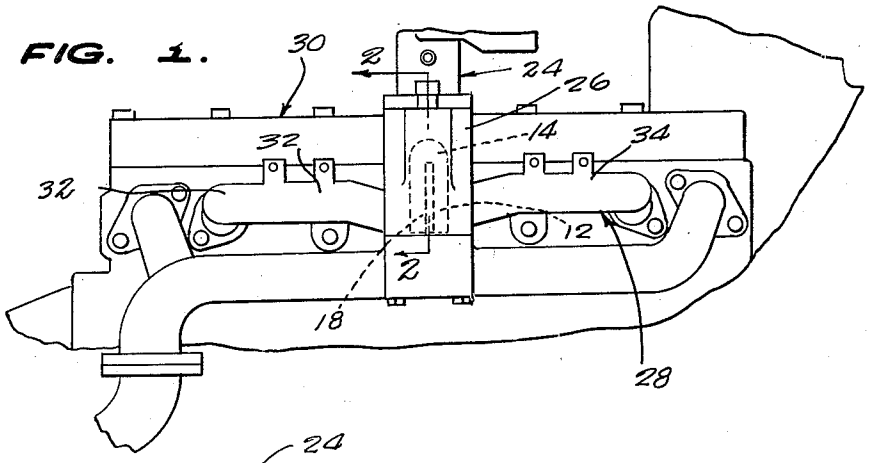
Dec. 16, 1958 C. E. FINLEY ET AL 2,864,350

APPARATUS FOR PARTITIONING A MANIFOLD

Filed Feb. 28, 1958

FIG. 1.



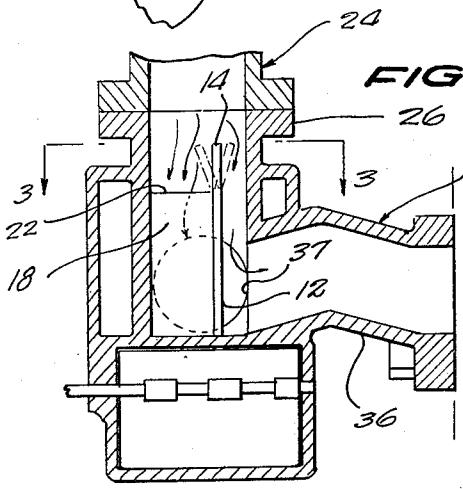
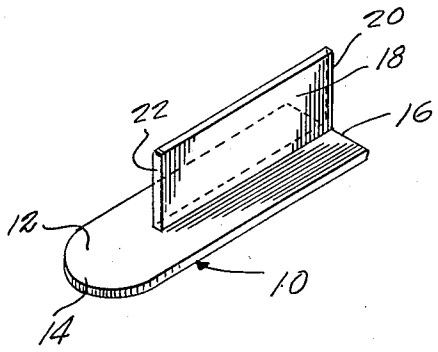


FIG. 2.

FIG. 4.



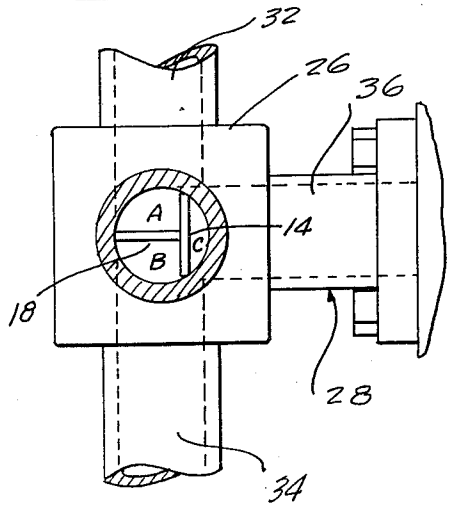


FIG. 3.

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APPARATUS FOR PARTITIONING A MANIFOLD

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6 Claims. (Cl. 123—52)

This invention relates to an apparatus used to partition a manifold and, more specifically, to an apparatus used to partition the heat exchange member of the intake manifold of an internal combustion engine into separately defined chambers.

This invention has, as its primary object, the provision of an apparatus of the class described, which will function to divide the vapors drawn into the heat exchanger from the carburetor into predetermined amounts for transmission to the various cylinders. The object of thus dividing the vapor volumetrically is to furnish each cylinder with a substantially equal amount of vapor regardless of its relative distance from the source.

Another object is to provide a device of the class described which is easily installed and removed.

A still further object is to provide an apparatus of this type which is capable of being adjusted to regulate the full needs of a given engine without costly or laborious modification.

A still further object is to provide a device of the class described above which is non-complex in construction and assembly, inexpensive to manufacture and durable in use.

