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J. G. LEAL

VALVE STEM PACKING

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Fig. 1.

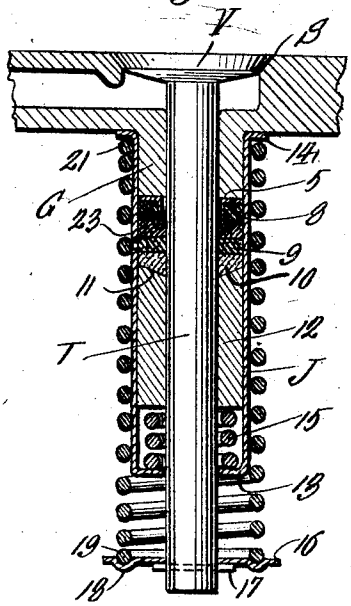


Fig. 2.



Fig. 3.



Fig. 4.



WITNESSES

Guy M. Spring

Inventor

JESSE G. LEAL

By Richard B. Owen

Attorney

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JESSE G. LEAL, OF VENTURA, CALIFORNIA.

VALVE-STEM PACKING.

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To all whom it may concern:

Be it known that I, JESSE G. LEAL, a citizen of the United States, residing at Ventura, in the county of Ventura and State of California, have invented certain new and useful Improvements in Valve-Stem Packings, of which the following is a specification.

The present invention relates generally to valves and more particularly to a packing for valve stems.

The invention is designed primarily for use with the valves which are now commonly used in internal combustion engines.

The prime object of the invention is to provide a packing which will efficiently prevent gases from escaping between the valve stem and the guide therefor.

Another very important object of the invention is to generally improve upon valve stem packing of this nature by providing a device possessed of a very simple construction, one which is comparatively inexpensive to manufacture, reliable, durable, and well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:

Figure 1 is a sectional view showing a valve stem guide with a valve positioned therein and my improved packing means.

Figure 2 is a detail perspective, a portion being broken away, of the packing supporting gland ring.

Figure 3 is a perspective of one packing washer, and

Figure 4 is a perspective view of another packing washer.

Referring to the drawing in detail it will be seen that a valve seat is indicated at S in association with which is the valve V. The stem T depends from the valve in the usual manner and is slidable through the depending sleeve guide G. A gland ring 5 is constructed with a flange 6 at one end and a bead 7 at its other end so as to receive packing washer 8. This gland ring and its packing washer are disposed about the valve stem T and with the flange 6 in abutment with the bottom end of the guide G. A plurality of packing washers 9 are disposed over this stem T under the gland ring and still another washer 10 is similarly disposed. The last mentioned washer 10 is provided with a conical face so as to fit in the conical recess 11 provided in a follower sleeve 12 that is disposed about the stem. A jacket J is constructed with a cylindrical body portion having a closed bottom end 13 and an outwardly flanged upper end 14. This jacket J houses the guide G, gland ring 5, washers 8, 9 and 10 and follower sleeve 12. A coil spring 15 is disposed about the valve stem and impinges against the bottom end of this jacket and the follower sleeve 12. The bottom 13 is provided with an opening through which the valve stem projects. A plate 16 is supported on the bottom end of the stem T by means of pin 17. This plate is constructed with an annular pocket 18 for receiving the bottom convolution 19 of a spring 20 of the coil type. The upper convolution 21 of this spring engages the flange 14. This spring 20, therefore, not only holds the jacket in place but also normally tends to maintain the valve in a closed position. The spring 15 and the follower sleeve 12 tend to compress the washers 8, 9 and 10 and thereby insure a sufficiently snug fit of the stem T therein as to prevent the escape of gas about the valve stem through the guide. In order to lubricate the valve stem an orifice 23 is provided in the jacket J.

It is thought that the construction, operation and advantages of the invention should now be clearly understood without a more detailed description thereof.

While the preferred embodiment of my invention has been described in detail, it will be understood that I do not wish to be limited to the particular construction set forth, since various changes in the form, material, proportions, and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. In combination, a guide sleeve, a stem slidable through the guide sleeve, packing disposed about the stem below the guide sleeve, a follower sleeve slidable on the valve stem at the bottom of the packing, a jacket surrounding the guide sleeve and the

packing and the follower and including a cylindrical body having an apertured bottom end through which the stem is slidable, said jacket further having an outwardly extending flange at its upper end, a plate fixed to the bottom end of the stem, a compression spring impinged against the plate and the flange of the jacket, and a second compression spring in the jacket impinging against the bottom of the latter and the bottom of the follower sleeve.

2. In combination, a guide sleeve, a stem slidable through the guide sleeve, packing disposed about the stem below the guide sleeve, a follower sleeve slidable on the valve stem at the bottom of the packing, a jacket surrounding the guide sleeve and the packing and the follower and including a cylindrical body having an apertured bottom end through which the stem is slidable, a compression spring in the jacket impinging against the bottom of the latter and the bottom of the follower sleeve, and means to retain the jacket stationary with the guide sleeve.

In testimony whereof I affix my signature.

JESSE G. LEAL.