their domed shape contributes to R-R detonationless operation. Their six (!) piston rings will hold the engine's compression for many hours. Since the rotating mass tends to stop at or near top dead center, it's possible to leave a tight 40/50 overnight and start it in the morning by just flipping on the battery ignition switch and jiggling the spark lever. There are two plugs per cylinder and ignition is by both battery and magneto, the latter being of Royce design and make.

Automotive engineers at large have claimed that timing gears cannot be made to stay silent without the use of fiber gears, chains, et cetera. Rolls-Royce has said that "The use of chains may be regarded as an admission of the inability to produce gears that will stay silent." R-R gears are made of case-hardened nickel steel and phosphor bronze, are fine pitched helicals with wide faces, and are lubricated under constant pressure. They are made to the finest limits of accuracy available from machines, and each set is selected and fitted by hand. The silence thus obtained costs as much as a small production car complete, but is a permanent feature. All Rolls-Royces were machine-made, except for such hand-fitting and, in spite of folk-lore to the contrary, their engines were not sealed, although the fine carburetor adjustments were.

This big, beautifully-machined and polished carburetor was also of Mr. Royce's design and make. That long ago he realized the undesirability, from an airflow and turbulence standpoint, of choke valves. He provided a separate "pilot carburetor" for starting and for eliminating the obstruction of a choke from the normal carburetor intake. Much of the economy of these cars was attributable to the carburetor jet adjustment, which was placed on the steering column and could be controlled by the driver to meet any driving condition. And then, to top off this part of the engine, he provided a governor control whereby the driver could set the throttle for any desired speed and have that speed accurately maintain itself, uphill, downhill, or on the straight.

All this did add up to a super-excellent result. Top speed was good, but not remarkable. What was remarkable is an unending story which has made the Silver Ghost a subject for study and research by technical bodies everywhere. Still, given a mechanical genius to lay down a sound, advanced design, the secret of such excellence is simple:

"To build a motor car so that it shall serve its owner permanently, as his house does, and not transiently, as does his apparel. . . . To build it so that it shall yield the utmost mileage from the fuel that it burns, not because the saving is important, but because efficiency includes economy. . . . To build, in all, not the most luxurious motor car in the world, but the most perfect—remembering that perfection respects all details, and ignores none."



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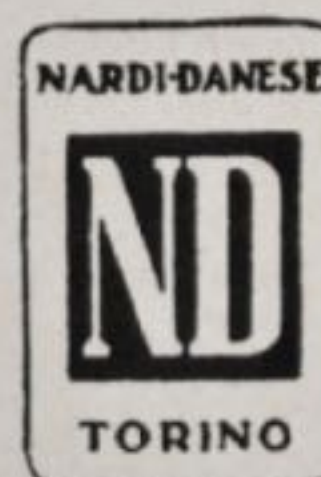
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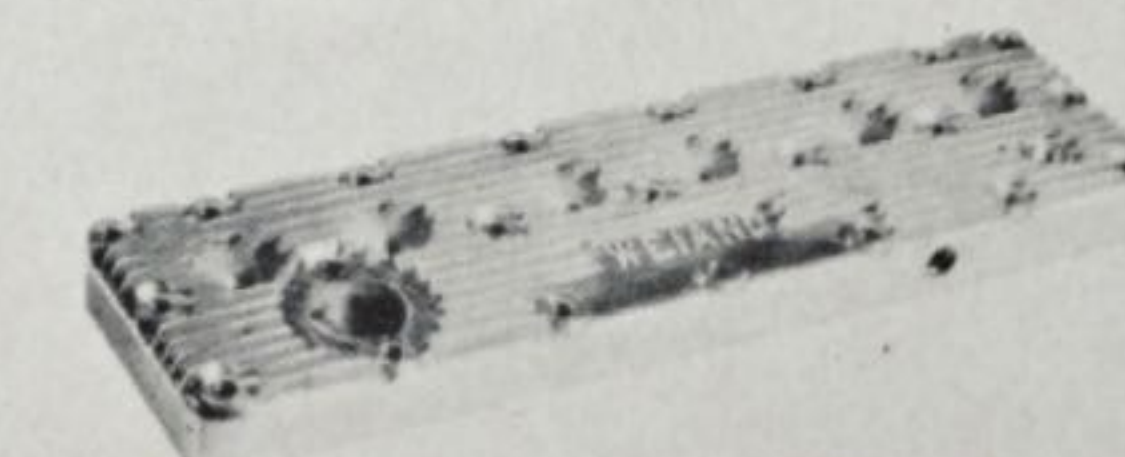
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—BONNEVILLE NATIONALS—
August 21-27, 1950

TRIAL FOR STOCK CARS



ON MAY 5th, numerous stock cars will start out from Ciudad Juarez, Mexico, (across the border from El Paso, Texas) on a five-day, 2178-mile international speed trial to the southern border. The race, inaugurating the completion of the Pan-American Highway System in Mexico, will finish on May 9th in El Ocotil, a small town on the Guatemalan frontier.

The race will be run in eight legs, one each on the first and last days, and two each (divided by a half-hour rest period) on the other three days (see map). To be eligible for the main prizes, entrants must maintain a minimum speed of 50 mph on each leg. Based entirely on speed, prize money is as follows: (1) \$17,341, (2) \$11,560, (3) \$5,780. Small prizes will also be awarded for first, second and third places in each leg. Total prize money will be 330,500 pesos (\$38,208.09).

Entry is open to any five-passenger closed body, standard passenger car, regardless of make, model, or year of manufacture. Sport, convertible and coupe models are barred and all entered cars must have only regular factory equipment, except for an extra tank.

