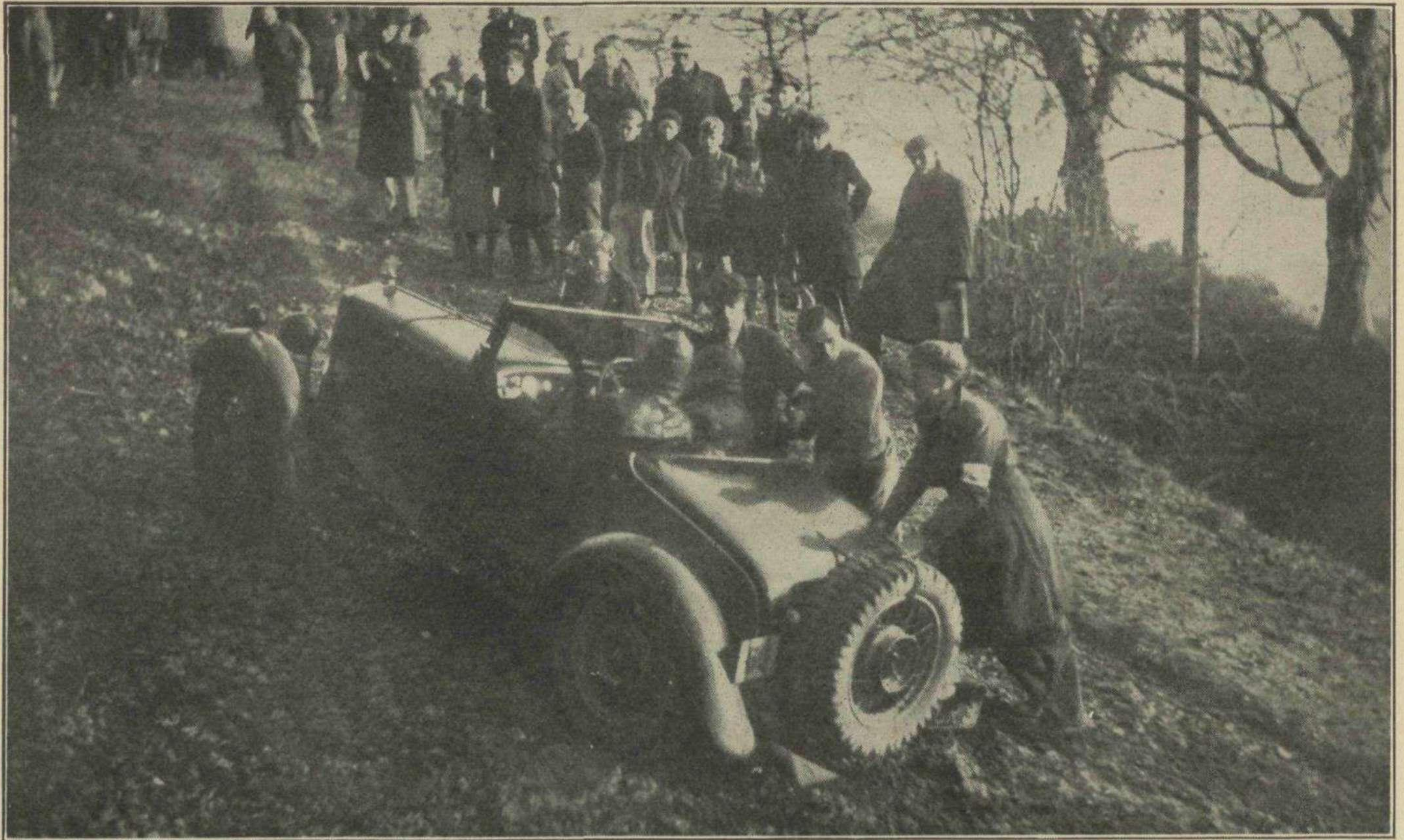


MOTOR SPORT

INCORPORATING
Speed

ONE SHILLING
MONTHLY



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MOTOR SPORT



OFFICIAL JOURNAL OF THE BRITISH RACING DRIVERS' CLUB

INCORPORATING **SPEED** AND
THE BROOKLANDS GAZETTE

EDITORIAL OFFICES

15-17, 21, CITY ROAD, LONDON, E.C.1

Telephone: CLerkenwell 1128

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54, BLOOMSBURY STREET, BEDFORD SQUARE, W.C.1

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"THOSE WERE THE DAYS"

Lionel Martin Looks Back

THE Editor has paid me the very high compliment of asking me to write something for *MOTOR SPORT*, but having read with the greatest possible pleasure the many amusing and instructive articles which have done so much to keep the sacred flame of our Sport burning during these lean years, I shudder at the thought of his reception of this disordered screech. What it is going to be, I cannot imagine—a catalogue of cars I have owned, 70 to date, or a chronicle of an ill-spent life? Well, anyway, here goes.

How well I remember my first sight of a motor car in motion! I was cycling from my crammer's to London along the Oxford road when I saw the monster approaching, and I threw myself and "iron" into the nearest ditch, counting myself lucky to escape with my life—very like the sensation enjoyed many years later when "observing" on the Railway Straight at Brooklands, with Cobbs and Campbells and Parry Thomases thundering by at speed (there was a handy ditch *there*, too, in case evasive action should be needed).

Sensation number two was being driven from the finish of a bicycle race, in which I had competed, into Hitchin, in a friend's 16-h.p. Napier, during which we clocked miles at over 40 m.p.h.; this seemed a colossal speed, and I couldn't make out why my friend wanted to send his car back to the works to have more and stronger ponies added to it. At this time one of my jobs was to blow the horn and apply the brakes on the family four-in-hand, and whether it was the dullness of this stately progress—a five-minute mile was considered terrific—or a growing distaste for pushing myself round on two wheels, I know not, but late in 1902 I took the plunge and became the proud owner of a 2½-h.p. chain-driven Humber motor-cycle.

This machine rejoiced in the possession of a "spray" carburetter, as the contraction was then called; it was the great-

Soon the war will be over and we must look forward. Meanwhile, it is pleasant to look back, and in this interesting contribution Lionel Martin describes some of his experiences in the very early days, and throws yet more light on the origin and development of the Bamford and Martin Aston-Martin.—

Ed.

great-grandfather of the modern "gas-works," and only functioned by fits and starts. In those days one dressed for the sport of motor-cycling entirely in leather, and the state of mind and body engendered by pedalling the thing when it wouldn't go is better forgotten. How I ever managed to sell the thing is one of life's mysteries, but it was an odd coincidence that when attending, many years later, my first meeting as a member of the Motor Cycling Club Committee, I found myself sitting between the man from whom I bought it and the unlucky fellow who became its next owner.

Then followed a 3½-h.p. Rex, of which the highlight was when the trailer containing a girl friend became detached during the ascent of Reigate Hill; my joy at the resultant surge of acceleration was soon damped, and the ensuing damages had to be paid out of the sale of the machine.

Next came a 2½-h.p. Excelsior, quite a reliable machine, but still fitted with pedals which now and then earned their keep. The speed limit was then 12 m.p.h., and the police were becoming wise to the easy money and promotion to be earned by the persecution of this new locomotion; a favourite *riposte* was to pretend to slow up and edge to one side of the road, and having lured Robert thereto, to give her the gun and disappear into space: there were no number plates then, of course.

There lived near me a friend who used to take me out in his cars from time to time, and I got so bitten with the four-wheel idea that I decided to mortgage all my worldly goods and buy a car. There followed tours of inspection to all the garages in London, and I very nearly succumbed to the charms of a 7-h.p. Panhard with Phoenix engine and Krebs carburetter, when the then editor of the *Autocar* guided my erring footsteps to a place where a "12/14" Clement Bayard was to be seen, and of this I became the proud owner.

Four-cylinder engine of about three litres, with tonneau—back entrance—body, and no hood or screen. However, the thing went, and I had quite a good year's motoring out of it, being fairly sure of getting at least somewhere.

I remember it by two things: the first phenomenal avoidance—running along a footpath on the Fairmile to dodge what was surely the largest farm horse ever, which was crossing the road from the Stoke d'Abernon turning; my first real skid, resulting in my front passenger coming to rest astride the bonnet; and the girl friend—yes, the same one!—being hurled over our heads into the ditch. Which reminds me of an impromptu remark by John Douglas, who used to drive some of my Aston-Martins, on seeing a stately lady with the then popular flowing robes sail past—"Skirts by Hoover!" To protect the underside of the chassis this car had been fitted with a canvas undershield, and the dust thus raised at any speed became such a local scandal that the thing had to be scrapped.

Health next winter caused the Riviera to be prescribed for me, and meeting *en route* in Paris my local motoring friend, a visit to the Salon seemed indicated. A great fellow this, who earned the Legion d'Honneur—he had by that time become resident in France and was a motor agent—for driving French speed boats at Monte

Carlo, and was also a member of the Gobron-Brille Gordon Bennett elimination trials team; he was the living counterpart of the traditional Michelin hero, Bibendum—he was 6 ft. 2 in., and weighed 17 stone. He subsequently drove for Mercédès, but in the aforesaid eliminating trial his steering came adrift just after passing through the timed kilometre at 110 m.p.h. and his car hit a tree; he was unhurt, and his mechanic merely sprained his ankle—and then they say speed is dangerous!

However, to return to the Salon. Among the wonderful display of cars were Rolls-Royce, including the funny squat "Degalimit"—single-geared, if I remember rightly—and one of the Brasier Gordon-Bennett racers, which I nearly bought—I was to meet it again many years later at Tintagel; but I was finally persuaded by my friend to invest in a "24/32" Mors with Roi de Belge body (but still no hood or screen, though side-doors were fitted for the back seats), and this car was eventually delivered to me at Nice.

Of course I had to pass a driving test for my French licence—*carte rose*—which I still have, and the incident of meeting a down-coming timber wagon on a steep gradient, necessitating a re-start—in those days the hand-brake withdrew the clutch—was such that the officer of the Department of Roads and Bridges decided not to incur a repetition of the peril, and passed me. Owners of "the fastest sports cars" loved to line up on the road across the Plain d'Antibes, which bordered the railway line, and wait for the Paris expresses, which they could easily beat up, even in those days, "60" and "90" Mercédès being the principal runners. My friend had one of each, and many a good scrap I had in them.

In those days, too, one almost had to keep a chauffeur; the greasing of chains, etc., did not go well with Riviera clothes. I had a jolly little Frenchman, who used to bubble over with excitement during a scrap, but never forgot to attend to a row of some dozen drip-feed lubricators. He was eventually offered a job on an "18/28" Mercédès, which was the equivalent to a free ticket for Heaven, so I had to let him go. For my return journey as far as Paris he found me a substitute who wanted to go there and who made the journey in mid-March, sitting in the traditional mechanic's place on the floor boards, with his feet hanging over the side—and this clad apparently in little more than a boiler suit and a thin overcoat.

This car lasted me longer than any I have owned subsequently, with the exception of these war years, but it had, besides its chain drive, certain unlovable mechanical eccentricities, such as a water tank carried where we now wear our petrol tank—a design which resulted in frequent air locks and loss of all coolant. Now in this engine the base chamber and water jackets were one casting, the separate cylinders, with cylinder barrel and head integral, making the water joint by means of a rubber ring, so that when, on occasions of real drought, the cylinders became red hot, or nearly so, the rubber rings took a poor view of the situation—a trait which ultimately decided me to pass it on to someone in need of practical experience. Well, well—the firm of Mors is defunct

now, anyway! This car saw the close of chapter one of my racing career—it was in this wise. In those days the lucky lads made it almost a point of honour to lunch on Sundays at the "Metropole," Brighton, and the displays of youth and beauty at this happy resort were only equalled by the appalling clouds of dust on the way down—so dense that at times the only way of getting the road was a potato deftly thrown at the car in front. Needless to say, the police were very active, and despite the energy of the then youthful Automobile Association (I am member No. 163), made many captures. One luckless day I was timed but not stopped on the way down, and a corpulent and evil-disposed Robert was waiting at the bottom of Handcross on the way back. Spying his upheld hand some way ahead I stopped and reversed, with the intention of turning round and returning home by a different route. Circumstances made the reversing a slow job, and Robert very nearly came up with me, and the last view of his furious and profusely perspiring face almost compensated me for the sentence of twelve months' suspension which this wicked act earned me.

What I did during this time is nobody's business, but the poor "24/32" Mors was sold, and was eventually succeeded by a lot of small fry until a 1907 "20/30" Renault came on the scene; she was a honey, one of the best cars (I am now driving my 70th) that I ever owned. I was a fool to sell her and buy a "35/45" of the same make.

About this time I fell in again with an old cyclist friend, well known to S. F. Edge, and he had in his pocket the sole concession for Surrey and Sussex for De Dions and Napiers, so I went in with him and enjoyed for some time a very profitable partnership, owning and demonstrating a "65" Napier and all sorts and sizes of De Dions.

Of the latter, by far the nicest was a little 2-seater with an engine about the size of that of a Rudge motor-cycle; I drove it all over the British Isles, and it was as sweet as butter until one day, in the Highlands, I ran a big-end (incidentally, my sole experience of this trouble). Re-metalling the rod was straightforward enough, but re-assembling it between the twin flywheels attached to the crankshaft on keyless tapers was not too funny without a jig, and I'm bound to confess she was never the same again.

About this time the public seemed to become allergic to De Dions and Napiers, and coming across another cycling friend, the late Robert Bamford, we decided to take over the London depot of Messrs. Hess & Savory, Ltd., to whom he was apprenticed. This was situated in a mews in South Kensington, and we got a lucky start by securing a sub-agency for Singers from poor ("Pearly") Percy Lambert, the first man to do 100 miles in the hour, who was so tragically killed at Brooklands soon after.

As my partner and I were both ex-racing cyclists, naturally our thoughts turned towards speed on cars, and we used to "do things" to Singers, Calthorpes, G.W.K.s, etc., which brought us in much custom, and quite a few prizes in races, hill climbs and trials. One or other of us made constant visits to the

above factories to collect new cars, and ultimately we got fed up with the delays, train journeys and troubles on our return journeys (my steering once became disconnected on a new car and I took a lovely toss), so we decided to build a car ourselves, the outcome being, of course, the B. & M. Aston-Martin.

Our objects were to build a completely individual car, but one which was comprised of only well-tested designs—my own very varied experience of 40 or so privately-owned cars forming the criterion, and I'm afraid I really ought to have paid homage to Vauxhall, Rolls and, later, Bugatti, by whose well-tried products I had benefited. Well, on the principle that if I didn't know a thing myself, I should enlist someone who did, I obtained the help of such firms as E. G. Wrigley, of Birmingham, Coventry Simplex, of Coventry, etc., and they worked out, and made practical, ideas provided by Bamford & Martin, Ltd. I cannot go further without acknowledging the genius of my, then, "head lad," John Addis. He has since gone over to New Zealand, and from there, alas, to a place from which no man returns. One of the back-room boys, he deserves credit, which he has never yet received, for genius and inspiration without which I doubt whether the Aston-Martin would ever have materialised. The time I am speaking of is just before the Great War—1913-1914—and it was in the latter year that Messrs. Coventry Simplex, Ltd., delivered the first engine built to our suggestions. It was a side-valve of 66.5 by 100 mm., to conform to the current light-car limit of 1,400 c.c., and, the chassis, transmission, etc., not being ready, I bought one of the delightful little Bugatti-designed Isotta Fraschinis and installed the engine therein. Regrettably, this made the car too heavy in front, but it was quite stable up to 70 m.p.h. or so, and when weight on the back was needed for trials, we just added it—as at a J.C.C. test on the Cinder Track at Brighton—which was climbed with some half dozen lads clinging on somewhere.

Alms Hill, Nailsworth Ladder, and practically all the test hills of the period were climbed in this way, my wife making the first lady-driver's ascent of the two last-named. An unpleasant incident was the breakage of both front springs at the same moment, at speed, on Salisbury Plain, but it takes a lot to check an enthusiast. The engine tested, and at any rate the faults known, war intervened. Bamford at once volunteered, and at the end of hostilities he decided to give the motor trade a miss, so he was not responsible, for better or for worse, for anything that happened subsequently.

By the way, if you were marketing a car, how would you choose a name for it? All the best and most attractive names seemed to have been taken, and many a discussion we had and much advice were we given. At last, a period of intensive thought was induced by a walk of some miles behind a car which was being towed behind a farm cart as the result of another steering derangement on a trial; no, it wasn't the A.M., but a car for which we were agents. After reviewing all the flowers, beasts, birds and fishes that we knew, we got on to place names, and as my Singer had recently scored a point or

two at the Herts County A.C.'s Aston-Clinton hill climb, the first part of that name was adopted with acclamation, and my humble cognomen appended to it.

So much for the name. At the end of the war two chassis were supplied by our contractors, and one was built for test, leaving the other as spare parts. The engine was a conventional side valve, of the dimensions given above, and it had only one unusual feature (if one excludes the then current practice of casting the head with the block) of having the necessary valve caps not screwed into the head, but ground in and held down by a bus-bar. The gearbox provided for the disconnecting of the "constant mesh" wheels on top, but was otherwise conventional, and the drive was taken by an enclosed propeller shaft to a fully-floating back axle; the wheels were of Sankey type.

Springing, I regret to say, was the conventional semi-elliptic front and $\frac{3}{4}$ -elliptic back of the period. The complete chassis, on which was a body, called by the irreverent the "coal scuttle," from its resemblance to that useful but static commodity, was duly tested by Addis and myself over all the current trials courses, including an intensive rush round the west coast of Scotland, and while the performance and reliability were good, five years had elapsed since the design had been laid out, and though these had been war years, I felt that the car was not as much in advance of current practice as I wished. It was, however, one of

the starters in the first J.C.C. 200-Mile Race, and certainly lived for many years after that.

As a result of experience gained, the whole job was re-designed to bring it up to current requirements. The unusual valve caps were scrapped in favour of the screw-in type, the cone clutch gave way to a Hele Shaw, the gearbox succumbed to something rather of the Bugatti type, and the back axle was very materially lightened. The first components of the new design were delivered during 1920, and a further period of testing commenced. After considerable running in England, the car was taken to France and the Alps and every effort was made to break it up; this succeeded as far as the front springs were concerned, but otherwise the car was passed by its critical "parent" and orders were given for a limited number of replica parts.

The engine was given a stroke of 106 mm. to bring it near to the new 1,500-c.c. limit, and before production commenced the Perrott system of front brakes was adopted, these being operated by foot only, while those on the back wheels were applied by hand lever. Intelligently used, this system produced phenomenal stopping results.

I expect builders of "specials" will understand the thrills of first discovering that the new design "really worked"—it seemed to me "almost too much to hope for"!

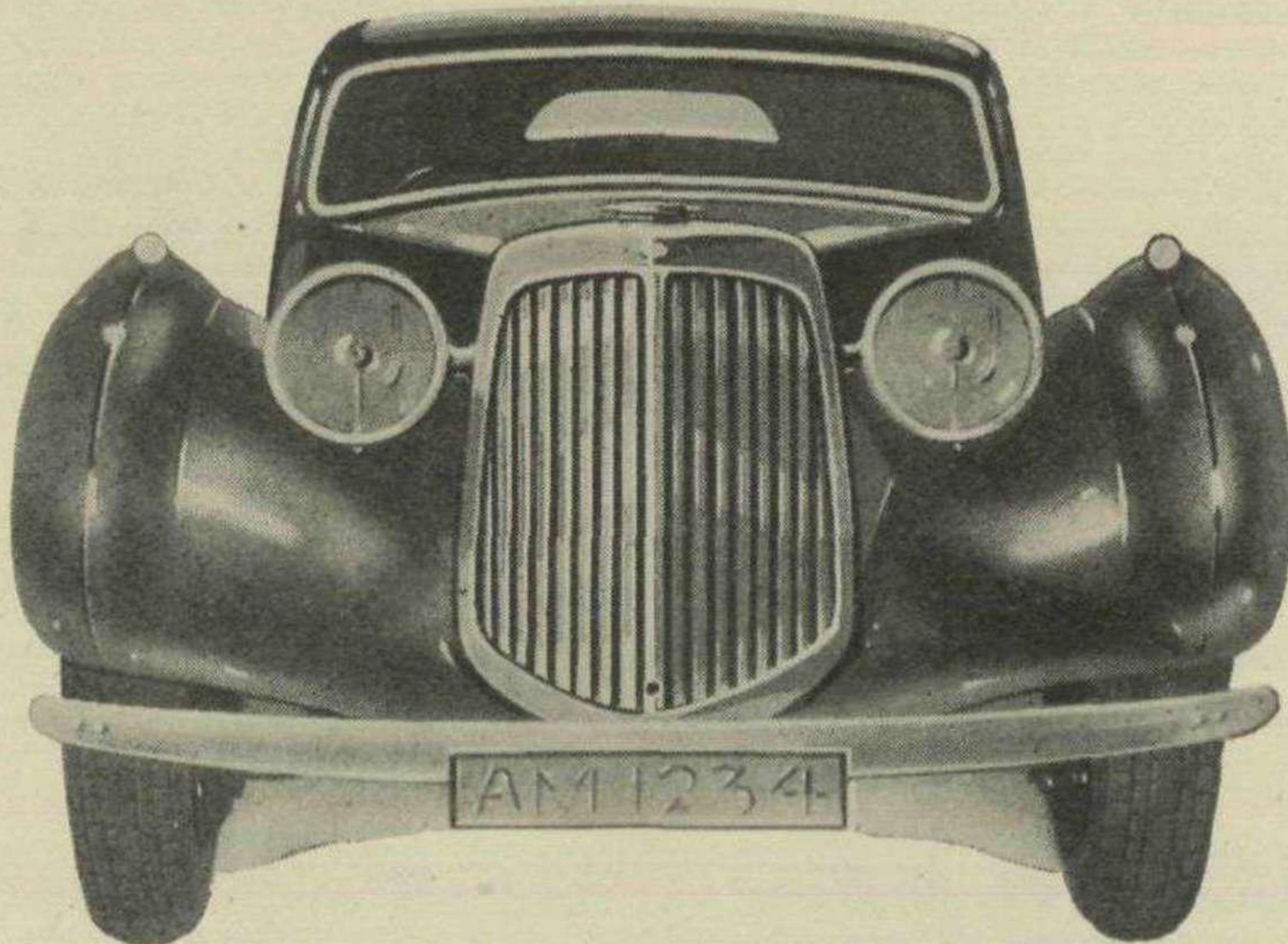
Prior to production of the revised edi-

tion further tests had to be made; these took the form of races at Brooklands, M.C.C. and other trials and hill climbs, and at each honours were won. We won our first race at an Essex M.C. meeting in 1921. Also, we used to sally forth on the road rather in the mood of the traditional Irishman seeking someone to "tread on the tail of his coat," and many were the hectic scraps which resulted—often our adversary, driving a much heavier and possibly less controllable car, found life too precious to persevere with the contest after a few intensive miles. Presently, too, we learned the values of the various opposing vehicles, and developed a technique for dealing with each.

