PREPARATIONS AND APPLIANCES.

"The Wedgeway."

MR. A. LOWNDES YATES, F.R.C.S. (Birmingham), has designed an instrument to replace the wedge which it is customary to employ whenever the teeth of an unconscious patient are tightly clenched and respiration is obstructed. It consists of a tongue depressor having a double deck. The thin end is passed between the teeth and, when pushed further, opens the mouth, at the same time affording an airway. If the tongue is the cause of the obstruction it can be depressed, provided that the "wedgeway" is introduced behind it. The instrument (Mr. Lowndes Yates writes) thus affords a ready means of dealing with almost every emergency which may arise from respiratory obstruction in unconscious persons. It is anticipated that it will prove specially useful to nurses who have charge of patients during recovery from anaesthesia; it has the further advantage that it is inexpensive and cannot get out of order. The wedgeway is obtainable from Messrs. Allen and Hanburys, Limited, 48, Wigmore Street, W.1.

THE LONDON MOTOR SHOW.

SOME POINTS FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE twenty-first international motor car show opens at Olympia, Kensington, under the patronage of the King, on Thursday next, October 13th, and will remain open, the Sunday excepted, until 10 p.m. on Saturday, October 22nd. Various changes have been made in the organization, all of which are to the good. Thus in former years the public have not been admitted to the exhibition until the Friday, the Thursday being called a trade and press view day. But what was intended to be purely a business facility was so much abused that the situation became unmanageable. Many thousands of persons concerned neither with writing about the exhibition nor with motor trading sought and secured admission. The Society of Motor Manufacturers and Traders has arrived at a happy solution of the problem. It will make no change in the charge for admission on the days which have hitherto been available to the public and will again be available; but on Thursday next the exhibition will also be open to the public, instead of closed as hitherto, and it will be possible for anybody to enter the building by paying ten shillings at the turnstiles. Thus the congestion problem will be solved, and through the added revenue still further advancement of automobilism will be possible for the only body which has the opportunity to do this, by such means as subsidizing institutions that cannot afford to pay for the investigations they were established to carry out, encouraging certain classes of competitions for the evolution of the machine, and holding exhibitions concerned with branches of automobile enterprise which do not draw large numbers of the public and on which there is therefore a loss.

IMPROVED STAND SCHEME.

Another improvement of note may be observed by anybody on entering the building. It concerns the lay-out of the stands in the car section. As far as possible island stands are being provided along a continuous central gangway from the new entrance off the main road to the central gangway in the main hall. Another set of regulations is designed to remedy the scandal of what I would call make-believe British motor cars. Not until this year has there been anything approximating to a satisfactory definition of what constitutes a British-built vehicle. In that connexion the society sent to America a delegation which has done very satisfactory work in clearing up some parts of the problem. Next week in respect of every motor car shown at Olympia there will be stated on every show card, price card, or other form of notice submitted the following particulars: "Chassis made in ——" and/or "carriage work made in ——" Where the exhibit displayed is wholly the product of one country, one announcement, "Made

in ——" may be displayed. In regard to accessories, components, and tyres, similar information will be conveyed (a) by means of a card attached to every item exhibited; (b) on a schedule of all the items exhibited, prominently displayed upon the stand as approved by the exhibition manager; and (c) by one notice "Made in ——" where the whole of the exhibits are products of one country. The most difficult point to settle in the past has been: What constitutes a British-made car for the purposes alike of trading and of exhibition? Thus some machines which have been only assembled and packed in Canada have actually entered this country as British built. The new rules lay down, however, that the chassis and carriage work of complete cars shall be regarded separately, and that the country of origin shall be that within which the exhibits have been mainly produced, except that claim shall not be made for origin of any country within the British Empire.

GERMANY'S RE-ENTRY.

