M. B. RICE.

MANIFOLD FOR INTERNAL COMBUSTION ENGINES.

APPLICATION FILED MAR. 26, 1910.

974,992. Patented Nov. 8, 1910.

Fig. 1.

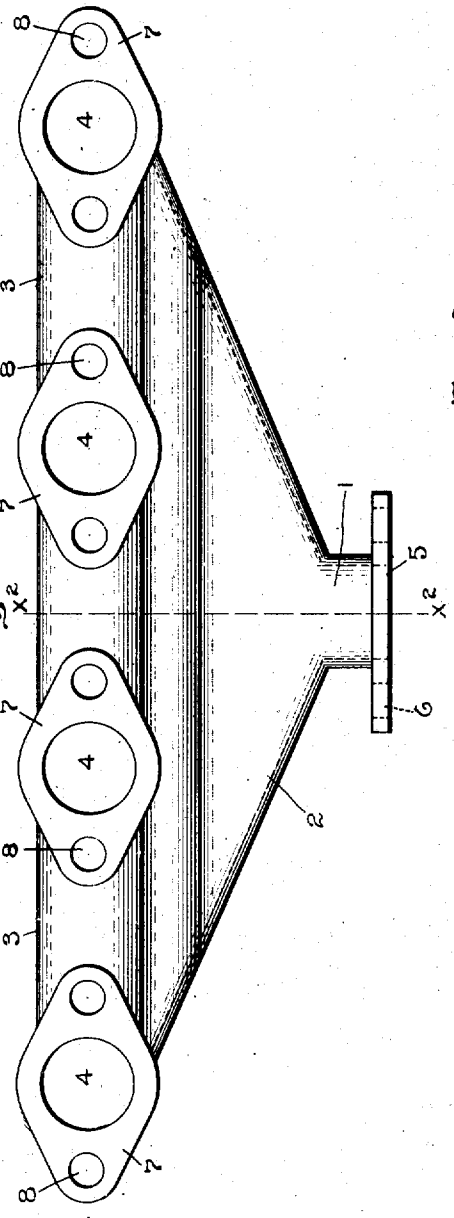
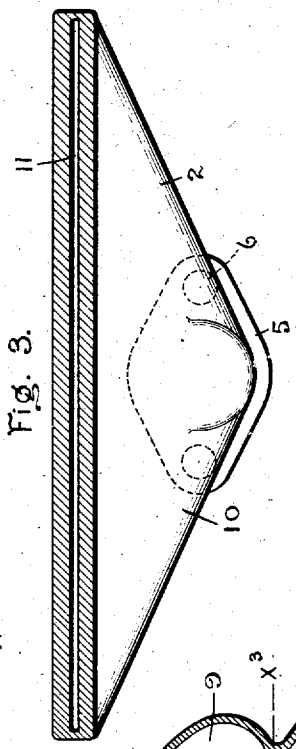


Fig. 3.



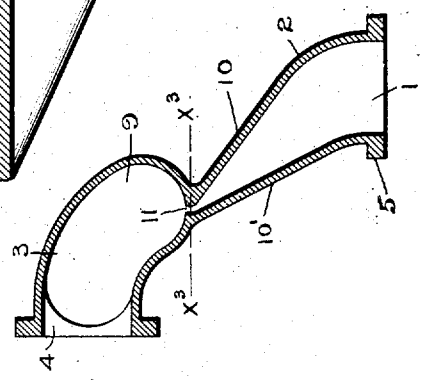


Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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MANIFOLD FOR INTERNAL-COMBUSTION ENGINES.

974,992. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed March 26, 1910. Serial No. 551,786.

To all whom it may concern:

Be it known that I, MERRILL B. RICE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Manifold for Internal-Combustion Engines, of which the following is a specification.

This invention relates to means for connecting the carbureted mixture from the carbureter to the cylinder of a multi-cylinder internal combustion engine, and the main object of the invention is to provide means for this purpose which will distribute the mixture uniformly or equally to the several cylinders as regards quantity and quality of the mixture.

Another object of the invention is to provide a manifold of simple construction for the purpose stated.

Other objects of the invention will appear hereinafter.