Secretly, this "second edition" of the A.M. was intended to put Great Britain right in the very front as regards light cars, and at that time the only challenger was the Bugatti.

This challenge became a reality after a little "cross-talk" in the Press, and the duel was to be staged at Brooklands, but, alas, it never came off, as the Bugatti, in practice, used its propeller-shaft as a pogo stick, with detrimental results.

About this time there joined Bamford & Martin, Ltd., a long, thin youth with a laugh that no one could resist; seeing him now, you would not realise, until he laughed, that it was H. Kensington Moir—"Albert" pronounced Frenchilly to us, we (my wife and I) "Pa" and "Ma" to him. He performed prodigies of tuning and resultant speed on the car, and while with us sowed the seeds of pit organisa-



The great aim of culture, the aim of setting ourselves to ascertain what perfection is, and to make it prevail

Matthew Arnold

tion which he later brought to full growth.

Seeking propaganda, it occurred to me that no "light car," *e.g.*, one under 1,500 c.c., had ever broken a world's record. The list of these included, in those days, many more times and distances than the tables do now, and it seemed as though some of the longer records made by S. F. Edge on the Napier in 1907 might be successfully attacked. Practice in quick servicing and replenishment brought good results, the Track was engaged, and at a most unseemly hour the team of Kensington Moir, Sammy Davis and Clive Gallop commenced operations; by an odd coincidence an A.C., superintended by S. F. Edge, was at the same time attempting "class" records, and these were taken by the A.C. and A.M. more or less alternately, as pit stops influenced the average speed. Presently, the A.C., having run the first half of a "Double Twelve," went in, but to their amazement we continued, getting amongst records at 1,100 miles and continuing ahead of time until darkness and Col. Lindsay Lloyd stopped us. That was "Bunny," that was, and after her records she was wrapped up again and put to bed until the Tourist Trophy.

For this we had built two special "real racing" cars with engines of current Peugeot design—in fact, *etudie* by Henri at the instance of Clive Gallop, who had served his apprenticeship with Peugeot—and which were to have been driven by Gallop and the late Count Zborowski, who had by then joined the firm.

Well do I remember the pride with which my wife and I saw the two cars start, one early morning, for Liverpool and "The Island." Alas, "were to have been driven" has to be written. It was the usual tale, late completion of the job, and insufficient time to correct teething troubles, and the cars had to be withdrawn.

I didn't like not to be represented, so Moir and poor little "Bunny" were dragged out—the former in wonderful form, but the latter literally just as she had finished her world's record run; the result, a good lap or two, then a valve spring broke and the valve cap could not be shifted to fit a new one, so that was that. ["Bunny" may still be in existence, because the car thought to be this one, and recently broken up, is now believed to have been "Nigger."—ED.]

There followed many successes for these and the standard cars at Brooklands, Shelsley Walsh and elsewhere, Capt. George Eyston, who had bought one of the three experimental chassis, being especially successful. Moir and Eddie Hall must have collected almost a record number of "Seconds," behind Humphrey Cook on the 3-litre Vauxhall and Raymond Mays on the Bugatti. At Brooklands, of course, Moir was a wizard, and was certainly the only man to win a race by sucking, through a tube, petrol into an autovac from the petrol tank!

As a result of all this racing, etc., the name of Aston-Martin seemed to get sufficiently well known to justify production, so this commenced, and orders were placed on the books of the company well ahead of deliveries. Alas! the difficulty of getting delivery of parts on such small orders as seemed only justified, together

with insufficient capital, soon produced the inevitable result, and soon after an appearance at Olympia, the firm had to go into liquidation.

Of course, it had been obvious for some time that the firm of Bamford & Martin was "for it," but somehow we had hoped against hope that the Motor Show might save us. Our stand was not in too bad a position, and we had lots of enquiries, but the orders did not come in as we had hoped. Incidentally, we showed a chassis, not with the usual plating and polish, but with all-metal parts, except the steering arms, which we left bright, and the inside of the channel of the frame, which we painted British green, black-leaded, and I think it looked very workmanlike. The work done on it, and the idea, were my wife's, and it was she who designed the quite distinctive radiator.

My banker didn't like me at all about this time, but I had lots of fun out of it all, and I do not regret it a bit.

For trials and races we used to go about in a gang: M.C.C. trials, Shelsley and Spread Eagle hill climbs, the Caerphilly and Porthcawl week-ends—what fun they all were!

I remember in the bar parlour at Cardiff hearing a budding M.P., who sometimes appeared at Brooklands in a very slow car, telling an amused audience how he had completely fooled "Ebby," and there was the old man sitting quietly in a corner, drinking it all—and other things—in.

Spread Eagle was the next week-end, and the same driver arrived with a very pansy, white-painted car. He had made himself none too popular the week before by saying, when asked to respond to the toast of the competitors, that he was only accustomed to speak to his constituents. His car was garaged at Shaftesbury in an old stable, and it was just too bad that there should be a fall of soot from the chimney that night; he took it very well, though. After the climb there was always a big dinner which the competitors attended, and everyone present had to make a speech. Two dear old ladies who happened to be staying in the hotel, who might not have enjoyed the boisterousness, each made a most charming little speech, and were cheered to the echo. People were found in all sorts of places next morning; on the verandah, under a sofa, etc. Before we left for home the landlord used to call half a dozen or so of us into his private room, and in front of each guest was a bottle of the best; quite like a *vin d'honneur* at Le Mans in the old days.

One summer, an eastern potentate sent out commands to the Trade to exhibit their wares before him at Brooklands. One of our friendly customers, who had a quite quick 2-seater Aston-Martin, couldn't bear the idea of Bugatti getting away with the 1,500-c.c. class, so he did several laps at speed, unfortunately exhibiting to the great man a good view of the A.M.'s stern, on which was emblazoned the name "Nigger"—just too bad!

Had it not been for the Aston-Martin I might never have had the luck of Zborowski's friendship—he was a prince of sportsmen, and his parties at Higham stood in a class by themselves. Practical jokes were rampant, and one never knew what might happen next. One day a

very famous driver, of whom Lou was not particularly fond, arrived at such a time that an invitation to dine and sleep almost had to be given—and by an odd chance the guest had arrived with suitable equipment for the night. Preparations for the entertainment were quickly made, the store of practical joke equipment was drawn on, and during dinner one couldn't help noticing that the almost self-invited guest seemed ill at ease. Presently, he asked to be excused, and as after some time he did not reappear, a search party was organised. He was ultimately found in the lavatory sitting in a basin of hot water, in the firm belief that a certain portion of his anatomy had frozen; I don't think he stayed the night. Having received much kindness and hospitality from Lou, we, my wife and I, decided to ask him, the Countess, Gallop and Cooper for a week-end at an hotel at Sidmouth.

All sorts of things happened. Lou had the 5-litre Ballot, which he subsequently bought and raced, out for a trial run. The Countess was his passenger for the journey to Salisbury for lunch; Gallop drove "Bunny," solo, and Cooper, in Lou's Hispano, was also by himself. We all started at different times and from different places, but all met at Salisbury without incident. After lunch, Lou took my wife on board, and the Countess came with me. I was to show the way out of the town, and scarcely were we clear of the houses when I heard a roar and got a large blob of mud in the eye; that was the Ballot. However, a few miles further on we found it in trouble. On a sharp corner Lou had met a traction engine, and in avoiding it, had hit a small tree; this bent a front wheel, but, fitting the spare and calming the frightened driver of the steam engine, we got on with the job and soon arrived at Sidmouth. Presently, Cooper and Gallop arrived on the Hispano, "Bunny" having had to be left, *en panne*, at Coombe Bissett. We had a good time that night, but I haven't been back to that hotel since!

Next day, Lou and Gallop set out on the Ballot to collect "Bunny," while the rest of us went over to Torquay for lunch in the Hispano. On returning to Sidmouth, we found Lou and Gallop covered with mud, and in a great state of excitement. It seems that being so near to it, the drivers decided to return to Sidmouth by way of Spread Eagle Hill. Gallop, on the Ballot, had started first, but he misjudged a bend and ran wide. Lou, hard on his heels, nipped through, and they went at it for all they were worth. Neither knew the road very well, but "Bunny" was never passed, and arrived with an average for the journey of 55 miles per hour. The Countess innocently asked: "Is that fast?"

Next morning serious complications arose. We were due to interview at lunch the principals of an aeroplane firm at Bristol, who, we hoped, would build the Aston-Martin for production. When we arrived at the garage in the town to get the cars out we found the police in charge; a day or two before a murder had been committed at Bournemouth, of which the driver of a grey car was suspected. Now "Bunny" had just been washed over with grey, prior to a re-

paint! Ultimately, we were able to prove an alibi, but that was not the end of it. The Ballot and "Bunny" were completely un-silenced, and the police, having heard our entry into their select town, decided to nab us on leaving. However, the friendly garage not only warned us of this, but told us of another way round, so we escaped—the Roberts having the mortification of hearing us, indeed, but with a field between us and them.

Of course, the Ballot *would* stall at a cross-roads, and nobody turned up for half an hour capable of giving a push start, so that we were all late for lunch. Added to this, our hosts regaled my wife with lemonade which, by a mischance, was upset over one of the great men's trousers. Altogether, the visit to Bristol was not a success, the final episode being the Ballot catching fire in one of the narrowest and most important streets, blocking all the traffic of the city for nearly an hour. However, good old "Bunny" brought Lou and Gallop back to London safely, but for weeks we had to answer questions as to the identity of the drivers with a view to prosecutions for "driving to the danger." The situation was ultimately saved by my wife asking the "tec" whether the offending car was driven by a man or a woman, and whether it was left- or right-hand drive; this, and a mixed whisky and brandy caused his discomfiture, and on getting up he lifted his armchair up with him—he was the Yard's fattest man.

Later that year came the Strasbourg Grand Prix, for which, though only 1,500 c.c. up against a two-litre limit, we had entered.

For the *pesage*, nothing could be added to the cars, and we weighed too light. A kind-hearted official told us to come back again after lunch, and in the meantime, to make sure that nothing important had been omitted from the cars. After lunch we were heavy enough!

At one time during the race the car driven by Zborowski was running fifth, and we had seen the Sunbeams, which had the pit next to us, out of it. A real sporting gesture was when Capt. Irving offered us all their pit equipment. Of course, failure was in store; one car went out with broken valve springs, the other with a faulty magneto drive.

When the abandonment of our second car was announced on the loudspeakers, a sympathetic sigh went through the grand stand opposite, and I will end my random remarks about Aston-Martins on that note.

The next problem after the Bamford & Martin liquidation was to find a car of another make for me to drive. The price must not be high, and quite understandably my choice fell on the new Riley.

I had two of them, a saloon and an open 4-seater. They were delightful to drive, and everybody to do with the firm was most helpful and charming.

I drove the 4-seater in an Essex M.C. Six Hours Race, but without success,

and the saloon in several M.C.C. trials, often using it for official route finding prior to the trial.

Next on my list are two 6-cylinder M.G.s, one of which I took over to Ireland to see the first Tourist Trophy on the Ards circuit. Soon after this I was honoured by being given a seat on the R.A.C. Competitions Committee, being a scrutineer under the late H. P. McConnell, to whom I was indebted for very many acts of kindness. I had to decide that nothing short of absolute compliance with the regulations was workable. I couldn't, after passing one car which was "almost" right, reject another which was ever so slightly less so; I hope disgruntled competitors have forgiven me by now!

Talking of regulations, I remember one event at which I had to get a signed statement from each competitor that he had read them; mostly, they signed cheerfully enough, but one man replied to my question: "No, but I'll sit down and read them now." He did, and I've always honoured him for it; he was George Newman.

Another competitor who stands out in my memory was the driver of a Bugatti. Taking delivery of his car at Molsheim, he had almost reached the French coast when he had serious trouble; by dint of missing meals and sleep, he managed to get back to Molsheim, have the job put right, and present himself punctually at the scrutineering. What a contrast to those who often came late from just

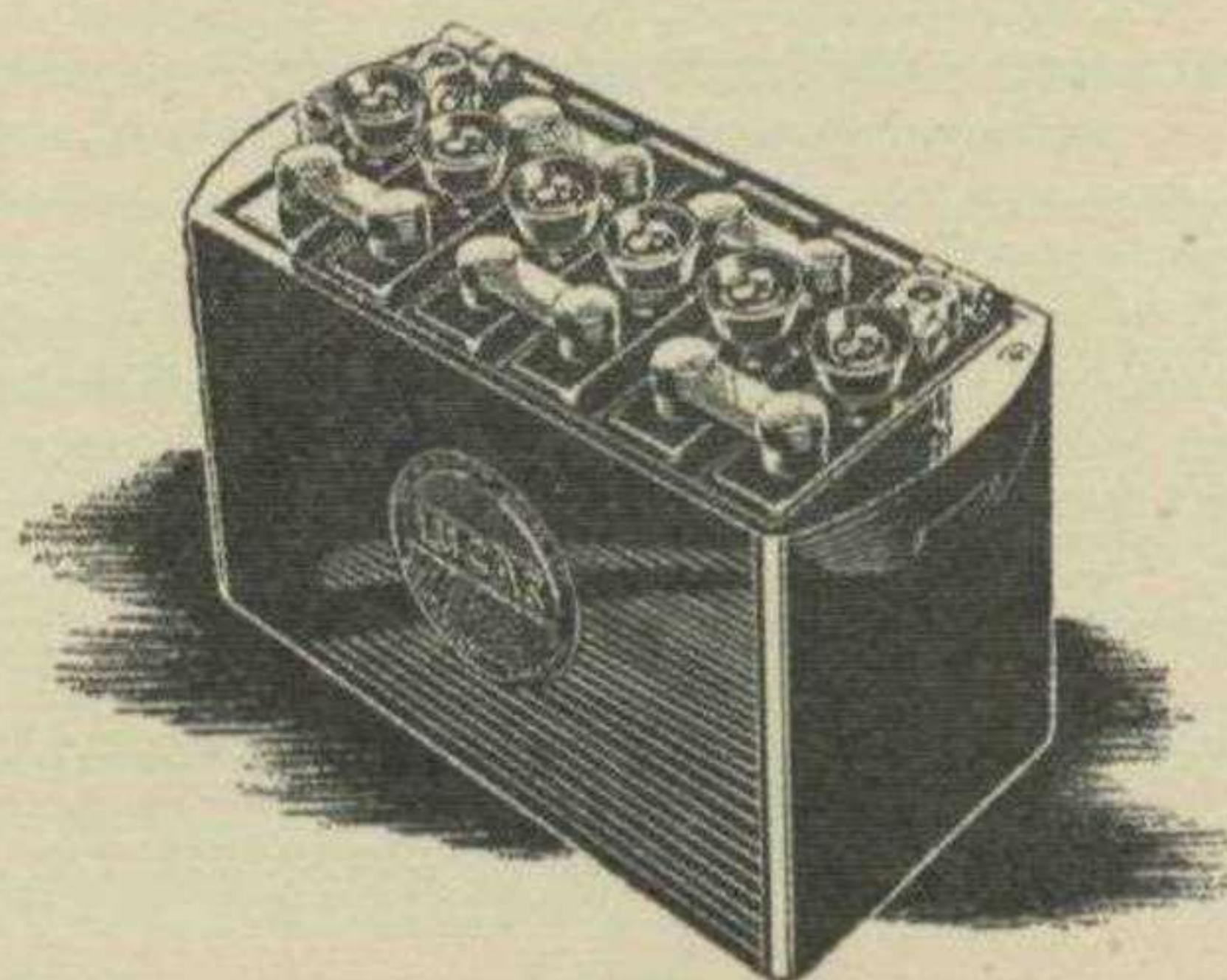
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round the corner, and without an excuse.

One year I had the honour of driving the official car during the Tourist Trophy race. I was asked what car I would like to drive, and I replied an Invicta, because of its acceleration. I hope I was not a nuisance to any competitor on the course during the race, but I met two late competitors going to the start, during my lap to open the course.

About this time I used to do odd bits of timekeeping, though never an official timekeeper, for the R.A.C., on the Brighton run, for the M.C.C. and the J.C.C., besides during "special tests" on the Experts' Trials, etc. It was quite interesting work, particularly timing, in practice, the cars going through the course obstacles of the British Empire Trophy race, the times being used to calculate the inter-class handicaps.

On my first Monte Carlo Rally I had the good fortune to be one of the crew of Bertie Browning's Sunbeam, starting from John o' Groats, the late Humfrey Symons being the other member. I learned a lot which I put to good use in the following year, when driving a Humber. The year after that I had a Talbot "105," but after much hard work by my splendid crew, I'm afraid I let them down in the final test by braking too soon. The Alpine Trial was good fun, too; first on a Hillman; perhaps it was its performance which enabled its makers to further perfect it. The next year I was a passenger with my wife, who had entered an E. W. Wolseley "Hornet Special," which she drove with great skill, gaining a Coupe des Alpes and the Coupe des Dames in her class.

Later, on the Talbot, I was privileged to drive the late Col. Lindsay Lloyd, who was the British Commissar Sportif, and always looked after the British competitors like a father. Another year, when the trial was run by the Swiss, and confined to their country, the colonel got me the job of British "Commissar Adjoint"—on a Railton this time. On one of the days we were due to arrive at St. Moritz, and nearing the end of the

etape, the route passed through a road called the via Mala—well named, as it ran through a narrow gorge, between a cliff on one side and a precipice on the other. Just before we entered the defile there was a noise of "blowing" and of loud klaxons astern, so, thinking it might be some delayed competitor trying to make up time, I pulled over; but no, it was the Hun Sportsfeurer, General Hunlein, driven by a professional driver in his "500K" Mercedes-Benz.

Having passed us, he didn't seem so terribly fast, after all, on the winding road, and we closed up with him, doing more than some horn blowing in our turn. Quite a scrap ensued for some miles, the Railton's acceleration after corners being quite equal to the Mercedes, and at last the Huns became so flurried that they missed the turning to St. Moritz, and we arrived there first, to the great delight of the colonel.

We scored a success, too, at one of the meetings of the Sport Kommissars. The German representatives were trying to exclude a French driver of a Bugatti, who had been late at one of the controls, but we dug up a rule which gave him a leg out.

Colonel Lindsay Lloyd was a great man, and when one got to know him, not nearly so autocratic as those whose ideas differed from his at Brooklands might think. He certainly did look after the British competitors' interests.

Since 1930 I had been a member of the B.A.R.C. Committee, and usually acted as a steward. This was most interesting work, but I don't think there is much that I can write about it.

Again, the colonel was invaluable when he acted with us, and I remember one occasion, when there was a collision between two cars, his version of the incident was proved to be more correct than that of two other stewards who were in the tower with him. He was also, of course, chairman of the R.A.C. Competitions Committee, and he carried out his duties with conspicuous ability and fairness.

I'm afraid I've strayed quite a long way away from the cars, though.

About this time I had several Wolseley "Hornet Specials"; one of them, a long-tailed 2-seater, lapped Brooklands at 78 m.p.h.; another, a sportsman's coupé, averaged, on the return journey from an M.C.C. route-finding expedition, just over 50 m.p.h. from the Station Hotel, Carlisle, to Oxford Street, meticulously timed by stop-watch.

Talking of averages, an old friend of mine, Bertie Browning, of Monte Carlo Rally and African trips (with the late Humfrey Symons) fame, who had gone to live near Bridport, offered a cup to whichever of his friends should do the best average from Staines Bridge to Bridport; all 30 mile limits to be strictly observed, and attempts between 9 p.m. and 9 a.m. barred. Some astounding times were recorded, but perhaps I had better not give details—anyway, some people took little more than two hours for the 118 miles, and some even did the journey in less.

I am now coming to the end of my list of cars, which, by the way, number 70, of 31 different makes and five different countries, but the last three were worthy examples: Lancia "Aprilia," which lapped at 79.5—I could never get that odd half-mile; 328 B.M.W., with a drop-head coupé body, always good for 100 m.p.h., and "10/12" Fiat—rather an anti-climax, the latter, one might say, but after "having things done to it," it would do 75 an hour and over 40 m.p.g. at moderate cruising speeds—quite useful in these times. Only recently I had quite an exciting and not unsuccessful scrap with a Jeep, driven solo, with great verve, up the North Road. Oh, yes, one year I bought a Chevrolet in New York and drove it across to Los Angeles, selling it at a profit there—but that's not motoring, just transport.

