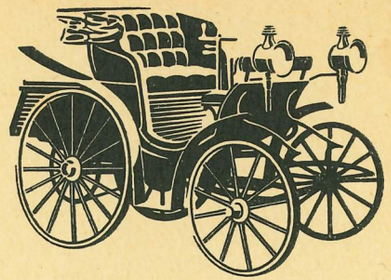
MERCEDES-BENZ

TYPE 130

Some of the earliest cars constructed by Gottlieb Daimler and Carl Benz had their engines placed at the rear.



This constructional tendency is now re-asserting itself in the most modern creation of present day automobile practice.

MERCEDES-BENZ rear engine TYPE „130"

The job of designing the MERCEDES-BENZ Type 130 has undoubtedly been one of the most interesting tasks, which the automobile engineer has ever been called upon to tackle. The object in view has been to produce a car combining the riding qualities of a fair sized vehicle with independently sprung wheels and the spaciousness of a modern medium sized saloon car with the cheap running costs of the baby car. The solution is no less interesting than the problem itself, for the new MERCEDES-BENZ Rear-Engine Car Type 130 has been announced to the public at a moment, when it is of the utmost importance to come to the aid of the motoring community in every manner possible. The Daimler-Benz Company never for one moment entertained the idea of constructing a small car on the same lines as a large vehicle, in accordance with standard contemporary practice, in order to arrive at low running costs in this manner. On the contrary it was found necessary to employ entirely new constructional methods, which alone made it possible to solve this problem.

