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VALVE OILER AND SILENCER

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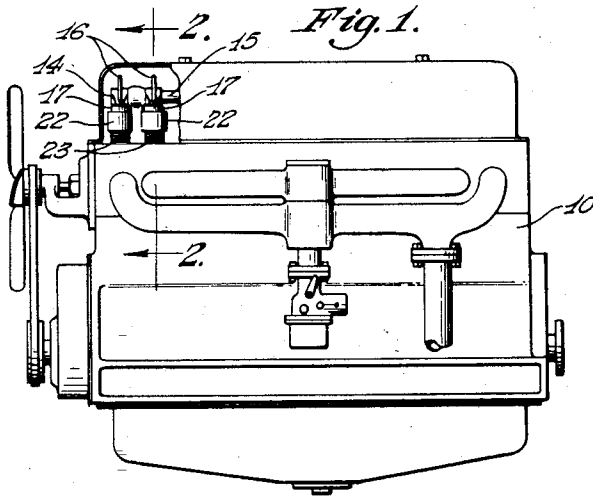
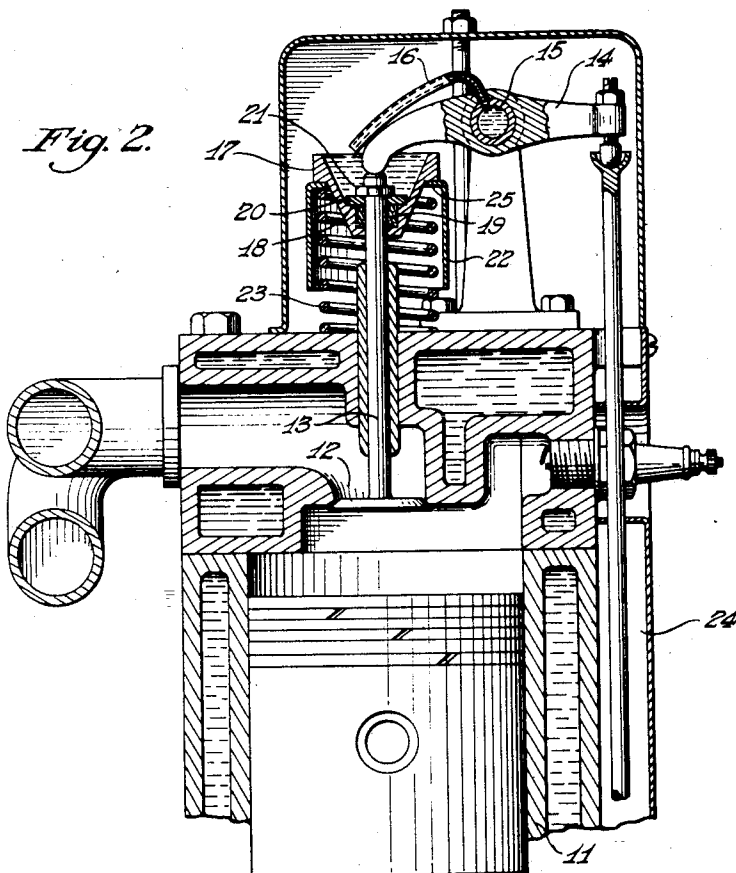
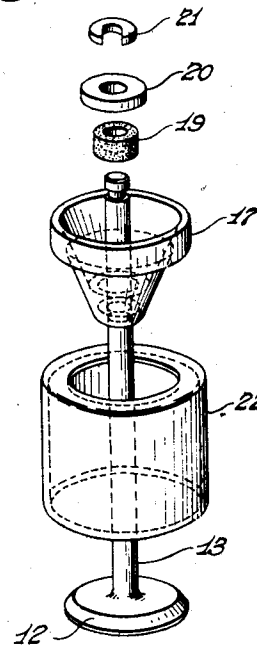


Fig. 3.



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VALVE OILER AND SILENCER

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Serial No. 581,945

4 Claims. (Cl. 184-6)

This invention relates to certain novel improvements in valve oiler and silencer, 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.