Just one more line and I'm through. The best of my cars: "20/30" Renault, 1907; "30/98" E-type Vauxhall, 1918; Lancia "Aprilia," 1939, and 328 B.M.W., 1939—that's my verdict, anyway.

Some Meadows "Gen."

We have received from Henry Meadows, Ltd., who are supplying the Air Ministry with 1½-litre, 4-cylinder, Type 4EC/A engines, rather like their well-known car units, some valuable information about the latter—that is, the Type 4 E.D. 69 by 100-mm. 4-cylinder engines as used in Frazer-Nash, H.R.G., and, at an earlier date, in Lea-Francis cars. The 4 E.D. was supplied in two types, the "Standard" and the "Brooklands." The former ran up to 4,000 r.p.m. and the latter up to 4,500 r.p.m., and later examples of both types had a heavier crankshaft, with 45 mm. diameter crank-pins and 46 mm. diameter journals. The bores of these engines were tested to 500 lb./sq. in., and the water jackets to 50 lb./sq. in. Sump capacity was one gallon.

The "Standard" type had a valve timing giving an inlet period of 220° and an exhaust period of 230°, while on the "Brooklands" engine the timing was: i. o. 10° before t.d.c., closes 50° after b.d.c.; ex. o. 60° before t.d.c., closes 15° after t.d.c., giving an inlet period of 240° and an exhaust period of 255°. Ignition advance was 35° before t.d.c., or 55° to 60° before t.d.c. for full output above 3,000 r.p.m. Both engines weighed 3 cwt. 2 qr. 7 lb. with flywheel, clutch and unit gearbox. The "Standard" model had a compression ratio of 5.2 to 1 and gave 37½ b.h.p. at 4,000 r.p.m. with a b.m.e.p. of 109 lb./sq. in. at 1,000 r.p.m., 110 at 2,000, 97 at 3,000 and 82 at 4,000 r.p.m. The "Brooklands" model had a com-

pression ratio of 7.0 to 1, tulip racing-type valves, two S.U. carburetters instead of one Solex or Zenith, and a high-lift camshaft. It gave just over 52 b.h.p. at 4,000 r.p.m., and b.m.e.p. figures of 113, 118, 123 and 113 lb./sq. in. at 1,500, 2,000, 3,000 and 4,000 r.p.m. respectively. At 2,400 to 3,200 r.p.m. the torque was approximately 74½ lb./ft., reaching nearly 75 lb./ft. at about 2,800 r.p.m. The dimensions of both engines, with type 4A gearboxes, were 5 ft. by 2 ft. 10 in. by 2 ft. Henry Meadows, Ltd., hope to produce a new range of sports car engines when they are released from war production. They have in mind a 3-litre 6-cylinder engine of very high output, but their post-war programme is not yet definite.

MERCÉDÈS MEMOIRS

I SUPPOSE there is a number of motorists who, during their motoring career, have always used the same make of car. I have always, during my many years of driving, had Mercedes cars, and have had a great deal of pleasure in handling the large sporting and racing cars of this famous make.

The 1903 60-h.p. model, with 140 by 150 mm. 4-cylinder engine, having its cylinders cast in pairs, was capable of about 80 m.p.h. with full touring body. It had a low-tension magneto, overhead inlet valves, and side exhaust valves and was chain-driven. No accelerator pedal was fitted, and two segments on the steering wheel controlled the magneto advance and throttle, respectively. The early models had no half-compression device for starting, and the first of this model had a variable lift to the inlet valves. Later, 1903/4 60-h.p.s were fitted with a half-compression device, a ratchet and pinion on the exhaust valve stems lifting the exhaust valves off their seatings. Even so, it wanted a fairly good effort to swing the engine, especially on a cold morning, and I had a few nasty backfires from them. The Mercedes Company supplied several sizes of chain sprockets, so it was quite easy to alter the gear ratios, incidentally.

The 90-h.p. racers which took part in the Paris-Bordeaux race of 1903 were sent to Cannstatt to be got ready for the Gordon-Bennett race, but were destroyed in the great fire at the works, together with about 100 partly-finished cars. This was in June, 1903, shortly before the Gordon-Bennett race in Ireland, so the Mercedes Company asked three private owners of 60-h.p. touring cars to lend them for the race. The American, Mr. Clarence Gray Dinsmore, lent his, which was fitted with a 2-seater racing body and, driven by the Belgian, Jenatzy, won the race for Germany. The other two cars in the race were driven respectively by the American amateur, Foxhall Keene, and the Belgian amateur, Baron de Caters. Mr. Gray Dinsmore was so pleased that his car won the race that he at once ordered one of the 90-h.p. racers for the 1904 Gordon-Bennett, again to be driven

Edward L. Mayer has owned nothing but Mercedes-Benz cars. Here, at the request of the Editor, he recalls some of the more outstanding.



by Jenatzy. Baron de Caters drove the second Mercedes and Fritz Opel a car of his own firm's make. The Opel car broke the crankshaft soon after the start. Jenatzy started first and finished first, but L. Théry, on a Richard Brazier, won the race by 11 minutes. Jenatzy lost a lot of time when he ran out of petrol, and on one occasion, when approaching the level-crossing at Wehrheim, saw a shunting engine standing on the line. He was able to slacken speed, and the driver of the engine started out of the way, but he was a bit shaken. It was a very hot day at Homburg, and the Mercedes people had gangs of men stationed at the controls with buckets of water to cool down the tyres of the two Mercedes cars! In this race there were three Austrian Mercedes running, but they did not seem as fast as the Cannstatt cars. These 90-h.p. 1904 Gordon-Bennett cars were very fast, W. K. Vanderbilt and Baron de Caters attaining a speed of about 97 m.p.h. on their cars. I had one of these cars, which I bought in Paris, and it certainly was an easy starter and most reliable. I also had an Austrian Mercedes 90-h.p. racer of 1904 type.

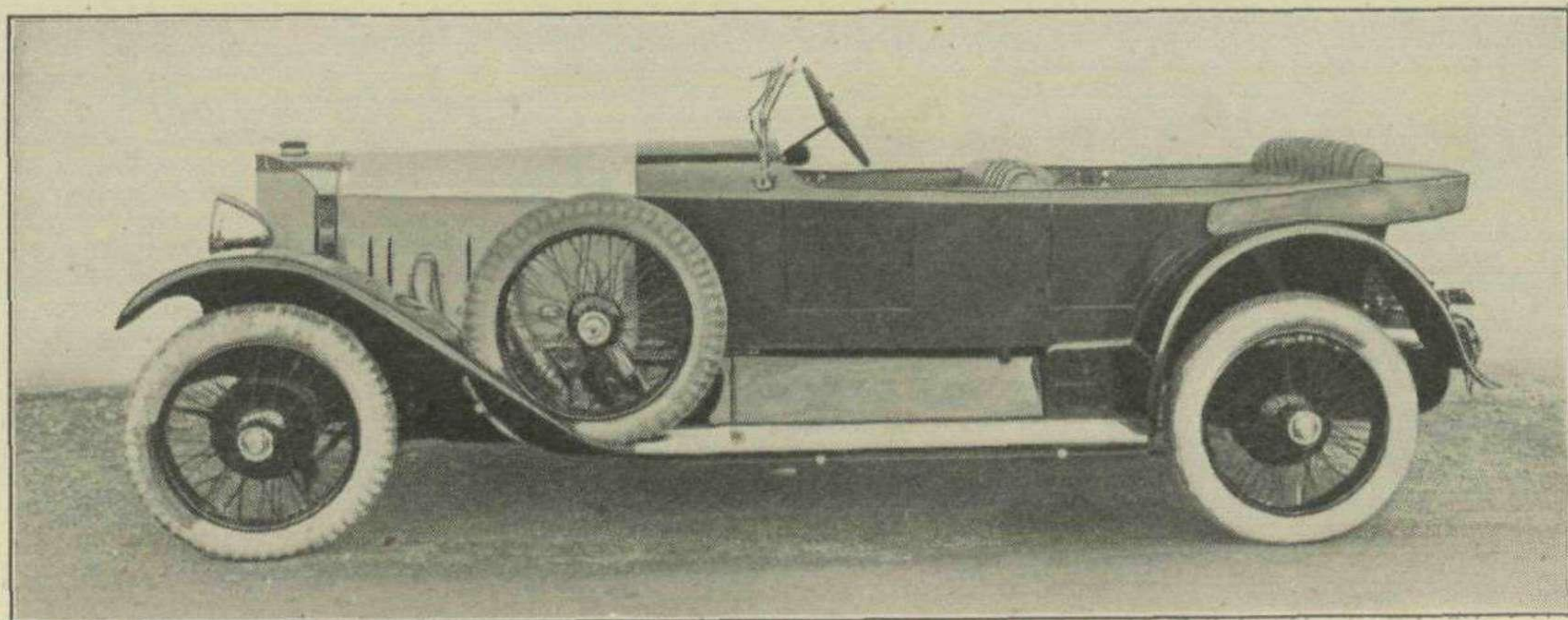
In 1905 Mercedes fitted their touring cars with a side-entrance phaeton body, longer chassis, and many other improvements, including an accelerator pedal, etc. I had a "28/32" open touring car with an elegant Mercedes body, and a "40/45." Both these cars were painted and upholstered in the then prevailing Mercedes style—maroon body, and red chassis and wheels, and red patent leather upholstery with gold and black lines on the body.

The racing 120-h.p. with 4-cylinder 175 by 145 mm. engine, with its cylinders cast in pairs, chain driven, with 34 teeth in the driving sprockets, was, in those days,

considered very fast. It also had a very noisy exhaust, and I remember thundering round Brooklands track in the early days, on an off day, and really enjoying myself.

In 1907, Paul Daimler had the 35-h.p. and 45-h.p. cars fitted with ball-bearing crankshafts, but these proved somewhat noisy and were discontinued afterwards. I had a 1907 Grand Prix car which sometimes was very easy to start and on other occasions wouldn't start at all, and as swinging the engine by hand even on half compression was very tiring work, I used to ask my brother to tow me to a convenient hill near our house and, getting a good run, engage second speed, and let in the clutch. The engine then started at once, and when warm, often started on a good pull up by the handle. This car had a very large engine of 175 by 150 mm., with low tension magneto—maximum revolutions about 1,200 per minute, with 35 teeth in the driving sprockets, and a ratio of about 1½ to 1 on 4th speed. The Mercedes change-speed gate was very easy, and the lever flicked in without effort. The early models of 1902 were fitted with a safety catch over the reverse position, which had to be hand lifted. From 1903 onward a spring-loaded lever by the side of, and connected to, the change-speed lever was pushed down to release the safety catch. The only Mercedes car I ever saw fitted with a progressive gear-change and not a gate was one of the very first 60-h.p. cars belonging to Mr. G. Higginbottom, of Macclesfield, and some years after, when this car was for sale, I drove it for a short distance for the novelty of trying the changing of the various speeds.

The first Mercedes car to have shaft drive was the 1908 35-h.p. model, with 110 by 140 mm. 4-cylinder engine, which had Honald magnetic plugs with rocking anvil and U-spring, and the Friedman system of lubrication. It was a quiet-running and reliable car. Although the chain-driven models were fitted with chain cases, there was always a certain hum from the chains. As regards the racing cars, engine size was restricted in 1908 to a bore of 155 mm., and the 135-h.p.



1908 Grand Prix Mercédès driven by C. Lautenschläger, which won the race on the Dieppe Circuit, had a bore and stroke of 155 by 172 mm., and the other two cars driven by Salzer and Willy Poege, of Chemnitz, were of 155 by 180 mm. Poege won the Semmering Hill Climb on a "Kaiser Preis" Mercédès of 140 by 140 mm.

I bought a 1908 "Prince Henry" sporting Mercédès of 130 by 180 mm. in Paris, and it had a good deal of the speed of the Grand Prix racers, and was a very easy starter. I also had a 1909 55-h.p. Mercédès, with a 2-seater racing body.

I went over to Paris on receiving a letter from the director of the Paris branch of the Mercédès Company, whose works were at Puteaux, outside Paris, offering me a special, very fast Semmering Mercédès racer. The door of the garage was flung open, and there was this fine car, painted the Mercédès white. The acceleration was terrific, but, unfortunately, the price was too stiff, so I had very reluctantly to go home without it.

In 1909-10 the sporting model was the "37/95" with 4-cylinder engine of 130 by 180 mm., chain driven with chain cases, and having two overhead inlets per cylinder, and side exhaust valves. I had an open 4-seater of this type. The 1912-13 models were fitted with a V-shaped radiator, and two or four outside exhaust pipes covered with flexible brass tubing. The 1914 French Grand Prix resulted in a triumph for Mercédès, with first, second and third places. There were five Mercédès running, driven by Lautenschläger, Wagner, Salzer, Sailer and Pilette. Sailer had the rather thankless job of making the pace. He was leading up to the fifth round, when his petrol pipe broke and he had to retire. Pilette drove into a ditch, and Lautenschläger, Wagner and Salzer took first, second and third places, respectively. The winning Mercédès cars had a 4-cylinder engine with the cylinders in pairs, machined out of solid steel billets (93 by 165 mm.), four valves per cylinder, provision for four sparking plugs, although only three per cylinder were actually used, and two double magnetos. The water jackets were also of steel, welded on to the cylinders. At about 2,800 r.p.m. the speed was about 120 m.p.h. Two 1914 racers came over here—one was exhibited at the Mercédès showrooms in Long Acre and had Lautenschläger's "28" winning number on it and his name scratched on the bonnet. The other, a reserve car, belonged to Mr. Harrison, of New York, and was sold after the war. I had this car for some time, and it certainly was a remarkable car in many ways.

The Mercédès Company invited their clients to a banquet at the Trocadero Restaurant on July 17th, 1914, to celebrate the triple win, and I have still got the dinner menu as a souvenir. Lautenschläger's car was raced at Brooklands after the war by Louis Zborowski, and was eventually destroyed by fire. Mr. Harrison's racer is still in England, owned by Ariel Clark. Curiously enough, I had a photo sent me some little while ago, taken in America, of a 1908 Grand Prix Mercédès, which was raced so well at Brooklands by D. Resta, and belonged to Mr. Fry; the car looked in exactly

the same condition as it did in 1908. The other 1908 Grand Prix car which came here was driven by Willy Poege in the race, and his name was stamped on the radiator cap.

The large sporting model of 1914 had a 6-cylinder 105 by 140 mm. engine with overhead camshaft, with its cylinders in three pairs, high tension and coil ignition, 12 sparking plugs and two carburetters. I had a car of this type after the war, with a magnificent polished mahogany body and rear scuttle, red patent-leather upholstery and red bonnet and wings, and with improvement to engine, etc. In that year (1923) the two smaller models, "6/25" and "10/40," were fitted with the new "Kompressor" or supercharger, and I bought a "10/40" with an open Mercédès body. Using the supercharger was very fascinating, and the speed was considerably increased. I went over to the Hague to see the "28/95" racer of Director Wiemann, of the Dutch branch of Mercédès, but the price was prohibitive, so I came away with the "10/40" car I have mentioned, and had some very fine drives on it. For a 16-h.p. engine it was very fast indeed. The supercharger, when engaged, made quite a loud whining noise, but I found this rather pleasing than otherwise. The supercharger was placed in front of the engine, and the driver pressed the accelerator pedal past the full open throttle position, which drew back a long rod and so engaged the supercharger

Racing at Wealdstone

The First British Model Car Meeting

The British Model Car Club held its first meeting, and the initial public event of its kind to be staged in this country, at the Kodak Hall, Wealdstone, on October 1st. Cars lapped a "round the pole" course, and there was electrical timing, spotlights, refreshments, a loud-speaker system and a gallery from which the spectators could, in safety, watch the models put up their impressive performance. For this initiative Mr. D. A. Russell deserves the greatest credit. The cars were tuned at the pits and tested during the morning. They comprised Mr. Russell's 10-c.c. Brown-engined S.S. "100"; Mr. D. B. M. Wright's 5-c.c. Westbury "Kestrel"-engined "Special," largely constructed of Juneero parts; "No. 4" of straightforward design, running on balloon tyres; "No. 5," which did not actually run; Mr. Gasgoine's car, which was on view, but only partially finished; Mr. Cruikshank's M.G.; Mr. F. G. Buck's "No. 2A"; and Mr. Russell's enclosed cockpit Auto-Union record car, the tiny engine of which was cleverly concealed beneath the cockpit hood—an idea suggested to Mr. Russell by the Editor of MOTOR SPORT. The course proved rather smooth, resulting in much wheel-spin, which caused the two fastest cars, the M.G. and "No. 2A," to throw tyres. In the morning the S.S. lapped regularly at 21 m.p.h., and the M.G., with faultless precision, at over 50 m.p.h. After lunch, the M.G. at first suffered from four-stroking and could

Continued on page 237

clutch on the forward end of the crankshaft. The rotors revolved at about three times engine speed, and maximum engine revolutions was very quickly obtained, it only being necessary to engage the supercharger for about 10-15 seconds. The supercharger was fitted as standard on all the large sporting and touring models, only the smaller ones in later years being without this very useful and fascinating fitment.

In 1924-25 the larger models were the "24/100," "33/140" and short-chassis "33/180." I had one of the "33/180" cars. Up to this time Mercédès fitted their cars with right-hand steering and gate change, but soon afterwards they made their cars with left-hand steering and central change and handbrake.

In October, 1927, at the Motor Show at Olympia, the new 36/220-h.p. open sporting car was shown. It was altogether different, very long and low, with very raked steering column and a 6-cylinder engine with supercharger, two carburetters, frame underslung at the rear, sporting 4-seater body, and spare tyres carried at rear—maximum speed about 110 m.p.h. The English agency very kindly sent a car round to my house with their test driver to try out, and the acceleration on each speed with supercharger engaged was simply remarkable. When I bought one of these models I found it, after getting used to the feel of the car, very easy and most pleasant to handle, and the engine very flexible, and with a top gear of 2.76 to 1, it was possible to run from about 12 to 15 miles an hour to maximum without labouring; maximum revolutions 3,200 per minute, engine 98 by 150 mm. The larger model of 1929-30-31, the "38/250," is, in my opinion, one of the very best models ever turned out, and with open sporting body from the Mercédès coachbuilding works at Sindelfingen, near Stuttgart, I think looked magnificent. Engine and lay-out was similar to the "36/220," only 100 by 150 mm. bore and stroke, pressure-fed petrol, and additional shimmy dampers.

I had a very elegant "38/250" open 4-seater, painted cream with maroon wings, with a large trunk on the back containing two suitcases bound in calf. At the present time I have a very fast open semi-racing 4-seater, with racing supercharger and a good many other special features, and it was prepared for the 1939 Le Mans race, but was scratched at the last moment.

As regards the 1937-39 models, "500 K" and "540 K," I have only had very limited experience with them, but although magnificent cars, they seem to my mind rather too "gentlemanly," and not so ultra Mercédès as the "36/220" and "38/250." The independent springing of the wheels is very fine on bad roads, but as English road surfaces are so universally good, it seems rather unnecessary. I had a short run on one of the first to come over, with Neubauer driving, and he put the near-side front wheel on and off the pavement in a quiet street to show how good the springing was. He was a driver in the 1924 Targa Florio race in Sicily on a Mercédès, which race was won by Werner, and has been for some years manager of the Mercédès racing team.

More Molsheim Magic—With a Moral

THESE notes may be of interest as they outline what seems to me to be the easiest way of going about racing in a small way. That is, by concentrating on one make, working up from the slower to the faster models and using the experience gained to do most of the work on the cars oneself. Although I made a point of recording the details of all work carried out on my Bugattis, these notebooks are not now available, and so I cannot offer here detailed information which might be of value to other Bugatti owners.

I became interested in the Sport while still at school—in the days when the 2-litre and “two-three” Bugattis were winning nearly every race that was held; such an impression did they make that I have since owned nothing but Bugattis. The first was a 1924 “Modified Brescia”—then 10 years old. The specification of this model is well known—the car itself was identical with the one tested by *MOTOR SPORT* about that time. The long wheelbase chassis had only rear-wheel brakes and was fitted with high-pressure tyres, while the body was a narrow 4-seater. As soon as the car was purchased the body was removed and thrown away, and the engine and chassis stripped for examination and overhaul. The engine, which had recently been rebored, was found to be in good order. It had the late-type crankshaft with the front main bearing plain and the other two ball—the “Full Brescia” cylinder block with dual plug orifices on the induction side, and a single S.E.V. magneto driven from the vertical drive to the camshaft by a horizontal shaft. After the big-end bearings had been re-metalled and the 16 valves ground-in the engine was re-assembled and refitted. As it had been decided to build a new 2-seater body the gearbox was moved back 18 ins.—the shaft connecting the engine to the gearbox being lengthened to suit and the propeller-shaft being shortened. The steering column was also lengthened, thus giving a seating position just in front of the rear axle. The chassis was then fitted with a long bonnet and a short door-less body.

With the standard Zenith carburetter and low-compression pistons, the maximum speed, on the high top gear of 3.4 to 1, was about 72 m.p.h., but, while the car handled well, the brakes were the limiting factor to performance. Very little trouble was encountered; there was some plug oiling at first, due to somewhat worn inlet valve guides, but this was overcome by providing improved drainage for the oil fed to the cambox. In an effort to improve the braking, the local breaker's yard was visited and a front axle from a sports Lea-Francis was obtained. This axle had spring beds which allowed the existing Bugatti springs to be out-rigged (in the manner of the later models) by the fitting of a dumbiron tie-rod and brackets to carry the rear shackles, while the Bugatti steering rod fitted straight on to the “Leaf” steering arm. With this axle installed the transmission brake was scrapped and all four brakes coupled to the foot pedal.