The course will take the competitors through all types of terrain, beginning with a desert in the north, the mountainous mining region south of Chihuahua, and the mile-high Bajio plateau between Leon and Toluca. Two mountain ranges will be crossed between Toluca and Puebla, the highest point being more than 10,000 feet, before heading south across lower mountains and valleys. Near Tehuantepec, the route will reach its lowest point, 100 feet above sea level. After Tuxtla Gutierrez, the highway climbs rapidly to almost 8000 feet in 40 miles. High mountains are traversed to as far as Comitán, then the road descends to 2000 feet at El Ocotil.

SPRING RALLY SPORTING NEWS ROAD RACE

IT WAS "Ladies Day" at the first running of the annual Spring Rally, an open meet, sponsored by the Los Angeles Regional Group of the Sports Car Club of America, on Sunday, February 26. Lovely Maude Frisbie took home the handsome 27-inch winner's trophy, with Miss Elaine Williams filling second position, a mere six seconds behind. Third was Carlyle Blackwell, Jr. All three piloted MG-TC's.

Starting from the historic Rose Bowl in Pasadena, the contestants covered a 130-mile circuit of desert and mountains that included all types of road. The course was divided into seven sections, each of which had to be covered at a pre-assigned average.

THIRD GYMKHANA

THE EXTREMELY energetic Foreign Car Group of Los Angeles conducted its third Gymkhana on Sunday, March 12th. First three men and women were:

1. Dan Dickinson	MG	55.2	sec.
2. G. Thatcher Darwin	Beetle	56.5	sec.
3. Gordon Speck	MG	60.2	sec.
1. Joan Moss	MG	69.8	sec.
2. Marilyn Speck	MG	71.6	sec.
3. Maude Frisbie	MG	78.3	sec.

DUSTER DATA

Text and Photos by Tracy Gilpin

CONSISTENTLY rated as one of America's finest automobiles, the Cadillac had its origin in 1903. The antique car pictured in this month's column was produced during the company's first year in business and is one of fifty "rear entrance tonneau" models produced that first year. Only three Cadillacs of this model and year are known to still be in existence. One is owned by Raymond C. Levis, Annapolis, Md.; another by Walter Marr, a vice president of General Motors and the third by William F. Fleming, Wycombe, Pa.

The car shown here is that owned by Mr. Fleming. It was selected by the Antique Automobile Club of America for the 1948 championship trophy awarded to the year's "finest restoration of an antique automobile." Mr. Fleming did all of the mechanical and body restoration other than twelve hand-rubbed coats of red paint, which were sprayed and finished down by his wife.

During its championship year, Mr. Fleming drove his car more than 4,000 miles and during the 1949 season, because pressure of business prevented him from entering as many antique contests, he still clocked more than 1,000 miles.

Although the body and chassis of the 1903 model were made by the Cadillac Automobile Company, the engine was designed and built on order by Leland Faulkner Machine Co. The following year Sam Leland joined Cadillac and the company was reorganized as the Cadillac Motor Car Company. Leland is still a key executive with Cadillac.



The engine of the 1903 is mounted under and slightly behind the front seat. It is single cylinder, six horsepower, with five-inch bore and five-inch stroke, designed and advertised for speeds of 5 to 25 miles per hour in high gear. It may be hand cranked from either side, counterclockwise fashion on the left side (the normal side as the handchoke lever is awkwardly located on the left beside the spring behind the rear left wheel).

The most unique mechanical feature of the 1903 Cadillac is its separately cast block and waterjacket. The block is cast iron but the waterjacket is constructed of copper.

Ignition is simple, consisting of a dry battery, vibrator coil and spark plug. Planetary type transmission is used with single chain to the compensating gears (differential), which are all spur gears.

Lubrication is by a drip oil system supply. (Continued on page thirty-three)



