Feb. 16, 1926. 1,573,075

G. LEHMANN, JR

VALVE STEM SILENCER

Filed April 24, 1923

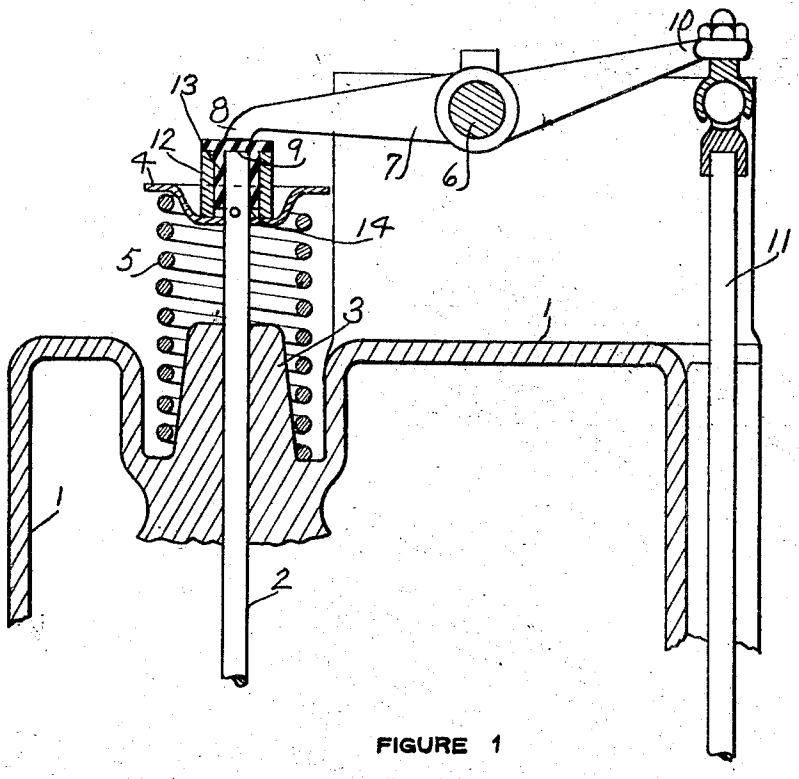


FIGURE 1

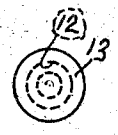


FIGURE 2

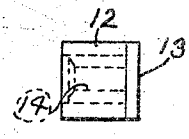


FIGURE 3

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Patented Feb. 16, 1926. 1,573,075

UNITED STATES PATENT OFFICE.

GEORGE LEHMANN, JR., OF SAN JOSE, CALIFORNIA.

VALVE-STEM SILENCER.

Application filed April 24, 1923. Serial No. 634,257.

To all whom it may concern:

Be it known that I, GEORGE LEHMANN, JR., a citizen of the United States, and a resident of San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Valve-Stem Silencers, of which the following is a specification.

My invention relates particularly to a device mountable upon the end of a valve stem.

In the operation of internal combustion engines there is a very noticeable metallic sound occasioned by the contacting of the valve actuating element with the engine valve stem. In the case of a multi-cylinder automobile engine this noise is very pronounced.

It is one object of my invention to provide a means whereby this noise is entirely eliminated.

It is another object of my invention to provide a device of the character indicated that will be simple in form and construction, economical to manufacture, easily installed, and one that may be adapted for use on any type of valve mechanism, and highly efficient in its practical application.

In the drawing:—

Figure 1 is a sectional elevation showing the device in position upon the valve stem of an engine valve, parts being broken away.

Figure 2 is a plan view of the device.

Figure 3 is a side elevation of the same.

Referring more particularly to the drawing, I show at 1 the upper frame work of an internal combustion engine. At 2 is a valve stem operating in bearing 3 of frame 1. Mounted upon the upper portion of valve stem 2 is a spring supporting member 4 under which expansion spring 5 is inserted as shown.

At 6 is pivotally mounted a rocker-arm 7, the end 8 of which engages the upper portion 9 of valve stem 2 to actuate the same. The opposite end 10 of rocker-arm 7 engages a push rod 11 which in turn is operated by cam mechanism not shown.

At 12 is shown a metal case in which a fiber bushing 13 is fitted, the latter having a head portion overlying one end of said casing. The said bushing 13 has an orifice 14 of a size to take the upper portion of the valve stem 2. This construction separates the end 9 of valve stem 2 from the end 8 of rocker arm 7 by the thickness of the fiber bushing.

In operation there is a slight clearance between the parts 8 and 9 when in an extreme retracted position, therefore when parts 8 advances and contacts with part 9 a metallic clicking sound is heard. But by slipping the element described into the position shown, when the part 8 advances it strikes a non-metallic substance and no sound is heard.

While I have shown and described a fiber bushing, it is to be understood that any suitable material of like nature may be used, and the device may be made in any suitable proportions and combinations, and in any desired form to meet specific requirements.

Thus it may be seen that I have provided a valve stem silencer which is simple in form, economical to manufacture and install, and one that is highly efficient in its practical application.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is;—

As an article of manufacture, an open ended tubular metallic casing, and a non-metallic bushing fitted in said casing and having a head portion overlying one end thereof, said bushing having an orifice formed in its other end in concentric relation to said casing whereby to slidably engage one end of a valve stem.

GEORGE LEHMANN, JR.