

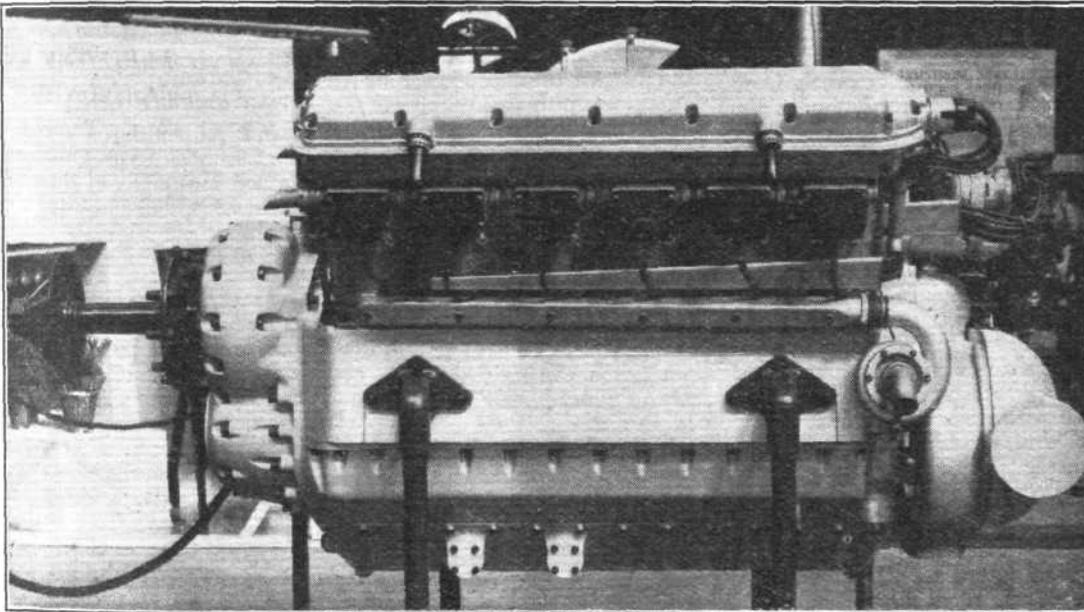
of bronze. The valves and rocker gear are totally enclosed in substantial housings, the fixed portion of the housings being cast integral with the heads. The inlet and exhaust ports are located at the same side of the head, the valves being arranged on the fore and aft centre line of the cylinders. The cast aluminium manifold is of the branched type and has a "hot-spot" connection to the similarly cast exhaust manifold. The crankcase is of Electron alloy, which probably accounts for a considerable portion of the weight saved. It is not divided on the centre line of the crankshaft but above this, the top portion forming a tank having an oil capacity which is sufficient for a six hours' flight. Dry sump lubrication is provided, one pressure and two scavenge pumps being fitted. The crankshaft is carried in six bearings, the foremost supporting the crankshaft extension, on which the airscrew hub is mounted, and forming the thrust bearing. The two Scintilla magnetos are mounted one at either side of the forward extension of the crankcase, with their distributors facing rearwards. A Sum carburettor supplies the mixture to the branched manifold previously mentioned.

Mércèdes-Benz

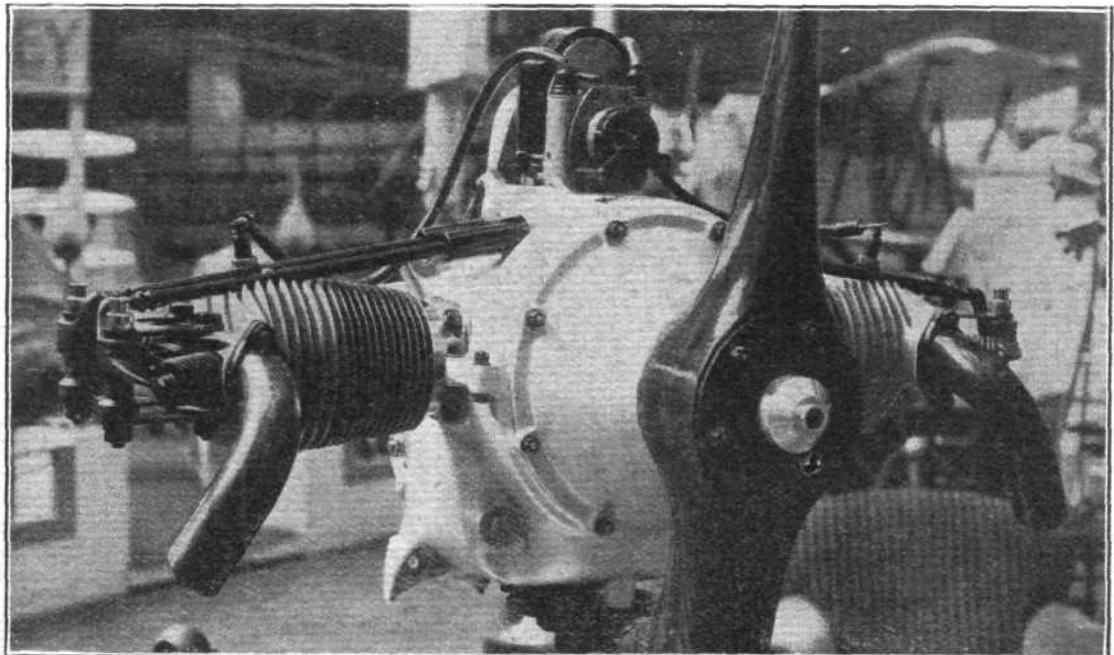
This firm is showing one example from each extreme of the scale, namely, the 1,000 h.p. type F.2 supercharged

engine, and the little twin-cylinder air-cooled horizontal opposed type F.7502 light 'plane engine. The large engine is of the geared 12-cylinder water-cooled 60° V. type, in which the cylinders form separate units, having welded-on sheet steel water jackets. The bore and stroke are 165 mm. and 210 mm. respectively. The engine develops 800 h.p. at 1,500 r.p.m., when normally aspirated, or 1,000 b.h.p. at 1,700 r.p.m. with the compressor in operation. The supercharger is of the usual Mércèdes controlled form, as applied to the cars of that make. It is the only one of its type in the show, as it is fitted "before" the carburettor, *i.e.*, its function is to supply air under pressure to the carburettor instead of drawing carburetted air and supplying it under pressure to the cylinders, as in other types of superchargers to be found at Olympia. The engine is provided with a dynamo and electric starting motor (this not being fitted to the engine shown), and with these accessories weighs 1,800 lbs. or 1,650 lbs. if directly driven. The reduction gear is of the spur type and provides a ratio of 0.51 : 1.

Four valves are provided in each cylinder head, two inlet and two exhaust, the valve gear being totally enclosed by aluminium covers and lubricated under pressure. The crankcase is of Electron and is so constructed that inspection is facilitated by the removal of a tray fitted at the bottom.



The Mércèdes-Benz 1,000-h.p. type F.2 is a super-charged and geared engine.



At the other end of the scale : the little flat twin Mércèdes engine develops 20 b.h.p. at 3,000 r.p.m.