Aug. 11, 1931. O. H. SPENCER 1,818,283

ENGINE INLET MANIFOLD

Filed May 3, 1929

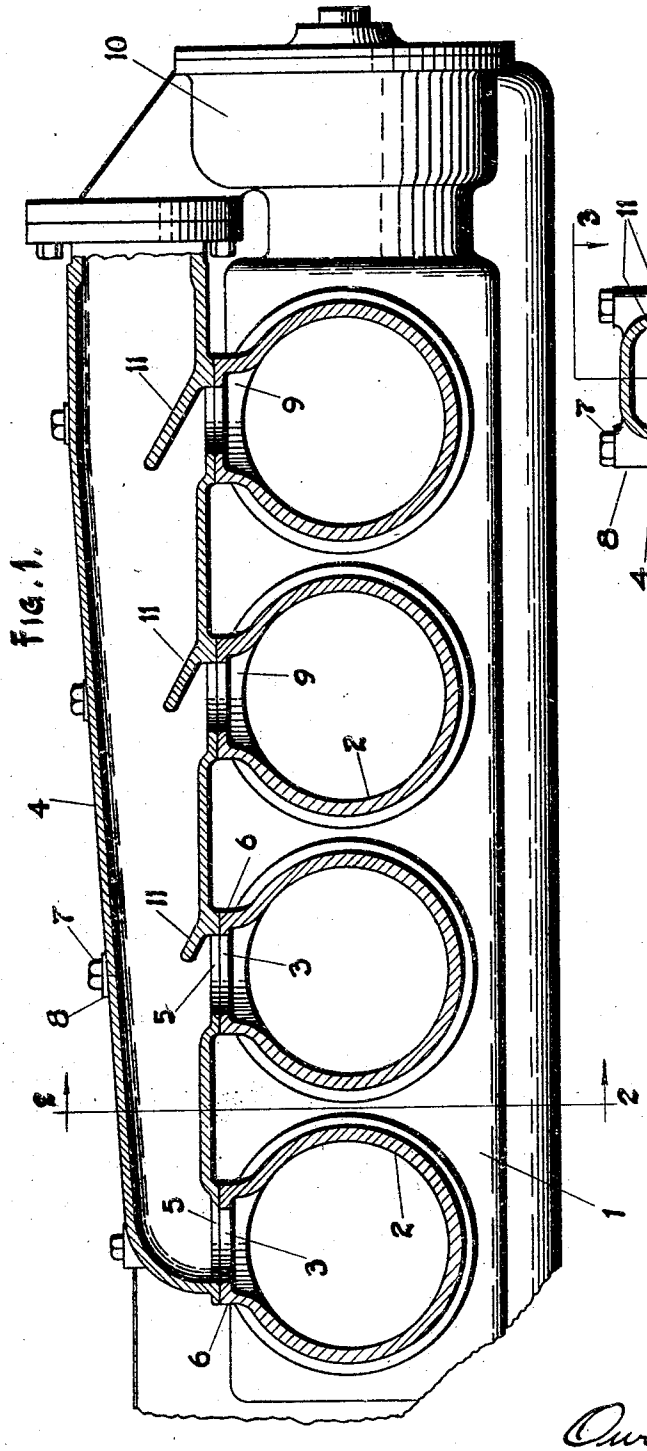


Fig. 1.

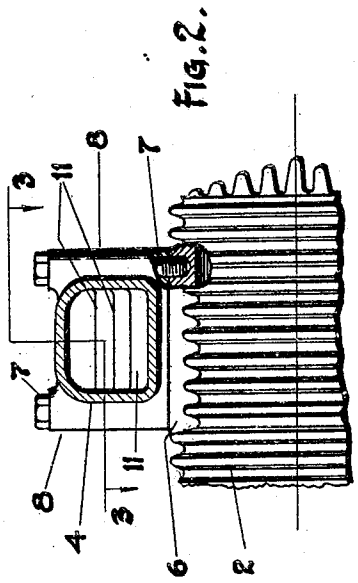


Fig. 2.

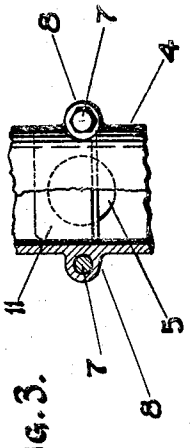


Fig. 3.

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Patented Aug. 11, 1931 1,818,283

UNITED STATES PATENT OFFICE

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ENGINE INLET MANIFOLD

Application filed May 3, 1929. Serial No. 360,271.