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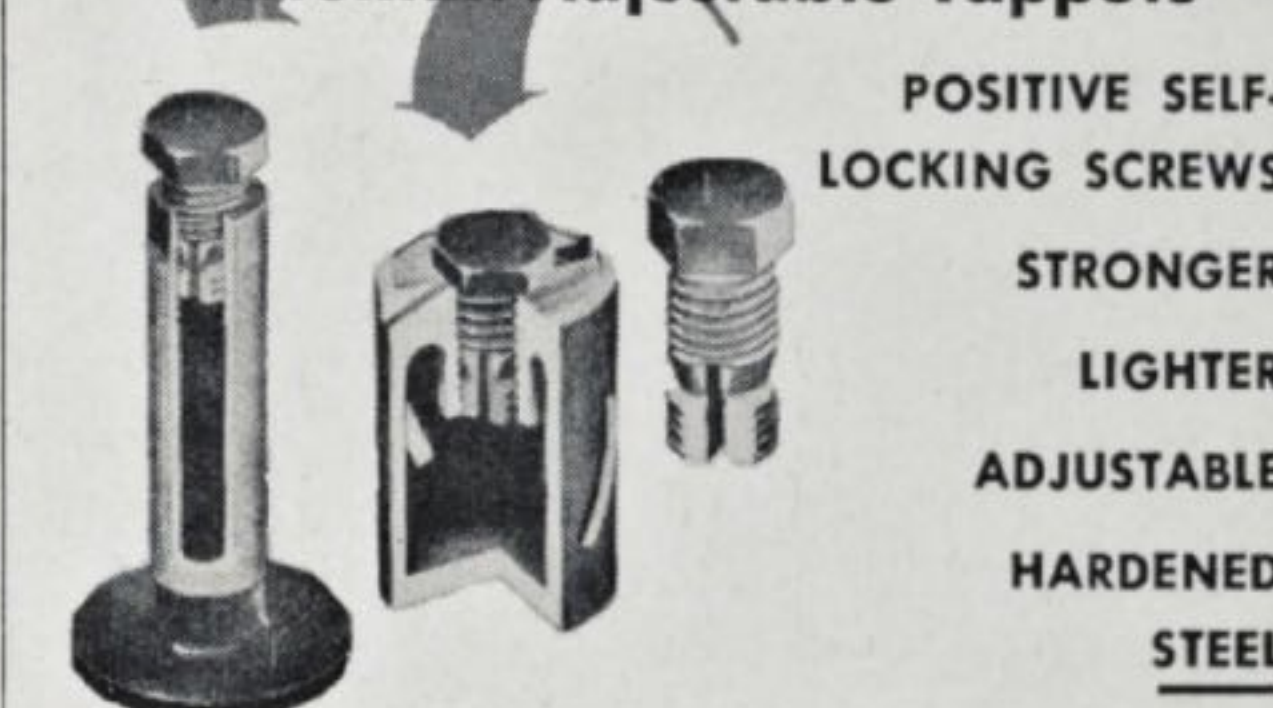
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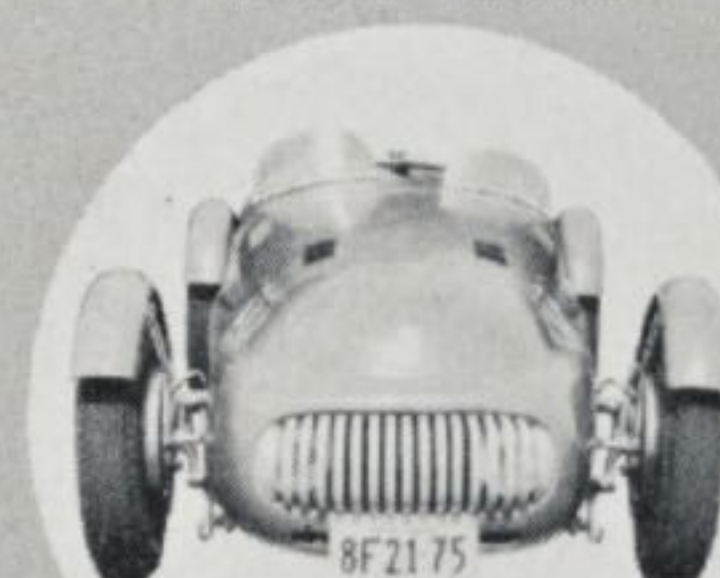
Above, Center—For Ford V-8, Mercury and Lincoln—includes plated keepers and spanner wrench. Set of 16, \$13.60 postpaid.

Left—For Models A & B. Set of 8, \$8.00 postpaid. Also—For Ford 60—includes plated keepers. Set of 16, \$17.50 postpaid.

