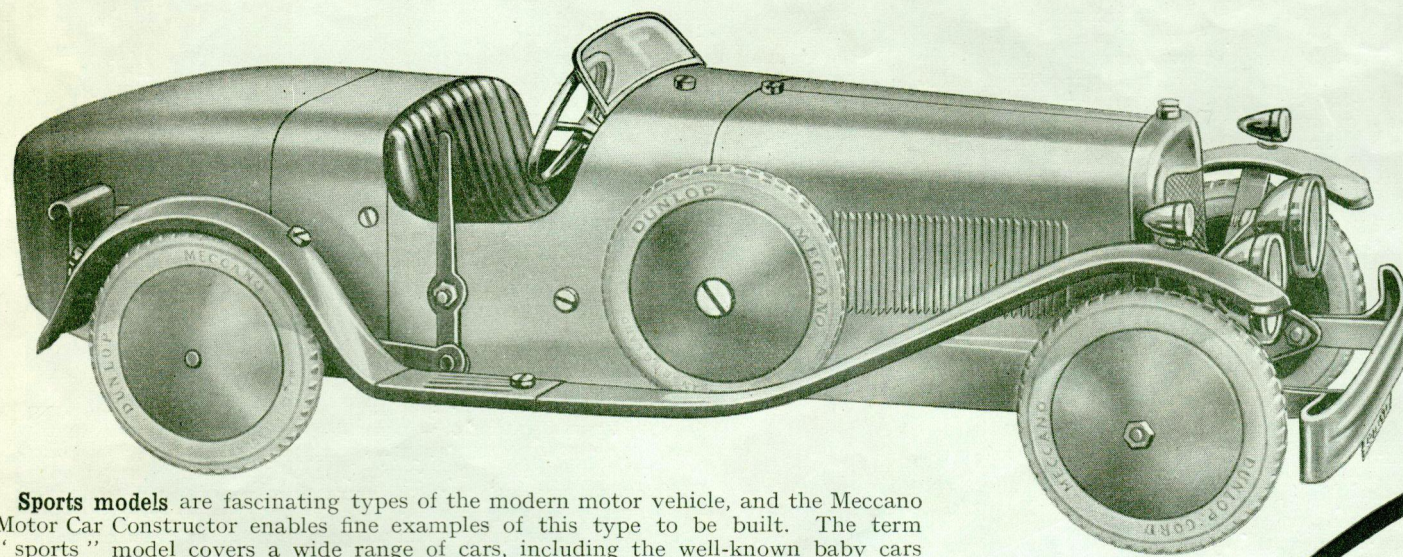


Model No. M1. Sports Tourer



Sports models are fascinating types of the modern motor vehicle, and the Meccano Motor Car Constructor enables fine examples of this type to be built. The term "sports" model covers a wide range of cars, including the well-known baby cars fitted with specially-designed four-cylinder engines, light cars with engines of six cylinders, and larger vehicles having eight or 12 cylinders and fitted with two or more carburettors. Cars of this type are produced by many motor manufacturers, outstanding British examples being the Bentley, Lagonda, Sunbeam, Alvis and M.G. Midget. French cars of the type include the Delage, Chenard-Walcker and Hotchkiss, while Germany and Italy are represented by the Mercedes-Benz and the Fiat respectively, and the United States by the Auburn and Stutz.

Model No. M1 has the long bonnet and low racing lines that are typical features of these sports cars. The actual assembly of the model is dealt with in detail overleaf, and if the instructions are followed carefully no difficulty will be experienced in building the car. The Front and Rear Number Plates are supplied blank, and an individual touch may be given to the models by adding registration numbers.

To operate the complete model, first place the brake in the "on" position by drawing the Brake Lever toward the rear of the car. Then wind up the Motor with the key provided and place the car on the ground. Next rotate the Steering Wheel so that the front wheels are set for the car to run in the required direction, and finally release the brake by moving the lever forward. The car will then travel for about 50 yards at high speed.