In the April, 1941, issue of “Motor Sport” A. C. Whincop wrote of his Bugatti experiences. In this informative article Capt. C. L. Clark, R.A., does likewise, and with a moral, for he considers developing one make of car for club competitions by far the best approach to inexpensive racing, and gives many useful pieces of advice.—Ed.



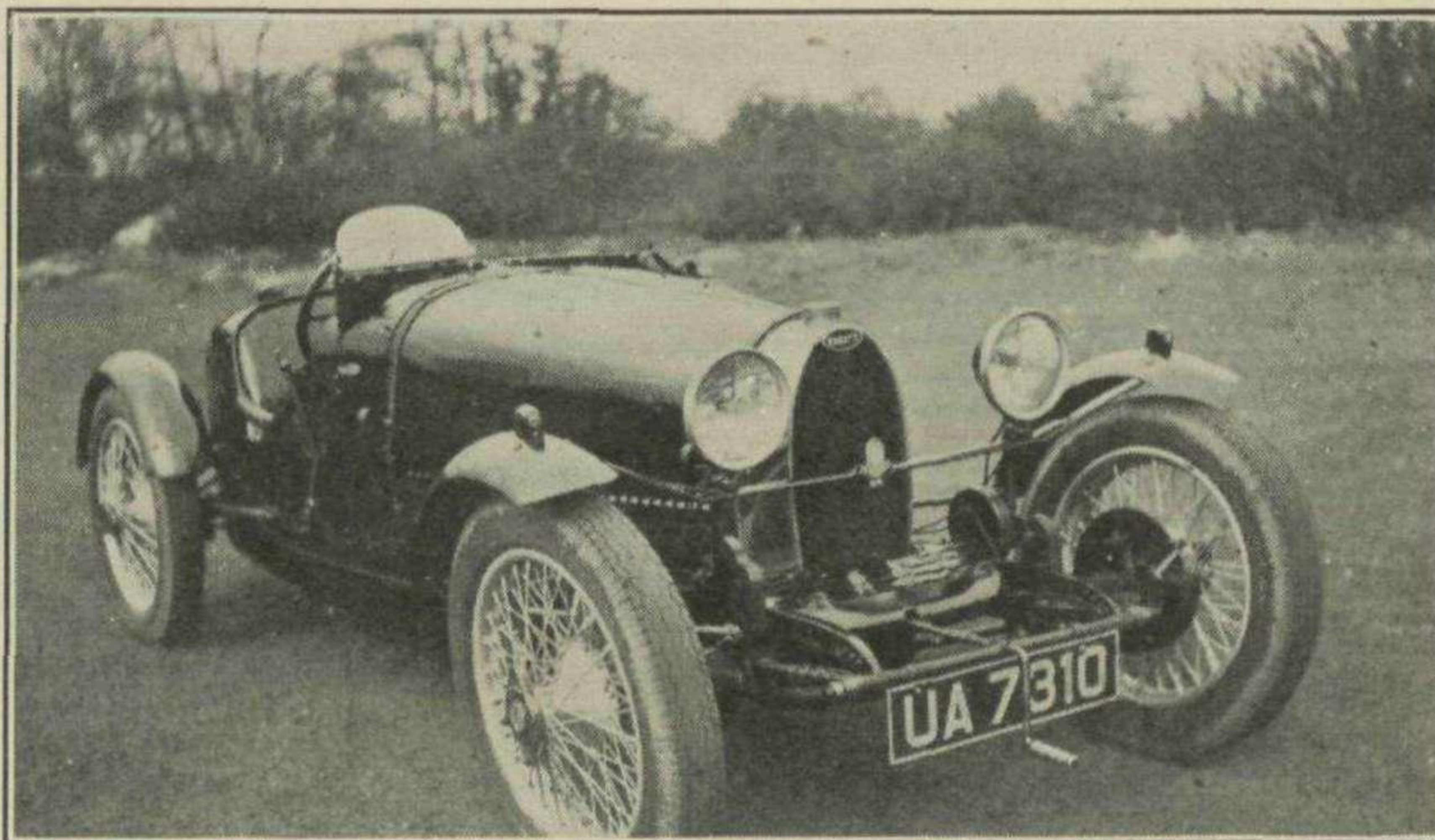
This gave an appreciable improvement in the braking department, and steps could then be taken to improve the performance. Twin S.U. carburetters were fitted, which gave a performance justifying the entry of the car for the second Wetherby speed trial.

The run up to Wetherby was marred by a series of oiled plugs—since the car had been remarkably free from this vice, it did appear as though the well-known Bugatti temperament had arrived! This state of affairs persisted through the first climb, and it was not until the interval that my friend, who had been cleaning sets of plugs the whole of the very hot day, asked if I had been “playing about with the so-and-so magneto.” After I had assured him that I had had it off the day before to check it over, he grabbed the ignition leads, which “came off in his hand.” I had, of course, failed to tighten the setscrews which held the leads to the distributor block! After that the car went well, but my reputation as a tuner of motor cars dropped to a new low!

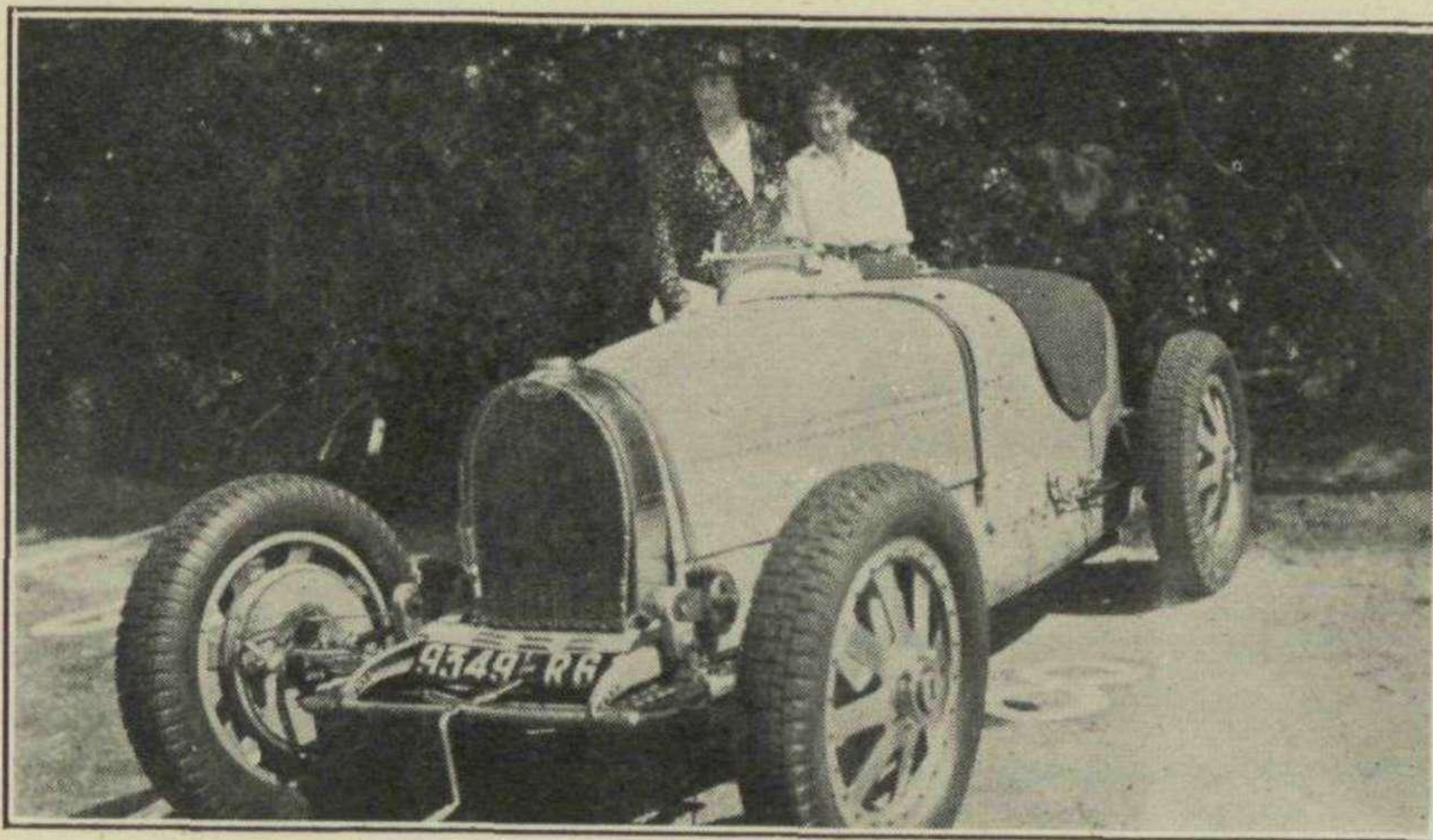
Shortly after this the Brescia was sold and a 1½-litre Type 37 Grand Prix was purchased. This had, for a long time, been my ideal, it being one of Ettore's more straightforward designs. This particular car was of 1929 vintage and was quite standard, even to being fitted with

full road equipment, hood and sidescreens. The specification of this model may not be so well known and may bear being given in some detail. The engine, four cylinders of 69 by 100 mm., has a fine, disc-type, crankshaft carried in five plain bearings, all bearings being lubricated under pressure by a large oil-pump driven from the nose of the crankshaft. On the earlier models jet feed was used for the big-end bearings, oil from jets in the crankcase walls being directed into grooves cut in the webs of the crankshaft. From these grooves the oil flowed to the big-end journals. While this system is suitable for low-speed engines, or for those fitted with roller bearings, it limited the maximum safe speed of this engine to 4,000 r.p.m. With the full pressure system the safe revs. were said to be 4,500, but this could be quite safely exceeded for short periods. The cylinder block, with its fixed head, carries three valves, one large exhaust and two inlets. The camshaft is housed in an aluminium alloy cambox and driven by a vertical shaft at the front of the engine. This vertical shaft also carries a skew gear driving the horizontal shaft for the water pump. The valves are operated by fingers which pivot on tubes running the full length of the cambox and which carry oil under pressure to lubricate the camshaft assembly. The valves are fitted with caps and clearances are adjusted by shims. Standard carburation is by a single Solex feeding through a two-branch, water-warmed manifold. Ignition is by a Delco distributor driven from the rear of the camshaft and at right angles to it.

Transmission is via the usual Bugatti multi-plate clutch contained in the small diameter flywheel, to the separate 4-speed gearbox, and from there by means of an open, solid propeller-shaft to the straight-toothed final drive. The chassis is the standard Grand Prix type to which the larger, 8-cylinder engines were fitted, although the front axle, while appearing



The author's Type 37 Bugatti



The author's Type 35 Bugatti

to be the same, is solid and not tubular as on the more expensive models. The reversed $\frac{1}{4}$ -elliptic springs allow the axle to move fore and aft, the axle being positioned by means of short radius rods which run forward to the chassis frame, and all torque being taken by a long torque arm which runs alongside the propeller-shaft and is secured to the gearbox. The normal axle ratio for this model is 3.86 to 1 which, with the 5.00-in. tyres usually fitted, gives a road speed of 21½ m.p.h. per 1,000 r.p.m. Wire wheels are standard, brakes have the smaller diameter of 11 in., and are operated by an ingeniously balanced cable system.

During the winter, armed with information gained from "Bugantics" and experience of the car when it had been run on the road for a month or two, a complete overhaul was undertaken. The engine came in for most attention, for it was known that exhaust valves sometimes broke and that big-end bearings did not always stay in place. The reasons for these unfortunate happenings were perfectly plain—the valves broke because, being hollow, they only had a certain useful life, while bearing troubles were due to complete disregard of rev. limits.

When stripped the engine was found to be standard, except for Martlett pistons giving a compression ratio of 6 to 1. The rivets securing the big-end brasses to the rods were found, in some cases, to have sheared, and this appeared to be a likely source of trouble in the future. These rivets were therefore scrapped, the rods and caps were reduced by $\frac{1}{16}$ th in., and brass shims were made up to trap the bearing brasses in place. The bearings were then re-metalled and fitted. In order to give a higher oil pressure the oil pump was moved from its original position and mounted opposite the water pump, taking its drive from the bevel wheel on the vertical drive shaft, and increasing its speed of rotation. New KE.965 valves were made up, with over-size stems in order to utilise the existing guides, and Terry valve-springs fitted. Since magneto ignition was preferred a Scintilla was fitted in place of the coil system.

The chassis required little attention, though the Bugatti shock-absorbers,

which are not really adjustable, were replaced by Hartfords, those at the rear being transverse. All steering arms and rods, torque tubes, etc., were chromium plated and the body cellulosed black, with the wheels aluminium.

One further modification was made after the engine had been run. It was found that the supply of oil to the cambox was excessive, so adjustable needle valves were fitted to control the amount. When run-in the car had a comfortable road speed of about 85 m.p.h. and handled extremely well. It was used for normal road work and also entered for the Frazer-Nash C.C. Stanley Cup meeting on the Donington Inner Circuit.

For this meeting a single S.U. replaced the Solex carburetter, and in practice the car reached 90 m.p.h. Acceleration was quite good and the way in which it handled gave complete confidence. But in the actual events things did not go at all well for, after two laps, boiling set in and it was found that the electrodes of two plugs had melted! That taught me not to use soft plugs for such work—a thing that I should have known before. The car was also run at Wetherby soon after—as a racing car since it had no starter—but the bottom gear of 9.5 to 1 made standing starts difficult and our times compared very badly with such cars as Moore's G.N. "Wasp." The same trouble was found at Saltburn—in the sprint events we seemed to sink into the sand rather than to proceed with the rest of the field, though we did manage a third place in one event. Throughout this period the car was used for ordinary running about and also went through the B.O.C. Monte-Honiton-Carlo Rally without losing a mark, finishing sixth.

Attempts were next made to improve the performance, and new Martlett pistons giving a compression ratio of 7 to 1 were fitted. Discol fuel was used and there was a considerable improvement. A further pair of wheels carrying 4.00-in. by 17-in. covers, were obtained, to lower the effective axle ratio, and the car taken to Wetherby for the last meeting of the season. Here the alterations showed their worth, since second place was obtained in the 1½-litre racing class.

Encouraged by this, a further overhaul

was carried out during the winter. Since the car was in genuine use as a sports car it was decided to equip it with a starter and so comply with the specification of a sports car as laid down by the various clubs. It was found that the big-end modification had been completely satisfactory and, to make the crankshaft assembly 100 per cent., the main bearings were re-ground and re-metalled. An almost new cylinder block was obtained, the existing pistons and valves being retained, and the engine carefully re-assembled. Two short, separate inlet manifolds were made up and twin Solex fitted, twin S.U.s being prepared as alternatives. The standard oil filter was replaced by a large Tecalemit cooler-filter mounted in the airstream outside the bonnet. The fly-wheel was fitted with a special starter ring and a starter was mounted on an extension of the gearbox lid.

When run-in, oil pressure was set at a constant 60 lb./sq. in., and it was found that the temperature of the oil, thanks to the cooler, never exceeded 70 degrees C. The safe maximum engine speed of 4,500 r.p.m. was now obtainable—the Solex carburetters giving rather more speed while the S.U.s gave the better acceleration.

In this condition the car was run in the first Wetherby event of the season, but only managed a second place in the 1½-litre class. More tuning was done and the car entered for the Stanley Cup events at Donington. Practice showed a considerable improvement—95 m.p.h. with full equipment on the straight down to Starkey's Corner. In the L.C.C. Relay Race, setting off as first car of the limit team, a considerable lead was built up, and in the two other events for which the car was entered, second and third places were obtained. Encouraged by this, the car was entered for the two short races which preceded the Coronation Trophy event on the full Donington circuit. For this it was stripped of all touring equipment and 25 per cent. PMS.2 was added to the Discol normally used. The practice period was marred by rain but, being anxious to put in as many laps as possible, I very foolishly made my first acquaintance with the circuit when it was streaming with water. After a few laps to warm things up I pushed a stop-watch into my mechanic's hand and asked him to time the next three laps. Intent on making reasonable times I believe that I left the road on every corner on every lap! On one occasion a photographer had to leap very smartly over the straw bales at Coppice—and then I chased him some way up the escape road! All in all I was very glad when those three laps were over, but when I returned to the pits it was to be greeted with the remark, "How do you start this watch?"

In the actual events no one could get near the "works" Austins, but it was great fun. The Bugatti went well. Ignoring the rev. limit in the excitement, I went up to 5,000 r.p.m. in the gears and got 4,700 r.p.m. in top going down to Starkey's—about 100 m.p.h.—and was elated to pass a K3 M.G. "Magnette," which had started off the same mark. The things that stand out most in my mind, however, were, first: after leaving braking to the very last moment (as I thought) for Coppice Corner, being passed by Charles Martin in the "3.2" Alfa, on

the inside, still apparently going at full bore and having time to grin at me as he passed! And, secondly, the way in which everyone managed to miss the driver of a Maserati, who had stalled his engine on the point of Coppice Corner and was alternately jumping out to push the car off and jumping back to take cover!

After that the road equipment was refitted and the car used for touring until the next meeting on the Donington Inner Circuit. At this meeting the car, entered for both sports car and racing events, went well and managed several places. The most interesting race was one over 10 laps for cars of all types. We found ourselves on scratch with Mays's 2-litre Alvis and "Bloody Mary." Bolster, of course, shot away at the start and, having gained a considerable lead, dispensed with his bonnet, which came down like a falling leaf and took quite a lot of avoiding. After that we all three proceeded to run through the field, Bolster gaining a great deal on acceleration, losing some of it by motoring on the grass at the corners, while the Alvis drew away from me on the straight, but lost on the corners where the Bugatti was much more handy. We finished in that order after 10 very enjoyable laps.

Next came a memorable week-end, a combined B.O.C./V.S.C.C. meeting at Donington on the Saturday and Wetherby "Open" hill climb on the Sunday. The Bugatti went "like a bomb" at Donington, winning two events, being second in two and taking two "vintage" awards. Carrying full road equipment, except for a silencer, 100 m.p.h. was touched on the run down to Starkey's Corner, while the magnificent way in which it handled allowed places to be made up on every corner. After being driven home that night the Solex carburetters were replaced by the S.U.s, the small rear wheels were fitted and the next day the 1½-litre sports class was won at Wetherby.

After this the car was sold, as I felt that I had graduated to something faster. This took the form of a late-pattern Type 35C—the supercharged, 2-litre, single-camshaft model. The car bought had a distinguished record on the Continent which, of course, indicated a hard life, but, unfortunately, I could not resist trying it out at Donington before stripping it down. The inevitable happened. While going quite well as the scratch car, there was a bang and a cloud of smoke, and a rod came out. A very full winter of spare-time work ensued, the car being stripped right down.

The chassis of this model is, of course, the same as that of the Type 37, except that it has the magnificent tubular front axle and aluminium wheels, with the large brake drums integral. The engine, however, is very different in detail, the crankshaft being built-up with four ball and two roller main bearings and roller bearings for the big-ends. The two cylinder blocks, each of four cylinders, are of the same pattern as the Type 37 but lighter and of 60 mm. bore. The cambox is in one piece and carries at the rear the ingenious drive for the magneto, whereby the position of the armature can be altered relative to the camshaft, thus giving advance and retard without affecting the optimum spark. The big

Roots blower is driven from the nose of the crankshaft by a train of gears and draws from a large Triple-Diffuser Zenith carburetter. The first problem of the overhaul was the crankshaft. After some time a somewhat worn, secondhand shaft was obtained. The fault with the earlier editions of this type of shaft was that they were fitted with hollow rollers throughout. When these rollers had seen considerable service they appeared to become somewhat compressed (they resembled Hyatt bearings and were in no way solid), with the result that they skidded round their journals instead of rolling. This wore flats on the rollers and, in the end, caused the bearing to lock solid and rods to break. The later shafts were fitted with normal, solid rollers and were most reliable provided that the engine was first warmed-up slowly to thin the oil and prevent any chance of the rollers skidding. The correct procedure for the overhaul of these shafts was to send them off to Molsheim, but that sounded most expensive, and so the large, taper cotter-pins which lock the sections of the shaft together were pressed out and the shaft dismantled. The journals, rods, and roller cages were all carefully examined, oversize, solid rollers were made up by a local firm, the shaft was re-assembled and finally locked-up after being trued between centres of a lathe. The aligning of the shaft was, of course, a job for a skilled turner but, after some careful work, it was done with the required accuracy. This shaft was used for two seasons of racing and was then transferred to a sports engine, in which it ran some 4,000 miles—so the roller-bearing shaft does not seem to be quite the bogey that it is usually made out to be.