The forthcoming exhibition will be further notable in the history of the motor business in this country because, for the first time since 1913, German chassis and coachwork and other automobile goods are admissible and will be displayed. Thus there will be shown the six-cylinder Mercedes cars of various sizes, including the very high powered supercharged types, and which have perhaps an "academic interest" for medical men, since this year we have in the Lea-Francis a British car standardized with a supercharger. Mercedes pioneered this development as far as standardized motor car practice is concerned. I would describe the effect, from the driver's point of view, as being that when he has attained a certain speed and thinks he has got the utmost out of the engine, by further depressing the accelerator pedal so as to bring the supercharger into use he suddenly gets the impression that a second engine has been insinuated under the bonnet of the car. Then the need for gear changing is greatly reduced. At present, however, such a well proved device is available only in these very expensive cars which do not come within the purse-range of the average medical man, and its use sets up a moaning noise.

THE FORD SITUATION.

As in former years Ford cars will be conspicuous by their absence, because this firm has never signed the Society of Motor Manufacturers and Traders' bond. But, largely owing to an ingenious publicity campaign, many medical motorists are curious to know about the promised new style Ford car. It has even been hinted that it would be exhibited elsewhere in London concurrently with the Olympia show. This, however, will not be the case. I may state, as a result of private (as distinct from official) information from America, that the new Ford car is not even in production there, though large numbers of some of the parts have been going through the shops. So far approximately 350 of the new engines and chassis have been built and stored, pending Mr. Ford's final decision. Assembly production works in Detroit are in readiness to get going on a proposed schedule of approximately 300 cars a day, which is a very small output for Ford. Much has yet to be done before big production can be attempted. Even in America Ford agents are considering that they will be lucky if they get more than a sample car and a few spare parts during the rest of this year.

Changes are being made, and tests carried out, in connexion with pistons and connecting rods. A good deal of experimental work is still going on. Instead of all-steel pistons, for example, some on the Iyanite principle are being considered. Connecting-rod changes are being investigated, chiefly with a view to reducing cost, for it is intended to produce a better product at approximately the same price as that hitherto charged for Ford cars. Mr. Ford is not satisfied with the cost per car, nor that everything has yet been done to effect savings that will enable the car to be marketed at as low a figure as may be possible. A very important point is that, in association with his engineers, he has developed a new steel treatment, which is understood to produce a metal of great strength and toughness. If this is so it will be a big accomplishment, and will assist the sale of the new car just as the former method of steel

manufacture made possible the model "T." The new treatment of steel, together with the discarding of the use of malleable, in the new car has made possible a rearrangement of important parts of the factory plant, which, it is understood, will greatly reduce overhead charges and cut down the amount of labour needed. A like procedure is being followed in regard to all details of the works equipment, machine groupings being made to effect saving in operating costs: instance the fact that certain parts are now being made in three operations which formerly required six.

UNBREAKABLE GLASS AND EVAPORATED DYES.

Again, the glass plant is being employed on a much reduced scale pending the result of experiments now in progress concerning an unbreakable glass. The company is still awaiting the receipt of a number of important new machines that will play a big part in quantity production schemes. Practically all the change-over plans of production and factory equipment have now been completed. Plant for manufacturing lacquer for body finishes has been installed, and the company is making experiments on a large scale in the use of synthetic dyes from Germany. To lessen high duties on importing these materials the liquids in the dyes are evaporated off before shipment, so that large quantities may be sent across the Atlantic in concentrated form.

Seeing that the new Ford engine designed in America is 1/8 in. wider in the cylinder bore measurement, and that the piston travel is half an inch longer, it would appear to be an impracticable type for sale in this country, although it follows conventional construction and has an L-head, a pump-assisted cooling water circulation with a single piece two-bladed propeller-type fan, and oil-pump circulation at the base of the crank case. A five-bearing crank shaft of a much heavier type than in the model "T," and counter-balanced by the use of circular crank cheeks joining the crank pins, is another feature. But for new Fords to be built in this country and for the European markets an engine of about £12 taxation rating is in hand. The new type generator to be used on all Fords is equipped with oilless self-lubricating bearings; but the old Ford starter will be retained. An improved steel selective type transmission scheme, that practically reproduces the Lincoln scheme on a lesser scale, is a feature, as also will be a clutch on the Lincoln principle. The front axle will be heavier than in former Ford practice, on account of the provision of front-wheel brakes of the internal expanding type, equipped with two-piece steel brake-shoes on each drum and achieving a total braking surface of 144 square inches. Further, what Americans call parking brakes, and we call hand-controlled brakes, are mounted on the two rear wheels. The radiator and hood will be larger than in the model "T" Ford and with round lines. The top will be lower, bringing the car nearer the ground, and the springs will be flatter. The wheel-base will be 110 inches, and the hubs will be larger, with roller bearings in the wheels. The steering wheel will be of the irreversible type. Perhaps the most important point, however, is that, contrary to the practice hitherto pursued by Ford, plans permit of the new type of car being developed and changed in detail in exactly the same way that other motor manufacturers operate. Therefore, Ford cars may be presented in a different form from year to year, according as changes in demand come about.

