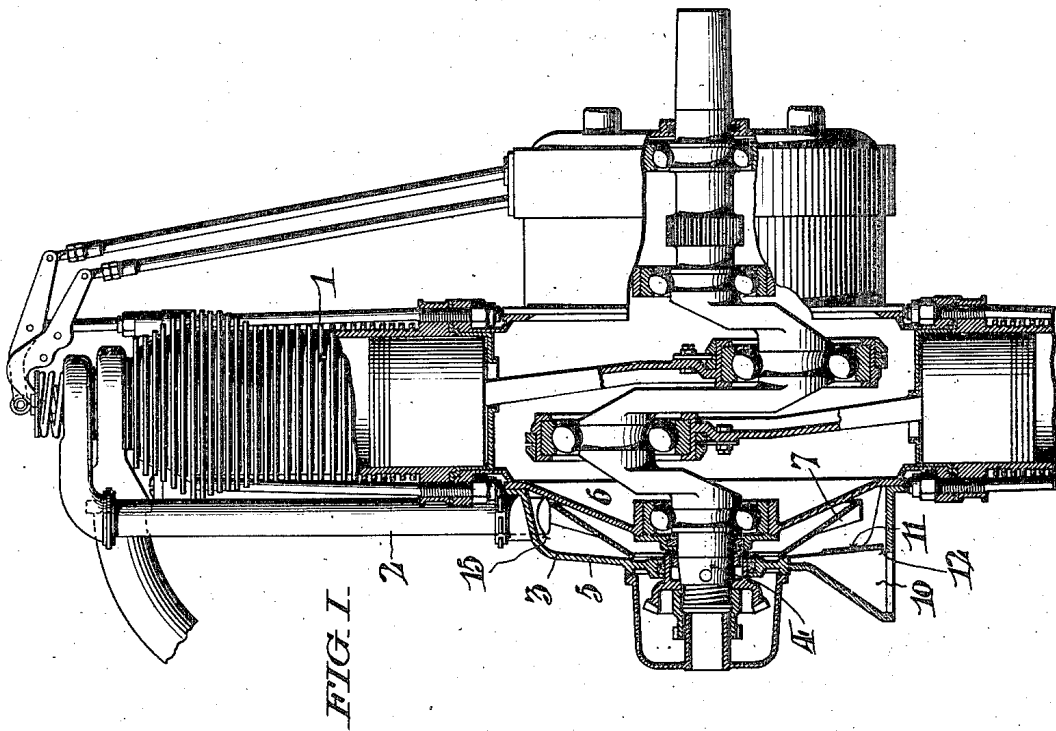
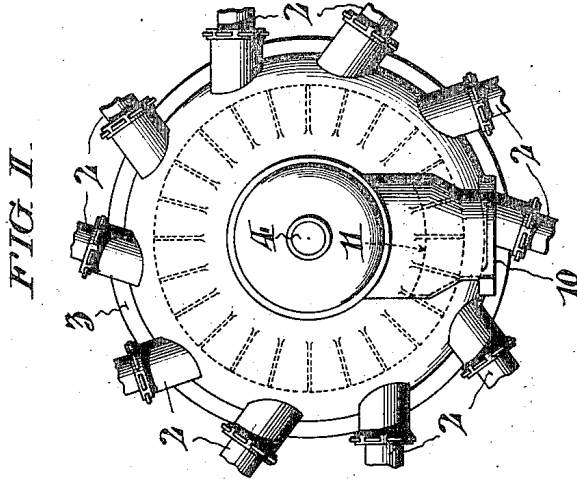


J. W. SMITH.
INTERNAL COMBUSTION ENGINE.
APPLICATION FILED SEPT. 12, 1916.

1,229,340.

Patented June 12, 1917.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN W. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

INTERNAL-COMBUSTION ENGINE.

1,229,340.

Specification of Letters Patent. Patented June 12, 1917.

Application filed September 12, 1916. Serial No. 119,615.

To all whom it may concern:

Be it known that I, JOHN W. SMITH, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Internal-Combustion Engines, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in internal combustion engines having a plurality of radial cylinders to which the explosive mixture is led by way of an induction case. My improvements relate specifically to the detailed construction of this induction case, whereby a more even mixture is distributed to all of the cylinders.

In the accompanying drawings, Figure I, is a sectional view of a part of the engine embodying my invention, and

Fig. II, is a side elevation of the induction case.

The cylinders 1, of the engine receive their explosive mixture by way of radial induction tubes 2, all of which lead from a centrally situated annular induction case 3, which surrounds the shaft 4, of the engine in a plane corresponding to that in which the tubes 2, lie. The induction case comprises an outer wall 5, and an inner wall 6, with a rotary centrifugal fan 7, mounted between the two. The inlet opening 10, by which an explosive mixture from the carbureter is drawn into the induction case is formed in the side 5, of the induction case toward its lower edge. For this purpose the side 5, is offset as shown, so as to be removed from the plane in which the disks of the fan rotate. In order that the inlet 10, may discharge as near as possible to the center of the induction case, the inner side of this opening is protected interiorly by the baffle plate 11, the outline of which appears in dotted lines in Fig. II. The shape of this baffle plate is such that the incoming stream of explosive mixture is deflected across its surface and around its inner edge toward the center of the fan, by which said mixture is immediately taken up and further atomized and driven by its centrifugal action into the tubes 2. These tubes project slightly within the periphery

of the induction case, as shown at 15, so as to prevent any liquid fuel drawn in with the explosive mixture from accumulating in the lower part of the induction case and being thence driven in liquid form into the lowermost pipes.

To properly dispose of such accumulating liquid the baffle plate 11, is so constructed as to provide a by-pass in the form of a slot 12, along its edge and in proximity to the edge of the inlet 10, whereby accumulating fluid flowing into contact with the stream of the incoming mixture is taken up and delivered near the center of the fan, and again atomized and driven by centrifugal force into the tubes 2.

In this way a rich mixture is evenly distributed between the radiating pipes and any tendency to feed a leaner mixture to the upper pipes than to the lower pipes is overcome.

Having thus described my invention, I claim:

In combination an internal combustion engine with radially arranged cylinders; an annular induction case centrally mounted near the plane of these cylinders; induction tubes connecting the periphery of the induction case with the cylinders; a centrifugal fan rotating in said fan casing; an inlet opening for the induction case offset from the plane in which said tubes enter it, delivering an explosive mixture in the central region of the fan casing, and a baffle plate interposed within the induction case to deflect the incoming mixture toward the center of the same, with a by-pass at the lower edge of the said baffle plate, whereby fluid driven by the fan from the mixture toward the periphery of the fan casing is allowed to escape, and again come into contact with the incoming mixture.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this ninth day of September, 1916.

JOHN W. SMITH.

Witnesses:

JAMES H. BELL,
E. L. FULLERTON.