After all components, including the supercharger, had been dismantled and overhauled, the engine was re-assembled with re-bored blocks and new Martlett pistons, giving a compression ratio of 7 to 1. The Bugatti valves were replaced by solid KE965 valves, fitted with Terry springs. The chassis was in good order. The axle ratio was 4.5 to 1, the lowest fitted. All steering arms, rods, etc.,

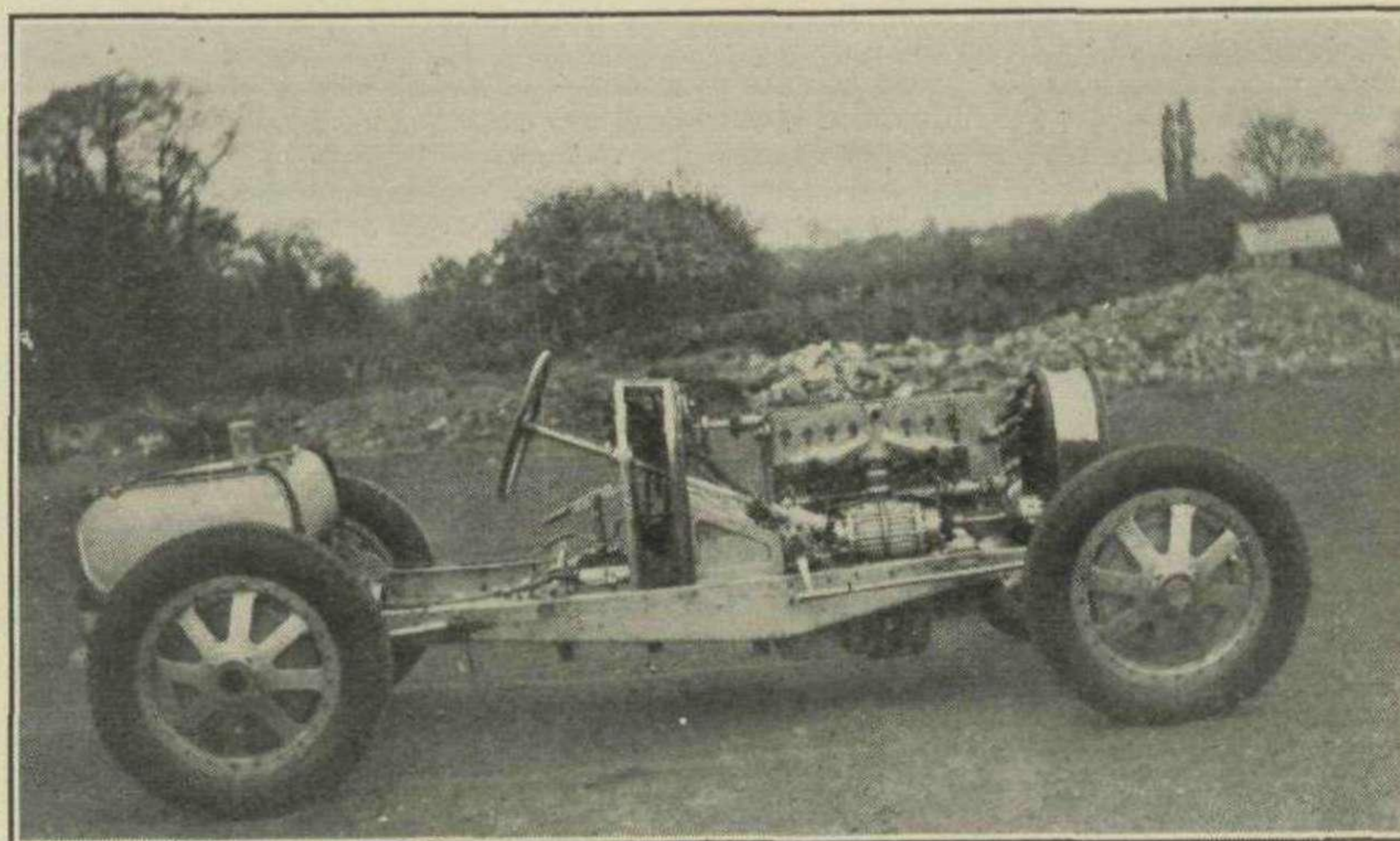
were plated and the body panels cellulosed the correct shade of blue.

It was decided to run the car only in hill climbs and sprint events during the first season, since these do teach both the tuning and driving of a car without incurring too much expense. The first event was at Prescott, but the combination of a partly-tuned car and an inexperienced driver (who was thoroughly frightened by such a hill) resulted in a pretty poor time. Next came the first Wetherby meeting of the season. This was much easier on the driver; the car had been further tuned, and second fastest time of the day was recorded. And so the season went on. As the car was tuned and I got the feel of it, so times improved until we managed to get third places at Poole and Prescott and, at last, fastest time of the day at Wetherby.

Throughout the season the rev. limit was kept down to 5,000 r.p.m. (5,500 r.p.m. is the official limit, though it can very easily be exceeded). The fuel used was Discol with 25 per cent. PMS.2 added; Castrol R oil was used and Champion R7 plugs. On the 4.5 to 1 final drive ratio 5,000 r.p.m. represented about 80 m.p.h. in third and 95 in top.

For the next season the engine was checked over carefully and the compression ratio lowered to 6 to 1. With a view to running at Donington the axle ratio was changed to the more normal 3.8 to 1. In order to run the engine in, wings and silencers were fitted and, amongst other runs, the B.O.C. Opening Rally was attended. For this season a 2-wheeled trailer had been made, the whole outfit being towed behind a V8 Ford. This proved a most comfortable and efficient method.

The season started well with fastest time of the day at Wetherby, followed by a third at Prescott. The car seemed now to have found its form—5,000 r.p.m. came up very easily. This now gave about 92 in third and 117 in top, together with good acceleration throughout the range. A return was therefore made to Donington for an Inner Circuit meeting organised by the United Hospitals Club.



"Naked but unashamed"—the Type 35 with the body off pending servicing operations

Starting from scratch in the first "all-comers" event, third place was taken after never as much as seeing the winning car, owing to the handicap. In the second such event the car was re-handicapped without my being told anything about it, with the result that I started with the same bunch of cars as before. After a grand struggle with a 2.6-litre Alfa and two 2-litre Bugattis, we managed to run through the field and cross the line first, only to be disqualified for starting too soon. This disappointment was somewhat mitigated by being awarded a cup for the fastest standing and flying laps of the meeting.

The car was handled with care (owing to the memories of our last visit!), but went extremely well and handled as only a Bugatti can. Between 115 and 120 m.p.h. was reached going down to Melbourne according to the rev. counter.

Unfortunately, my T.A. unit went to camp for a month after this, and a number of events were missed. However, I managed to get leave to attend the Open Meeting at Wetherby. Here the car (and especially the driver) was out-classed by such exponents as Fane, Baron and Lemon Burton, but a run was made in under 30 secs., which was quite a lot faster than the old record, and only goes to show the effect of example!

After camp the car was taken down to Prescott and managed to win the 2-litre class (No, Mays was not there!). Next came the Poole Speed Trials and the International Meeting at Prescott. At Poole only one run was made before it rained and, since it was the first of a number of runs, it was not made "flat-out." Being thoroughly frightened of going quickly in the rain, this time was not improved on, and we were lucky to get third place in the class, a fraction of a second behind Arthur Baron with the "3.3" Bugatti. The Prescott meeting was a good show, but not for me! After some quite reasonable times in practice (and thinking of the bad tactics employed at Poole the day before) a really determined run was started. Going up to the first hairpin below Pardon Farm at quite a respectable speed, I attempted to change down to bottom to round the corner, only to find that there did not seem to be a gear available! I had, of course, been relying on the engine as well as the brakes, which were then fairly hard on, and was foolish enough to look down at the gear gate. The reverse stop had

lifted and the lever was being pushed against the (luckily) blank side of the gate. When I looked up there appeared to be trees hanging over the radiator, so I put up a panic show on the brake pedal, which just stopped the car in time, but which also twisted the front axle between the off-side spring mounting and the swivel-pin. So that was the end of that climb, the car being quite unmanageable on the right lock. Altogether it was rather a disappointing week-end.

Next came a rush to get the car ready for a meeting at Donington less than a fortnight later. The damaged front axle was sent away to be straightened, but owing to various delays, could not be ready in time. A secondhand axle was obtained the night before the event and fitted during the night. We arrived at Donington in time to do only the necessary minimum of practice laps and used them to make brake and shock-absorber adjustments. In the first race we were flattered by being put on the same mark as a 1½-litre Maserati, with another of these cars and the B.H.W. on scratch 3 secs. behind.

For the first lap all went well, but on the second lap the blower release-valve started to lift and, unwilling to risk damaging the engine, I retired. The race itself was marred by the death of Sir John Bowen, who crashed in the Maserati. As a result of this accident the meeting was curtailed. The cause of our trouble was found to be weak mixture. For sprint events the mixture was cut down as much as possible to avoid "gulping" when getting off the mark. For road-racing the mixture was made considerably richer to keep things cool inside the cylinder heads. In the excitement of changing the front axle this had been overlooked and the jets for sprint work left in the carburetter.

Of the two events which remained in the curtailed programme, one was a scratch event in which we took second place behind the B.H.W., and the other a handicap event in which we started from scratch and managed to win. And that, though we did not know it, was the last race to be run at Donington for a very long time. It is very much to be hoped that we shall see a lot of club meetings on both circuits after the war—they are such very good value. In fact, I wonder if we can hope to see a club organise a "Vintage Grand Prix" there,

with, say, entries of cars of the types that ran in Grand Prix races between 1920 and 1930?

My regiment was at war stations before the next event for which we had entered was run and, later in the year, while on leave, the engine was taken out of the Bugatti and carefully stored.

Early in 1940 I was given staff duties which necessitated the use of a car, and so a Type 43 was purchased. This, it will be remembered, is a very sporting edition, consisting of the "2.3" Grand Prix engine in a somewhat longer chassis. Except for the sump and engine bearer arms and the increased stroke (100 mm. instead of 88 mm.), the engine is identical with that of the 2-litre, and this had great advantages when it was found that there was play in the rollers of the "two-three." The crankshaft assembly, pistons and cylinder blocks from the Grand Prix car were fitted to the Type 43, and twin Zenith carburetters were fitted in place of the blower in view of the petrol restrictions.

This car was fitted with a very comfortable 2-seater body rather on the lines of an American roadster and was very fully equipped, even to the extent of having a radiator muff! Some 4,000 miles were covered with the car in this state. 4,000 r.p.m. could be reached, or 82 m.p.h., with the 4.1 to 1 axle ratio fitted as standard, while no trouble at all was encountered. Towards the end of the year the urge to refit the blower could not be resisted, and so this was done, the jets of the triple-diffuser Zenith being replaced by adjustable jets which could be cut down for town work and quickly opened up for fast runs. In this state the car was not pushed, but 4,500 r.p.m. was available, which meant a little over 90 m.p.h. With a little tuning and decent fuel there seems no reason why this model should not do more than 100 m.p.h.

On being ordered overseas this car was laid-up alongside the Grand Prix, to await the day when it will tow the G.P. to further events and, incidentally, act as a very useful set of mobile spares!

[This article contains many useful hints to Bugatti owners, but Capt. Clark has kindly offered to help anyone in connection with Brescia and Types 35, 37 or 43 Bugattis, and, in view of his long experience with, and successful operation of, these cars, this offer should prove most acceptable. Letters can be forwarded.—Ed.]



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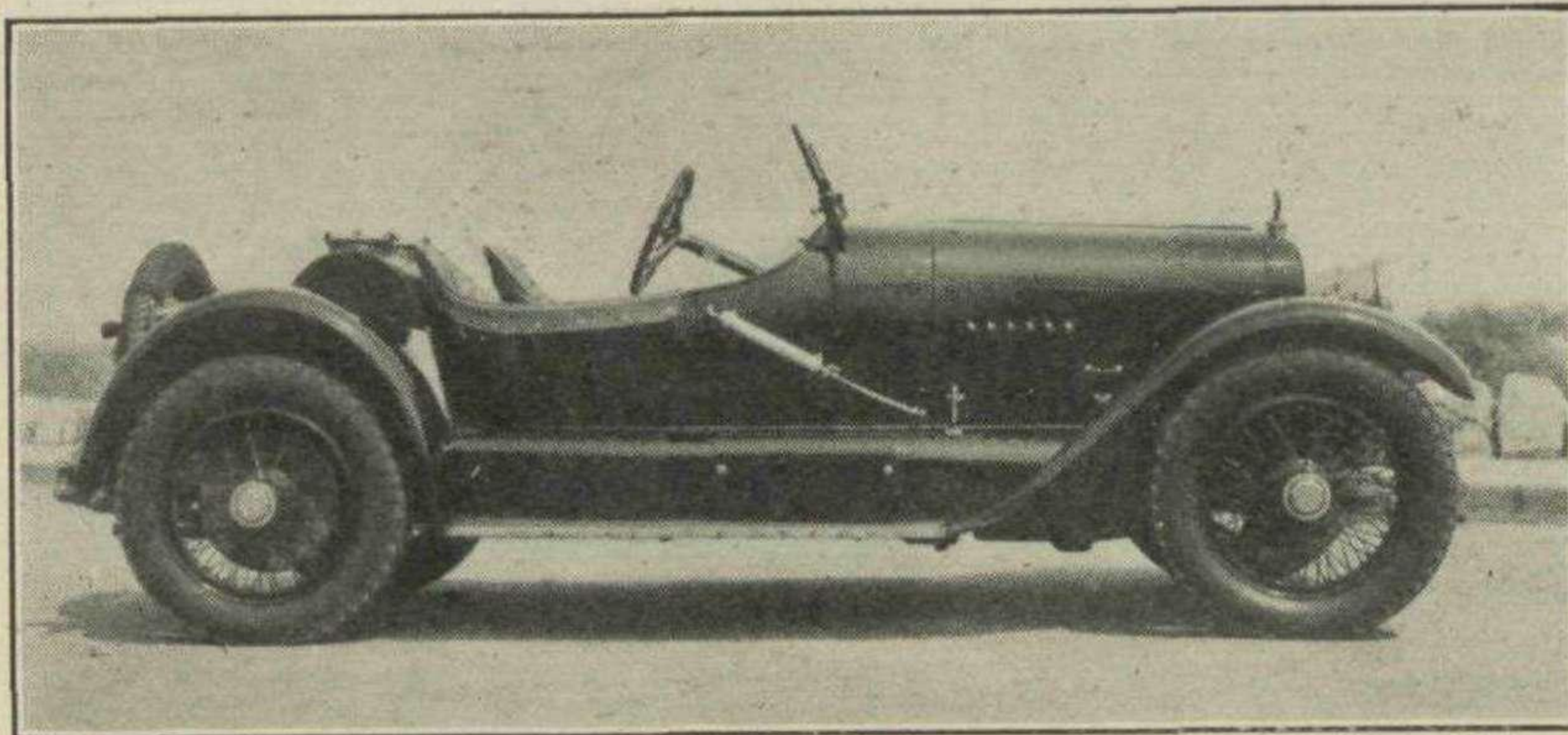
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An American Vintage Sports Car

From Theodore F. Robertson, President of the Sports Car Club of America, comes some information about his 1918

Series 4 L-head sports Mercer, which has a 4-cylinder side-valve engine of 3 1/4 in. by 6 1/4 in. (298.2 cu. in.) and so came within

the 300 cu. in. class. The valves have a clear opening of 2 1/4 in., carburation is by a Zenith carburetter ported through the block, and ignition is by a Bosch ZU4 magneto. The gearbox gives a direct drive on top and has ratios of 11.91, 6.88, 4.72 and 3.22 to 1. Transmission is by open shaft. The chassis is sprung on 2 1/2-in. by 39-in. 1/2-elliptics at the front and 2 3/4-in. by 52-in. 1/2-elliptics at the back. The wheelbase is 9 ft. 7 in., the track 4 ft. 10 in., and the wheels are 80 mm. Rudge, with 20-in., 21-in., and 24-in. rims, carrying 6-in. section tyres. The foot-brake operates on the transmission and the hand-brake on 16-in. rear wheel brakes. The 1915 catalogue guaranteed 1 mile in 48 secs. (i.e., 75 m.p.h.), and in the amateur race at Chicago in May, 1916, Mercers of this type won at 86.8 m.p.h. for the 30-mile race and 86.7 m.p.h. for the 50-mile race, putting up the fastest lap of the 2-mile circuit at 94.0 m.p.h., these achievements going to the credit of three different cars.



The 1918 Series 4 Mercer Raceabout owned by the President of the Sports Car Club of America.

Early Motor-Boat Racing

READERS of MOTOR SPORT are, of course, almost exclusively car-minded, but to the vintage contingent among them a few notes on early racing motor-boats may be of interest, especially as names well known in the car world are prominent.

As long ago as November, 1902, the Automobile Club (now the R.A.C.) recognised the importance of the then little-known application of the internal combustion engine for marine propulsion and appointed a marine motor committee to deal with the subject.

In 1903 a great impetus was given to the movement by the presentation, by Mr. (later Sir) Alfred Harmsworth, of a 100-guinea trophy, for an International competition for power boats limited to 40 ft. in length. The first race for this trophy was held at Queenstown, in 1903, in connection with the "Irish Fortnight," and although no foreign entries were received, it created a great deal of interest both in this and in other countries. The race resulted in a victory for S. F. Edge with a Napier boat of 40 ft., against Messrs. Thornycroft's "Scelopendra" and

Mr. Beadle's "Durendal," both of 30-ft. length.

The year 1904 marked a very great increase in the interest shown, which was taken up by the French and American clubs. Five entries were received from France and two from America for the British International Cup Race of 1904. Very important races were held at Monaco. A race was held by the Automobile Club de France from Calais to Dover. Races from Paris to the sea for the Gaston Menier Cup and many other trophies, were held. The 1904 British International Cup Race produced six boats, of which only five actually started, the American boat "Challenger" being beaten by the "Napier II" owing to some trouble with the ignition; the French Clement boat "Bayard" unfortunately fouled her propeller at the start; and the final heat between "Napier Minor" and "Trefle-a-Quartre" was won by "Napier Minor" by 1 min. 24 sec. "Napier Minor" was unfortunately disqualified on a technicality and the Cup awarded to "Trefle-a-Quartre."

The Calais-Dover race must have been

an interesting spectacle, the prize for racers in Class 1 being awarded to the "Princesse Elizabeth," with a 45-h.p. Delahaye engine, the second class being won by "Mercedès IV," with an 80-h.p. engine, which beat "Napier Minor" by just over five minutes, "Trefle-a-Quartre" having trouble on the way and being beaten by nearly an hour and a half by the Mercedès. The Paris-to-the-Sea race was again won (in Class 3) by the Mercedès boat, a Hotchkiss being second, "Trefle-a-Quartre" giving up. Class 2 was won by "La Rapee III," with a Panhard engine, and Class 4 by "Titan IV," with a Delahaye engine. The Gaston Menier Cup, won in 1903 by S. F. Edge, was won by the Hotchkiss, "Trefle-a-Quartre" being second, with the "Napier II" third. Only one boat with a steam motor (Gardner-Serpollet) had been built for racing purposes, but she made a very poor show throughout. Not so different from car racing, with Mercedès, Napier and Panhard continuing the struggle which occurred so frequently on land.

A. W. BUTLER.

LETTERS—continued from page 240 on the excellent suggestions by Holland Birkett for "750" competition after the war.

Perhaps the hosts of enthusiasts building "750" specials are not interested in competition motoring.

I am, Yours, etc.,

Oxhey, Herts.

A. RUMFITT.

* * *

Sir,

I was interested to read in the article

on the 1923 J.C.C. "200" that the super-charged Fiats returned to Italy without the engine covers being lifted after they had "blown-up."

However, I recall seeing recently a photograph of Campbell standing looking at the car, which has the bonnet open! I regret I cannot at the moment recall what book it was in; maybe other readers may remember the photo.

Writing of photographs, may I take a little more of your space to ask readers

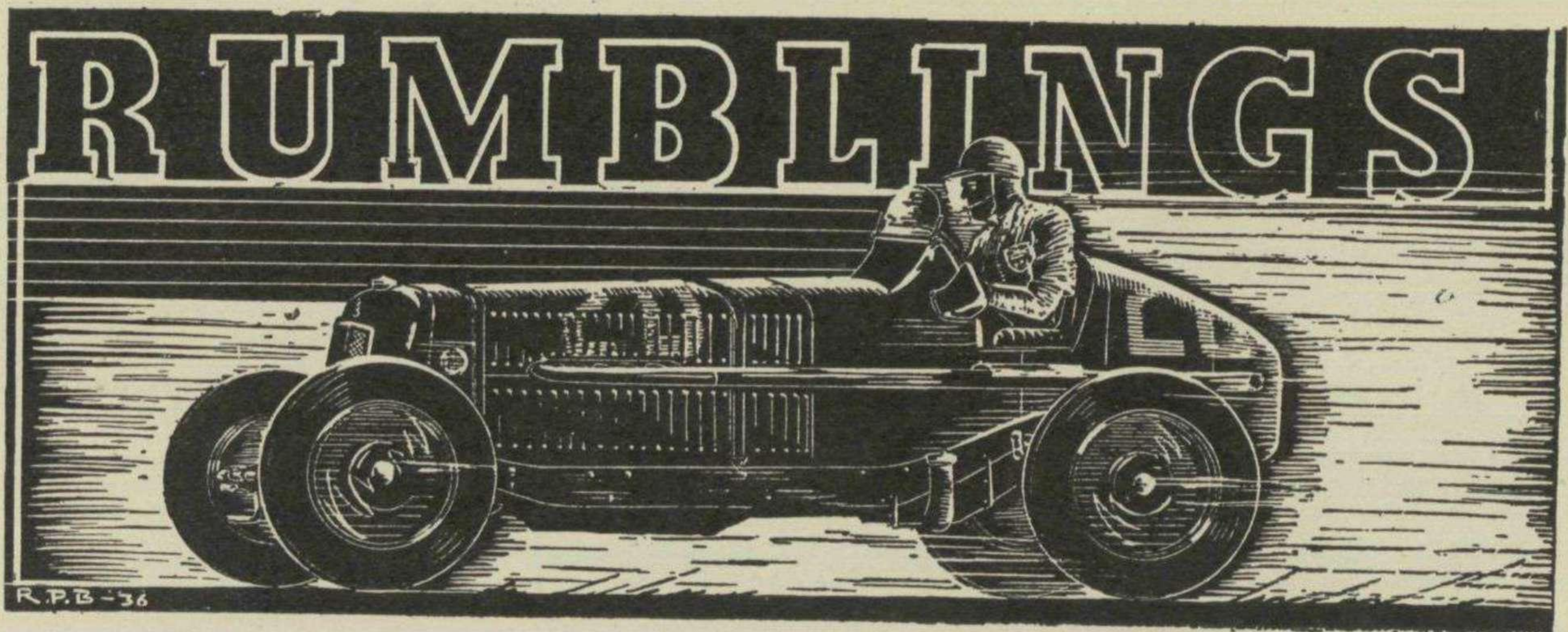
to get in touch with me if they have any Sunbeam racing photographs for sale?