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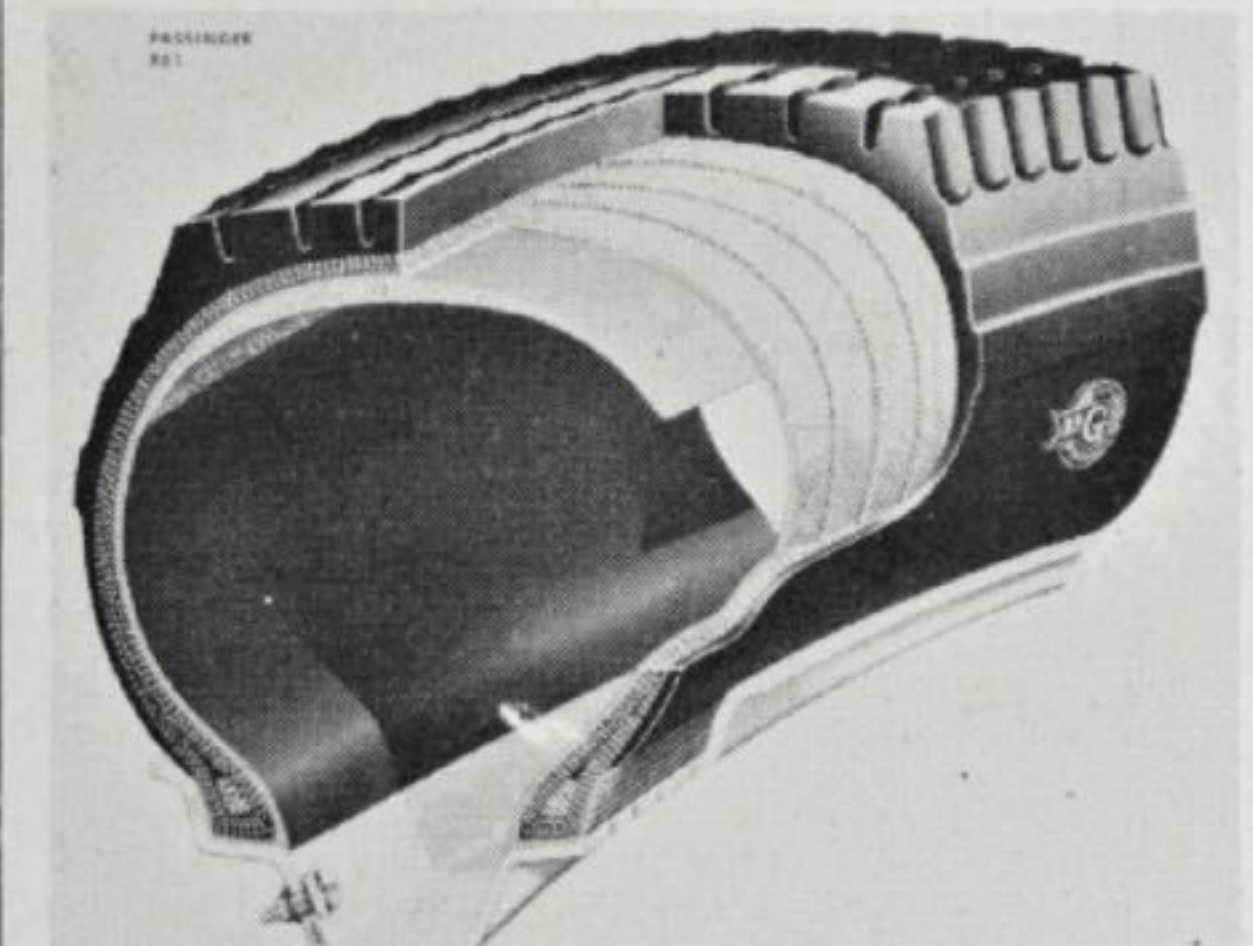
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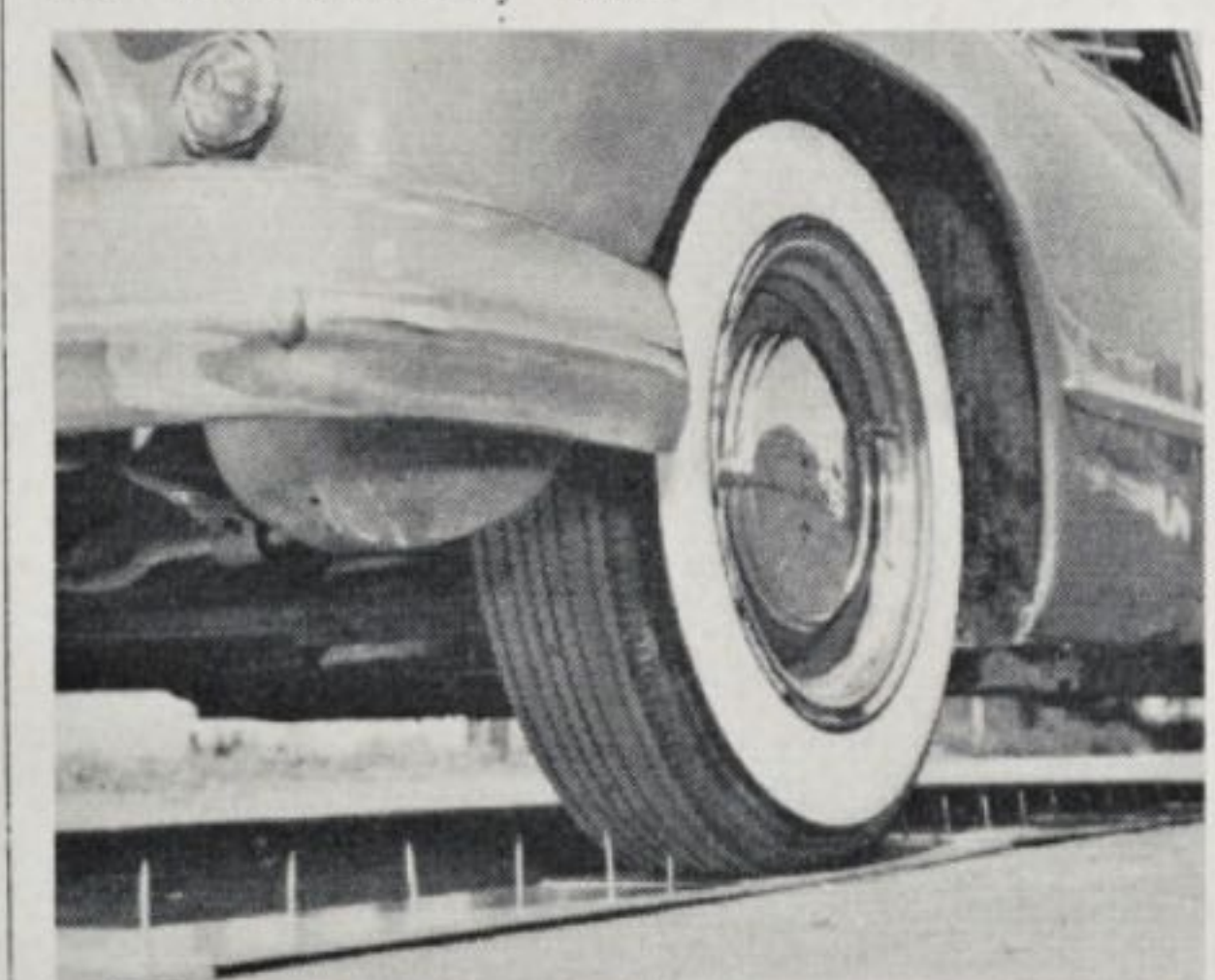
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TOPICS**

EXPANDING its production of tubeless tires, the B. F. Goodrich Company late in February introduced this new tire to the West Coast for the first time. The tire features a tread in which the tougher, longer wearing "cold rubber" is used. Retaining air without the use of an inner tube, the tire is built with a special layer of rubber inside that enables it to run over nails and glass that would ordinarily cause punctures. The construction is shown in the cross-section:



Special concentric ridges, molded on the beads, seal the tire against the rim and prevent air from getting out around the edges. Rubber washers inside and outside the valve keep the air from escaping at that location. The sealant is on the inner side of the tread area. Price—less than a conventional tire with safety tube, but more than tire with ordinary tube.