Other and further objects and advantages will become more readily apparent from a consideration of the following specification when read in conjunction with the annexed drawing, in which:

Figure 1 is a fragmentary side elevational view of a conventional six cyclinder internal combustion engine showing, in dotted lines, fuel regulating apparatus or divider constructed in accordance with this invention in place within the heat exchange portion of the intake manifold;

Figure 2 is an enlarged transverse cross-sectional view of the heat exchange member taken substantially along the vertical plane of line 2—2 of Figure 1, looking in the direction of the arrows, the divider being shown in full lines;

Figure 3 is an enlarged cross-sectional view of the heat exchange member shown in Figure 2, taken substantially on the horizontal plane of line 3—3 of that figure, looking in the direction of the arrows; and

Figure 4 is a perspective view of the apparatus or divider, per se.

Referring now more specifically to the drawing, reference numeral **10** designates, in general, an apparatus or fuel divider constructed and assembled in accordance with the teachings of this invention. The apparatus **10** comprises a substantially rectangular flat main body portion **12** having a rounded end **14** and an opposed end **16** substantially perpendicular to the longitudinal axis of the main body portion **12**. Perpendicular to the longitudinal plane of the main body portion **12** and substantially adjacent the longitudinal axis thereof is a substantially rectangular partitioning member **18** having a pair of opposed substantially parallel ends **20, 22**. The end **20** is positioned in the same plane as the end **16** of the main body portion **12**. As is seen in the drawing, the rounded

end **14** of the main body portion **12** extends beyond the end **22** of the partitioning member **18** for a purpose to be described.

In making use of this device, the carburetor **24** is removed from the substantially cylindrical, hollow heat exchange member **26** mounted on the intake manifold **28** serving the cylinders of a conventional six cylinder internal combustion engine **30**. The divider **10** is press-fitted into the heat exchanger **26** is such a manner as to divide it into three chambers identified by reference letters A, B and C in Figure 3. The chambers A and B, respectively, are in open communication with the conduits **32, 34** of the manifold **28** supplying the outer cylinders and the chamber C is in open communication with the conduit **36** of the manifold **28** supplying the cylinders closest to the heat exchanger **26**.

As is seen in the drawing, the main body portion **12** is substantially parallel to the open face **37** of the conduit **36**.

Under some operating conditions it has been found to be desirable to provide a larger or lesser measure of carbureted fuel to the outer cylinders (i. e., those cylinders most distant from the carburetor **24**), in order to equalize the amount actually combusted within the cylinders. As shown by dotted lines in Figure 2, the end **14** of the main body portion **12** may be inclined to either side of the vertical plane thereof in order to vary the side of the chamber C relative to chambers A and B, thus accomplishing the desired objective by constricting or enlarging the opening leading to the chamber C.

In operation, the mixture of vaporized gasoline and air is drawn from the carburetor and into the heat exchange member **26** where it is divided into chambers A, B and C, as shown by the arrows in Figure 2. The mixture then passes into the conduits **32, 34** and **36** and on the cylinders where it is expended, in substantially equal amounts.

It should, of course, be pointed out that it is within the scope of this invention to alter the configuration of the divider to serve internal combustion engines having any number of cylinders. Therefore, having described and illustrated one embodiment of this invention it will be understood that this embodiment is offered merely by way of example, and that this invention is to be limited only by the scope of the appended claims.

What is claimed is:

1. An apparatus for partitioning a manifold comprising a substantially rectangular main body portion and having a substantially rectangular partitioning member secured thereto in substantially perpendicular relationship relative to a side thereof, said partitioning member being of lesser length than said main body portion, the major axis of said main body portion being substantially parallel to the major axis of said partitioning member.

2. An apparatus for partitioning a manifold as defined in claim 1, wherein said main body portion is provided with a substantially rounded end and an opposed end substantially perpendicular to said major axis of said main body portion.

3. An apparatus for partitioning a manifold comprising a substantially rectangular main body portion having a rounded end and an opposed substantially rectangular end, a substantially rectangular partitioning member fixedly secured to said main body portion in perpendicular relationship relative to a side thereof, said partitioning member having a pair of opposed substantially rectangular ends, one of said rectangular ends of said partitioning member being coplanar with said rectangular end of said main body portion, and said rounded end of said main body portion extending beyond said other end of said partitioning member.

4. An apparatus for partitioning a manifold as defined

in claim 3 wherein said rounded end of said main body portion is capable of being inclined to either side of the vertical axis thereof.

5. In combination with an internal combustion engine having a substantially hollow heat exchange member mounted on the intake manifold thereof, a manifold divider press-fitted into said heat exchange member and flush against the lower walls thereof comprising a substantially rectangular main body portion having a rounded end and opposed substantially rectangular end, a substantially rectangular partitioning member fixedly secured to said main body portion in perpendicular relationship relative to a side thereof, said partitioning member having

a pair of opposed substantially rectangular ends, one of said ends of said partitioning member being coplanar with said rectangular end of said main body portion, and said rounded end of said main body portion extending beyond said other end of said partitioning member.

6. An apparatus as defined in claim 5 wherein said partitioning member extends along the longitudinal axis of said main body portion.

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