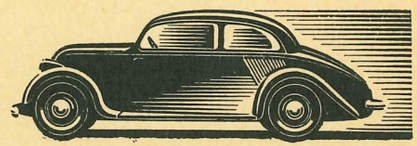
ENGINE AT REAR

INDEPENDENTLY SPRUNG WHEELS

TUBULAR FRAME

HYDRAULIC BRAKES

DIRECT STEERING

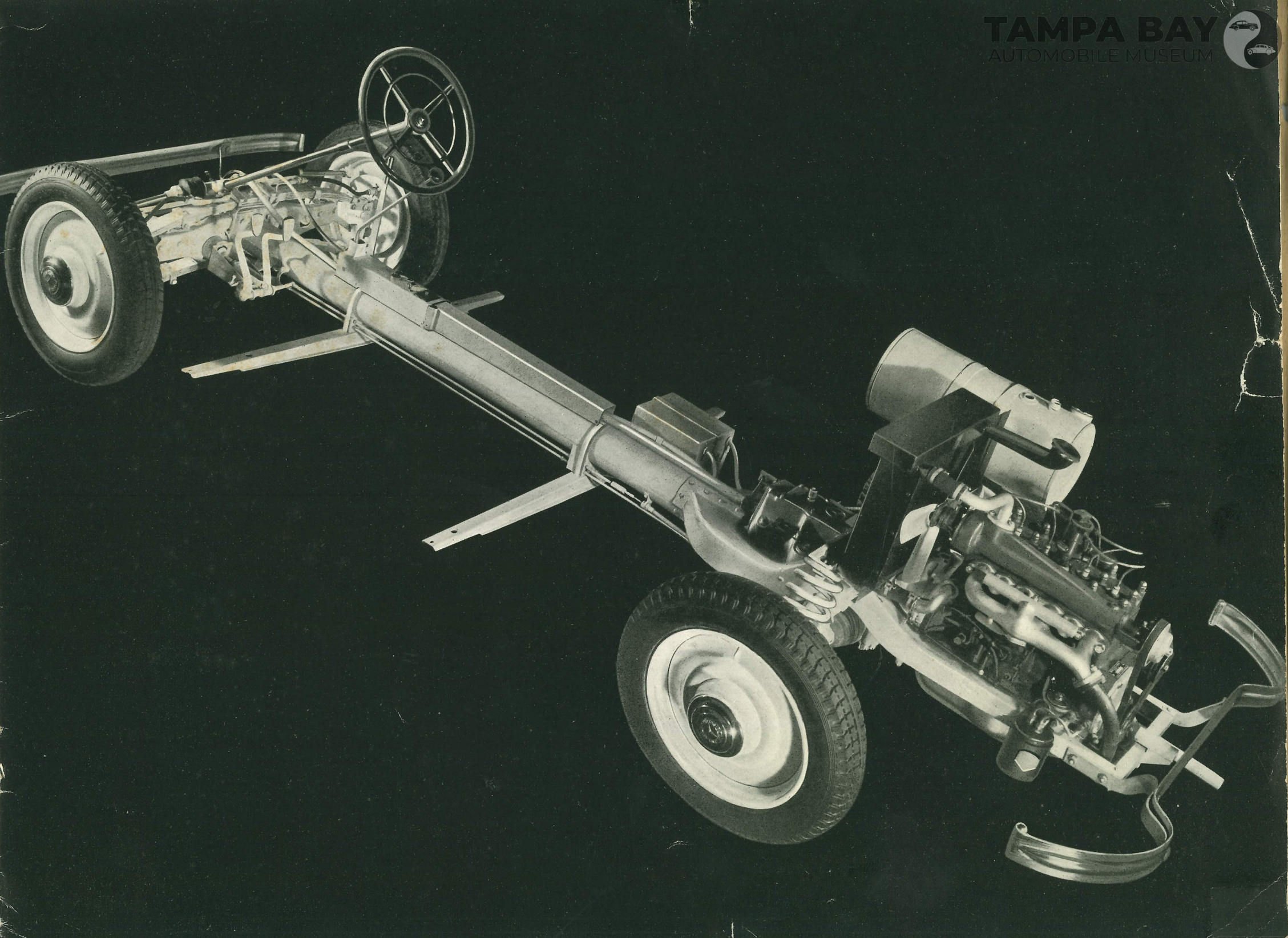


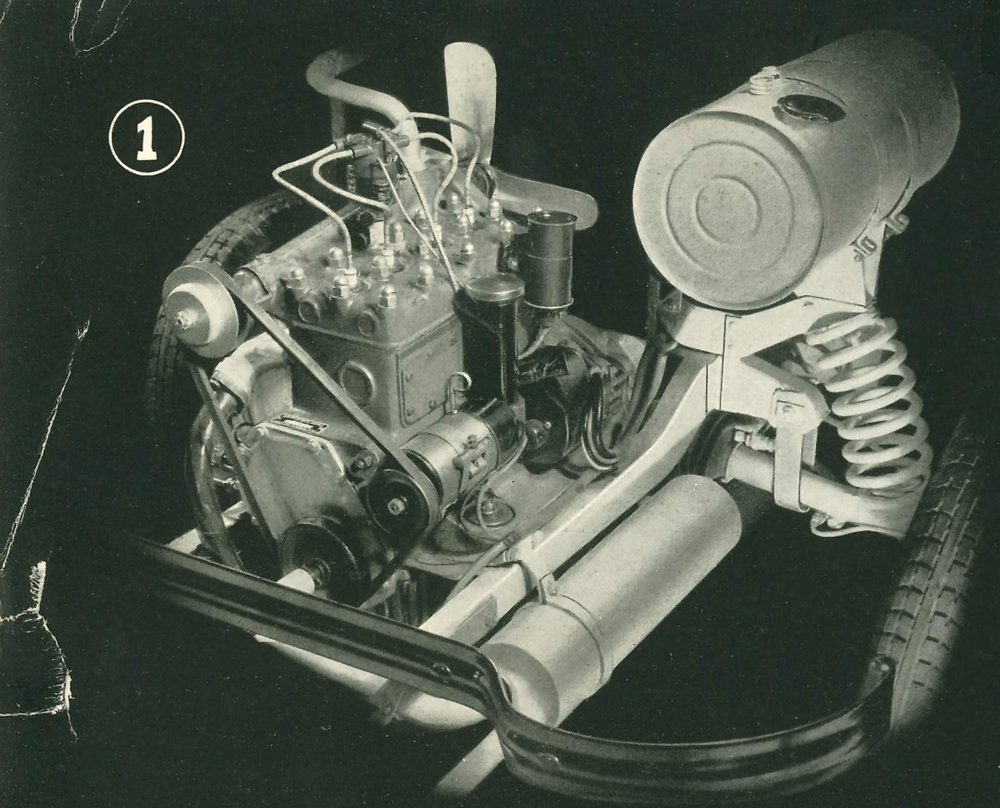
It was thus that the new MERCEDES-BENZ Rear-Engine Type 130 came into being. It is an entirely new type of car but has been developed according to plan during a long period of exacting work connected with the design itself and subsequent testing. This is a car which serves to still further emphasise the MERCEDES-BENZ reputation for quality, a reputation extending back through decades; this is a modern vehicle, which as regards its characteristics on the road, is in no way inferior to the larger MERCEDES-BENZ jobs with independently sprung wheels; furthermore, in spite of its remarkably low running and maintenance costs, it affords all the roominess and comfort, which one usually associates only

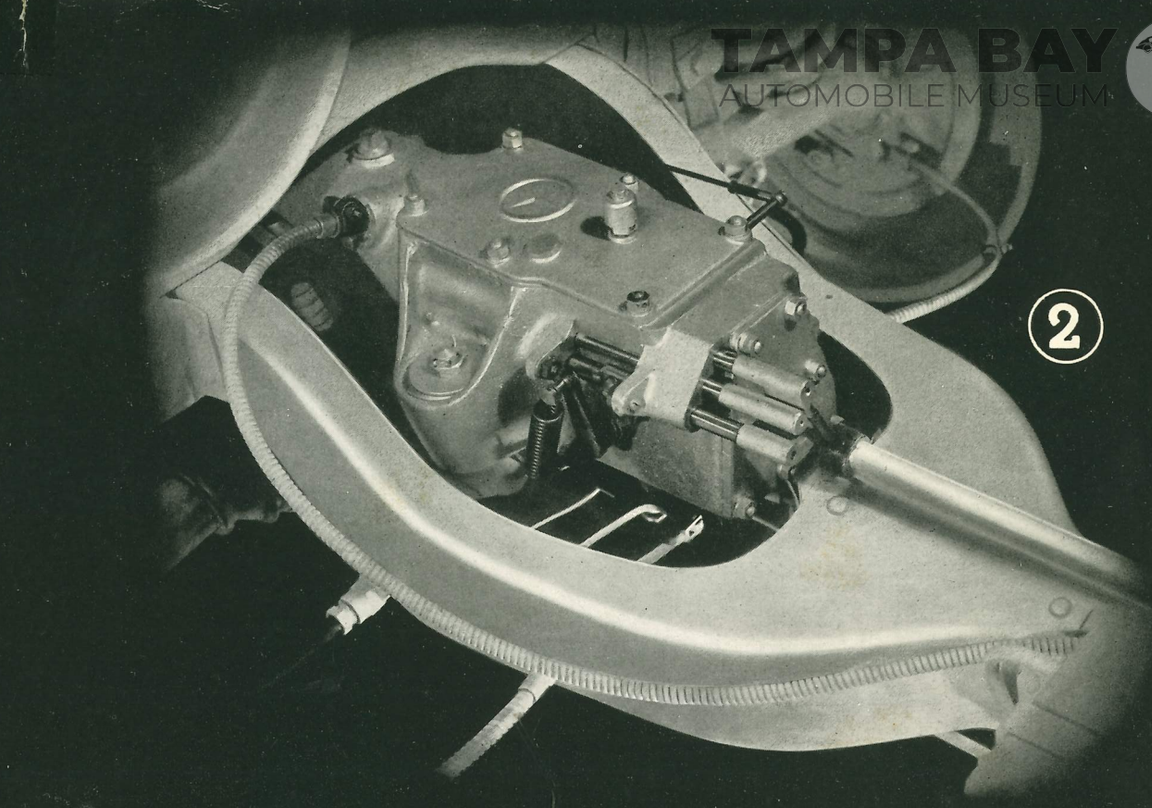
with medium sized cars. With the object of gaining more space, rendering the entire power unit compact and reducing the weight and quantity of chassis components, it was decided to transfer the engine to the rear. This innovation in modern automobile construction ensures the three primary advantages of this car: firstly, the engine, gear-box and differential form one compact, easily accessible unit above the rear axle. Secondly, the location of the engine at the rear of the chassis makes it possible to provide very much more commodious seating space than would otherwise have been possible. Thirdly, it has been possible to seat all four passengers between the axles, which represents a considerable gain in riding comfort. In consequence of the favourable distribution of weight in conjunction with the independently sprung wheels front and rear and the direct steering, the new MERCEDES-BENZ model possesses perfectly astonishing road-holding capabilities at all speeds.