★ ★ ★

OF INTEREST to travelers who intend to motor on the Continent of Europe is a new book recently published by Temple Press, Ltd. Titled **MOTORING ABROAD**, this book was written by Rod Walkerly, who is Athos of *The Motor*. He has written the book in such a manner that anyone who reads it prior to "motoring abroad" would know exactly what to expect. He would know where to go, what to see, what the food and wine are like and what sort of hotels he could stay in. Not only is the book interesting to one who intends to travel on the Continent, but it also makes pleasant reading to anyone interested in conditions there. Along with interesting photographs, Brockbank of *The Motor* has also added his deft touch in the manner of many cartoons. The book is priced at 10/6 (about \$1.46) and is published by Temple Press, Ltd., Bowling Green Lane, London E.C.1, England.

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Duster Data
(Continued from page thirty-one)

ing two main bearings, the connecting rod and cylinder. Oil consumption is approximately one quart for each 100 miles. The only real operating problem is presented by the necessity of crawling out and under to lubricate the transmission every 100 miles. The steering assembly was designed by Warner, as is the rear axle.

The wheels (28x3), of the artillery-spoke type, are mounted on the half elliptic sprung frame with 82-inch wheelbase and 56-inch cross tread. A seven-gallon gas tank under the driver's seat offers a cruising range, without refueling, of approximately 250 miles. The cooling system, unlike many vintage cars of the same era, uses no more water than a 1950 model. It is filled through a removable pipe fitting that connects into an expansion tank located in the dash board, which is barren of instruments.



The body is constructed of solid 1/2-inch poplar and is all wood other than metal fenders and trim. The car's overall weight is approximately 1400 pounds.

Originally rated for under 1400 rpm, the Fleming restoration has turned as high as 1600 rpm and was officially clocked at slightly better than 40 mph.

In operating the 1903 Cadillac, two foot pedals are used. The pedal to the left of the steering column is the low gear pedal; that to the right is both the service and emergency brake (a foot-operated ratchet locks the foot brake). The brakes function on two 10-inch by 2-inch externally operated expanding bands on the rear axle.

A throttle lever is located on the steering column, with spark lever beside the driver's seat to his right. The final control is the high-reverse lever, also to the driver's right. In a forward position, the gears are in high, with reverse in the extreme rear location. There was no clutch in the 1903 model.

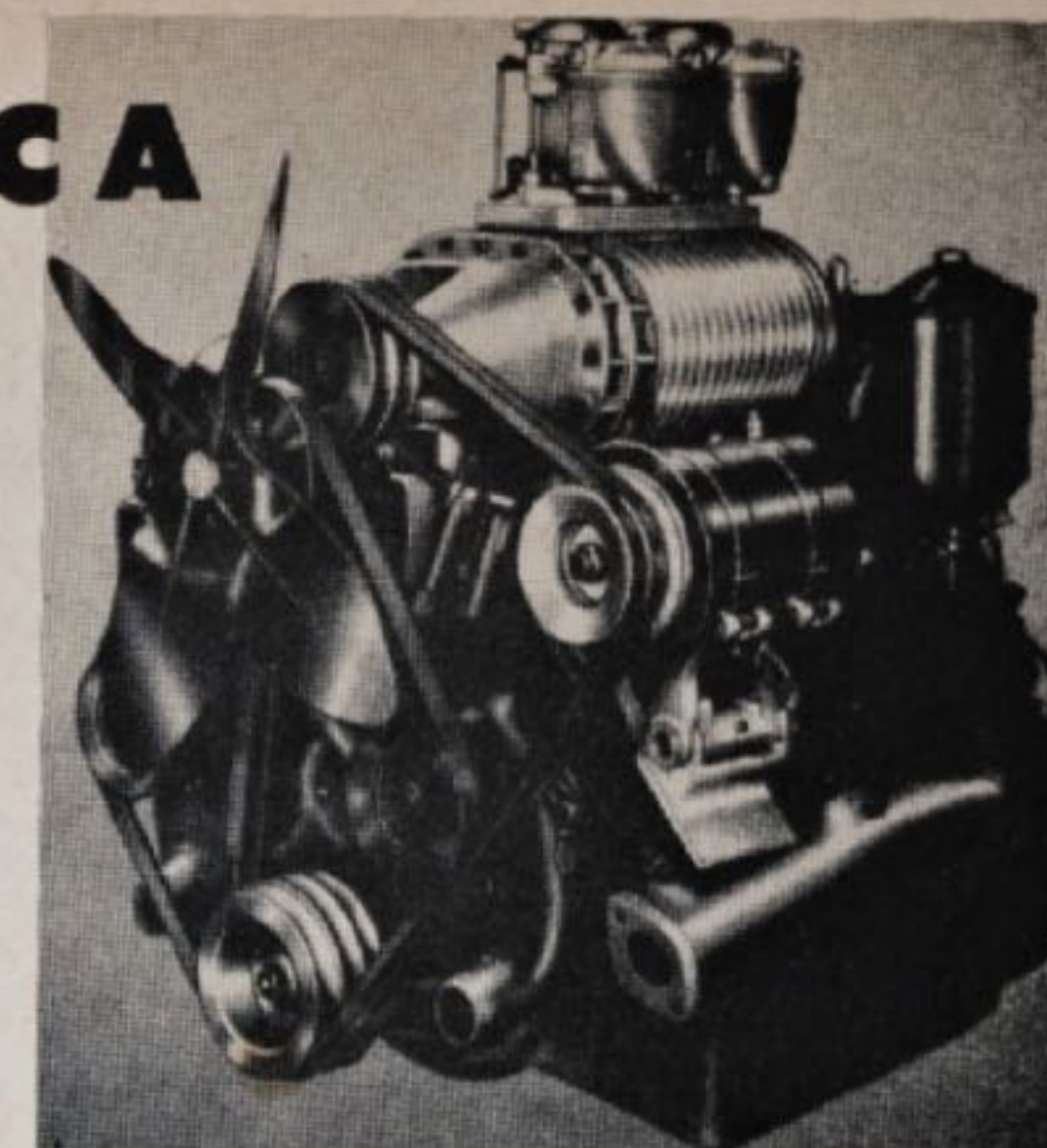
In 1902 the general introduction of the rear-entrance tonneau model took place, and by 1903 they had become highly popular with the new motoring public. F.O.B. Detroit, the 1903 Cadillac shown here was priced at \$850, less accessories, which was slightly under the \$940 average price for the 28,000 American-built cars marketed that year.