I am, Yours, etc.,

HAROLD PRATLEY.

S. Woodford, E.18.

[We seem to recall the photograph of the Fiat in the Lonsdale Library "Motor Racing," but is Mr. Pratley sure this was taken after the "blow-up"; surely not a very opportune time to get such a picture?—ED.]



Everyone in the North knows Freddie Hambling, so it is not surprising that we ran into him recently.

Another Post-War Venture Hambling remembers the game from the very early days, for long before the last war he was with Napiers and had much to do with the cars raced at

Brooklands, often riding as *mechanicien*. In the later stages of the last war he designed an ambitious 4-cylinder small car that would have anticipated the Austin Seven, and also a water-cooled 4-cylinder shaft-drive motor-cycle, neither of which were proceeded with. He also built a special 3-speed gear for Morgans, demonstrating its efficiency on a Morgan-Hambling special of distinctly sporting aspect. Then he went North and commenced tuning and dealing in fast cars, mostly Bugattis, his own cars including G.P. Type 37 and two Type 43s, and a curious coupé of Type 38 specification but actually a "2.3." More recently Hambling installed the 6-cylinder Scott 2-stroke engine in an Aston-Martin for Dr. Wood and also worked on a very unusual Ford V8 and a special-bodied 4-cylinder Jowett for the same enthusiast. Incidentally, Hambling's war-work is mostly associated with diesel engines, and he uses a Ford Eight-engined Morgan 3-wheeler, while Dr. Wood has a Ford Ten-engined Morgan. Hambling's latest venture is the design of a car intended for the post-war market and of very great interest to enthusiasts. Two delightful models, very well made of wood, paper and cardboard, exist, apart from the drawings. To combine the advantages of a short and a long-stroke engine in one unit a 4-cylinder opposed, eight-piston layout is used, with two crankshafts, the upper one geared to the lower at the rear of the block. The block itself is a simple casting, so compact that it is probable that no water-passages will be required between the bores, which measure only 60 mm. With a stroke of 65 mm., the capacity is 1,496 c.c. There are four valves per cylinder, arranged two on each side, at right angles to the bores, as once used by Lanchester and on the 1911 G.P. Delage. A camshaft on each side operates via rockers, the cam boxes being reminiscent of Bugatti practice. The gear train coupling the cranks, which are plain-bearing and fully balanced, drives the camshafts, and a Roots blower drawing from an S.U.

carburetter. The crankcase covers are light alloy and dry sump lubrication employs two gear-type pumps, self primed from a large oil tank behind the small inclined radiator, and driven from the rear of the bottom crank. The magneto is driven from the front of the top crank. The engine is four-point, solidly mounted. The chassis comprises a tubular backbone and a boxed "Y" nose accommodating the engine. Hambling observed the bad effect on handling of a variable fuel load at the rear of a car when driving Bugattis, so he has decided to place his fixed loads fore and aft and his variable loads amidships. To this end the gearbox is incorporated in the rear axle and body and fuel tanks are mounted on the tubular backbone. The shaft to the Borg and Beck clutch is driven at about one-third engine speed from a gear in the crank-driving train. The gearbox is in one with a De Dion type rear axle, the driving shafts of which have constant velocity universals and ribbed brake drums against the axle housing. The gearbox has constant mesh gears, the dogs of which operate in a special manner and are controlled from a small lever on the steering column via a flexible drive. The final drive bevel gears will be correctly adjusted on assembly and no provision made for taking up wear—a Bugatti feature. Independent suspension is provided fore and aft, consisting of transverse leaf springs and two transverse torque rods as a wish-bone at the top and a single rod beneath. Braking is to be by Girling. To get three on the front seat of a coupé body reminiscent of a Bugatti elektron coupé, the steering wheel is well over on the off side, with a reduction to the column behind the facia, and three separately adjustable seats are used, while the parking brake is of umbrella-handle type. Low windows aim at giving lots of vision. The chassis dimensions are: wheelbase 7 ft. 10 in., front track 4 ft. 2 in., rear track 3 ft. 11 in. Two exhaust pipes lead out of the lightening holes in the near side of the engine "Y." The engine is expected to be very smooth and untiring, and to be capable of some 8,000 r.p.m. The aim is to offer two 3-seater coupés, both weighing 13 cwt., one to run normally at 6,500 r.p.m. and give 110 m.p.h., the other to run at 5,500 r.p.m. and give 100 m.p.h., the price being about £700. A cheaper model, with Singer Nine engine, weighing

12 cwt. and giving 85 m.p.h., is projected, to sell at around £260. This sounds an ambitious plan, but the war should give us higher-efficiency fast cars, and a 110 m.p.h. 1½-litre is a useful goal. We certainly hope the Gordano and the Hambling will come along to brighten the peace.

* * *

Passing through Chesham recently we stopped at the Winterbourne Garage to call on Stafford East, who, although busy on Ministry of **Stafford East's Supply work, managed to show us some things after our own heart. Stable**

First on the list was Teddy Wilkes's ex-John Bolster "30/98" Vauxhall, which the owner is gradually rebuilding in his inevitably limited spare time—he has to cycle over from Luton before he can start work! Every nut and bolt on the chassis is being methodically renewed, and rivets replaced by h.t. bolts, while the engine is to be assembled with one of the fully-balanced crankshafts. The car will be kept in its original condition, with elegant 4-seater body. Next we saw East's own car, a 4½-litre Bentley on which he and his father have built a useful utility body to replace the original rough fabric saloon body. The photograph in MOTOR SPORT of a similar car road-tested in 1941 inspired East, and a very neat result has been obtained, the body having less overhang than the one we illustrated. The Bentley regularly averages 100 miles a week and, as the roadholding is unaffected, East says he does not in the least mind being his own lorry driver! An engine from an "Ace of Spades" 6-cylinder Lea-Francis was noticed, and East is renovating his own 2-litre A.C. saloon, for which he has made up a neat six-branch exhaust manifold. While working on this car he has been using a "Ruby" Austin Seven saloon, but this is to be replaced by a J2 M.G. Midget. "Not that I like M.G.s," explained East, "but an M.G. is better than an Austin Seven 'Ruby'!" So busy is East that he has not been able to work on his antiques to the extent he would have wished—they include his rebuilt touring G.N., a 10-h.p. Panhard, a V-twin J.A.P.-engined N.U.T. motor-cycle with two-port heads involving some wonderful piping and silencing, and a 2-speed, open-frame Scott. We were able to see the latest addition to his premises, namely, a test-bed and water dynamometer. This dynamometer can absorb up to 175 b.h.p., and is so arranged that the car's own radiator can be used to circulate the coolant, an electrically-driven fan supply-

ing a current of air equivalent to that at a road speed of 60-70 m.p.h. A supercharged 2-litre Lagonda engine was on test for the local police inspector when we called—this gentleman is very keen and is completely rebuilding his car, having just fitted a new dashboard—but normally the bed is used to test Ford V8 engines for the Ministry of Supply. There is accommodation for an engine and gearbox and an ingenious feature is that of twin tachometers, one driven from the engine and the other from the brake, so that clutch slip under full power cannot go unobserved. East will retain this test bed after the war, when he hopes the Winterbourne Garage will be able to offer special service to the enthusiast, accurately recording engine performance and doing any kind of job, especially that of making "one-off" parts for special cars. Even now, one of his clients is putting a Ford V8 engine into a Triumph Ten.

* * *

Various attempts have been made in the past to offer models of racing cars to the public; but mostly these were mere toys, if we except the Alfa-Romeos and Bugattis made by **Masterful Models** March Models, Ltd., and fitted with fairly reasonable wire wheels. Now another concern has pronounced itself able to undertake the construction of accurate car models to special order. This concern, the Dagra Engineering Co., Ltd., of 31, King's Road, London, S.W.3, has already done some excellent aircraft models, notably for the Westland Aeroplane Company, and those racing drivers who feel they would like to own accurate reproductions of their cars, perhaps installed in their tender-lorries, should be able to obtain what they require from this concern. We have no idea how much such models would cost, or how long they would take to build—presumably from photographs and/or examination of the real car—but we understand that some very elaborate and detailed aircraft models have been made for around £20 each. Of course, size and elaboration would have a close bearing on the cost. Apart from non-working scale models, Dagra can build petrol-driven models or make up component parts for them, such as final drives, centrifugal clutches, very excellent wire wheels, etc. In passing, an excellent subject for a Class 3 petrol-driven model would seem to be the Leyland-Thomas, for it obviates difficult-to-form dumb-irons, had disc wheels, and offers plenty of under-bonnet space for the tiny engine, coil, condenser, accumulator and carburetter.

CONTINENTAL CARS

Now carry a stock of good quality sporting cars which from week to week covers almost all tastes. A selection of these appears below. Overhauls can be carried out by appointment only at present.

Tel.: Chobham 31

**RODNEY CLARKE
LEONARD POTTER**

2.3 Supercharged Alfa Romeo Zagato	Type 39 Bugatti G.P.
Supercharged Fiat 500 convertible	Type 35 Bugatti G.P.
1937 Riley Sprite 2-seater	Type 55 Bugatti Coupé
16-cylinder Cadillac Coupé	Type 55 Bugatti Roadster
Morgan 4/4 2-seater	Type 57 Bugatti Drophead Coupé
Supercharged Fiat Balilla 2-seater	Type 57 Bugatti Saloon
1938 M.G. T Type	

**CENTRAL GARAGE,
CHOBHAM
nr. WOKING**

Club News

WE HEAR

Ronny Burnett has had the good fortune to acquire one of the last 1½-litre sport Altas to be produced, a 1940 unblown car. What is more, he has also had the luck to get Geoffrey Taylor to service it, and it is now at Tolworth for overhaul; this is *not* to suggest that this busy little factory can do such work for everyone. E. V. Busk, who competed with some success in Vintage S.C.C. events with a "12/50" Alvis, has bought a straight-eight G.P. Bugatti with aluminium wheels, which appears to be a Type 35. Ken Wharton recently addressed the Smethwick Rotary Club on motoring developments since the very early days and found his audience very attentive and impressed by the speed attained by cars like Gabriel's Mors fully 21 years ago. He is especially anxious to obtain photographs of his "Ulster" Austin in action at Donington, Madresfield and Brooklands during 1935-38, if anyone can help, and also to trace the car—GJ4879.

John Cooper has disposed of his Fiat 500 and Talbot 105, and has acquired a "Hyper" Lea-Francis 4-seater, which has two S.U. carburetters, but for which the blower is available. W/O. D. H. Mater, R.A.F., writes to say the Bugatti he bought some time ago turns out to be a Type 22, and he hopes to obtain a "Full Brescia" as a stable companion for it. Lt. Philip Shenton has taken over the Meadows Frazer-Nash which was last owned by poor Scafe. K. Hutchison looks forward to an early resumption of trials and, meanwhile, has amassed two Ford V8s, his Allard and Kitty Hutchison's Fiat 500. Jenkinson now has the ex-Julian Fall Type 22 Bugatti, and Fall has given him a 1928 *Autocar* to go in the door pocket. Lacy would sell his very well-preserved 3-litre "Red Label" Bentley for £100. A Guildford doctor has bought the ex-Alan Marshall "T.T. Replica" Frazer-Nash. Continental Cars Ltd. have agreed to assist in the filming of "Rake's Progress," by supplying three or four Bugattis, while Peter Monkhouse will also lend a hand, with his Type 51 Bugatti. Charles Brackenbury has the Le Mans V12 Lagonda which survived the flying bomb episode, for his official journeys, lucky man! V. L. Parry, invalided out of the R.A.F., runs an S.S. "100" on official journeys and craves an Allard for after the war. Adlards recently converted the ex-Zwick Allard to the low-radiator type with V-grilled radiator for a Mr. Appleton; Warburton is selling his Allard, the original Bugatti-tailed car. Macdermid has been home again and has been seen whistling about in a Humber Super Snipe with 9.00-in. by 13-in. boots. Leslie Bachelier is concerned with war production these days and gets around and about in an "1,100" Fiat, after using three "500" Fiats and

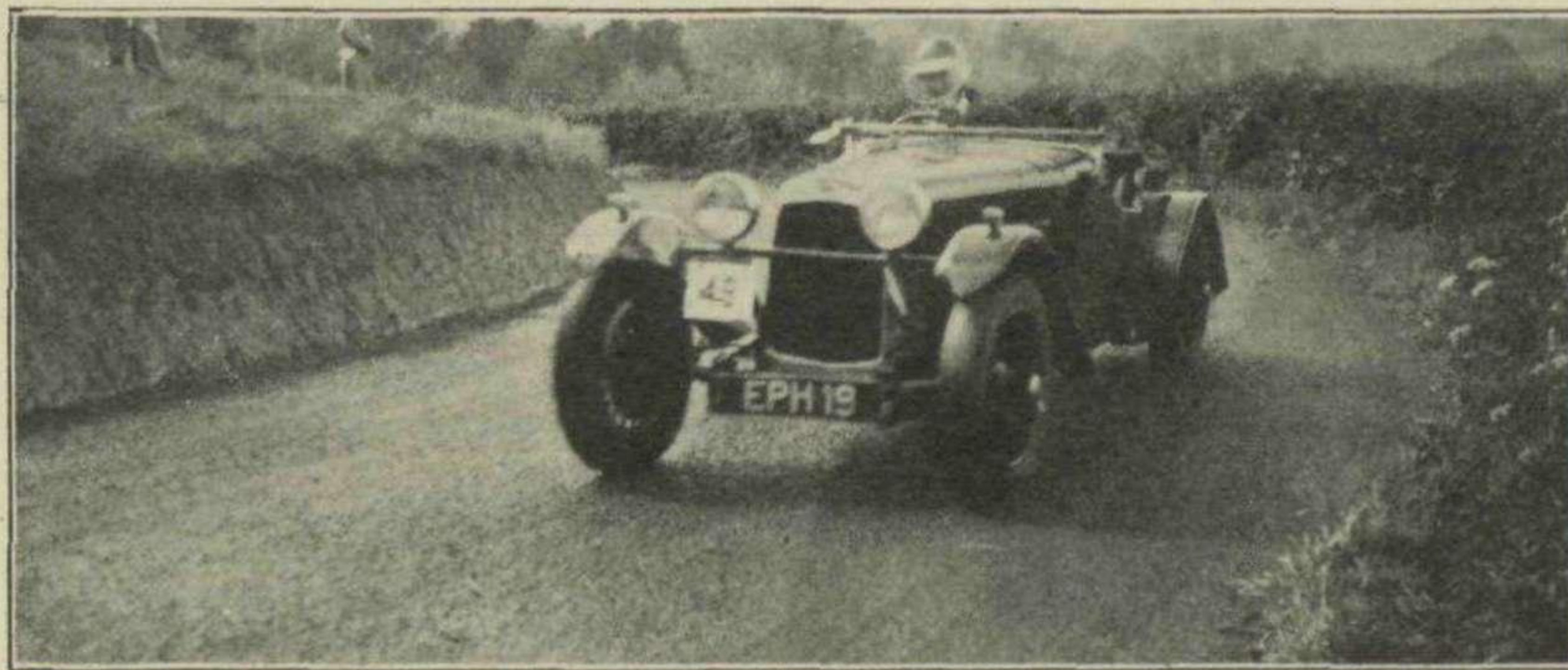
a "1,500" of the same make. He has, or had, an O.E. "30/98" Vauxhall chassis for disposal. Maclachlan is in a Worthing nursing home with stomach trouble, but it's an ill wind, because, while there, he hopes to write for us the story of his famous single-seater sprint Austin Seven. H. F. Hart has met F/O. Tony Morgan through *MOTOR SPORT*, and they have been out in Hart's Le Mans Singer and in Morgan's "International" Aston-Martin, and they have met Capt. A. G. Miller and Goodhew, the last-named having recently bought a Le Mans Lagonda from Brian Finglass. Hart is ridding himself of the Singer, because he has had the good fortune to acquire a 4½-litre Bentley and an G.E. "30/98" Vauxhall for £20 the two, which cars he and Lillywhite intend to thoroughly recondition.

Up North Routledge has made an excellent job of a "Speed Twenty" Alvis coupé, with "Firefly" engine installed, fitting it with many extras, including a very neat central control for the self-change gearbox. This car is used daily in connection with aircraft servicing, and Routledge also has a very ambitious A.C. Six-engined Alvis "Special" on the stocks; he is also interested in a Riley Nine and is assisting an A.T.A. pilot to convert a Girling-braked Riley Nine single-seater, in which someone put a Triumph engine, back into a 2-seater. G. G. Carmen recently came back from a German prisoner-of-war camp and addressed the Oldbury Rotary Club on the subject. He used to race an Austin Seven at Donington. Coil Nicholson is now a R.A.F. Flt./Lt. at a Middle East M.U., and very staunch to 3- or 4½-litre Bentleys; he says he'd rather a bike than an Austin Seven! A 1914 Daimler has come to light in Shropshire and there is a brass-radiator Model-T Ford with good tyres for sale for £20 in N. Ireland.

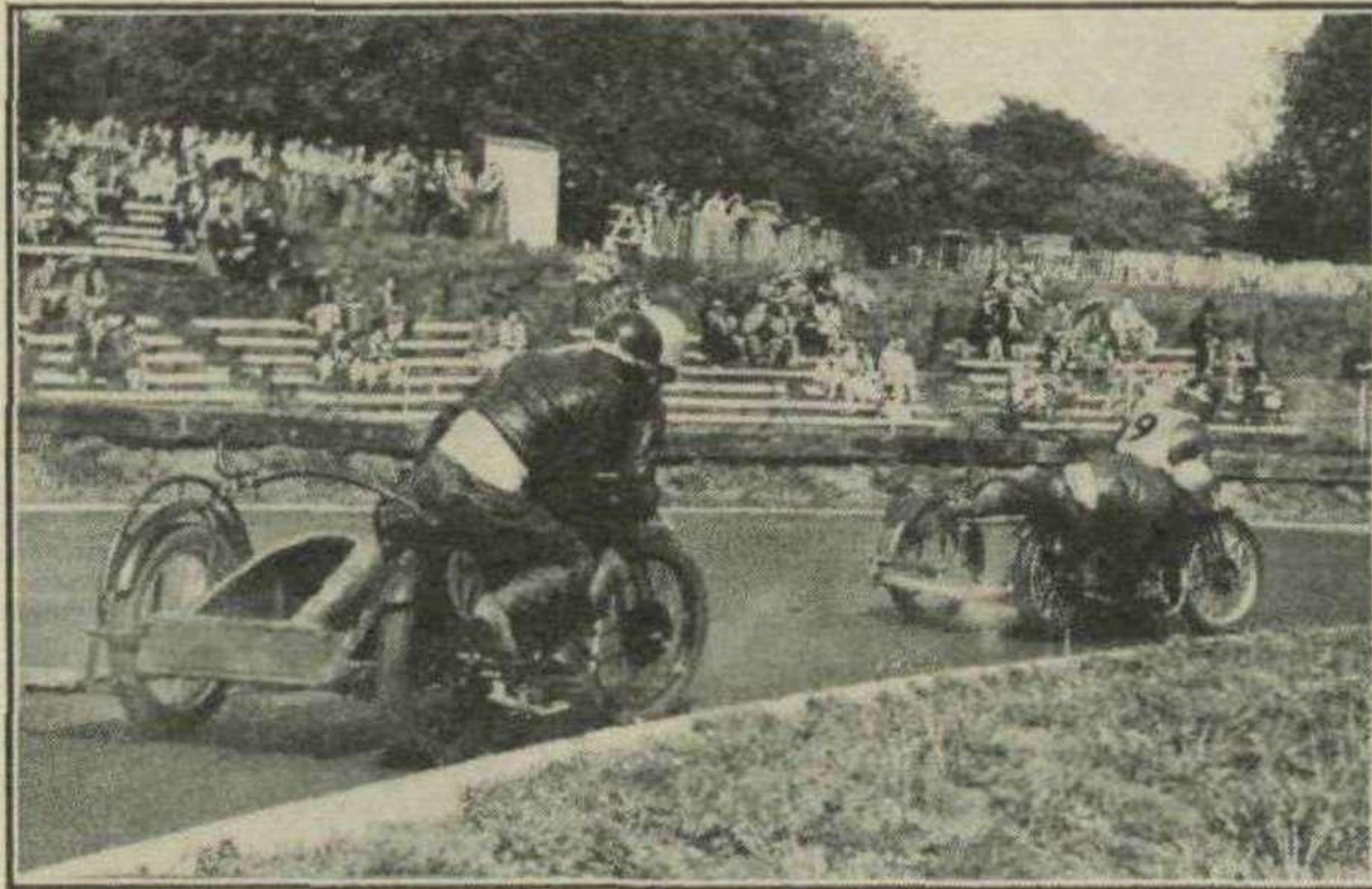
F/Lt. Shepherd, R.A.F., recently diced round Monthlery in a Jeep and reports

both track and road course in good condition, and the lock-ups beneath the steep banking intact, although the grandstand and pits have disappeared. Delahaye, Champion and similar posters are still plastered about liberally. In France, Shepherd has so far failed to encounter a Bugatti, but has seen a very fine short-chassis Delahaye d.h. coupé and a modern Hotchkiss-Amilcar d.h. coupé. Shepherd's own car is the ex-works, ex-Peter Eve H.R.G. (EPH19), which he bought from Derrington. This car ran fourth in the 12-Hour Sports Car Race at Donington and was driven at Prescott, etc., by Curtis; on a long, fast run it still gives 32 m.p.g. It was overhauled in 1940 and now stands beside Shepherd's 2-litre "Speed Model" Aston-Martin fully-streamlined 2-seater. Shepherd's father has a 3½-litre Alvis saloon, his sister an Austin Seven "Ruby" saloon, and the family hack is an 11-h.p. Lanchester, so he has lots of motoring interest to look forward to when basic comes back. Shepherd's past cars have included a Rapier, a Rapier de Clifford Special, a 3-litre Bentley, an Arnott blown A.C. "Ace," and, since the war, two Austin Tens, two Morris Eights, an M.G. Magnette and an Austin Seven. The A.C. is now owned by a keen "Wren," and the special Rapier is in the Midlands. Can anyone loan this enthusiast an H.R.G. handbook, please?