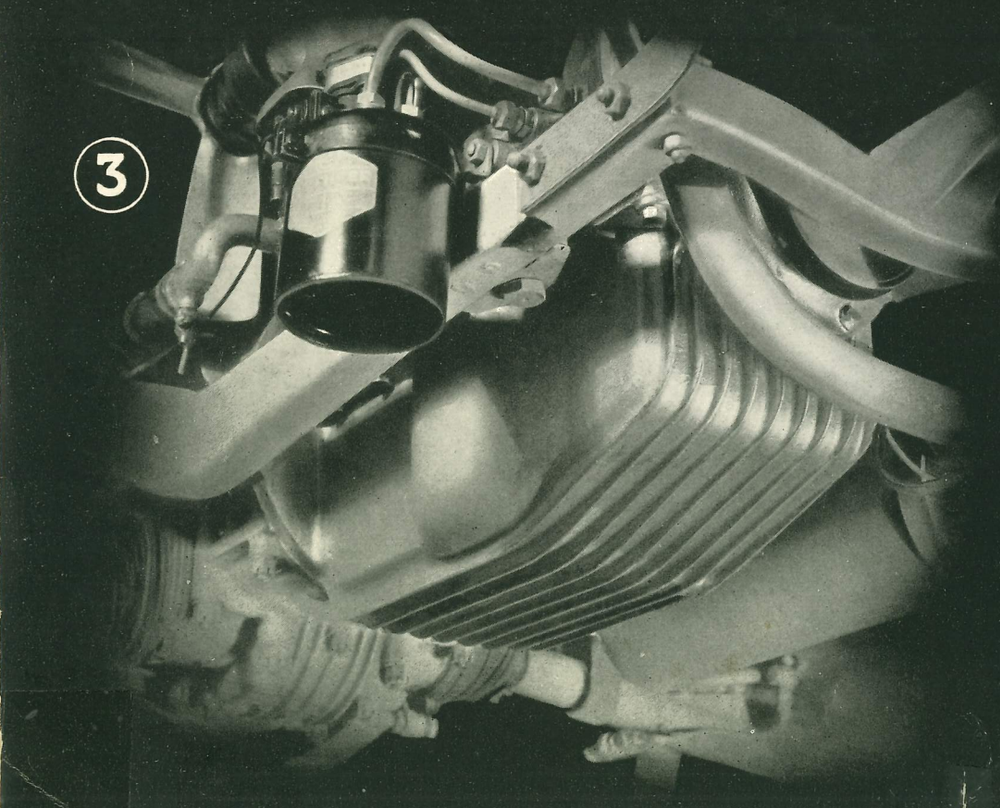
Although a lower priced car for a larger public has been created, nothing has been omitted, either in the coach-work or in the chassis itself, which might add to the driving qualities, efficiency of the engine or the passengers' comfort: the employment of a strong tubular chassis, terminating in a forked member at the rear, has made it possible to reduce the weight. The 26 HP engine with four cylinders in line forms one unit together with the differential and the gear-box and is fitted behind the rear-axle, which is carried freely by two powerful spiral springs. The engine is suspended at four points in rubber in order to damp any vibrations. The gear actuating rods lead from the gear-box, which is provided with three forward speeds together with an Overtop Gear and reverse ratio, along the tubular chassis to the gear-lever, which is situated in the normal position between the two front seats. In spite of the entirely new construction of this car, everything has been avoided from the very outset, which might have called for a different method of changing gear, in order that this model should afford the driver the maximum amount of pleasure from the first moment of taking it over. The two front wheels are carried by

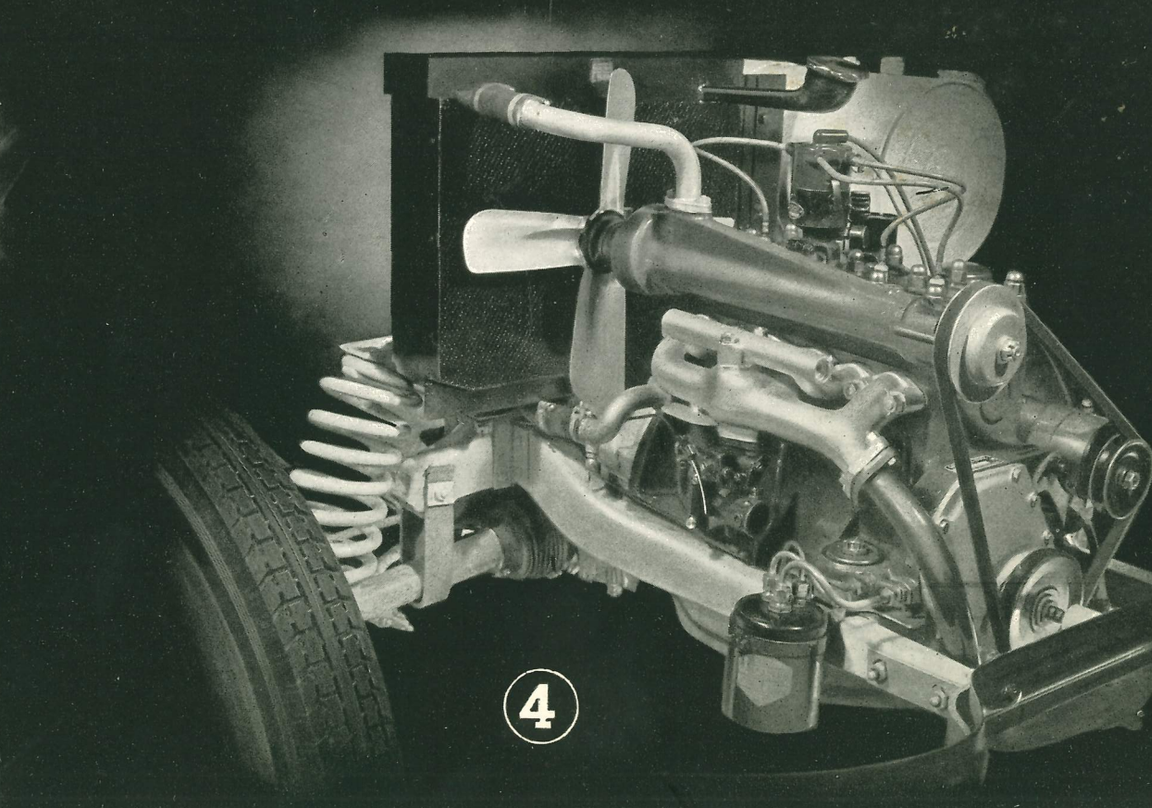
The illustration on the right depicts the tubular chassis of the Type 130. In front can be seen the method of carrying the front wheels by means of two springs without the interposition of an axle; at the rear the suspension by means of two spiral springs is shown; the battery, gear-box, radiator, engine and fuel tank are also shown.











two powerful transverse leaf springs without the interposition of an axle, and are fitted with two hydraulic shock absorbers. As a result of the rear axle being designed for independently sprung wheels also, it is possible for each road wheel to assume any position without affecting the other wheels, so that each wheel is able to counteract the irregularities in the road surface quite independently. The sterling qualities of the MERCEDES-BENZ Rear Engine Type 130 on the road are, however, not solely attributable to the employment of a powerful engine, the overtop gear and the system of independently sprung wheels, but a large measure of credit must also be accorded to the method of direct steering, which makes it extraordinarily easy to control the vehicle at all speeds. The safety factor has received special attention in the form of a low centre of gravity, broad track and an extremely easily operated hydraulic braking system.

The engine is particularly generously equipped. It is water-cooled, the radiator block being fitted in front of the engine inside the rear portion of the car. A fan draws cool air from outside through two wind channels, and in combination with the vane-type water pump fitted in the cylinder-head, ensures the efficient cooling of the engine, even in the hottest weather or on the longest hill. Lubrication is by means of a gear-type pump, which feeds oil under pressure to all parts of the engine. The oil returns to the sump, which consists of a light metal casting and is provided with nine cooling ribs in order to effect rapid dissipation of the heat. An oil filter is provided to prevent any foreign bodies from entering the lubrication system, thus ensuring the permanent cleanliness of the oil. The Solex carburettor is easily accessible from the outside and is fitted with an air cleaner, which is built into the side of the body and serves to silence the air intake at the same time. A hot spot on the induction manifold, dynamo with controlled voltage, 6-volt battery, large silencer, easy-starting device on the carburettor, single-plate dry clutch and Bosch coil ignition with automatic timing are a few features of the MERCEDES-BENZ Rear Engine Type 130 illustrating the care which has been exercised in