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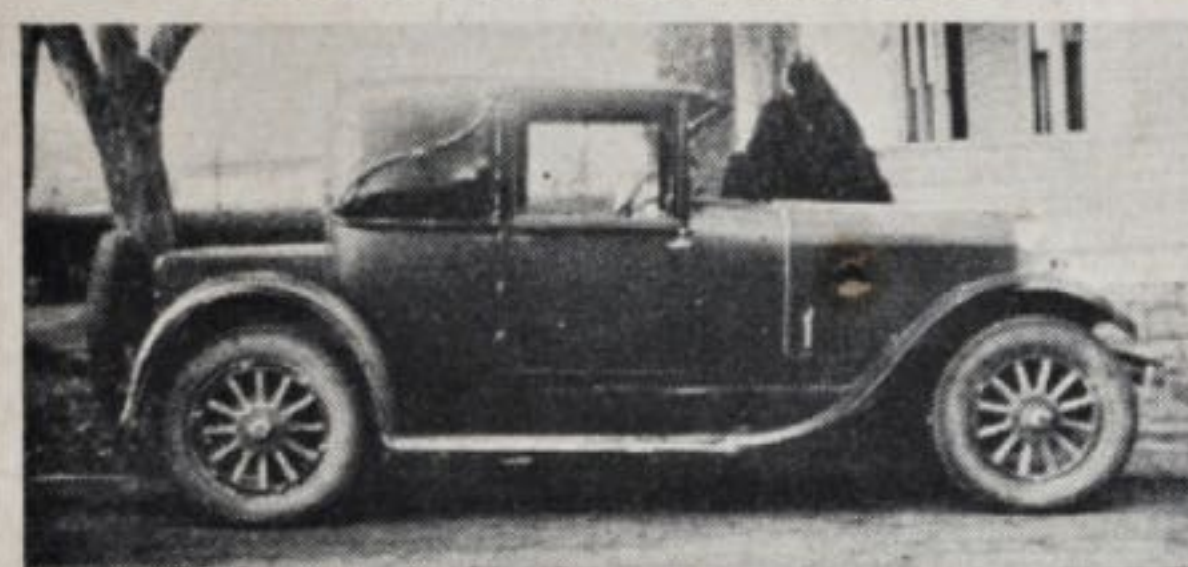


LETTERS...

FROM OUR READERS...

Letters published in this department are the opinions of the writers and are not to be construed as those of the editors. Address correspondence to: Letters From Our Readers, MOTOR TREND, 548 South San Vicente Boulevard, Los Angeles 48, California.

FRANKLIN AIR-COOLED



Gentlemen:

Your current issue of MOTOR TREND is the first one I have had the pleasure to read. . . . The article by Mr. Hoepfner, "Are Foreign Cars the Bunk?" was particularly interesting.

Although I would appreciate a newer car I am mighty proud of my 1926 Franklin coupe (with six-cylinder, air-cooled engine, wooden chassis and wheels), because it is in fair shape for its age, is not common and has several advantages over new cars . . .

. . . I sit up high and the headlights are adjusted so that I can see ruts on country roads in time to miss them. Quick steering is a help. . . . The low speed (of the engine) and the transmission, combined with large wheels and slow-acting brakes make it an ideal car for ice and snow . . .

Dave Gibson
Seattle, Washington

A NEW STOCK CAR RECORD?