Model No. M3. Light Sports Two-Seater

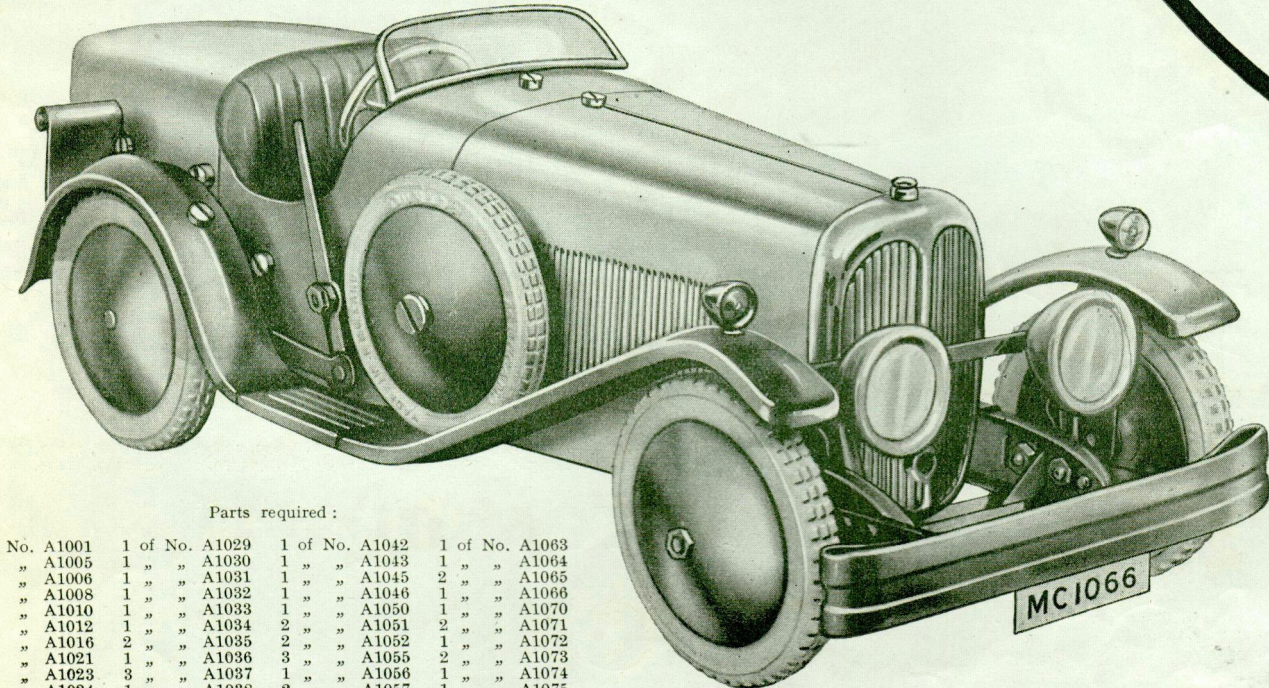
The light sports two-seater is a type that has been produced to meet the demands of motorists who require a car having a distinctive appearance and a high performance, coupled with the utility and comfort of the standard model. It is less expensive than a car designed to take part in actual racing, but its possession enables its owner to experience many of the thrills of that sport.

Many famous British and foreign manufacturers include light sports models in their range of productions. The chassis and engines of these models are similar in design to those of the standard touring cars of the firms producing them, but their engines are modified to enable them to give higher power and more rapid acceleration.

Among British cars of this type may be mentioned the Wolseley, Standard, Singer, Morris, Austin, Rover, Riley and Lea-Francis. French light sports cars include the Renault, Salmson, Citroën, Peugeot, Amilcar and Rally; while in Italy the Fiat and O.M. Companies also produce such cars.

Many of the features of the light sports car are reproduced in Model No. M3. This model has a shorter wheelbase than the standard car described overleaf, and several modifications must therefore be made when assembling the bodywork and propelling mechanism. In assembling the central portion of the body (see Fig. 3) the Seat 21 is bolted to the Dash 19, but the Centre Section 20 is omitted, the Tapered Tail Section 24 being bolted in position directly behind the Seat. The Mechanism is bolted to the Frame Members by bolts passed through the second set of holes in the Frame Members.

The Front and Rear Mudguards (complete with Running Boards) Nos. A1021 and A1023 are fitted to this car. The Front Mudguards are held in place by means of the Right and Left-hand Upper Mudguard Brackets, the screwed shanks projecting from the Side Lamps being used to lock the Mudguards in position. The Front and Rear Mudguards are held together by means of Bolts passed through the running board sections.