NEW CARS WITH SIX AND EIGHT CYLINDER ENGINES.

Olympia will certainly provide greater mechanical novelties than will be found in the new Ford car, in spite of the fact that the notable new Durant series of 18-h.p., six-cylinder engined, low priced, external expanding, four wheel braked Rugby cars, listed at from £285 to £365 complete, will not be shown, being sixth on the society's waiting list of would-be exhibitors. Nevertheless, there will be many entirely new vehicles in almost all categories, though the majority have six-cylinder engines. But no less a constructor than Wolseley, now owned by Mr. W. R. Morris, will introduce a 12/32-h.p., 1,542 c.cm., four-cylinder engined, £12 tax, four-speed, £315 all-steel saloon car with an overhead valve cam shaft, listed at £295 as a four-seater; Standard will show a four-cylinder 9-h.p. car; Bean a new 14-h.p. four-cylinder car; and Clyno will intro-

duce a new four-cylinder 9-h.p. car selling at £145 or as a fabric saloon at £160, and also a two-seat £250 12/35-h.p. model. At the other extreme Daimler brings the V-type twelve-cylinder double sleeve-valve engined chassis within the purse, running cost, and coachwork range of a much wider public than the nominal 50-h.p. type. That is now supplemented by a 30-h.p. machine that will be shown at Olympia, and an example of which has been ordered by the Queen. It is an admirably flexible and speedy car for the specialist.

Apart from the introduction of some new "straight-eight" American cars—as well as of the Cadillac-built V-type La Salle—a notable British supplement to Sunbeam's enterprise in this connexion will be the introduction of an overhead valve "eight-cylinder-in-line" engined nominal 20/60-h.p. Wolseley car. Perhaps I should mention that one of Mr. Morris's hobbies for some years has been the private building, at great expense because on an experimental scale, of eight-cylinder-in-line engined cars, he himself being a firm believer in the principle. This eight-cylinder Wolseley is notable for its relatively low cost, the bore measurement being 2 9/16 inches and the piston travel 4 inches. The exhibit will show the chassis fitted with a smart covered saloon body of modern type, ample accommodation, and luxurious upholstery in the best leather to the high waistline, the upper portion being finished in cloth. The list price is £750 only. The bucket-type front seats are adjustable independently, and the rear seat, which accommodates three persons, has arm rests on either side. The engine, clutch, and gearbox are also to be shown as a separate unit. The robust and carefully balanced crank shaft is arranged to run in ten white-metal lined bearings. The high-tension ignition has both hand and automatic control, and the patent automatic equalizing carburettor is fitted with an air cleaner. Among new American "straight eights," too, will be found the Marmon and the Auburn, the latter an assembled car; and the German industry contributes a fine example in the three-litre Horch.

WHY MORE CYLINDERS?

