Dec. 30, 1930. F. F. COWHERD 1,787,360

INTERNAL COMBUSTION ENGINE CLEANING DEVICE

Filed Nov. 7, 1928

Fig. 1

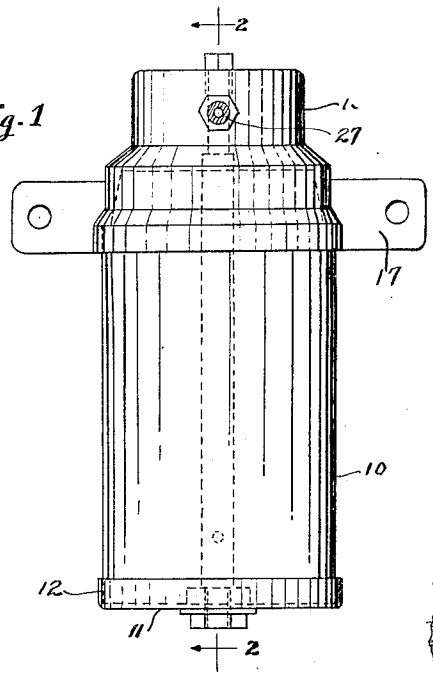


Fig. 3

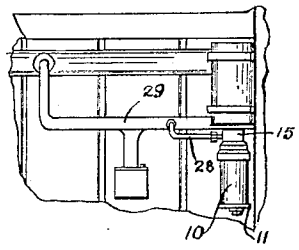


Fig. 2

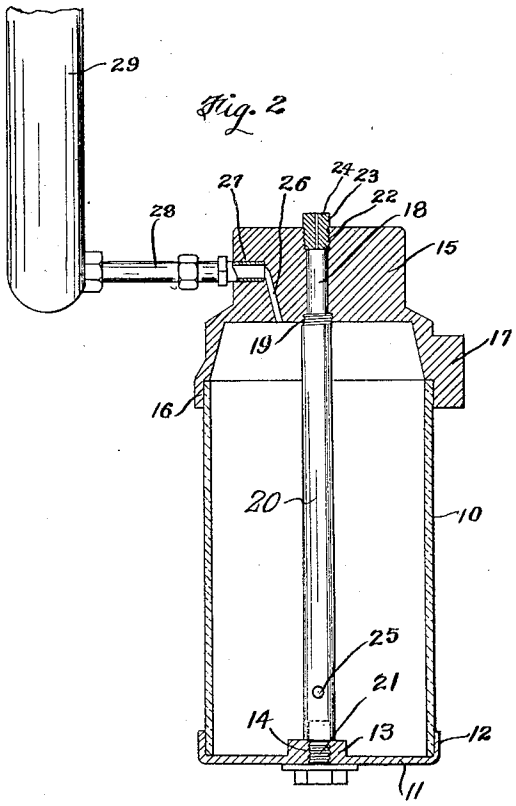
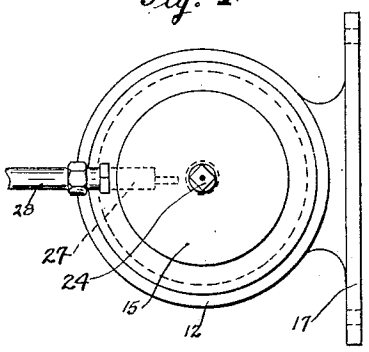


Fig. 4



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UNITED STATES PATENT OFFICE

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INTERNAL-COMBUSTION-ENGINE-CLEANING DEVICE

Application filed November 7, 1928. Serial No. 317,720.

This invention relates to certain novel improvements in internal combustion engine cleaning devices, and has for its principal object the provision of an improved construction of this character, which will be highly efficient in use and economical in manufacture.

The efficiency of internal combustion engines is greatly impaired by carbon accumulations in the explosion chambers and by accumulations around the valve seats and around the guiding members for the valve stems.

I have found that by introducing a suitable fluid into the cylinders of such engines that these accumulations may be obviated and therefore, the efficiency of the engine may be maintained at a maximum. It is therefore the salient object of my invention to provide a construction which will permit the introducing of such a cleaning fluid into the combustion chamber of an internal combustion engine.