This invention relates to means for introducing air or gaseous products into the cylinders of an engine, and one feature of the invention is the provision of means for equalizing the quantity of air or the like introduced into each cylinder.

A further feature of the invention is the provision of a single manifold for conveying the air or the like from a common source to all of the cylinders.

A further feature of the invention is the provision of means for forcing the air into the manifold with sufficient force to cause it to travel the full length of the manifold.

A further feature of the invention is the provision of means for attaching the manifold to the cylinders of the engine.

Other objects and advantages will be hereinafter more fully set forth and pointed out in the accompanying specification.

In the accompanying drawings which is made a part of this application,

Figure 1 is a top plan view of an engine with the cylinders and manifold in section.

Figure 2 is a sectional view as seen near line 2—2, Fig. 1, and,

Figure 3 is a sectional view thru the manifold, as seen along line 3—3, Fig. 2.

Referring to the drawings, the numeral 1 indicates an engine base on which are mounted cylinders 2, said cylinders having ports 3, thru which air or gaseous mixtures may be introduced into the cylinders.

Cooperating with said cylinders 2 is a single manifold 4, said manifold having ports 5, which register with the ports in the cylinders and thru which the contents of the manifold pass to the interior of the cylinders. The faces of the cylinders 2 are provided with bosses 6, at points around the ports 3, into which thread bolts 7, or the like, said bolts extending thru hollow ribs 8, on the opposed faces of the manifold 4.

The bosses 6 are preferably hollowed out immediately surrounding the ports 3, as indicated at 9, the hollowed out portions being conveniently curved, while the bosses are preferably oblong.

Cooperating with the manifold 4, and at one end thereof, is a fan structure 10, by means of which the air will be entered into the manifold under pressure and cause it to travel the full length of the manifold, any suitable fan mechanism or blower being used.

As the force of the air will be greater at the entrance end of the manifold than at the opposite end thereof, the air or gas passing thru same would be normally inclined to enter the nearer ports 3 and 5, than the ports at the other end of the manifold, hence the air would not properly enter the different cylinders in even amounts nor at uniform pressure as will be understood by those familiar with the art. To overcome this objectionable feature, baffles 11 are provided in the manifold, precedent to each of the ports 5 except the last one, said baffles being inclined and pointed in the direction of travel of the air thru the manifold, thus creating a sufficient suction tendency beneath the baffles against the cylinders to overcome the tendency of the pressure within the manifold to enter the first cylinders in excessive quantities.

As the pressure or force of the air is greater at the entrance end of the manifold, the length of the baffles 11 is gradually decreased at each succeeding port from the entrance end of the manifold toward the closed end thereof, so that practically the same amount of air will enter each cylinder, although the pressure is greater over the first cylinder than the second and so on to the end of the row of cylinders.

The same action will result when an ordinary carbureter (not shown) is attached to the end of the manifold, the suction created by the operation of pistons within the cylinders drawing a supply of fuel into the cylinders thru the manifold at sufficient speed so that the same baffles acting in the same manner regulate the amount of fuel drawn into each succeeding cylinder.

While the description and drawings illustrates in a general way certain instrumentalities which may be employed in carrying the invention into effect, it is evident that many modifications may be made in the various details without departing from the scope of the appended claims, it being understood

that the invention is not restricted to the particular examples herein described.

I claim as my invention:

1. A manifold having ports and baffles cooperating with certain of said ports for regulating the passage of air or fuel thru said ports, said baffles decreasing in length from the entrance end of the manifold to the opposite end thereof the baffles being inclined away from the direction of travel of the medium passing through the manifold.

2. Means for introducing air or the like into the cylinders of an engine, the combination with cylinders having ports, of a manifold for conveying air to said cylinders, said manifold having ports for registration with the ports of the cylinders, means for entering air or the like into said manifold, and baffles in the manifold adjacent the ports therein for regulating the volume of air or the like entering the cylinders, said baffles decreasing in length from the entrance end of the manifold to the opposite end thereof the baffles being inclined away from the direction of travel of the medium passing through the manifold.

3. Means for entering air or the like into the cylinders of an engine, a manifold having ports, baffles cooperating with certain of said ports for regulating the passage of air thru said ports, said baffles decreasing in length from the entrance end of the manifold to the opposite end thereof the baffles being inclined away from the direction of travel of the medium passing through the manifold, and means for attaching the manifold to the cylinders of an engine.

In testimony whereof, I have hereunto set my hand on this the 2nd day of May, 1929, A. D.

OWEN H. SPENCER.