I indicated in these columns last year that in the near future, six-cylinder engines would be in a considerable majority, not as regards chassis models only, but also as regards the total number of cars to be built. We have not reached that stage yet, because Ford is still rather obsessed with the four-cylinder idea, though he is experimenting with six-cylinder engines; but that type is being made in greater varieties, and also in smaller sizes. Therefore already it is being made available in some cases at unprecedentedly low prices this year—instance the new side-valve 1,474 c.cm. Renault "Monosix." Indeed, whether we turn to the American, to the Continental, or to the home industries, it will be found that most of the entirely new chassis to be shown at Olympia have six-cylinder engines. The reason is that, no matter how quickly a four-cylinder engine is made to accelerate, still this cannot be done so smoothly, nor with such absence of strain to the mechanism, as with a six-cylinder machine of equal power, because, to put the matter non-technically, with a four-cylinder engine the most that can be done is to have the explosions just connecting up, whereas those explosions, or power pulses, must overlap in a six-cylinder construction. Of course, on an eight-cylinder engine, designed and built to possess equal merit, this advantage is still more pronounced. That is why, in the luxury car class, the eight-cylinder engine is coming rapidly into vogue, standing to-day in much the same relation to the six-cylinder type that hitherto the latter has occupied in relation to the four-cylinder engined car.

There is, of course, nothing at all experimental about the six-cylinder engine as such. Indeed, one might say that, in face of our aircraft engine experience, there would be nothing experimental about making an eighteen-cylinder engined car, not that such a prime mover is likely to be required for car service, though the Daimler "double sixes" are a practical exposition of still greater flexibility, and therefore of more top-gear drive, than is possible with an eight-cylinder engine of equal capacity. The element of doubt about any new six-cylinder engined

chassis must consist entirely in this, that either the designer or the builder, or both, may lack previous experience of standardizing six-cylinder power units. This year has not been without costly illustrations of the fact that one may even have made successfully a six-cylinder engined chassis in the pre-war period, but that that experience will not necessarily suffice when deciding to return to that sort of enterprise after an interval of twelve or more years.

SOME TYPICAL NOVELTIES.

By way of illustrating the quite new six-cylinder engined types that will be introduced to the public next week, I may mention the enterprise of the Peerless Motor Car Corporation of Cleveland, Ohio, one of the three foremost high-grade car builders in the United States since pioneer days, in introducing a £435 six-cylinder engined car. Auburn will also show a vehicle with a six-cylinder engine; and Dodge Brothers of Detroit and Toronto will show a new six-cylinder engined range of 224 cubic inches cylinder capacity, having a sturdily built crank shaft, the scheme being standardized with all-steel bodies by the pioneers of that system of construction now taken up by Citroën and by Morris for certain types. This is the first six-cylinder car built by an organization which has produced and sold over two million four-cylinder engined Dodge cars in thirteen years. Among other types, France sends a new 16-h.p. Darracq, and Fiat introduces an £18 tax side-valve six-cylinder engined chassis, which will be shown both in that form and as an interior driven saloon. All the German Mercedes cars have six-cylinder engines, three types—with two-litre, three-litre, and four-litre engines respectively, the two former with side-by-side valves and the last-named with the overhead form—being non-supercharged; and three overhead valve engined types of 33/140, 33/180, and 33/220-h.p. respectively, with superchargers.

New British six-cylinder engined cars of note will be shown by Alvis (a two-litre), Rover (a two-litre), Armstrong-Siddeley (a two-litre 15-h.p. type), Arrol-Aster (20/60-h.p.), Star (18/50-h.p.), and Vauxhall (£20 tax, 20/60-h.p.). The 16-h.p. Austin, announced a month ago for delivery in March, will not be shown.

NEW BIG SCALE BRITISH LARGE CAR PRODUCTION.

From the points of view of manufacturing and marketing the most conspicuous six-cylinder engined British novelty of the show will be the new Vauxhall. It is the first-fruit of the purchase, two years ago, of that old-established company, always concerned with building a limited number of very high grade cars at Luton, where the works have been enlarged to facilitate the production of this new style machine of quality at the rate of 200 cars a week, or 10,000 vehicles a year, at a chassis price of £375, or as a Princetown five-passenger touring car, complete with all-weather and other equipment, for £475, as a two-seater for £485, as a coupé for £670, as an enclosed limousine for £520, and as a five-passenger Bedford saloon for £495. From the point of view of the evolution of the motor vehicle this is extremely interesting, because it might be called a Vauxhall car of Vauxhall quality, but of redistributed values. Thus in the past great expense has been incurred to achieve certain qualities required by a very limited section of the motoring public, who are prepared to pay for them, and, being expert drivers, do not mind changing speed frequently. But in making an appeal to justify such an output as is now embarked on we get a car which, while obviously a Vauxhall, nevertheless incorporates certain phases of American practice which have been proved to appeal to the generality of motor users the world over. This is notably so as regards gearing of the back axle and engine speed. The non-technical motorist's ideal is to be able to do what is called "step on the accelerator pedal," whereupon the car should gather speed without misusing the engine. That feature, pioneered by the American industry, is to be found in the new Vauxhall car. When, however, we come to such delicate matters as engine balance, engine efficiency for volume, and so forth, or the four wheel braking scheme, or the steering, or the freedom from vibration and the accuracy of the suspension, we find American practice far eclipsed and the best European