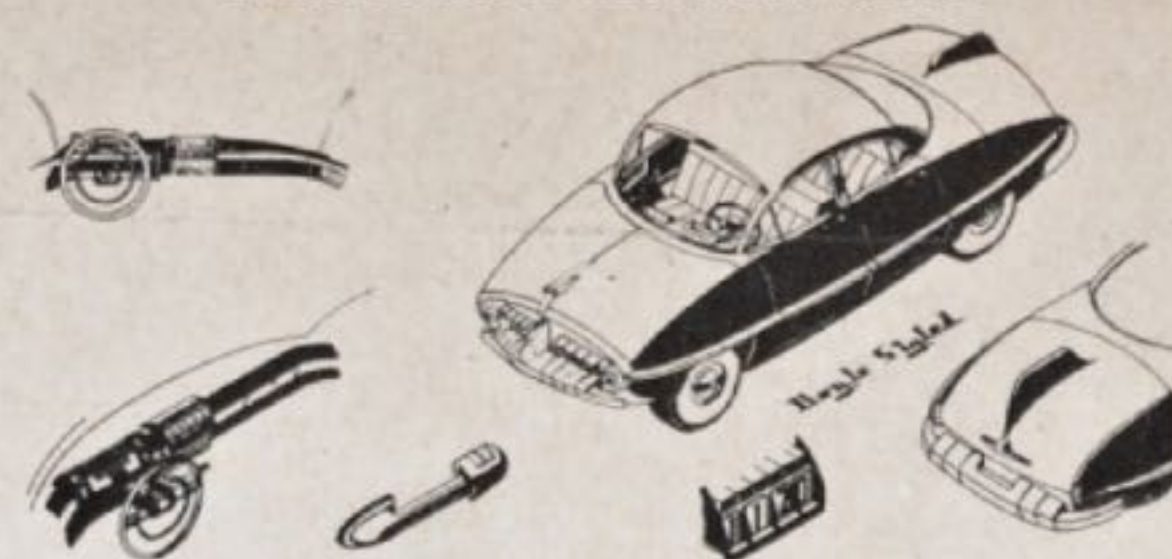
Gentlemen:

Enclosed is a clipping that I would appreciate having you straighten out. I have understood that the class C closed body stock car speed record is held by Hudson at a little less than 94 mph. Now could it be that this car—in the clipping—was hopped up, or ran only one direction with a tail wind, or enjoyed some other very favorable condition? If something of this nature is not true, then why don't they go out and cop the class C official record?

Paul Beauchamp
Riverside, California

—(Reader Beauchamp is referring to a Nash Ambassador that timed 99.4 mph at a Bell Timing Meet at El Mirage Dry Lake, California.) Although it might be construed that the time set by the Nash Ambassador was a new official record, such is not the case. The car body is stock; however, the engine enjoyed the advantage of having dual carburetion, a milled head, reground cam and special ignition. The test run was made in one direction only. No claims have been made for a new AAA official Class C Closed Car Division Record, which is still held by a Hudson Eight at 93.88 mph for the flying mile.—Editor.

READER'S DREAM CAR

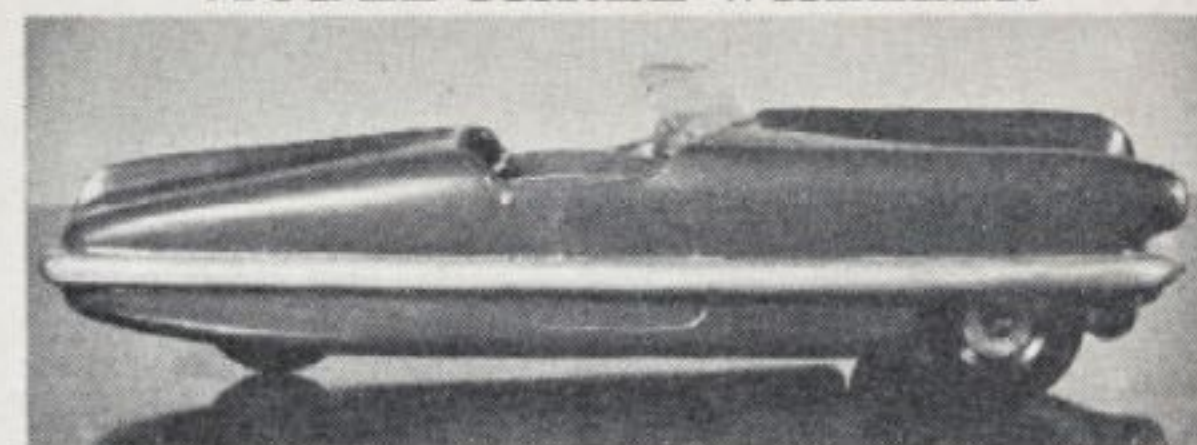


Gentlemen:

Enclosed is a photo copy of a design and rendering of my "dream car." I think the exterior has a new "vibrant" sharp appearance. The interior is conservative and not at all radical, but designed to utilize every inch of available space. I have a new idea for a car clock (noted).

Bob Doyle
E. Stroudsburg, Pennsylvania

MODEL THREE-WHEELER



Gentlemen:

I am enclosing a picture of a model car I built, which I hope will be of interest to fellow car enthusiasts. It is a three-wheeler, with front wheel drive and single rear wheel steering. Using this set-up, one could approach a nearly teardrop design and the bumper could be continuous about its circumference. It would also be very maneuverable.