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(1) *Engine unit with silencer and fuel tank.*
(2) *Gear-box containing three forward speeds, an overtop gear and reverse ratio.*
(3) *Underneath view of sump with nine cooling fins and the oil filter.*
(4) *Near-side view of engine unit with radiator and four bladed fan.*

selecting the comprehensive equipment of this vehicle. The control box cover is most accessibly situated between the front seats. To it are fitted the change-speed lever, starter button, the switch for the lights and — of particular importance — the fuse-box containing the fuses for the lighting system. The latter can, therefore, be changed over without interrupting the journey. The head lamps can be dimmed by depressing a button fitted to the floor boards. The hand-brake lever is fitted just to the right of the change-speed lever and operates directly on the rear wheels. The clutch, foot brake and accelerator pedals are situated in front to the left. The vulcanised steering wheel possesses four spokes and is of particularly elegant design. A contact ring is fitted to the steering wheel, so that it is an easy matter to sound the horn at all times without removing one's hand from the steering wheel. An anti-thief lock is fitted to the steering column, which locks the latter and at the same time breaks the ignition circuit, thus providing a reliable guarantee against misuse of the vehicle. The dash is equipped with the following instruments and controls: speedometer, oil gauge, charging tell tale light, button for illuminating instrument panel, switch for fog lamp and an ash tray together with an electric cigarette lighter. A little box is provided on the right-hand side for small articles required during a trip. The spare wheel and tool-kit are situated under the bonnet in front. A feature worthy of attention is the system of one-shot lubrication: just a slight pressure on the button suffices to lubricate all parts of the chassis.

The invaluable practical experience gained in the production of over 10,000 MERCEDES-BENZ cars with independently sprung wheels, a large number of patents of prime importance and the knowledge gained in the course of 50 years manufacturing practice in the construction of first-class cars, are the factors which have decided the design and equipment of this new MERCEDES-BENZ. The result is a thoroughly tested car of excellent value, detail of which has been well thought out.

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1. *The near-side front wheel with brake drum, brake connection and cover for steering joint.*
2. *Control box with change-speed lever, hand brake lever, light switch, starter button, easy-starting control and fuses.*
3. *The spiral spring of the off-side rear wheel and the gear box in front of engine.*
4. *Steering turned to the right (the steering cover on the right is drawn out and on the left it is folded up).*

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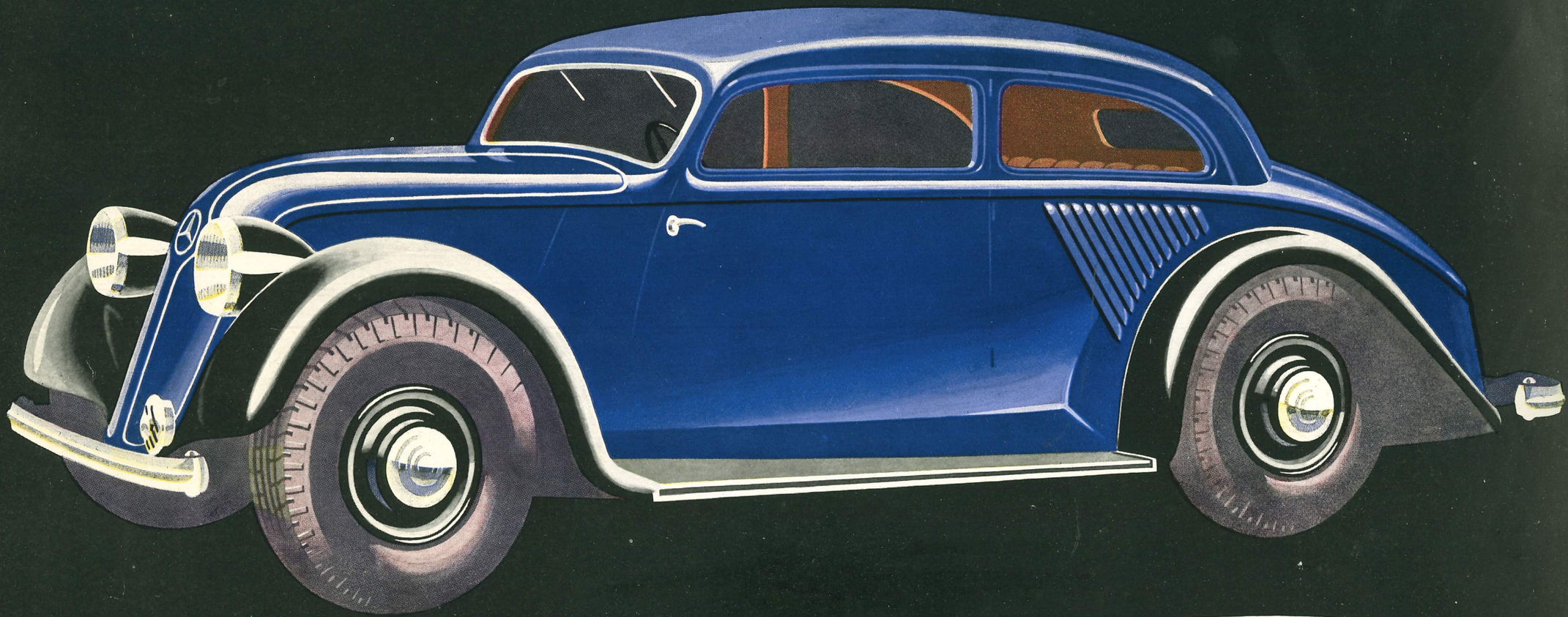
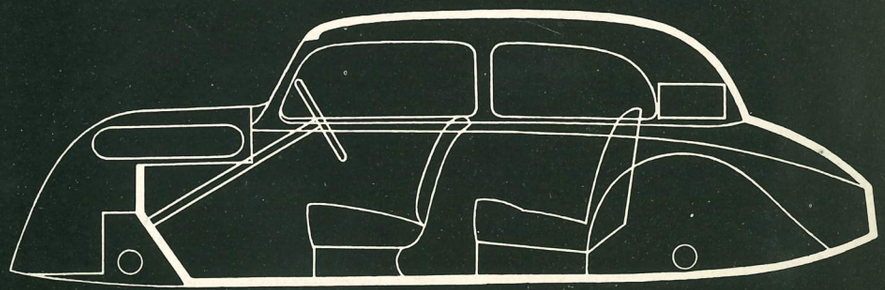
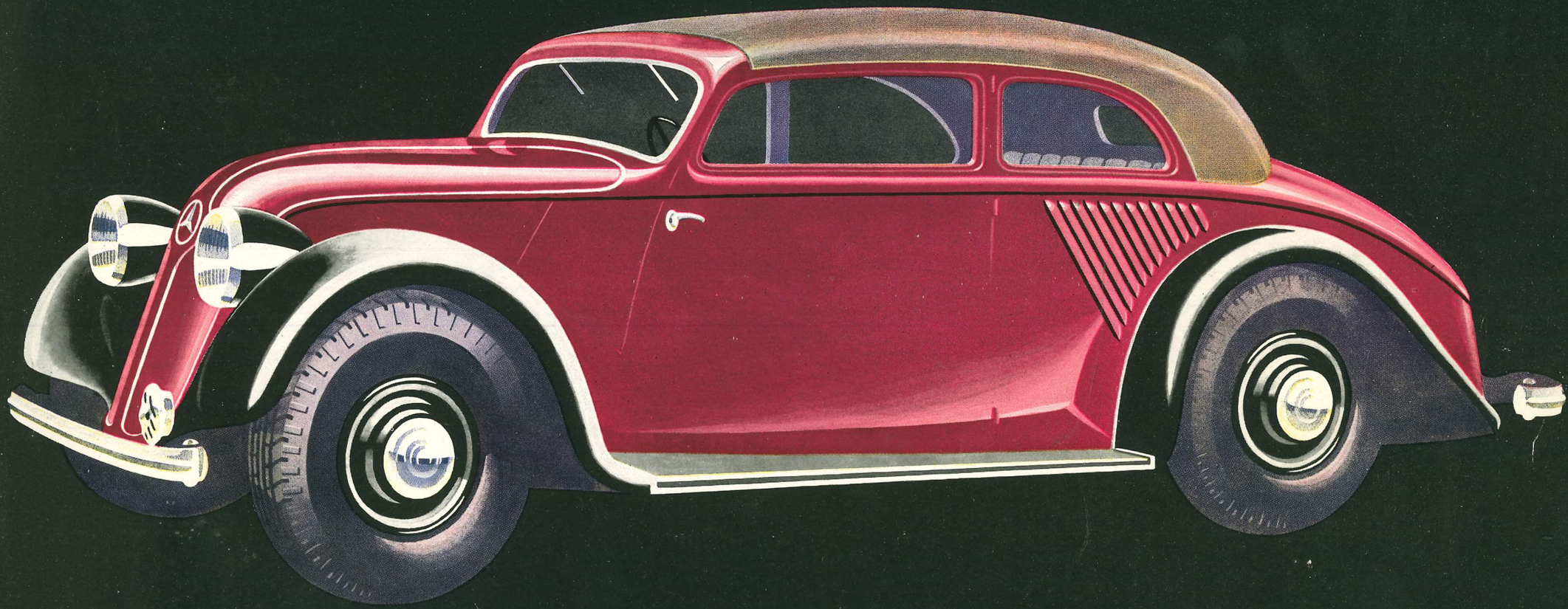
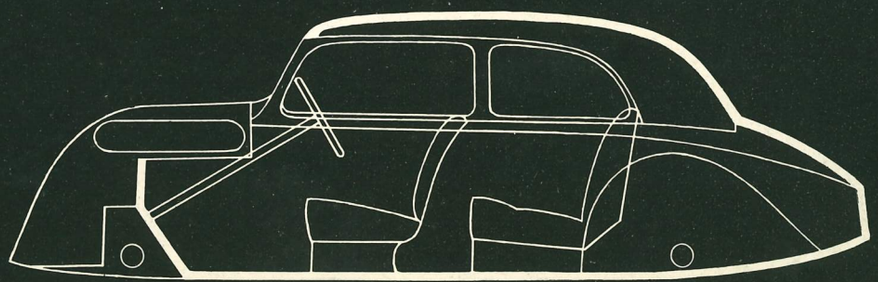
The four-seater Saloon model with permanently fixed pressed steel roof. Two very wide doors, fitted with locks, afford an easy entry to all seats. The extremely wide windows leave the vision quite unobstructed.