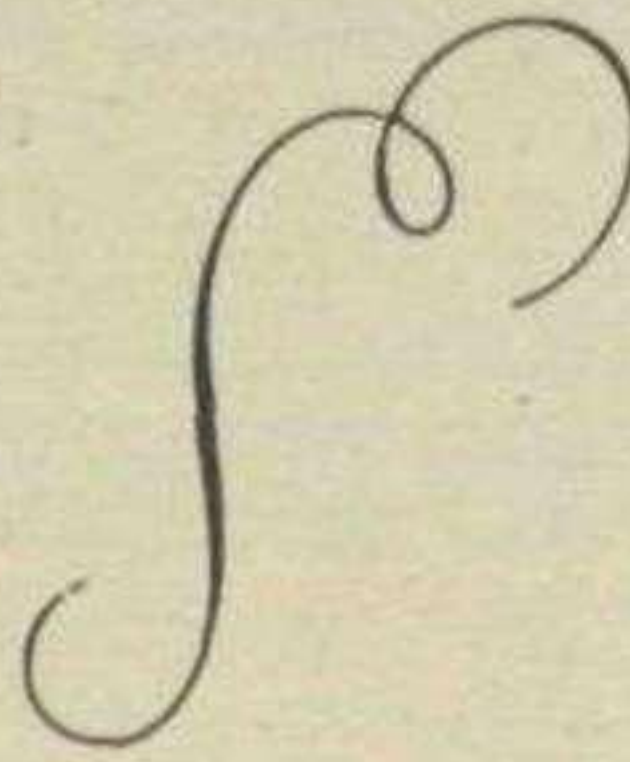
Cyril Peacock is gradually assembling his "12/50" Alvis tourer, to which he hopes to fit a "Silver Eagle" gearbox and Hardy-Spicer propeller shaft. He has also had the extreme good fortune to find a beautifully-preserved 1927 27-h.p. Hispano-Suiza 2-seater, which has been laid up since 1938 and was apparently used only three months a year, the total mileage being only 43,000. Some 6.50-in. by 20-in. tyres are wanted for it, if anyone can help. Anthony Phelps, test pilot to the Lockheed Corporation, has been in Canada, but is now back in this coun-



The Meadows H.R.G. now owned by F/Lt. Shepherd being driven at Prescott by Curtis when it was the "works" car



"Musical Chairs"



try. His Opel "Cadet" has now done 56,000 miles, and when taken down did not even need oversize rings. It has been recellulosed Bugatti blue. Phelps was able to run his s.v. Aston recently, and he is hot on the scent of a 2-litre Lagonda fabric saloon. A friend of his recently added a blower to a Triumph "Dolomite." John Cobb still ferries for A.T.A., having been seen in a "Hellcat" recently, and Billy Arnold, of Indianapolis fame, is now in this country. In Birmingham a very sound semi-sports 1928 "12/50" Alvis was recently for sale for £40, with lots of spares, but its owner has decided to keep it, while a touring "12/50" of about the same date was offered in Hull for £30, and a 1931 TJ touring "12/50" with three nearly new tyres, was available for the same sum in the North. Douglas Tubbs has temporarily laid up his D.K.W., and motors in a Fiat 500, while Gordon Wilkins is fully recovered and very busy down in the West Country.



SCOTTISH SPORTING C.C.

We understand that a plot is afoot to recommence activities at the earliest suitable moment and that stock is being taken of how many cars exist suitable for post-war competition. T. Leslie McDonald has recently had his special 1½-litre 4-cylinder Singer on the road after three years' inactivity.



DECEMBER "REMBRANDT"

The next "Rembrandt" enthusiasts' gathering is scheduled for December 3rd, and places thereat should be booked now. Full details are not yet available, but the arrangements will include lunch and, afterwards, a talk and discussion led by Capt. G. E. T. Eyston. Tickets cost 15s. each for lunch and 3s. each for the discussion only. The sum of £30 12s. 7d. has been handed to the R.A.F. Benevolent Fund as a result of the September meeting, and in future such takings will be used to send motoring magazines to Forces overseas and to Prisoner-of-War camps. Rivers-Fletcher has decided to carry future organisation on his own shoulders and not to form a new organisation—which Laurence Pomeroy suggested could be called the Automobile Racing Association—at all events yet awhile.

YORKSHIRE S.C.C.

The Yorkshire Sports Car Club held another of its regular dinners recently in Leeds, at which W. Boddy, the Editor of MOTOR SPORT, was the guest of honour. It was learned with regret that the Wetherby speed trial course is unlikely to be available again after the war.



B.O.C.

The Bugatti Owners' Club A.G.M. and film show had quite a good attendance. A. C. Whincop suggested that certain activities, such as the publication of "Bugantics," etc., might now be revived, but he was pointedly opposed by J. Lemon Burton, and the latter won the day.



COVER PICTURE

This month's cover picture reminds us that, but for Hitler, trials would now be in full swing. The car depicted is a rather unusual one—Hayward's famous Bayliss-Thomas. This was one of the larger-engined of these cars, made by the Excelsior Motor Cycle Co., and was successful in a number of trials. The picture actually brings the mind to all manner of good things to come—trials to watch and compete in, unusual cars to unearth and restore, perhaps a "defunct makes" rally one summer's day; and even post-war new models, for it is rumoured that the Bayliss-Thomas may be revived after the war as an economy post-war job.



THE "ROBIN" SPORTING M.C.

A new club, aiming to hold all manner of competitive events for both car and motor-cycle folk, the Robin Sporting Motor Club held a social evening at the "Hand and Spear," Weybridge, on September 30th. The annual subscription has been fixed at 10s. 6d. Hon. secretary, Mrs. Minnie Grenfell, "Chestnuts," Brooklands Road, Weybridge, Surrey. (Weybridge 4047.)



J.C.C.

The Junior Car Club continues its monthly council lunches at the Connaught Rooms. At a recent gathering prominent guests were Mr. Carlton Dyer, Director-General of Communications Equipment for M.A.P.; Col. D. C. McLagen, secretary of the S.M.M.T.; Wing.-Cdr. T. H.

Wisdom; Capt. A. W. Phillips; A. K. Stevenson, secretary of the R.S.A.C.; and Ronald Newnham. Wisdom suggested that post-war races should be named to commemorate those racing drivers who have lost their lives in the war.



SPORTS CAR CLUB OF AMERICA

The first meeting of this recently-formed club took place on July 12th, and was attended by Everett Dickinson, Jack Duby, Arnold Engborg, Charlie Fisher, Ted Robertson, Chaplin Wallour, and many wives and guests. The cars comprised a Duesenberg, which was mistaken for a P.40 from a close-at-hand airfield at one stage of the proceedings, an S.S. "Jaguar," a Mercer, a "Phantom I" Rolls-Royce, and two Lancia "Lambdas." Eight new members were elected in July, one owning six Packards of 1915-1929 vintages, a 1924 Stanley, and a 1911 Mercer, and the others weighing in with 1930 du Pont Le Mans model G speedster, 1913 Mercer Raceabout, 1924 Mercedes phaeton, 1926 Cunningham V7 tourer, and 1921 Mercer Raceabout, 1920 Mercer Raceabout, 1926 Stutz 2-seater and 1926 Packard phaeton, Mercedes 1923 3-seater and a 1912 Mercer Raceabout. The July issue of the *Sportswagen* contains a nice tribute to MOTOR SPORT, and a reprint of our road test report on the "33/180" Mercedes-Benz, published originally in August, 1927. Secretary, Everett M. Dickinson, 142, Chestnut Street, Boston 8, Mass., U.S.A.

RACING AT WEALDSTONE

—continued from page 228

only lap at 28 m.p.h., but on its third run it again clocked over 50. "No. 2A" then came out, and while it had not the stability of the M.G., it lapped at 57 m.p.h.—fastest time of the day, in spite of losing the off-side front tyre. The S.S. failed to run properly and the Auto-Union, on which work had proceeded all night, failed to start at all—it should be a most impressive model when the teething troubles are overcome. Mr. Russell closed the meeting with a vote of thanks to Kodak, Ltd., for loaning the hall, and explained some of the technical difficulties which had prevented a number of models from taking part. He promised even more thrilling performances in the near future, and reminded us that a Model Car Racing Club has been formed to control the pastime and hold further meetings. For our part we are very glad that model-car racing has at last commenced in this country. We hope it will develop healthily and that the models will remain realistic in appearance (which involves proper proportioning) and will become still faster and more reliable. We hope soon to see banked tracks and duration record runs. There is a big gulf between those who build and run the real thing and those who derive enjoyment from building and operating in miniature. But at all events some car enthusiasts should derive great enjoyment from building models while, especially in the winter off-season, racing folk should certainly not be beneath running model cars at these fascinating meetings, or intelligently spectating.

LETTERS *from* READERS

Sir,

The following is an account of the overhaul of a 1923 3-litre Bentley short-chassis model, known as the "T.T." type.

The writer has long desired to own a short-chassis vintage car of this make, and having been lately released from service with the Army after four years in various parts of the world, he decided that now was the time to buy the car and carry out a fairly comprehensive overhaul of it.

The writer is an amateur, in that he is not connected in any way with the motor trade, but he claims a fairly wide experience of the older type of vintage sports car, having owned and overhauled two "12/50" Alvis cars and a Sports Riley Nine, amongst dealings with 2-litre and 1½-litre Bugattis.

The equipment available was a good quality 9-in. swing lathe, a small bench drilling machine, and a bench grinder, with the usual complement of hand tools and unlimited ingenuity.

The car was purchased in February of this year, and delivery by rail was surprisingly quickly effected. Some little excitement was experienced in removing the car from the railway goods station to the writer's home, a distance of about a mile and a half. The engine would not start (it had been standing for nearly the whole of the war period) in spite of liberal (perhaps because of) priming of the cylinders through the cocks provided for the purpose. We managed at length to prevail upon the good offices of a gentleman with a Buick who, with a short steel rope and some very willing horses under its bonnet, not to mention a slipping clutch, gave us the necessary assistance to a point about 400 yards from our destination at the foot of a fairly steep but short hill. Here the Buick's clutch protested more than ever, and we thanked our benefactor and let him depart. There was then nothing for it but to make the Bentley engine perform. As we were then at the top of another hill much less steep but about 300 yards long, we decided on a do-or-die effort, and put the car into second gear. The clutch was let in after about 100 yards and the magnetos switched on. With much hesitation the engine fired, and with a lot of careful throttle footwork, we managed to coax the car the remainder of the distance. Before beginning the overhaul the engine was run for a while and notes taken for later guidance. The machinery did not sound so good; the big-ends being diagnosed as very slack, while the musical sounds from the pistons suggested either very much worn bores or worn gudgeon pins. The valve gear was very noisy; not that one expects a 3-litre to have Rolls-Royce sound-effects when running.

Eventually the overhaul was started. It was noted with satisfaction that there were no water leaks and that the upper half of the engine at least was externally quite clean. The less said of the lower half the better, as it was obvious that for many miles of travel more oil had been lost by leakage than by being burnt.

One thing which immediately impressed the writer was the ease with which the

bits and pieces were dismantled. The nuts came off their studs and bolts as though they had been fitted and not forced on to their respective threads as would appear to be the case with some of the more modern cars to which the writer has had occasion to minister. Most of the parts were numbered. Acts of contortion were not necessary to get at the important parts, nor did one feel the need for rubber screwdrivers or universally-jointed elbows or five pairs of hands. The layout is so straightforward that there was never any doubt as to the correct sequence for dismantling or for re-assembly.

Surprisingly, the car was in fairly decent condition, with nothing which could not be made as serviceable as it was on the day on which it was turned out by Bentley Motors, Ltd. After 21 years of life this was rather remarkable. The car had been rebored during this period, and the wear since this rebore was at maximum just .010 in. The worst feature of the engine was the wear in the little-end bushes, which were very bad.

The lower half of the engine was in a filthy condition, sludge being present in very large quantities. The main bearings were poorish, as were the big-ends, and it was decided to have all these replaced and the crankshaft ground.

The cylinders were duly cleaned up by removing all the aluminium alloy fittings and steeping the block overnight in a very strong solution of caustic soda. This method produces very clean combustion chambers and ports, and the writer is surprised to hear that more people do not thus avoid the chip and scrape performance. The caustic does not affect the bronze water jacket covers nor the "Hallite" packings, as these were left in position and the block has been pressure tested since and found to be O.K. As the pistons for the rebored cylinders could not be delivered for three months, the remainder of the engine and the rest of the car formed the subject of a leisurely and thorough overhaul. The camshaft and rocker gear was next inspected and was found to be fairly good. A thorough clean-up of the rockers produced very nearly unworn cam follower pads, though the rocker-adjusting screws and the valve stem tips were not so good. These were ground up in the lathe and re-hardened by the "Kasnit" process and the valves, which were in some cases bent, were straightened and the faces ground to the correct angle. The bevels on the upper half of the vertical drive had at some time been badly assembled and were rather worn. It was decided, however, that these were not sufficiently far gone to replace if a little noise could be tolerated and they were eventually reassembled and adjusted as near as was possible to correct mesh. A new thrust washer was fitted beneath the top bevel. The reground crankshaft was then fitted with the new big-ends and mains and a new double-thrust ballrace was fitted to the nose of the crankshaft. New valve guides were made by the writer to an exact copy of those fitted on dismantling, and it was noticeable that the valves required very

little grinding in to ensure a good seal. One point of interest was that when the valves, rockers and camshaft were assembled and the clearances correctly adjusted, the rocker-adjusting screws bore rather on the outside edge of the valve stem. As there was no method of adjusting this it was concluded that it is a feature of the design. One very tedious job was the refitting of the camshaft bronze bearings. There are five of these and they were all slightly worn, and the writer's object was to bed the camshaft in to a better fit than it had been before. In this he succeeded, but a very large amount of labour was expended for what will probably be of doubtful benefit.

It must be borne in mind that the car is very nearly in the state in which it was first listed by Bentley Motors, Ltd. It is one of those 3-litres which (to the writer's way of thinking) over-enthusiastic people have not fitted with cycle-type wings and comic running-boards, and it has been the object to restore the engine and the car generally to its original condition. The remainder of the car has been wonderfully improved (though it could by no stretch of imagination be said to be in bad condition) by the expenditure of time and trouble in finding bits and pieces with which to do up the upholstery and deal with the cracks (only one of any importance) in the aluminium of the bodywork. The one bad break in the body was at the bottom of the right-hand windscreen pillar. This was covered up and strengthened by rivetting in place a piece of heavy gauge aluminium, which forms an arm-rest fitting closely over the cutaway portion of the driver's side of the body. This patch has been carefully shaped and polished, and it now looks as though it was originally intended to be in that position.

Generally speaking, the transmission was in excellent condition. The gearbox was clean and the teeth unmarked. The rear pot-type universal joint required replacements in the shape of a set of blocks and slippers, which were obtained, after much searching, from Central Garage, Bradford. The car is fitted with front-wheel brakes, and when it was bought the writer was informed that the brakes had been attended to recently, and this was found to be true, as the drums and linings were in perfect condition.

An opportunity is now awaited, with growing impatience, to see how the car will perform on the road, but it is feared that this will be difficult of accomplishment until the end of "the trouble."

The writer is anxious that the very willing answers to queries which he has made to Bentley Motors, Ltd., and others whom he has badgered with questions, including Tom Mitchell, of Blackburn, and Mr. Henry, of Grosvenor Garages, Manchester, shall be placed on record. Indeed, he is grateful for the thrill of seeing envelopes in his morning mail with "Rolls-Royce" printed on the war-time economy labels.

I am, Yours, etc.,

J. YATES.

Blackburn.

Sir,

Some time has now elapsed since I wrote to you, and as you were good enough to give me space for two of my letters, I thought you may be interested to know how the Sport is carrying on out here; being a constant reader of all English car magazines, I have a fair idea how things are with you.

Motoring of a fashion still continues for the private owner, who is allowed 1-5 gallons per month depending on the size of car—this gives about 80-100 miles per month.

Motorists are given a priority of 1 to 12, but as only 1 to 6 carry any weight, the private owner with 12 is well left out. No tyres, or tyre repairs, car parts or service can be had without a 1-6 priority, therefore as soon as you run out of tyres, or have a mechanical breakdown, the car has to be laid up.

From what I read of conditions in England, tyres have to be returned when they are ready for retreading, but out here that condition does not exist, and the saying is that "as long as the tyre holds air it is a good one." A 30 m.p.h. limit has been imposed, and in view of some of the tyres, it is just as well. Tyres are worth up to £25 and over, and a car like a 1925 Dodge, worth £15 pre-war, is now bringing £100 with a good set of tyres.

The Sport is still going on in the spirit anyway, and three very unofficial events have been held during the last 12 months, the turn-up being quite up to pre-war standards, even though the events were supposed to be a secret. The last event drew about 400 spectators one hour before it was due to start; this large crowd brought about the undesirable attentions of six police patrol cars. The gentlemen in blue were amazed at so many people looking at the same piece of scenery at the same time, particularly the lad in the leather suit with an old car that had a dirt-track J.A.P. draped over each mudguard and a midget car on a towbar behind.

Things in this direction look bright at the moment, as the Army have decided that, the soldiers stationed locally having lost interest in stage shows and concerts, a few events by bikes and cars around the camp might brighten things up a bit, and by the enthusiastic response of the soldiers in making a track with bulldozers, etc., it looks like a step in the right direction.

I notice that most of the articles at present in MOTOR SPORT are centred round the ideal sports car. The well-known Yank *versus* English car argument has been going on for 12 months at the local club and shows no sign of abating or a decision being reached. To me a car has to be either one thing or the other, and it seems to be useless to try to make a racehorse out of a good carhorse.

In my last letter (August, 1941) I said I was looking for a good Bentley; since then I have acquired the best 3-litre "Blue Label" in Melbourne, it being just as new, even down to the original tyres. In two years' running nothing whatever has been done in repairs, and the car shows no signs of having done any work.

Just to run around the city I bought my wife a Square Rad. Morris in really good order, it not having been used for

years. This is the third Morris I have owned, and as I have never had the head or sump off any of them, I often wonder why they are rarely mentioned in England, while cars like Gwynnes, Humbers, etc., often mentioned, are not in the same street as far as reliability is concerned.

At the other extreme I have the rebuilt 5-litre Ballot. Owing to races out here being run on the handicap system, speed alone does not win the races, a slow, reliable car being a better proposition, as one does not have to trouble about passing. In one race I had to give the limit man 36 min. start in 150 miles. This state of affairs develops "specials" of various sizes, and is the reason for so many American-engined cars with M.G., Bugatti, etc., chassis, but taking it all round most of these cars are fast and very reliable, my own car being a good example. A few figures on what we call a "racing car," but what to you is a sports car, would not be amiss.

In 1933, I completely rebuilt the Ballot and fitted a Ford V8 motor. This seems to horrify some people, but as it was the only motor I could get at the time, I was not in a position to pick and choose.

When first tried out the car did 97 m.p.h., and this was gradually worked up to 114 unblown, which appeared to be the limit. The fastest standing ¼-mile was done in 16.6 sec. (official) and about 15 sec. with blower (unofficial). In four years no replacements whatsoever have been made to the motor and gearbox, except a Scintilla in place of the coil ignition. In fact, the only trouble I have had was with the Ford universal on the tailshaft, which evidently could not cope with the extra horses. The sump has been off once and the heads three times in 15,000 fast miles.

Since 1940 the car has been further lightened and streamlined (weight is 18 cwt. fully loaded), and the original 3 to 1 axle ratio has been retained. With the s.c. the fuel consumption goes up to about 45 m.p.g., and unblown the best I have had is 40 m.p.g. To back up this statement I will add I won the last petrol-consumption trial held here with 36.6 m.p.g., averaging nearly 50 m.p.h., the next competitor doing 24 m.p.g. All cars ran on second-grade petrol and bonnets and tanks were sealed, the distance run was over 190 miles of varying country. The worst I have ever had was 14 m.p.g. in a race where I had to use 2nd gear most of the time.

As far as engine speed goes it does not seem possible to blow the motor up, and although I never take it up over 5,000 r.p.m., I once had it up to 6,000 r.p.m. in second in the excitement of passing a bunch of cars in a race. I nearly passed out when I glanced at the rev.-counter.

As far as handling goes it is as good as, if not better than, anything else I have driven, but seeing it is an ex-G.P. car and cost about £5,000, it should handle well. A lap at Lobethal at an average of 88 m.p.h., and 150 miles in 105 min. through 102 corners and bends will testify to its steering and brakes. Trips of 500 miles in a day have been taken without any trouble; 23 miles in 16 min. was done on the way home from Adelaide.

When official racing ceased I looked for still more horses, and decided a blower

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Cooke, 146, Adelaide Road, N.W.3.

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4.00 x 19 "Comp" Dunlop for sale, good condition, 35s. Sheppard, East Green Drive, Stratford-on-Avon.