It is the primary object of this invention to provide an improved device for oiling and silencing the valves of internal combustion motors.

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 be best understood by reference to the accompanying drawing, showing the preferred form of construction and in which:

Fig. 1 is a side elevational view of a typical motor embodying the invention;

Fig. 2 is a sectional view on line 2-2 in Fig. 1; and

Fig. 3 is a perspective view of the invention.

In the drawing, which illustrates a preferred and practical embodiment of the invention, 10 indicates generally an internal combustion engine, 11 a cylinder thereof, 12 a valve for the cylinder and having a stem 13 operated by a rocker arm 14. The rocker arm 14, has a tubular supporting shaft 15 into which oil is pumped from the crank case of the motor, in a conventional manner, and from the shaft 15 oil is led by a discharge tube 16 to a cup 17 arranged about the upper end of the valve stem 13. On the stem 13, within the cup 17 is a packing 19 which is retained on the valve stem by suitable means such as the washer 20 and lock washer 21.

The cup 17 rests on an internal flange 25 of a housing 22 which in turn rests upon the valve spring 23 and is movable with the spring and valve, the cup 17 having an internal flange 18 which is urged into engagement with the washer 20 by spring 23 whereby to retain the cup 17 on the stem against the action of the spring.

When the motor is operating the cup 17 is kept filled with oil and the overflow from the cup flows over the spring housing 22 and drips down onto the lower coils of the spring 23 through which the oil disperses itself as the spring is compressed and expanded to keep the spring properly oiled and in smooth, quiet operating condition. The overflow from the cup may be returned to the crank case in any suitable manner as by the passage 24. The packing 19 and sealing engagement between washer 20

and flange 18 prevent an excess of oil from flowing from the cup 17 down the valve stem 13, but in the use of the device sufficient oil is found to seep past the engagement between the washer 20 and flange 18 to saturate the packing 19, from which sufficient oil flows down the stem 13 to keep the same properly lubricated.

Since the cup 17 is kept filled with oil while the motor is operating a film of oil is thus provided around and over the tappet clearance (the space between the rocker arm 14 and the valve stem 13) thereby eliminating the noise commonly associated with overhead valves. Furthermore, as the rocker arm rises away from the valve stem oil rushes in above the valve stem so that the rocker arm on its downward stroke meets a cushion of oil, thereby minimizing the tappet noise and wear on the rocker arm and valve stem.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, 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 claims.

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

1. The combination with an engine valve which includes a stem, of a spring for the valve arranged about the stem, an oil cup on the stem bearing against the spring and having a portion of said stem extended thereinto, means for retaining the cup on the stem against the action of the spring, a rocker arm to operate the valve having a portion adapted to reciprocate in the cup, and means for supplying oil to the cup whereby the oil in the cup will maintain a film of oil about the tappet clearance between the valve stem and rocker arm and the oil in the cup will overflow therefrom onto the spring.

2. The combination with an engine valve which includes a stem, of a spring for the valve arranged about the stem, an oil cup on the stem, bearing against the spring, and having an opening therein to receive a portion of the stem, means retaining the cup on the stem against the action of the spring, an oil-absorbent packing between said means and said opening, and means for supplying oil to the cup whereby said packing will lubricate said stem.

3. The combination with an engine valve

which includes a stem, of a spring for the valve
arranged about the stem, an oil cup on the stem,
bearing against the spring, and having an open-
ing therein to receive a portion of the stem,
5 means retaining the cup on the stem against the
action of the spring, an oil-absorbent packing
between said means and said opening, and
means for supplying oil to the cup whereby oil
10 from the cup will overflow about and lubricate
the spring and said packing will lubricate said
stem.

4. The combination with a reciprocatory valve
including a stem, and a rocker arm to operate
the valve, of an oil cup on the valve stem, said
cup having a portion of the stem extended
thereinto and having that portion of the rocker
arm which contacts with the stem adapted to
reciprocate in oil therein.

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