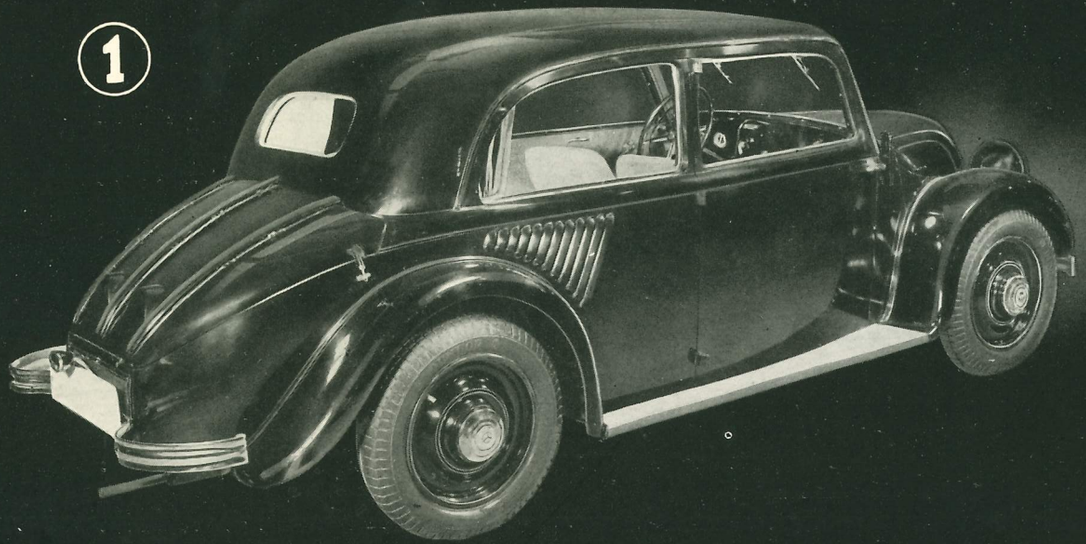


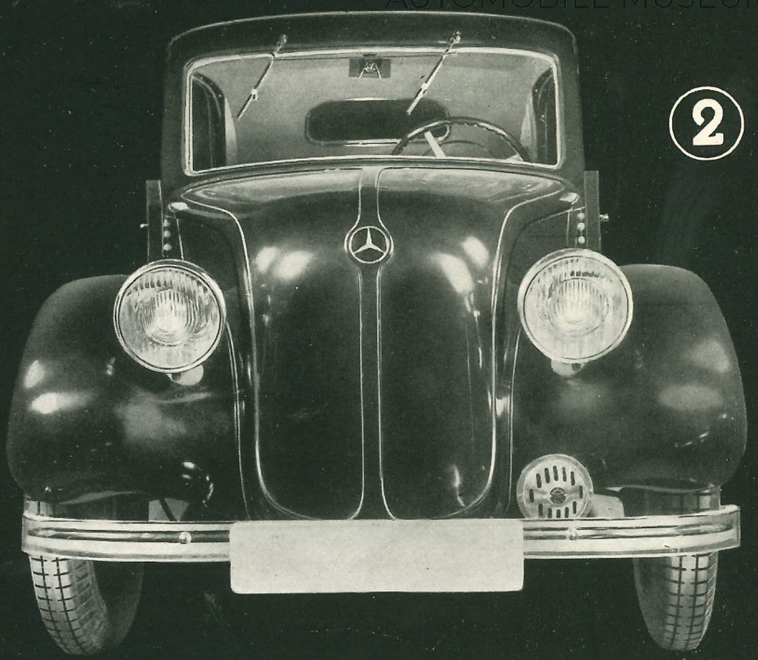


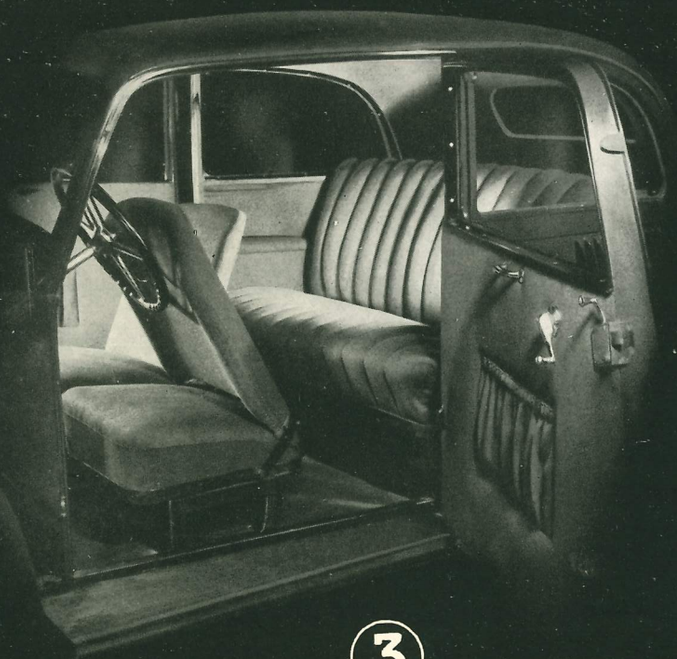
The Cabriolet - Saloon model possesses a hood made of strong Cabriolet material. The hood can be folded back with the greatest of ease. The sides remain erect but the windows can be let down, just as in the case of the Saloon model.

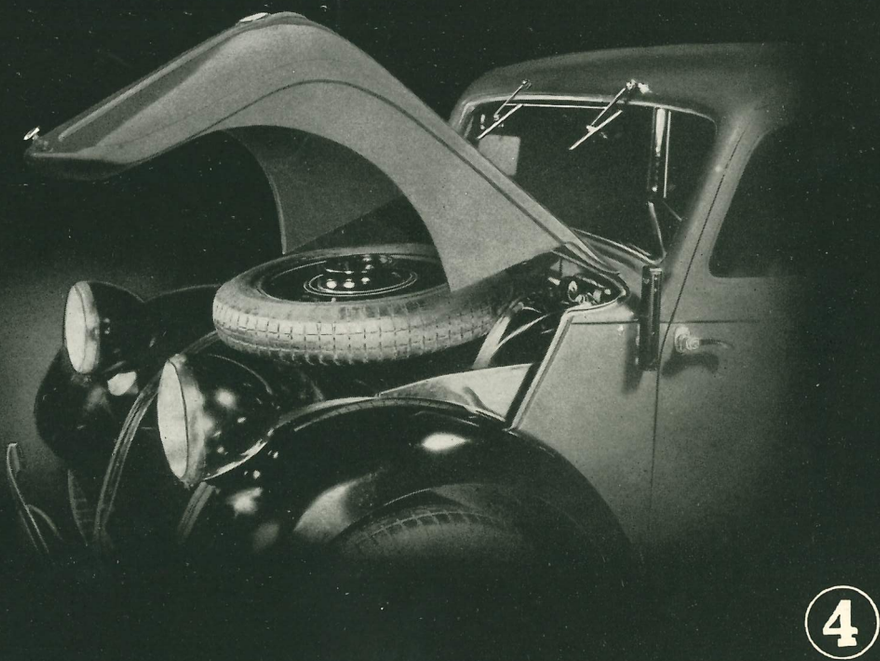












THE COACH-WORK

The distinguishing feature of all MERCEDES-BENZ coach-work is the fact, that the body for each car is produced in closest co-operation with the designers of the chassis. The result of this is that body and chassis are in perfect harmony with each other, whereas it also makes it easier for the chassis designer to take the coach-work into consideration from the very outset. The product of this co-operation is a technical ensemble, the individual parts of which have been developed in accordance with the most modern principles and harmonise perfectly. A further distinguishing feature of the MERCEDES-BENZ coach-work is the employment of specially selected materials, which are also made use of in the bodies for the Type 130. The consequent high standard of the equipment, paint-work and construction itself, together with the excellent lines and practical style have helped to create the reputation of the Sindelfingen bodies, which are products of MERCEDES-BENZ.

The problem of seating space has been particularly well solved. The MERCEDES-BENZ Type 130 appears large at the first glance. Furthermore, one has the opportunity of confirming this first impression on entering the car by way of one of the large, solidly constructed doors and occupying one of the well upholstered seats: all four seats are equal in comfort to those of a medium sized car. The extra space gained by transferring the engine to the rear of the chassis is particularly noticable when occupying the front seats, it being possible to stretch one's legs to their full extent. The materials selected for the interior of the body and for covering the seats are of excellent quality; the colours and patterns chosen are particularly suitable and tone in with the external paint-work. A rubber mat with a layer of felt underneath is provided in front of the front seats. By means of keeping the side pillars, very narrow, it has been

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(1) *Rear off-side view of the saloon model. Note ventilation louvres above wing.*
(2) *Full front view of car showing the elegant lines of bonnet.*
(3) *View of the roomy interior of the saloon model. The back cushion belonging to the driver's seat is folded forward.*
(4) *Bonnet up showing spare wheel and space for trunk and tool-kit.*

possible to fit large size windows, thus obtaining excellent visibility in all directions.

In the case of the Cabriolet-Saloon the hood, which is made of strong Cabriolet material, is easily folded back in a couple of movements. The sides remain erect forming a protection against the wind. The door windows of both models can be let right down. The roof of the Saloon models is made of pressed steel and is of uniform colour, thus presenting a particularly pleasing contour. Various colour schemes are available for the body itself. The paint consists of Nitro-cellulose, is extremely durable and maintains its freshness over a long period.

It is only necessary to glance at the body equipment to see at once, that here again nothing has been omitted, which makes for pleasant driving. The steering wheel is placed at a convenient angle. A rear-view mirror and an electric wiper are fitted above the windscreen. Pockets are found on the doors. A practical type of reading lamp is fitted over the driver's seat. The electric direction indicators are operated by means of a switch on the dash. The equipment further comprises door locks, trunk space behind the rear seats and under the bonnet, chromium plated bumpers front and rear and full length rubber covered running boards. The wings are of graceful design and sufficiently wide to afford ample protection. The disc wheels are fitted with chromium plated ornamental hub caps, which serve to protect the five wheel studs from dirt. Every car is supplied with a jack and a complete tool kit as part of the standard equipment. A trial run in this new MERCEDES-BENZ will serve to confirm all the claims made for it in this catalogue: one expects to find quite unusual qualities and finds ones expectations exceeded! Driving characteristics, performance, comfort and beauty of line, in short everything the discerning motorist looks for is to be found in this model. The enthusiast has here a car, which will be a source of pleasure to him from the very outset, because every detail embodies firstclass workmanship.

