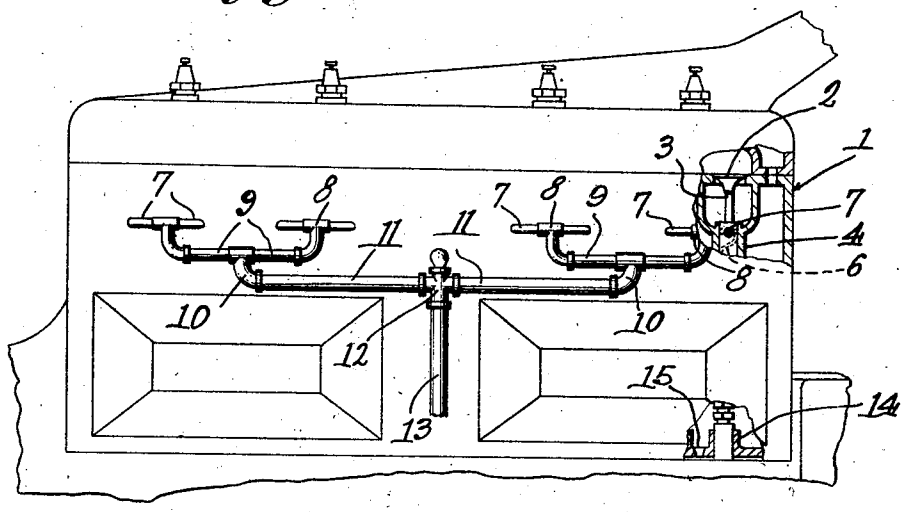
Sept. 7, 1926. 1,599,172

H. C. GOODBRAKE

VALVE STEM OILER

Filed June 22, 1925

Fig. 1.



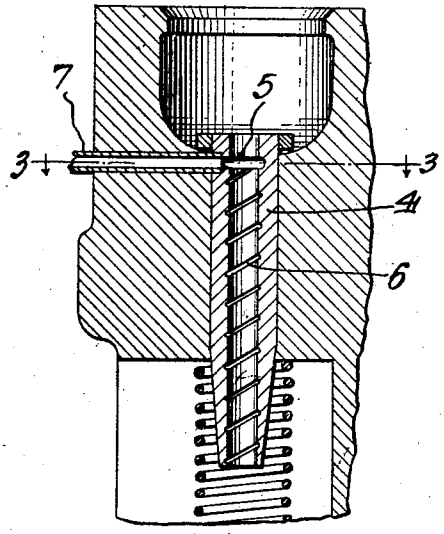


Fig. 2.

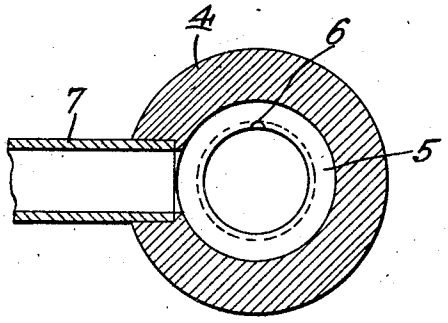


Fig. 3.

Inventor

Harold C. Goodbrake

By Cl Snow & Co

Attorneys

Patented Sept. 7, 1926. 1,599,172

UNITED STATES PATENT OFFICE.

HAROLD C. GOODBRAKE, OF EAST ST. LOUIS, ILLINOIS.

VALVE-STEM OILER.

Application filed June 22, 1925. Serial No. 38,812.

This invention relates to oilers for valve stems of internal combustion engines.

The object of the invention is to provide an oiling system constructed so as to ensure perfect valve action and to prevent frequent and expensive valve and valve guide replacement.

Another object of the invention is to provide an oiling system of this character which may be applied to all types except a vertical valve in head motor including sleeve valves, marine and stationary engines also tractors.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a side elevation of an engine equipped with this improved oiling system, portions being broken out to show the application of the oiler;

Figure 2 is an enlarged detail sectional view showing the valve stem guide equipped with this improved oiler; and

Figure 3 is a horizontal section taken on the line 3—3 of Figure 2.

It has been proven that 75% of the valve trouble in internal combustion engines is due to the sticking of valve stems caused by no lubrication at all while the other 25% of the trouble is due to weak valve springs, stems being too tight to work freely, checking too close, excessive engine speed and small valves. It is to overcome these objections that this invention was designed.

Most motors are already equipped with pressure oiling systems so that this system may be added without the expense of adding a pump which is necessary to ensure an even pressure of the oil.

The invention is shown applied to the engine of a Dodge car which is shown at 1 and which has eight valves one of which is shown at 2. This valve is equipped with the usual valve stem 3 mounted to reciprocate in a cylindrical valve guide 4. Each valve guide 4 is equipped at its upper end about three-eighths of an inch below the top with an oil pocket 5 which is about one-eighth of an inch wide and from which leads a spiral groove 6, said groove being about one-sixteenth of an inch deep. Oil is discharged into the pockets 5 of each pair of guides 4, through a tube 7. The tubes 7 are connected by a coupling 8 with a larger tube 9 which is about one-fourth of an inch in outer diameter. The tube 9 is connected by a coupling 10 with a larger tube 11 which is about three-eighths of an inch in outer diameter and is connected by a coupling 12 with a pipe 13 which leads to a gear pump not shown. The gear pump operates to drive the oil under pressure through the system and ensures a continuous feed to the grooves contained in the valve guides.

An oil drain 15 is arranged between each pair of tapped guides 14 and is designed to return the excess oil to the oil pan.

This oiling of the valve stem eliminates the major portion of valve trouble which is caused by sticking of the stem since with the ordinary engine no lubrication at all is provided for these parts.

It will thus be seen that when used in connection with a car having an oil pressure system all that is necessary is to connect up said system through the pipe 13 with the pipes 11, 9 and 7 which discharge into the pocket 5 of the valve stem guide and thus supply lubricant to this stem which will freely reciprocate in said guides without danger of binding or sticking and thus ensures proper seating of the valve.

I claim:—

The combination with the frame of an internal combustion engine, of a tubular guide mounted in the frame, a poppet valve including a stem mounted to reciprocate in the guide, and a tube extended through a portion of the frame and into the guide, the guide being supplied with an internal circumferential oil pocket with which the inner end of the tube communicates, and the guide having an internal groove which extends spirally down from the oil pocket through the lower end of the guide, the spiral groove opening laterally into the guide throughout the length of the groove, and said groove being shallower than the oil pocket.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

HAROLD C. GOODBRAKE.