Parts required:

1 of No. A1001	1 of No. A1029	1 of No. A1042	1 of No. A1063
1 " " A1005	1 " " A1030	1 " " A1043	1 " " A1064
1 " " A1006	1 " " A1031	1 " " A1045	2 " " A1065
1 " " A1008	1 " " A1032	1 " " A1046	1 " " A1066
1 " " A1010	1 " " A1033	1 " " A1048	1 " " A1070
1 " " A1012	1 " " A1034	2 " " A1051	2 " " A1071
1 " " A1016	2 " " A1035	2 " " A1052	1 " " A1072
2 " " A1021	1 " " A1036	3 " " A1055	2 " " A1073
2 " " A1023	3 " " A1037	1 " " A1056	1 " " A1074
4 " " A1024	1 " " A1038	2 " " A1057	1 " " A1075
1 " " A1026	1 " " A1039	5 " " A1058	39 " " A1076
1 " " A1027	1 " " A1040	1 " " A1060	50 " " A1077
1 " " A1028	1 " " A1041	1 " " A1061	

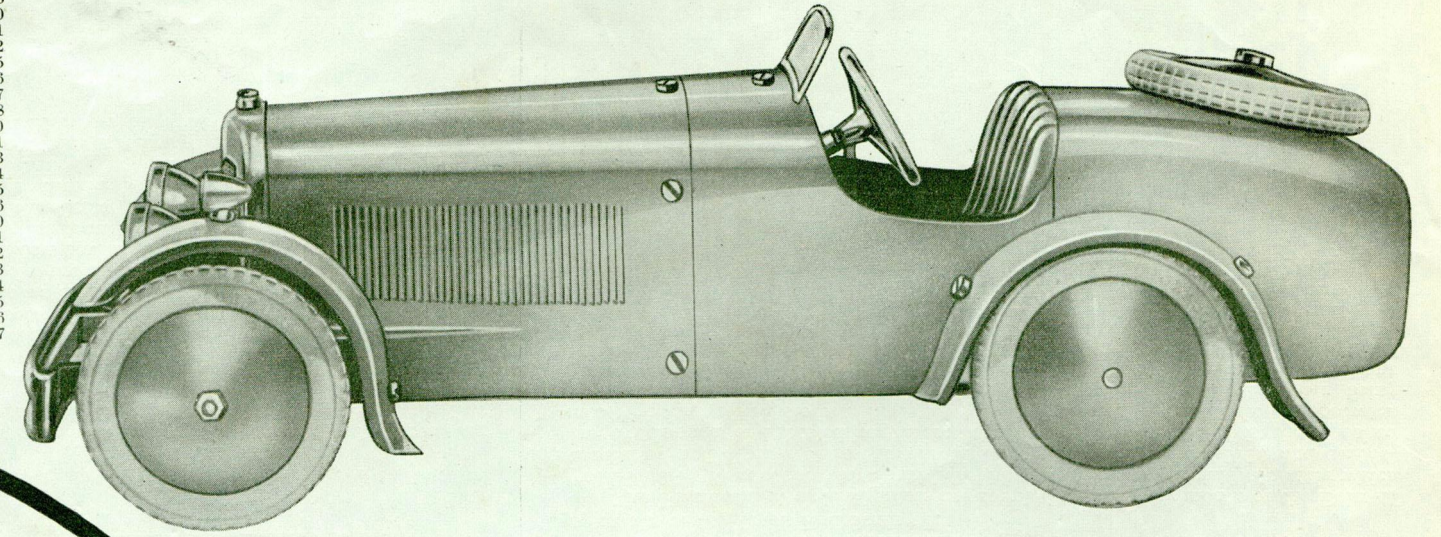
Parts required:

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1 " " A1010	1 " " A1046
1 " " A1012	1 " " A1050
1 " " A1014	2 " " A1051
1 " " A1015	2 " " A1052
2 " " A1021	3 " " A1055
2 " " A1023	1 " " A1056
4 " " A1024	2 " " A1057
1 " " A1026	5 " " A1058
1 " " A1027	1 " " A1060
1 " " A1028	1 " " A1061
1 " " A1029	1 " " A1063
1 " " A1030	1 " " A1064
1 " " A1031	2 " " A1065
1 " " A1032	1 " " A1066
1 " " A1033	1 " " A1070
1 " " A1034	2 " " A1071
2 " " A1035	1 " " A1072
1 " " A1036	2 " " A1073
1 " " A1037	1 " " A1074
1 " " A1038	1 " " A1075
1 " " A1039	43 " " A1076
1 " " A1040	54 " " A1077

Parts required:

