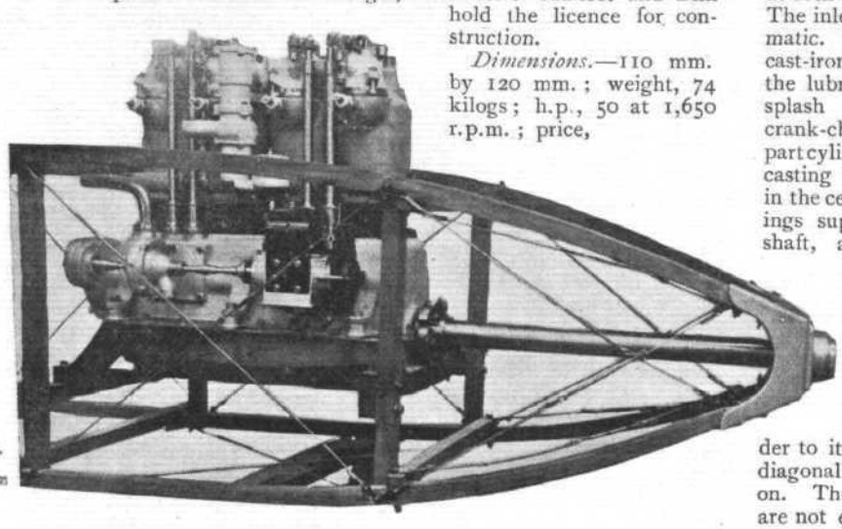
FLIGHT ENGINES AT PARIS SHOW—(*continued from page* 675).

C.A.M. 50-h.p.—Four-cylinder, vertical type, water-cooled engine, having separately-cast cylinders with copper jackets electrolytically deposited. A section of the cylinder and its jacket exhibited at the Salon is not remarkable for large water-space in the vicinity of the valves. Both valves are placed vertically in the cylinder-heads and both are mechanically operated. A peculiar detail is the use of concentric tappet-rods for operating the inlet and exhaust-valves of each cylinder. The most remarkable feature of this engine is that aluminium pistons are used.

The patents are those of Clerget, and Messrs. Malicet and Blin hold the licence for construction.

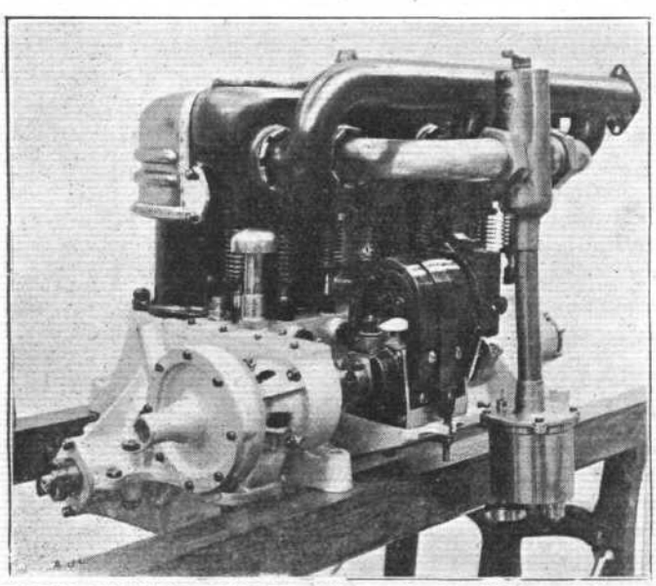
Dimensions.—110 mm. by 120 mm.; weight, 74 kilogs; h.p., 50 at 1,650 r.p.m.; price,



PARIS FLIGHT SHOW.—View of the C.A.M. motor made by Messrs. Malicet and Blin. The pistons of this engine are made of aluminium.

Dutheil-Chalmers.—Horizontal opposed cylinder engines, built both in 2 and 4-cyl. types. The cylinders and pistons are steel; the water-jackets are made of copper. Particulars of the construction of the engines have already appeared in FLIGHT.