standards maintained. In other words, this is essentially not an American Vauxhall, nor a transatlantic car of any sort, since it is ahead of what American manufacturers can achieve. I consider it a very happy combination of American features that make the widest appeal with European and, especially, British features that are as yet unequalled. Undoubtedly this is a car destined to exercise a very important influence in the full scale six-cylinder engined car market, for it is pre-eminently suitable for service overseas as well as in this country. The light steering employs the Marles cam and roller principle. The gearbox gives four speeds forward, though these are controlled centrally in American style. Semi-elliptic springs are used fore and aft.

GENERAL DEVELOPMENTS.

Incidentally, a study of the products of the American industry reveals a distinct tendency to achieve lower centres of gravity by "double dropping" the frames in the manner exploited in Europe by certain constructors for years past. In regard to covered bodies, the problem of ventilation is receiving much-needed attention in this country. Hitherto one had to get a car specially built if air and light were to be admitted through the roof. Now, however, several constructors will be found offering standardized saloons with non-rattling but movable roof schemes, whereby one can enjoy ventilation and proceed in sunshine without glare, and without draught, because all the windows can be kept closed. Undoubtedly there will be as big a vogue for these bodies as for the fabric type of covered coachwork, which comes into its own this year. We shall see it on cars of all sizes, powers, and costs. Some Americans standardize ventilators at the top of one-piece wind screens, which prove admirably effective. Steel building of covered cars also gains some adherents. Lacquer finish is all but universal for standardized productions, and big advances will be observable—notably on the part of the British industry—in that connexion this year.

Of course, nowadays, nobody should have a car without four wheel brakes. No one system is universal; but a great number of the systems produced by accessory manufacturers, and standardized by the producers of cheap cars, exhibit much-needed improvements in detail. A good deal, however, has still to be learnt about four wheel brakes by at least three car builders out of four. The problems involved are incapable of non-technical explanation, even if a whole article were devoted to them. Suffice it to say that one of the practical features of the low-priced four wheel brake equipment this year is that no attempt is made to absorb too much power through those European systems which are not absolutely scientific, and that there is therefore less chance of the driver coming to harm if anything goes wrong. A section of the American industry still continues to employ contracting band brakes, an obsolete system that has no justification. No medical man should have any car with a contracting collar brake. Instead of checking the wheel, this type either chokes it or lets it run free, skidding being one of the unsatisfactory results.

The advantages of studying overseas conditions in many of the Dominions is revealed in the new series of Hillman cars. These remain four-cylinder engined machines, but they look at least twice as important as before, have longer wheel bases, much better balanced engines, and much better steering. They are now really suitable for service overseas. The wings can be sat on without harming them. Yet this is not an American car, but essentially a British product, as may be judged by the comfort of the seating, for our designers can achieve much more accommodation within a body of a given dimension than is the custom in transatlantic practice. Pneumatic cushioning, instead of spring and hair types, gains many adherents for standardized practice, and is most advantageous; it is the only type at all satisfactory for such hard conditions of use as high-speed aircraft service. Central chassis lubrication gains a notable British adherent in Armstrong-Siddeley.

Incidentally, the opening of the Motor Show will coincide with the completion of the building and equipment of factories in this country by three important foreign tyre manufacturers, so that henceforth there should be no monopoly in this industry.