1 of No. A1000	1 of No. A1041
1 " " A1004	1 " " A1042
1 " " A1006	1 " " A1043
1 " " A1008	1 " " A1045
1 " " A1010	1 " " A1046
1 " " A1012	1 " " A1050
1 " " A1014	2 " " A1051
1 " " A1015	2 " " A1052
2 " " A1020	2 " " A1055
2 " " A1022	3 " " A1056
4 " " A1024	1 " " A1057
2 " " A1025	2 " " A1058
1 " " A1026	5 " " A1059
1 " " A1027	1 " " A1060
1 " " A1028	1 " " A1061
1 " " A1029	1 " " A1063
1 " " A1030	1 " " A1064
1 " " A1031	2 " " A1065
1 " " A1032	1 " " A1066
1 " " A1033	1 " " A1070
1 " " A1034	2 " " A1071
2 " " A1035	1 " " A1072
1 " " A1036	2 " " A1073
3 " " A1037	1 " " A1074
1 " " A1038	1 " " A1075
1 " " A1039	39 " " A1076
1 " " A1040	50 " " A1077

Model No. M2. Light Six Speed Model



Modern racing cars are classified in accordance with the total cubical contents of the cylinders of the engine. The "baby" type of racing car, such as the M.G. Midget, thus comes in the 750 cc. class, its engine having a capacity of approximately 750 cubic centimetres; while at the other end of the scale we find the 4,398 cc. Bentley, the 5,355 c.c. Stutz, and the 7,050 c.c. Mercedes-Benz.

The light racing car having an engine of between 1,000 and 1,500 c.c. capacity is extremely popular, and many British and foreign manufacturers specialise in this type of car. Well-known British cars in this class are the Riley, Aston-Martin, Fraser-Nash, and M.G. Among the French cars of this type the Salmson, Amilcar and Bugatti makes are outstanding, while numerous light racing cars are produced in Italy, Germany and other Continental countries.

Model No. M2 incorporates many of the features of a light racing machine. The model has a shorter wheelbase than the standard car described overleaf, and this entails several modifications in the assembly of the bodywork and driving mechanism. In assembling the central portion of the body (see Fig. 3) the Seat 21 is bolted to the Dash 19 as shown, but the Centre Section 20 is not included, the Rounded Tail Section 24 being secured in position directly behind the Seat. After the Tail Section has been bolted into position, the Spare Wheel is mounted in place as shown in the illustration.

The Mechanism is now placed in the Frame and bolted in position, the second set of holes in the Frame Members being used. The end set of holes are only employed when long wheelbase cars such as models Nos. M1 and M4 are being built.

The Front and Rear Mudguards Nos. A1020 and A1022 are fitted to this model. The Front Mudguards are held in place by the Upper and Lower Mudguard Brackets, the Lower Mudguard Brackets being held to the Frame by the bolts that are used to hold the Steering Column Bracket to the Frame of the car.