Clement-Bayard 40-h.p.—Four-cylinder vertical water-cooled engine, cast *en bloc*, but having part of the water-jacket made out of a single sheet of beaten copper. The copper is fastened in place by a band of steel, held down by screws. All the valves are arranged on the same side, and are mechanically operated. The cam-shaft

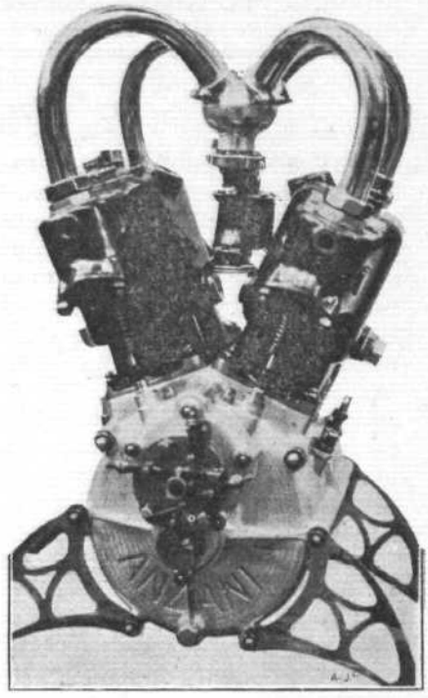


PARIS FLIGHT SHOW.—View of the 40-h.p. Clement-Bayard engine, showing the fastening of the copper water-jacket to the cylinder-casting.

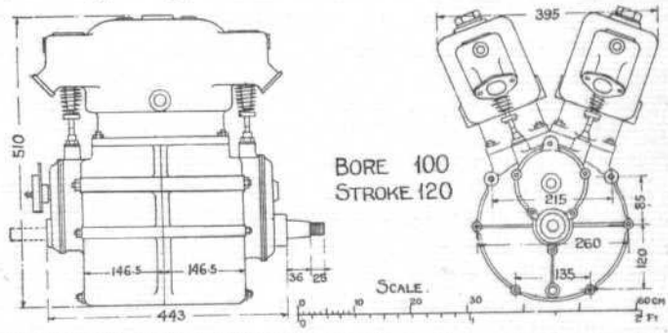
operates a small oil-pump direct, while a secondary shaft drives the magneto and water-pump. The design is very much on the lines of the automobile engine.

Dimensions.—100 mm. by 120 mm.; weight, 100 kilogs.; h.p., 40.

Anzani 35-h.p.—Water-cooled 4-cyl. V-type engine, having the cylinders cast in pairs with the valve-chambers at each end of the casting. The exhaust-valves for opposite cylinders are controlled by the same cam-wheel by means of rock-levers; this mechanism is of course in duplicate, as it is required at both ends of the engine. The inlet-valves are automatic. Steel pistons with cast-iron rings are used; the lubrication is on the splash system. The crank-chamber is a two-part cylindrical aluminium casting joined vertically in the centre. Two bearings support the crank-shaft, and the crank-chamber encloses two balanced fly-wheels. The cylinders are set at 45°, and the order of firing is from one cylinder to its opposite, then diagonally across, and so on. The firing intervals are not equal throughout the cycle of two revolutions, owing to the displacement of the axes of the cylinders in the V formation. There are two periods of 180° (*i.e.*, a half-revolution), but the other two are 180° plus or minus 45°. Thus if the first interval is (180 − 45) = 135° then the second will be 180°, the third (180 + 45) = 225°, and the fourth 180°. The crank-shaft has two



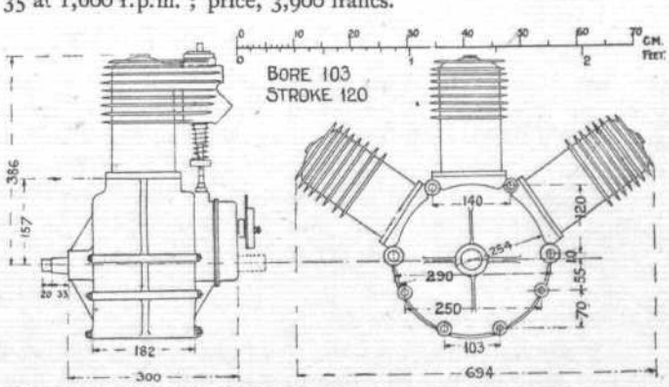
Paris Flight Show.—The new 35-h.p. 4-cyl. water-cooled Anzani engine.



PARIS FLIGHT SHOW.—Outline dimensioned drawing of the new 4-cylinder water-cooled 35-h.p. Anzani engine.

cranks set at 180° apart, and each crank carries two connecting-rods, one being forked to bridge the other on the journal.

Dimensions.—100 mm. by 120 mm.; weight, 83 kilogs.; h.p., 35 at 1,600 r.p.m.; price, 3,900 francs.



PARIS FLIGHT SHOW.—Outline dimensioned drawing of the 3-cylinder air-cooled 25-h.p. Anzani engine as used by M. Bleriot in the cross-Channel flight.