Jay Wallace
Sterling, Illinois

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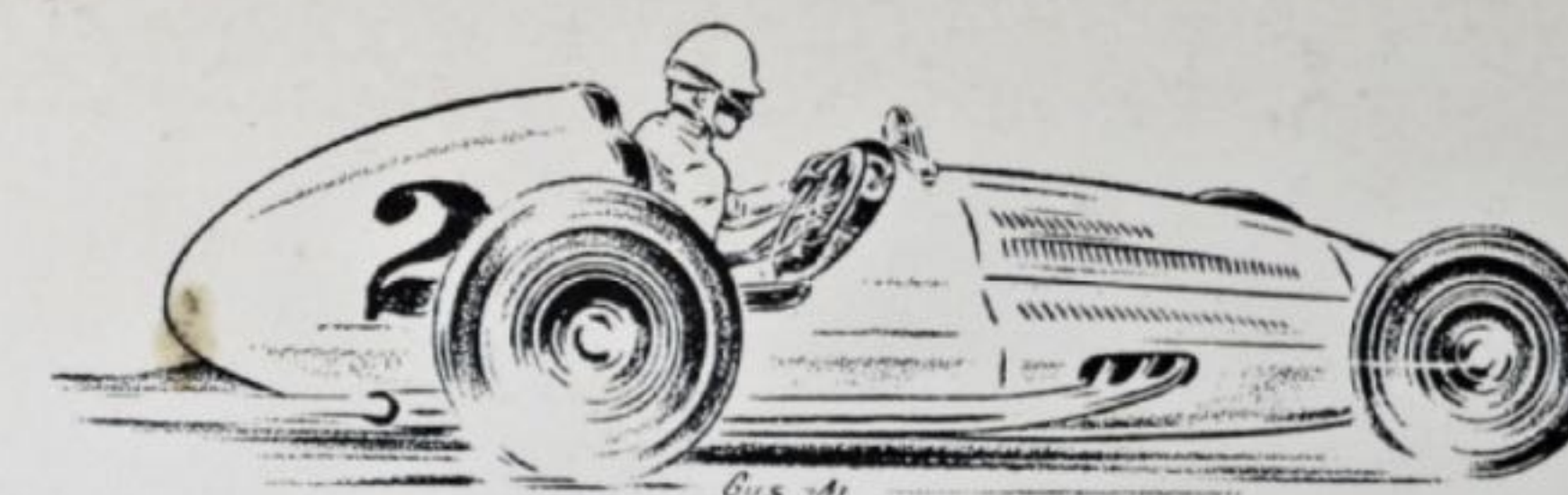
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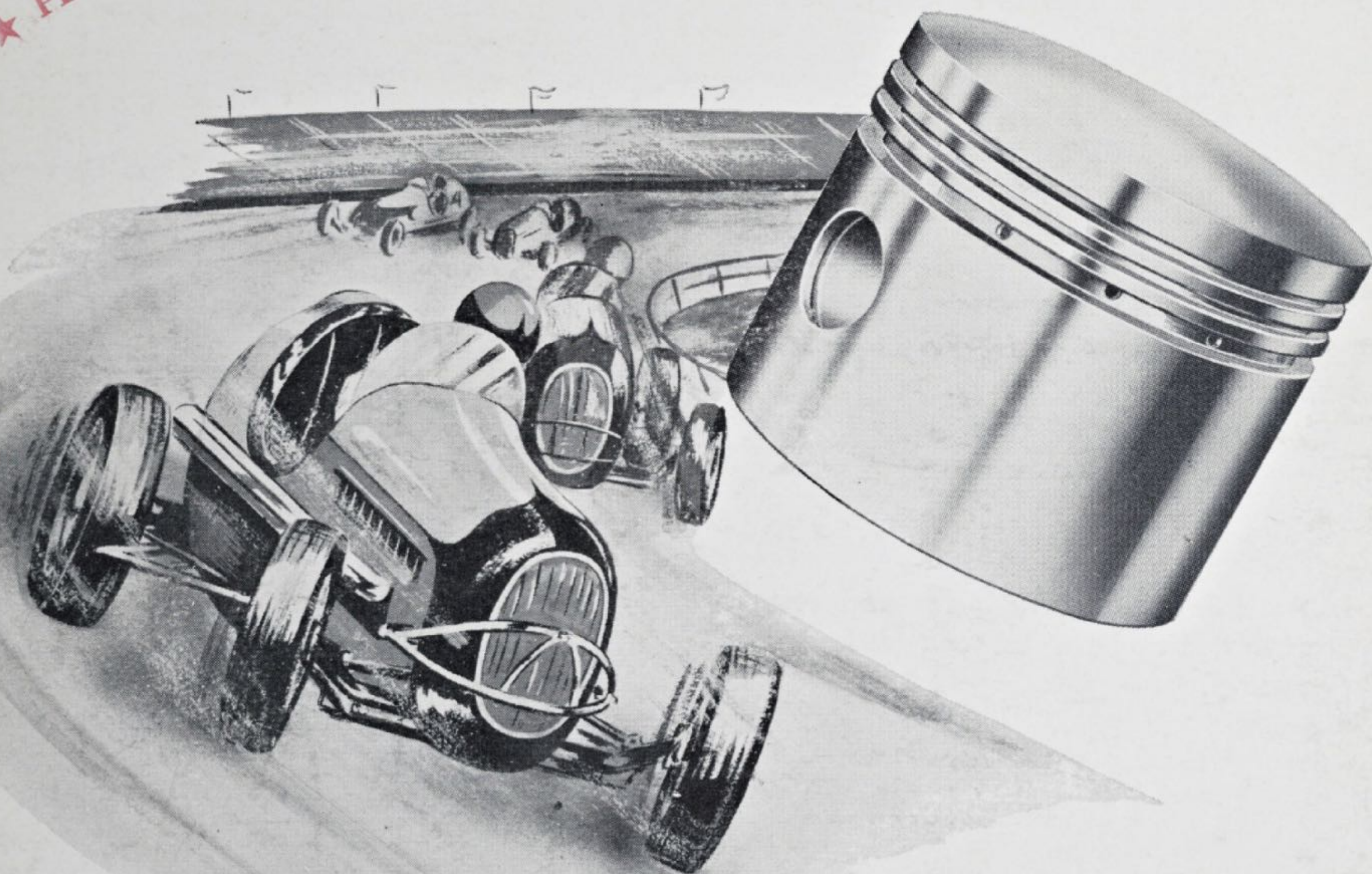


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