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(1) *Front near-side view of saloon model showing head lamps and horn.*
(2) *This view illustrates the convenient entry and the particularly comfortable seats.*
(3) *Front off-side view of saloon model showing the broad, well rounded wings.*
(4) *Wide windows and narrow door pillars ensure unobstructed vision in all directions.*

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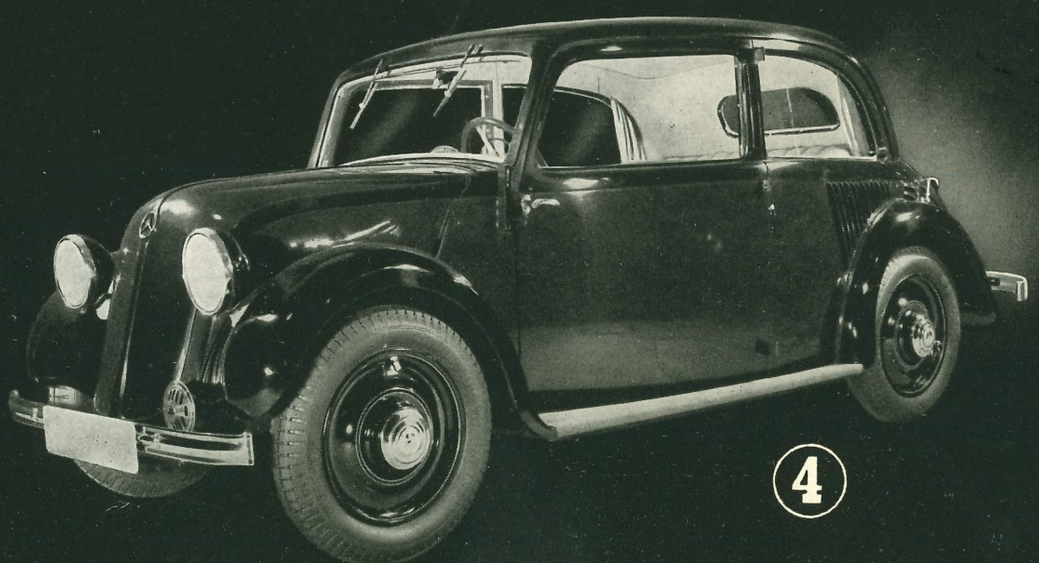

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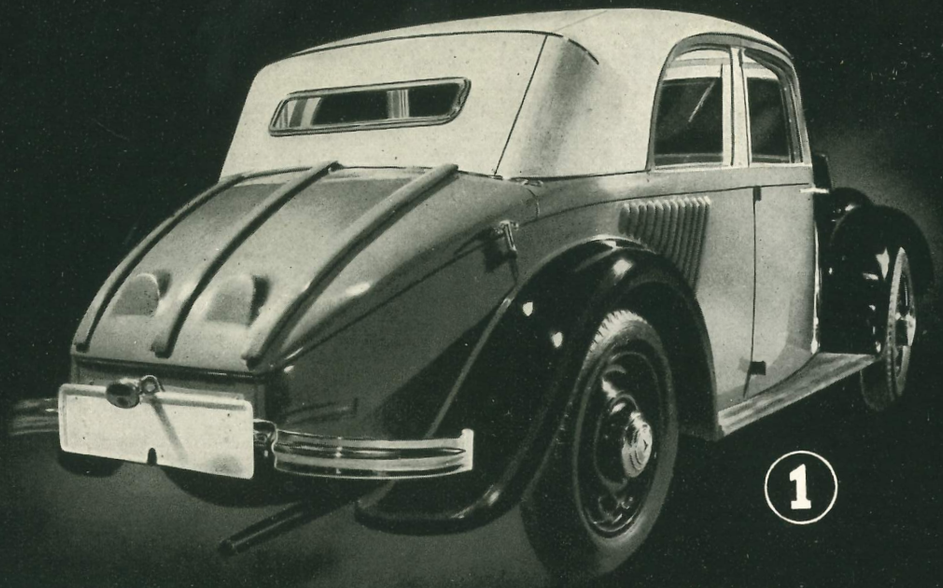

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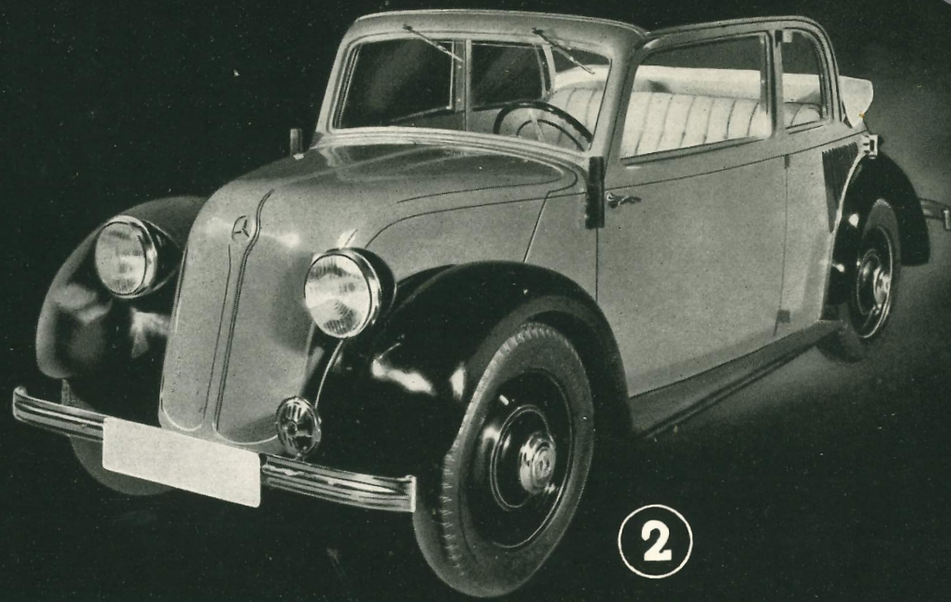

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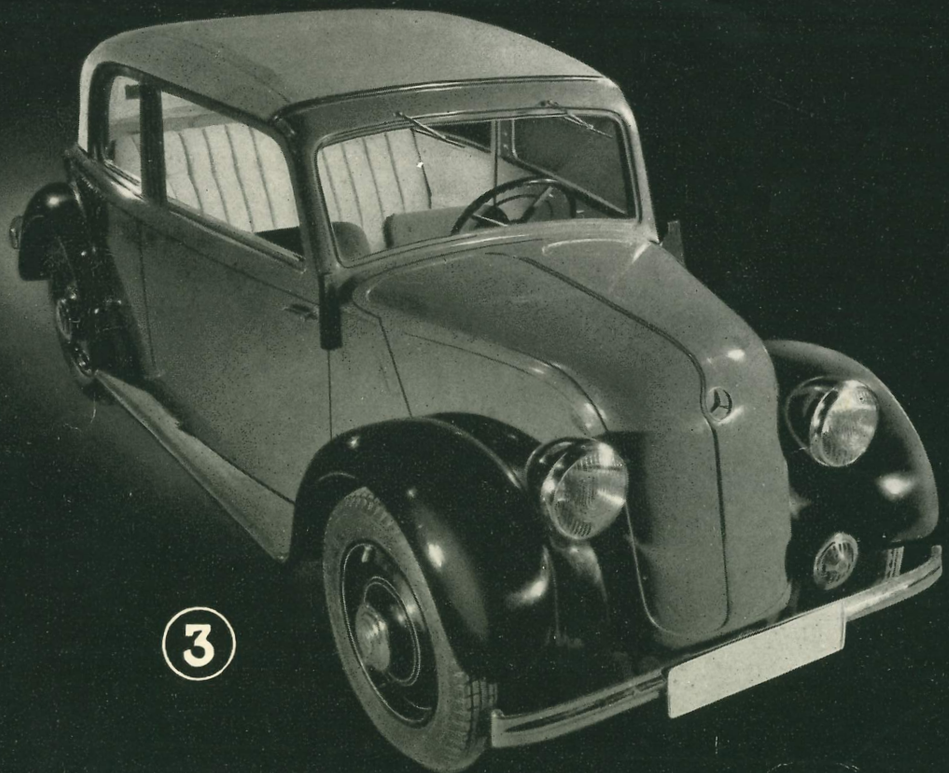