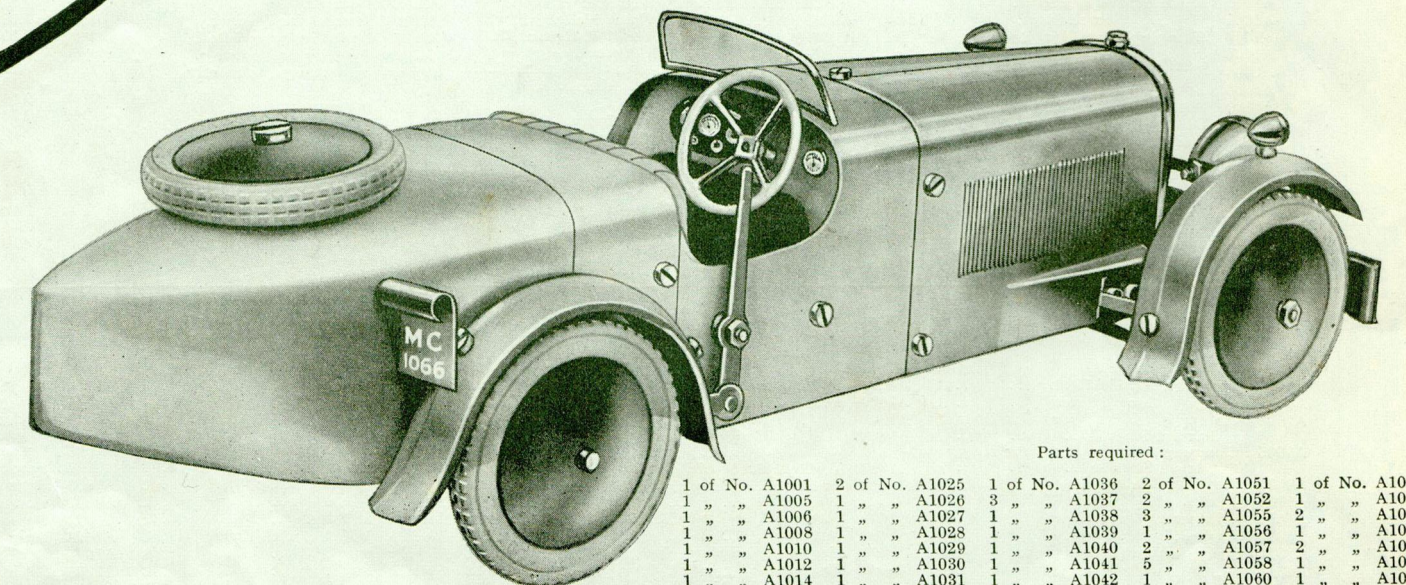
Model No. M4. Grand Prix Special

Road racing is a dangerous but highly exciting sport, and although this type of racing does not take place in England, many British cars are entered in foreign road racing events, while in certain cases English drivers pilot foreign racing machines.

One of the most famous events of this type is the Le Mans 24-hour race run over the Sarthe Circuit in France. This circuit is made up of ordinary roads, and the event provides a gruelling test of skill and endurance. In recent years the race has been distinguished by a remarkable sequence of successes by the British Bentley teams, but the honours in the last two races have gone to the Italian Alfa-Romeo firm.

In addition to the Bentley, other British cars that are prominent in road racing are the Lea-Francis, Talbot, Sunbeam and Alvis. The French Bugatti and Delage cars have both been remarkably successful in road racing events, as have also the German Mercedes-Benz and Italian Alfa-Romeo.

This model is similar in the main to the standard car described overleaf. The Curved Radiator and Tapered Rear Section are used in this model, however, and the Radiator No. A1001 and Clamping Plate A1005 are, therefore, employed in the radiator and bonnet assembly shown in Fig. 5. The Tapered Rear Section No. A1016 is used in assembling the bodywork. It will be seen that the Front and Rear Mudguards, Nos. A1020 and A1022 respectively, are used. The Front Mudguards are held in place by the Upper and Lower Mudguard Brackets, the Lower Mudguard Brackets being held to the frame by the Bolts that are used to hold the Steering Column Bracket to the Frame of the car. (See Fig. 1.) The Spare Wheel is secured to the top of the Tapered Rear Section.



Parts required:

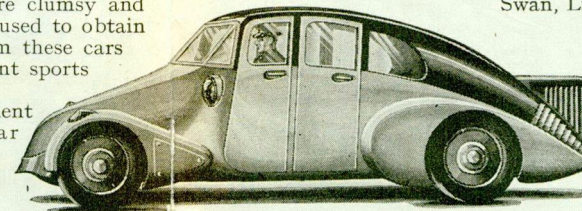
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1 " " A1006	1 " " A1027	1 " " A1038	3 " " A1055	2 " " A1071
1 " " A1008	1 " " A1028	1 " " A1039	1 " " A1056	1 " " A1072
1 " " A1010	1 " " A1029	1 " " A1040	2 " " A1057	2 " " A1073
1 " " A1012	1 " " A1030	1 " " A1041	1 " " A1058	1 " " A1074
1 " " A1014	1 " " A1031	1 " " A1042	1 " " A1060	1 " " A1075
1 " " A1016	1 " " A1032	1 " " A1043	1 " " A1061	43 " " A1076
2 " " A1020	1 " " A1033	1 " " A1045	1 " " A1063	54 " " A1077
2 " " A1022	1 " " A1034	1 " " A1046	1 " " A1064	
4 " " A1024	2 " " A1035	1 " " A1050	2 " " A1065	

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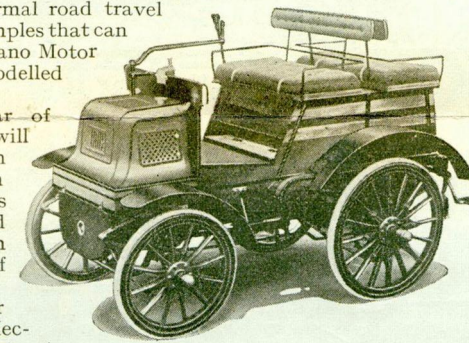
The Boy's Engineering Monthly