FOR Sale. Hillman Aero Minx. Mechanically perfect, 2-4 seater. First £15 gets. Paul, White Hart Cottage, Bovington, Hemel Hempstead, Herts.

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WANTED

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UNIVERSAL (gearbox end) to suit 1926/7 2-litre Lagonda. Whiteley, 674, Great West Road, Osterley, Isleworth, Middx.

SPRING steering wheel for Austin Seven. Nippy type would suit. E. Rumfitt, 6, Tudor Close, Bromley, Kent.

E.N.V. crash gearbox for 1½-litre Invicta, also engine for spares. Leadley, Sunholme, Moira Road, Ashby-de-la-Zouch, Leics.

OLD racing or sports car under 16 h.p., or chassis only. S. Johnson, 35, Milner Place, High Street, Carshalton, Surrey.

WANTED promptly, Eighth Series Lancia "Lambda" saloon, bodywork must be good, chassis reasonable. Bacon, London Fruit Exchange, Spitalfields, E.1. Phone, business hours, Bishopsgate 8133.

WANTED, pre-war instruction book for 1938 Fiat "500." Eames, "Cloverly," 120, Borrass Road, Wrexham.

WANTED, Austin "Nippy" or "Ulster," any condition. Alldred, 4, Bannerdale Road, Sheffield, Yorkshire.

WANTED, Austin "Ulster" front axle and flattened spring. Alldred, 4, Bannerdale Road, Sheffield, Yorkshire.

Spares Section, MOTOR SPORT,
21, City Road, London, E.C.1

was the only thing left; on looking at a McCullough I was not very struck with the design, and decided to build my own as, after all, it looked only a fan in a case. Having access to the library of an aircraft company I was able to gain some information on centrifugal blowers, and after 12 months' hard work I had a blower that frightened everyone that looked under the bonnet. I spent many hours before I got the two Ford dual carburettors on their manifold to sit under the bonnet, but this was eventually achieved. The fan was mounted vertically across the motor with the 11-in. casing and carburettors facing towards the rear of the engine and the gearbox was fitted on the other side of the fan and was driven by V belts from the crankshaft. The b.h.p. has gone up to 148 and the blower turns over at 6.3 times engine speed. Although the blower has been up to the 30,000 r.p.m. mark, it shows no sign of wear in 50 hours' running. As it gives almost double the boost the McCullough gives at the same speed it seems to be doing a good job. Top speed should now be about 125 m.p.h., but up to date have not had a chance to get it over about 115 on the rev.-counter.

Well, I suppose someone will now tell me that the 750-c.c. blown whatsit will do all my car will, but I still remember the late Colin Dunne paying £80 for a fuel bill for his ex-"Bira" K3 M.G., while mine for the same time was 80s., apart from any other expense.

Just to cheer you up the registration for 12 months on the Ballot is £5 10s.

I am, Yours, etc.,

JAMES GULLAN.

St. Kilda,

Melbourne, Australia.

[American m.p.h. and m.p.g. figures fill us with envy—and wonder!—Ed.]

" " "

Sir,

In your November, 1943, issue it was remarked that "a lady M.T. driver at a northern airfield arrives daily in a late-model 'Red Label' Bentley, and at the same place Rivers Oldmeadow is C.G.I." These facts are true to-day, but at the time your November issue was published circumstances had rendered them invalid, as the Bentley had become non-operational. Joan (the owner) had been unable entirely to avoid the stern of an unilluminated lorry parked by night on a main road, with results that completely changed the design of the Bentley chassis as approved by W. O.

Fortunately for the despondent owner, Sam (genus Clutton) happened to be attached to the same northern airfield at that time, and was quick to organise a means by which the line and form of the "Red Label" was restored to a true likeness to drawing requirements. Since the completion of repairs the car has performed consistently, albeit the owner is convinced that it has a quite different "feel." I wonder if that opinion is purely psychological? To the owner who has crashed either a motor-cycle or a car never feel the same after rebuilding, even though they may be exceptionally good examples of their breed.

At another northern airfield which I have occasionally to visit, one, Davidge-Pitts, is coping with this and that. When last seen, he remarked to me that he was

desirous of obtaining a Riley Nine Special Series crankcase bottom-half, and enquiry on his behalf in the Wolverhampton locality led to an interesting revelation. Quite unexpectedly, I found the potent ex-Maclure i.f.s. supercharged Riley chassis standing on four well-shod wheels and in immaculate condition. W. F. Jakeman has designed, and is building, a racing body to accommodate the new owner, who intends having this satisfying vehicle quite ready for events *apres la guerre*.

Within a short distance of this discovery I found the ex-John Player E.R.A. for sale. The price is such that the impecunious are advised to waste no time on enquiry. Furthermore, I am told that the front-end suspension fitted on this particular car is apt to cause the driver to be taken for a ride. If that is true, more expense is implied. The purpose which led to these and other disclosures was not forgotten, and a special series bottom-half was found available, to say nothing of two complete Dixon-Riley engines.

In the locality from which these notes are forwarded there are in regular use a 1939 Aston-Martin, a 4½-litre low-chassis Invicta, and an "18/80" M.G. (in poor condition), and a covey of small fry from Morris Garages. Additionally, two sets of regulation Brooklands "chimneys" are frequently to be seen in rapid transit, attached to a B.M.W. motor-cycle bearing trade plates, and a rider well acquainted with the racing world. And in Shrewsbury there is often to be seen an exceptionally tidy 2-litre Lagonda running crisply and well.

The present tempo of the war suggests that a modicum of basic fuel may well become available in the coming year. On this bright note I will conclude, excepting to remark that if W. Ruck-Keene should read these notes, the writer would be pleased to hear from him. I last saw him in 1939, when together we took a short dice in Peter Whitehead's Alfa-Romeo. Rumour has it that Bill has been broadening his mind with war travel, his itinerary including Finland, Russia, Turkey and, latterly, South Africa. I await confirmation.

I am, Yours, etc.,

F. A. KAPPEY.

Wolverhampton.

* * *

Sir,

Having recently returned to U.K. from active duties overseas, and whilst still recovering from the "shock" of finding myself a humble and much-restricted civilian again, I am deriving considerable enjoyment from perusing quantities of MOTOR SPORTS saved for my ultimate return!

Naturally, having been away since the beginning of 1942 I have a lot of interesting reading to catch up with—and quite a few comments to make!

Regarding a letter from Mr. Gordon Wilkins in the March, 1942, issue. I am most exceedingly sorry Mr. Wilkins did not appear to find any enjoyment in my (to quote) "Trivial Revelations" about the T M.G., published in the October, 1941, issue. But in actual fact the exhaust system of my car was altered with other purpose than to obtain noise. The diameter of the exhaust pipe on the

1939 M.G. T-type is ¾ in., which, in my humble opinion, is too narrow, and the widening of the pipe and sleeving of the silencer actually did give an improvement of some 2-4 m.p.g., with noise, of course, Mr. Wilkins!

Another point which I think also needs clarification is the "blind" I had with P.C. Amedro, of the Derbyshire police patrol. I had spoken to Constable Amedro on several occasions prior to our little "dust up" and he had always insisted he'd like to try one of the police M.G.s out against my own should a suitable opportunity afford itself. Well, the opportunity did afford itself. There was really no intention of provocation, Mr. Wilkins! Apparently my notes were somewhat scrappy and disjointed, actually being written at a somewhat hectic gun-site down in Surrey during early 1941, when the Luftwaffe DID come over regularly!

Somehow there seems to be a considerable dislike to the M.G. amongst a number of your readers, maybe brought about by the claims (very fantastic) some people make, but really, you know, without "plumbing" and badges it's a jolly fine little motor car, and after the war I am quite willing to back my own example, which has now 18,000 hectic miles to its credit, against any Lancia "Aprilia" (MOTOR SPORT arranged and observed) at any place suitable at the time, *i.e.*, Brooklands, Donington, or the Palace.

About these 7,000-8,000 r.p.m. with the Ford V8 engine. Surely, therefore, if this is possible, it's just a waste of time manufacturing 3½-litre engines by other makers? Why not simply fit suitably modified (?) Ford V8's? Somehow, though, I don't think such terrific r.p.m. is possible with the V8.

And the 140-145 m.p.h. from V8-engined "specials"! Such a performance from a 3½-litre side-valve engine makes the 2.9 "monoposto" Alfa of circa 1933-4 seem tame in comparison! What do you think?

I do hope you can make sense of my dreadful scribble, but since I've had a couple of "Spandau" rounds through my right forearm, writing is a considerable effort.

With all best wishes for the future.

I am, Yours, etc.,

Long Eaton,

PAT STILLEY.

Nottingham.

[We don't think; we *know* that the *monoposto* Alfa-Romeo is the faster car.—Ed.]

* * *

Sir,

Further to the letter from Robt. E. Newell in the issue of MOTOR SPORT for October *re* Sqn.-Ldr. J. R. M. Boothby and the various people who make nasty remarks about the Austin Seven, may I suggest that it is only necessary to look around a "Rembrandt" gathering to see how important is the role played by the Seven in the education of the real motorist.


Surely it is obvious that the Austin Seven has provided an introduction to "real" motoring for the aspiring enthusiast for nearly a quarter of a century, and in the shape of such cars as the Gordon Bretell single-seater will continue to do so for many years to come.

I am surprised at the lack of comment

Continued on page 233

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FOR Sale. 1932 3-litre Lagonda Selector Special. Completely overhauled. Maybach pre-selector vacuum gearbox giving four ratios on each, two forward and one reverse speed. Open sports body, partially rebuilt. Maximum over 100 m.p.h. Ideal trials Car. Box 151, MOTOR SPORT, 21, City Road, E.C.1.

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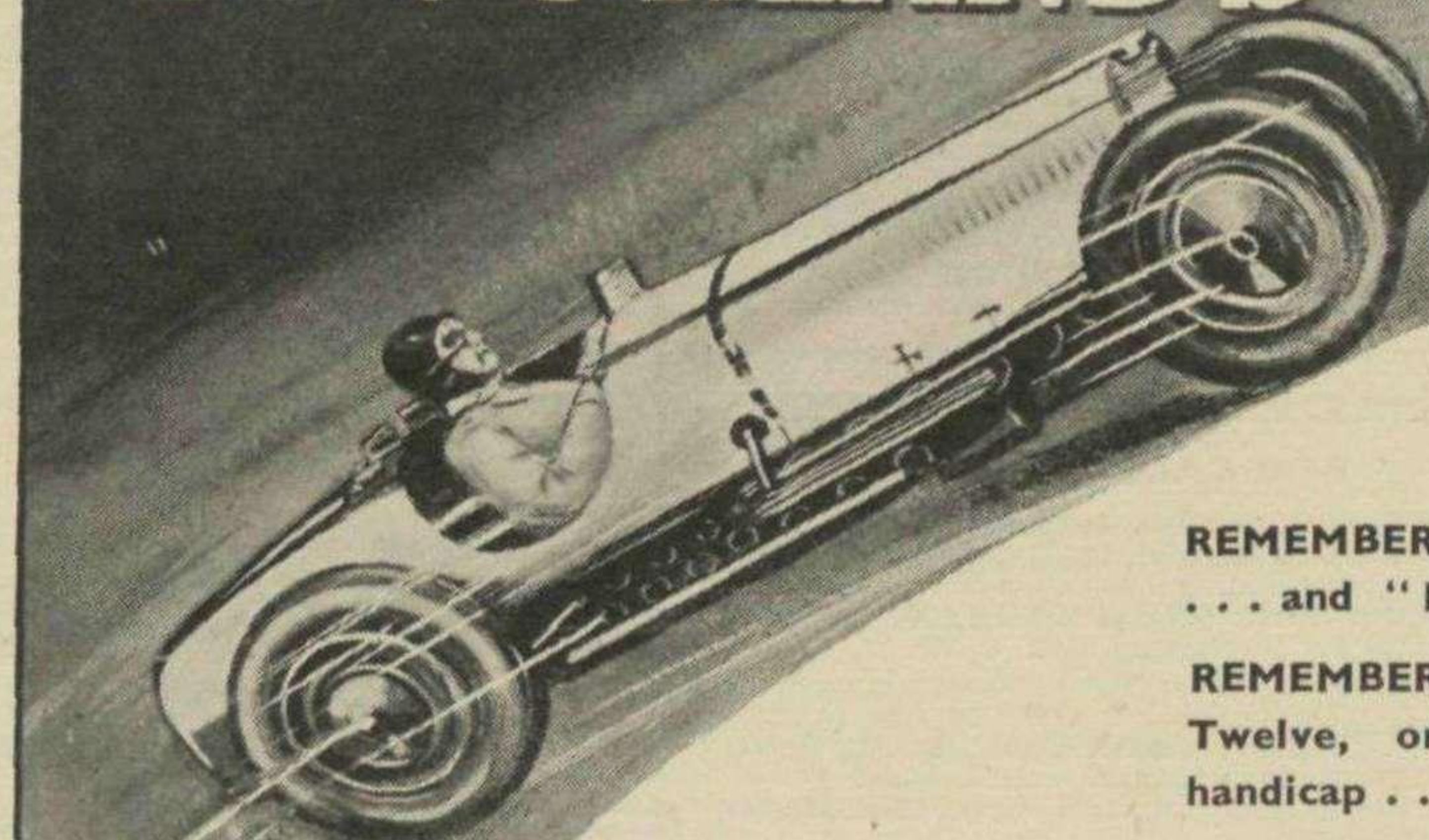
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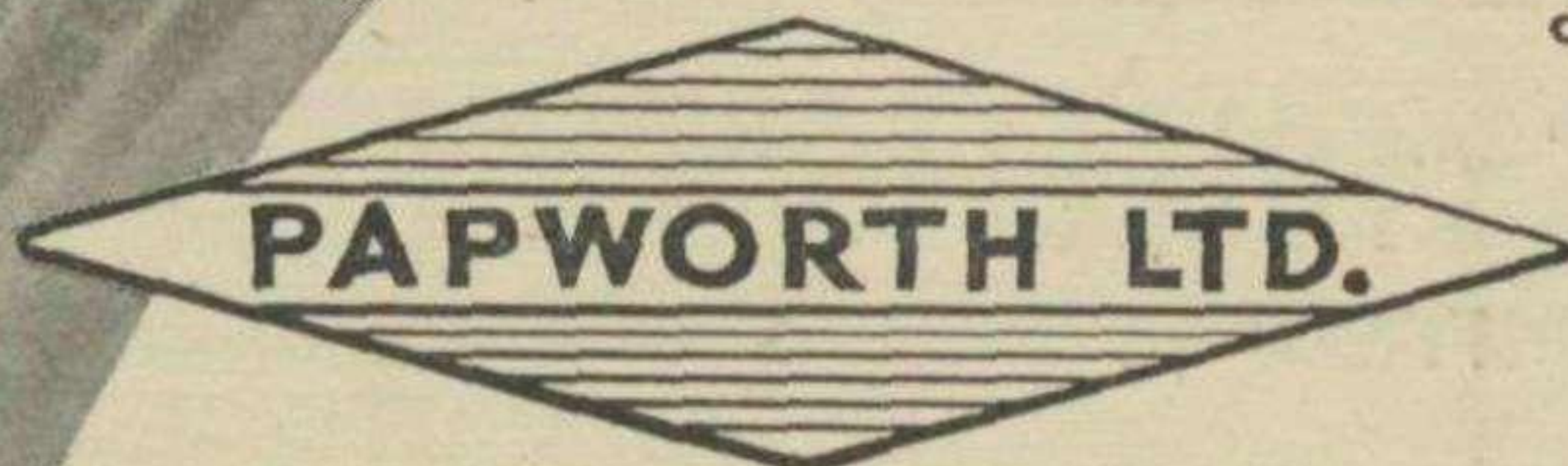


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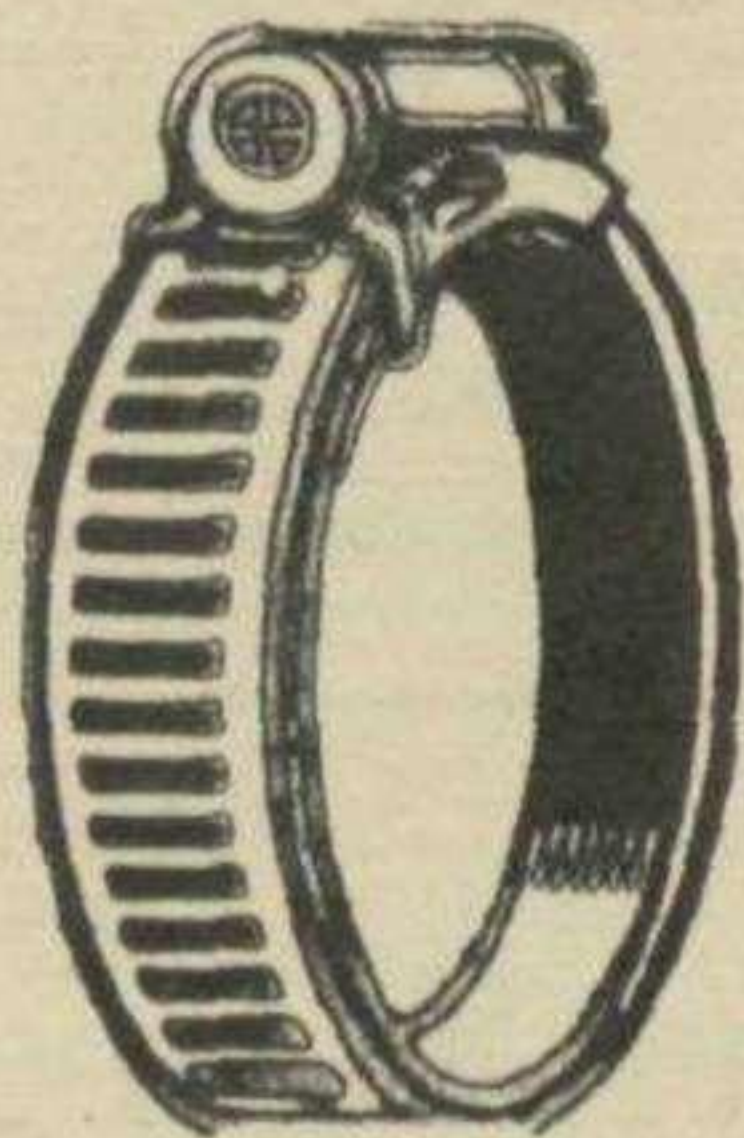
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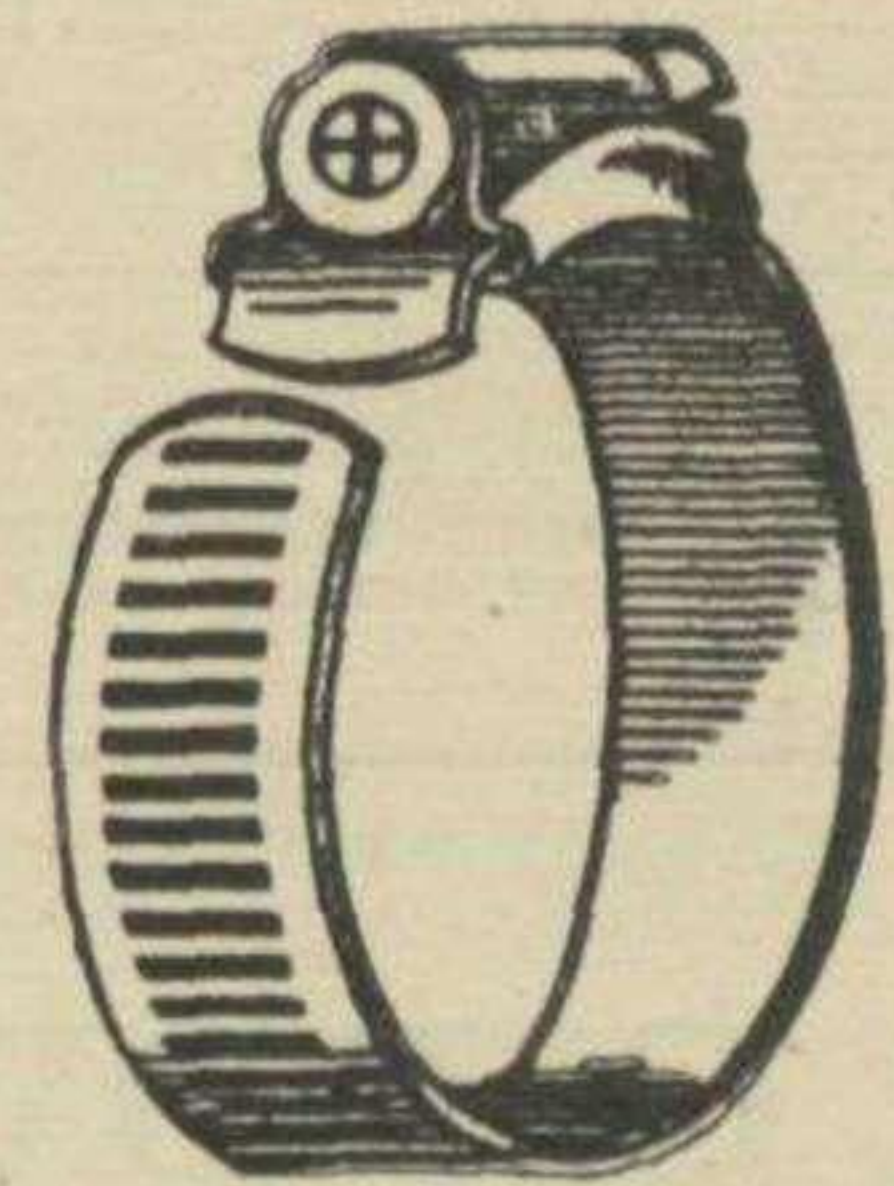
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