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TECHNICAL FEATURES

REAR ENGINE Rear engine with four cylinders in line, 1,3 litres cubic capacity, 26 Brake HP. The cylinder block and the upper half of the crank case form a monoblock casting of special gray iron. The sump consists of light metal and is specially designed to cool the oil. Detachable high

CRANKSHAFT efficiency cylinder head. The crankshaft is provided with counter-weights and runs in three bearings. It is completely balanced and the bearing surfaces are hardened according to a special process. Special light metal pistons fitted with three rings. Oil is fed to the gudgeon pins under pressure. The side valves are accessibly

CARBURETTOR placed on the exhaust side. The Solex carburettor is fitted with an automatic starting device, which ensures the engine starting up at once even in the coldest weather. Combined air-cleaner and silencer. Hot spot on induction mani-

6-VOLT IGNITION fold. 6-volt Bosch dynamo, controlled voltage,

ENGINE LUBRICATION coil ignition, automatic timing. Oil circulated by means of gear type pump, oil filter fitted. Fin

COOLING SYSTEM type radiator fitted at rear, four-bladed fan driven by an adjustable V-belt. The water is kept in circulation by means of a vane type water pump fitted to cylinder head. Independently

CHASSIS sprung wheels front and rear, drive and engine

TUBULAR CHASSIS at rear. The frame consists of a central tube with a box-section member welded on in front, to which the transverse springs of the independently sprung front wheel suspension system are attached; at the rear it branches out into a U-piece supporting the engine. Engine, clutch, rear axle and gear-box form a unit suspended at four points in the U-shaped extension piece

CLUTCH of the central tube on rubber. The engine and clutch are situated behind the rear axle, the

GEAR-BOX gear-box in front. Single plate dry clutch. Three forward speeds and an Overtop gear, one reverse ratio, semi-automatic synchronised change between Overtop and direct ratios without declutching, two silent ratios, all operated by stan-

REAR AXLE dard change-speed lever. Rear axle: the axle casings are horizontally pivoted on the differential case, worm drive, driving shafts provided with universal joints, each half-axle is sprung by a coil spring of the non-friction type, the upper end of which rests against the projecting end of a transverse member fixed on top of the

FRONT AXLE fork, which is arched over the half-axles. Front axle: Wheels independently sprung, two trans-

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(1) *This view illustrates the graceful lines of the rear portion of the Cabriolet-Saloon.*
(2) *View of the elegant and particularly comfortable Cabriolet Saloon. The hood is folded back.*
(3) *View of the Cabriolet Saloon. The hood is closed.*
(4) *The ease of entry afforded by the Cabriolet-Saloon, hood folded back and back of driver's seat turned down.*

verse springs fitted with safety device in the event of a spring breaking, hydraulic shock absorbers. Each wheel steered individually by means of geared rods. Hydraulic brake acting on all four wheels, hand brake operating mechanically on rear wheels. Detachable steel disc wheels, one spare wheel and tyre under front bonnet. Low pressure tyres 4,75–17. Fuel tank enclosed next to the radiator at rear of car, capacity: $7\frac{1}{2}$ gallons including $\frac{3}{4}$ gallons reserve. Speedometer with kilometer recorder, oil-pressure gauge, switch for direction indicators, fog lamp and dash board illumination, charging control lamp, ash tray with electric cigarette lighter. Bosch switch for lights, starter button, button for easy starting device, button for fuel reserve. Bowden one-shot lubrication. Hot air heating. Voltage regulating 6-volt Bosch dynamo, starter operated by pressbutton, 75 amp/hr. battery, tail light, stop light, ignition coil, distributer, 2 head lamps with three-way switch, Bosch horn, contact ring for horn on steering wheel, electric direction indicators, electric wind-screen wipers, reading lamp above driver's seat, foot dimmer. Internal pockets, door locks, rubber mat, anti-thief device on steering wheel which locks the steering column and at the same time breaks the ignition circuit. Bumpers front and rear. Jack, complete tool kit, windows which can be turned up and down, rear view mirror.

STEERING

BRAKES

DISC WHEELS

FUEL TANK

INSTRUMENTS SWITCHES ETC.

ONE-SHOT LUBRICATION

ELECTRICAL EQUIPMENT

OTHER EQUIPMENT

Right to introduce modifications reserved!

TECHNICAL DATA

Number of cylinders 4	Total reduction in Overtop 1:4,35
Bore . . . . . 70 mm	Gear box reduction in 1st gear 1:3,7
Stroke . . . . . 85 mm	Gear box reduction in 2nd gear 1:1,75
Effective cylinder capacity . . . . . 1308 ccm	Gear box reduction in 3rd gear 1:1
R. A. C. Rating . . . . . 12 HP	Gear box reduction in 4th gear, i. e. Overtop 1:0,645
Maximum number of revs. 3400	Gear box reduction in reverse 1:3.1
Brake horse power . . . . . 26 HP	Low pressure tyres 4.75-17
Compression ratio 1:6	Maximum speed . . . . . approx. 62.5 MPH
Firing order 1.3.4.2	Fuel consumption . . . . . approx. 30 M.P.G
Track front and rear . . . . . 4′ $1\frac{1}{4}$″	Oil consumption . . . . . approx. 1200 M.P.G
Wheel base . . . . . 8′ $2\frac{1}{2}$″	Capacity of tank . . . . . $7\frac{1}{2}$ gallons including reserve of . . . . . 3/4 gallons
Overall length . . . . . 13′ 3″	Capacity of radiator . . . . . 2-3 gallons
Overall height of body (without passengers) . . . . . 4′ $11\frac{1}{2}$″	Climbing ability in 1st gear . . . approx. 1:3
Overall width of body . . . . . 5′	Climbing ability in 2nd gear . . . approx. 1:5
Minimum ground clearance . . . . . $6\frac{1}{2}$″	Climbing ability in 3rd gear . . approx. 1:10
Numbers of seats 4	Climbing ability in Overtop . . approx. 1:18
Weight of chassis . . . . . approx. 9,75 cwt.	Capacity of battery (6 volts) . . . 75 amp/hr.
Weight of complete vehicle . approx. 16 cwt.	Oil carried in sump . . . . . $1\frac{1}{4}$ gallons
Total reduction in direct ratio 1:6,75	Number of spare wheels 1

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