An object of my invention ancillary to the foregoing is to provide a device through which air may pass to pick up the cleaning fluid and convey the same into the intake manifold of the engine.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will best be understood by reference to the accompanying drawings wherein a preferred form of construction is shown, and which:

Fig. 1 is a side elevational view depicting a preferred form of construction for my invention;

Fig. 2 is a vertical sectional detail view taken substantially on the line 2—2 on Fig. 1;

Fig. 3 is an elevational view depicting a preferred form of construction for my device in association with an internal combustion engine; and

Fig. 4 is a plan view of the device illustrated in Fig. 1.

In the accompanying drawing, wherein I have illustrated the preferred form of construction for my device 10 indicates the main body portion which is preferably formed of a transparent material for a purpose to be set forth hereinafter. The member 10 is substantially cylindrical in formation and at the lower end thereof, the bottom member 11 is mounted, which preferably has an upwardly extending flange 12 that engages the periphery of the body member 10. At substantially in the midpoint in the bottom member 11 on the inner side thereof a boss 13 is provided through which an opening 14 extends to the outer side of the bottom member 11 for a purpose to be set forth presently. A head construction 15 is provided which is mounted at the upper end of the cylindrical member 10 and this head construction 15 includes a depending flange 16 which corresponds to the flange 12. A supporting bracket 17 is provided which is employed in the mounting of the construction. An axially arranged bore 18 extends through the head member 15 and terminates in a screw-threaded portion 19 at the inner end thereof. A pipe member 20 has one end thereof connected in the screw-threaded portion 19 and the opposite end thereof is rested on the inner surface of boss 13. A bolt member 21 is passed through the opening 14 which screw-threadedly engages the inner surface of the pipe member 20 and thus a differential clamping action is created which serves to hold the bottom member 11 and head member 15 in position on the body member 10.

Into the outer screw threaded end portion 22 of the bore 18 a plug member 23 is fitted. An opening 24 extends axially through the plug member 23 and this opening is of relatively restricted size so as to be substantially capillary. Adjacent the lower end of the pipe member 20 openings such as 25 are provided for a purpose to be set forth presently. An outlet passage 26 is provided in the head member 15 which opens into a conduit 27 that is connected into the head member 15. A conduit structure 28 connects the conduit member 27 with the intake manifold 29 of an internal combustion engine.

In operation, a vacuum is created in the intake manifold in a manner well understood in the art. This causes air to be drawn

through the opening 24, passage 18, pipe member 20, and out through the openings 25 into the interior of the body member 10.

Prior to this time the plug member 24 will have been removed and the body member 10 will have been filled with a cleaning fluid having the properties set forth hereintofore and I have found that kerosene is ideally adapted for this purpose. Therefore, as the air passes out through the openings 25 it will pass through the kerosene in the body member 10 and will pass out through the air passage 26, conduit 27, conduit structure 28 into the intake manifold 29 and this air will pick up and carry out the kerosene from the body member 10. This kerosene will be distributed around the valve members and the valve stems and in the combustion chambers which will tend to keep these members free from undesirable accumulations that tend to reduce the efficiency of the engine.

It is apparent from the foregoing description that I have provided a simple and efficient device for introducing cleaning fluid into the combustion chambers and associated parts of an internal combustion engine. Further, by constructing the device so that the body member 10 is formed from a transparent material I can readily ascertain the quantity of cleaning fluid contained in said housing, but it is to be understood that any other desired arrangement might be provided for accomplishing this without departing from the purview of my invention.

Passage through the opening 24 may be regulated by peening the outer surface of the plug member 23 adjacent the inlet opening to said passage.

While I have illustrated and described the preferred form of construction for carrying the invention into effect, this is capable of variations and modifications, without departing from the spirit of the invention. I therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

In an internal combustion engine cleaning device, a substantially cylindrical body member, a bottom member, a head member, an elongated member extended through said cylindrical member connected to said bottom member and said head member to hold the same on said body member to define a cleaning fluid storage chamber, said member having an inlet opening closed by a removable plug having a relatively restricted passage therein, said member having outlet openings adjacent the lower end thereof, said head member having outlet passages provided therein to which members may be connected to connect said chamber with the intake manifold of the internal combustion engine.

In testimony whereof I affix my signature.

FRANK F. COWHERD.