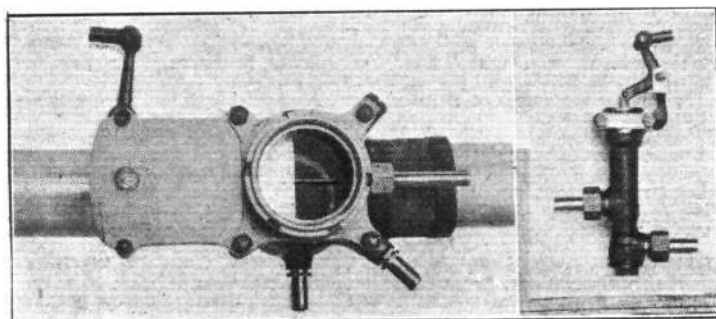


## THE BLOC-TUBE CARBURETTOR

It would be difficult to secure a more expressive name for a carburettor than that selected by M. Rene Tampier, for it explains the principle upon which it has been designed. When he set to work on the problem of producing an aero-engine carburettor, M. Tampier set himself two guiding rules: 1, that the flow of the petrol from the tank to the engine should be free and not controlled by any automatically-operated device, and 2, that the final aperture through which petrol must pass should be capable of being cleaned when necessary and be free as far as possible from any possibility of being choked by any particles of dirt or foreign matter. He also realised that the conditions under which an aero-

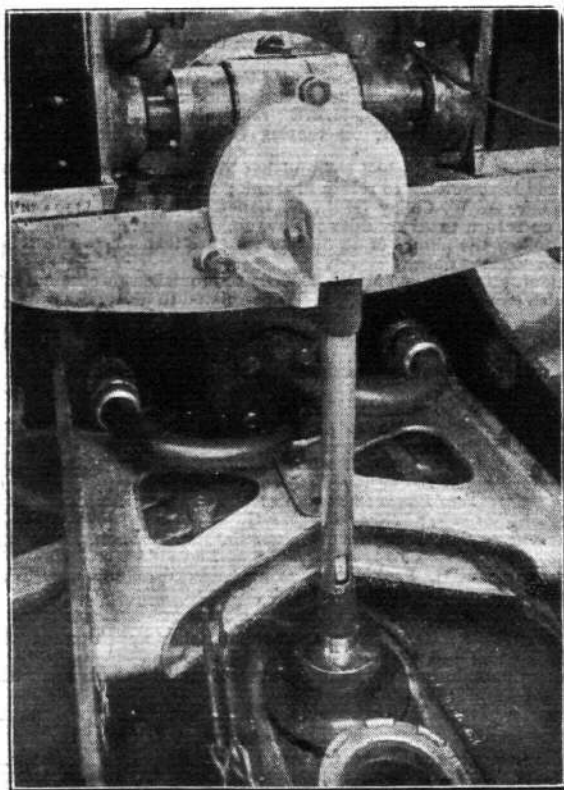
sprayed into the column of air, and so forms the explosive mixture; when the engine is stopped the needle cuts off the supply of petrol and is held down by a light spring, contained in the slide, pressing on its upper end. In order to obtain the correct proportions of petrol and air for various speeds of the engine, the needle is given a special shape,



**THE BLOC-TUBE CARBURETTOR:** Photograph showing the complete device. On the right the new Tampier Fine adjuster for controlling the amount of petrol fed to the carburettor

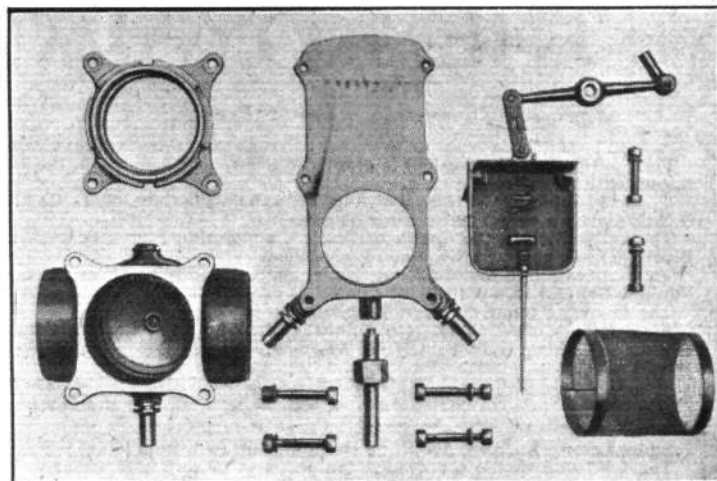
motor works are quite different from those which prevail for a motor-car engine. He noted that when the throttle of an aero-engine is being opened gradually the revolutions of the propeller increase in a definite ratio whether the machine be on the ground or in the air, or in other words the number of revolutions varies with the proportion of petrol supplied to the engine.

From the photographs showing the Bloc-tube carburettor



**Fitting of Bloc-tube petrol pump and drive on a Spad**

complete and in parts it will be realised that the device is a very simple one. The amount of petrol which passes to the engine is controlled by a tapered needle working in a nozzle at the end of the fuel supply pipe, while the air is regulated by the flat slide working across the circular inlet port. As a result, when the engine is running the petrol is



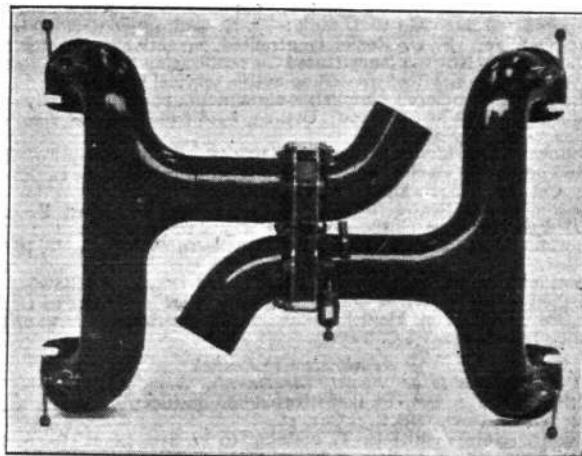
The Bloc-tube carburettor dismantled, showing its various component parts

this being determined, according to the type of engine, by experiments on the test bench and in the air.

Further, in order to obtain the weakest mixture under all conditions, M. Tampier thought out another device, which he calls a fine adjustment. It is in effect a cock, but designed on the same principle as the carburettor, inasmuch as it has a needle working in a jet, the position of the needle being controlled by a rod and lever. The fine adjustment also embodies a filter screen.

Having got thus far, M. Tampier set to work to produce a satisfactory control-lever, and eventually designed one which is held fast in any position by means of a friction-spring. This is connected up to the carburettor by rods and levers, and has proved so satisfactory in service that we understand it is a standard fitting on French machines, and has been used extensively on Allied machines.

Although the use of the Bloc-tube carburettor has been most extensive in connection with rotary motors, it has also given good results on fixed engines, and one of our photographs shows a twin carburettor fitted to a Hispano-Suiza engine. In this connection M. Tampier has devised a petrol pump worked positively, by means of a small bevel gear, from the engine. One of these pumps, working inside the petrol tank was tested for 500 hours at the French Govern-



**Twin Bloc-tube carburettor for Hispano-Suiza engine**

ment factory at Chalais Meudon, and when it was taken to pieces, every part was found to be in very good condition with no signs of undue wear and the inside of the pump was found to be quite clean.

These are but a few of the many ingenious devices which have been produced by M. Tampier, who, it is interesting