The invention is illustrated in the accompanying drawings, and referring thereto, Figure 1 is a rear elevation of the manifold. Fig. 2 is a vertical section on the line x^2—x^2, Fig. 1. Fig. 3 is a horizontal section on the line x^3—x^3, Fig. 2.

The manifold preferably consists of a single integral cap and comprises an inlet portion 1, a distributing portion 2 extending directly upward from the inlet portion 1 and an elongated head 3 at the upper end of said distributing portion, said head being provided with a plurality of outlets 4 for communication with the respective cylinders of the engine.

The inlet portion 1 may be integral in form and may be provided with a flange 5 perforated as at 6 to enable it to be fastened to the carbureter or other mixture supply means. The outlet portions 4 on the elongated head 3 are similarly provided with flanges 7 perforated at 8 for attachment to the respective cylinders. The elongated head 3 is provided with a downward extension or weld 9 having an elongated slot 11 at its bottom communicating with the upper end of the distributing means 2. The end walls of said distributing means diverge upwardly from the inlet portion 1 so as to extend directly to the outer end of the elongated head 3 so that the upper end of said distributing means is longitudinally coextensive with said head, said elongated head being of sufficient length to include all of the inlet openings 4 for the respective cylinders. The front and rear walls 10, 10′ of the distributing means 2 converge, as shown in Fig. 2 so that the actual area or cross section of the distributing means is practically uniform throughout and is substantially equal to the area of the inlet portion 1 and to the area of the outlet portion slot 11, said slot being of a length nearly equal to the length of the elongated head 3.

The manifold is connected to the engine by means of connecting means 5 and 7 in the operation of the engine, suction is produced successively at the outlets 4, causing the mixture to be drawn in through the inlet portion 1 and upwardly through the distributing means 2 and slot 11 into the elongated head 3 from which it passes to the particular outlet 4 which at the time is in communication with a cylinder on a suction stroke. Owing to the transverse constriction and longitudinal elongation of the slot 11, the mixture is drawn through nearly the whole length of said slot on each suction stroke, irrespective of which outlet portion 4 is being drawn from, the mixture passing in a fan-shaped current whose longitudinal axis extends approximately in a direct line from the inlet portion to the particular outlet portion 4 which is operative for the time being. The several outlet portions 4 are therefore put upon substantially the same footing as regards amount and quality of the mixture passing from supply means, and it is therefore possible, by proper adjustment of the carbureter, to maintain proper working conditions in each of the cylinders of the engine.

The depending extension 9 of the elongated and enlarged head 3 serves not only to facilitate and equalize the passage of the mixture from the elongated slot to that one of the outlet portions 4 which is in operation, but also serves to collect any condensed gasolene and return it to the slot 11 where it is brought into contact with the issuing current of mixture from the distributing means and is thereby carried forward and again vaporized or gasified, thereby maintaining the uniform quality of the mixture.

What I claim is:—

1. A manifold comprising an inlet portion, an elongated head provided with a plurality of outlets distributed along its length, and having an elongated inlet slot, and a

distributing portion extending directly upward from the inlet portion to said elongated slot.

2. A manifold comprising an inlet portion, an elongated head provided with a plurality of outlet portions distributed along its length and provided with an elongated slot, and a distributing portion extending upwardly from the inlet portion to said elongated slot, said distributing portion diverging longitudinally upward so as to be longitudinally co-extensive with the elongated slot at its upper portion, and said distributing portion being upwardly convergent in a transverse direction so as to provide substantially the same cross section throughout its length.

3. A manifold comprising an inlet portion, an elongated head provided with a plurality of outlet portions distributed along its length, said elongated head having a depending extension formed with a longitudinal slot communicating with the upper end of said distributing means, and a distributing portion extending upwardly from the inlet portion to said elongated slot, said distributing portion diverging longitudinally upward so as to be longitudinally co-extensive with the elongated slot, and said distributing portion being upwardly convergent in a transverse direction so as to provide substantially the same cross section throughout its length.

4. A manifold for carbureters comprising an elongated head provided with a plurality of outlets for the respective cylinders and having an elongated slot forming a laterally constricted inlet to said head, and mixture supply means communicating with said slot.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 18th day of March, 1910.

MERRILL B. RICE.

In presence of—

ARTHUR P. KNIGHT,

FRANK L. A. GRAHAM.