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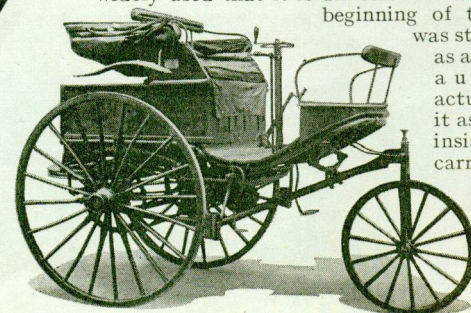
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A stream-lined super-car of the future



A Daimler dog-cart of 1896



A four-seater, three-wheel motor car of 1888, with an engine of one-and-a-half horse power

The development of the motor car during the past 40 years is one of the greatest triumphs of engineering. To-day the motor vehicle is so widely used that it is difficult to realise that at the beginning of the century it was still looked upon as a curiosity. The authorities actually regarded it as a danger, and insisted that a man carrying a red flag should walk in front of every mechanically propelled road vehicle! The early cars were nothing more than modified horse-carriages fitted with single-cylinder petrol engines. They had chain drive, tiller steering, and rim brakes, and they ran on wooden carriage wheels shod with solid tyres. The bodywork was placed high above the roadway, and provided little or no protection for either driver or passenger. The pioneer motorists, therefore, were compelled to clothe themselves in heavy fur-lined storm-proof garments and sou'-westers as a protection against wind, rain and dust. In addition the engines fitted to the early vehicles were unreliable, and had an unpleasant habit of breaking down at the most inconvenient times and places. In short, a motor ride in those days was always liable to develop into a serious adventure. As time went on, however, the motor car gradually became more efficient and reliable, and its development has continued steadily until to-day it has reached an extremely high state of mechanical perfection. A factor that has played an important part in the improvement of the motor-car is the experience obtained from high-speed motor racing. Motor racing has taken place almost from the inception of motoring, and many exciting duels were fought out on road and track in the early days. The famous Brooklands track, which was opened in 1907, provided a great stimulus to the testing of high-speed engines, while the gruelling test provided by the Grand Prix Road Races run over the Sarthe circuit in Northern France have had considerable influence on the design of the modern car. The early racing machines were clumsy and wasteful, very large engines being used to obtain quite low speeds; but it is from these cars that the modern highly efficient sports cars have been evolved.

An outstanding achievement of modern motor car engineering is the manner in which the world's land

speed record has been raised through the skill and enterprise of such famous British motorists as Sir Malcolm Campbell, the late Sir Henry Segrave, and the late Mr. J. G. Parry-Thomas. During the past 10 years the record has been increased from just under 130 m.p.h. to the amazing figure of 254 m.p.h., this record being obtained by Sir Malcolm Campbell when driving a British "Bluebird" car at Daytona, U.S.A., in February, 1932. British automobile engineers have concentrated also upon obtaining the maximum efficiency from miniature engines, and the record recently set up by Mr. G. E. T. Eyston, in driving a tiny car with an engine having cylinders of only 750 c.c. capacity at a speed of 120 m.p.h., is proof of their success in this direction.

The range of modern motor vehicles covers a tremendous number of types, including small two-seater "baby" cars, saloon and open touring machines in a variety of sizes, racing cars, saloon coaches, buses, and a wide range of vehicles for industrial and commercial purposes. One of the most attractive types of cars is the sports model, which incorporates an engine having much of the high speed and rapid acceleration of a racing car, but is fitted with bodywork suitable for normal road travel and touring. The examples that can be built with the Meccano Motor Car Constructor are modelled on this type of car.

The high-speed car of the future probably will be driven either by an internal combustion turbine or by means of power transmitted by electric waves from a central source of supply.

Model motor-car building with the Meccano Motor Car Constructor is even more interesting if the working of the various mechanisms of an actual car is understood. The Motor Chassis assembled from standard Meccano parts is just the thing for providing this information, as it forms a complete demonstration of the various mechanisms in a real motor chassis. This model is fully described in Instruction Leaflet No. 1, which may be purchased from any Meccano dealer, or direct from Meccano, Ltd., Binns Road, Old Swan, Liverpool.

