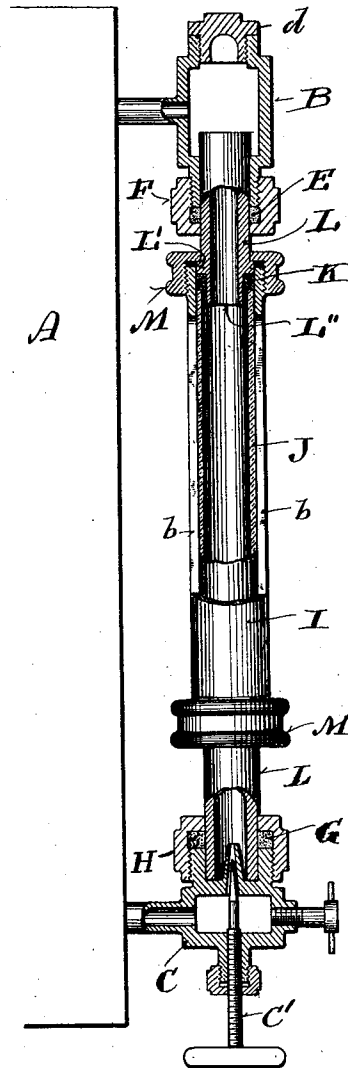


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SIGHT FEED TUBE FOR WATER GAGES, LUBRICATORS, OR THE LIKE.
APPLICATION FILED SEPT. 2, 1910.

998,104.

Patented July 18, 1911.



Witnesses:
Charles Young,
May Downey.

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UNITED STATES PATENT OFFICE.

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SIGHT-FEED TUBE FOR WATER-GAGES, LUBRICATORS, OR THE LIKE.

998,104.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed September 2, 1910. Serial No. 580,207.

To all whom it may concern:

Be it known that I, FREDERICK LEONHARDT, a citizen of the United States, and resident of Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented certain new and useful Improvements in Sight-Feed Tubes for Water-Gages, Lubricators, or the Like; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in certain peculiarities of construction and combination of parts hereinafter set forth with reference to the accompanying drawings and subsequently claimed, its primary object being to provide against fracture of glass sight-feed tubes for liquid-gages, lubricators or the like, and in case of fracture to prevent particles of glass from flying as well as to facilitate the substitution of one such tube for another and to avoid the necessity of exact measurements with respect to the dimensions of the substitute tube.

The particular object of my present invention is to provide a simple and effective coupling whereby a tight joint between the glass tube and metallic jacket is formed; the invention being particularly applicable to sight-feed lubricators or water-gages such as was patented by me May 15, 1906, No. 820508.

The drawing illustrates an elevation partly in section of a sight-feed tube embodying the features of my invention, the tube being shown in this instance as attached to a lubricator container, it being understood, however, that the same may be used as a liquid gage in the ordinary manner.

Referring by letters to the drawing, A indicates the oil reservoir and B, C, the feed-tube holders. The upper tube-holder B is closed at its top by a screw-plug *d* and a packing-ring E is compressed against the lower end of said holder by a sleeve-nut F run on an exterior thread of same. A similar ring G is compressed against the upper end of the lower tube-holder C by a sleeve-nut H run on an outer edge of said holder and by means of said packing-ring and nut the sight-feed tube is made fluid-tight in both holders.

The sight-feed tube comprises an outer metallic jacket I of cylindrical form exteriorly screw-threaded at its ends and pro-

vided with slotted apertures *b* that extend throughout the major portion of said jacket. A glass shell J is fitted within the jacket and is visible through the apertures of same. Packing-gaskets K oppose the ends of the glass shell and hollow thimbles L, having shoulders L', are fitted upon the gaskets, reduced end extensions L' being passed through said gaskets, whereby a bushing is formed therefor.

The thimbles L are tightly drawn into place by nuts M, which nuts are in threaded connection with the ends of the jacket and have faces that engage the shoulders of the thimbles, whereby the same are drawn down tightly to compress the gaskets in order that a fluid-tight connection is made at the opposite ends of the glass shell.

To position the sight-feed tube as part of the lubricator, the outer ends of the thimbles are fitted within the feed-tube holders and securely bushed by compression of the packing-rings E, this same connection being also used when the device is adapted for water-gages or the like.

The binding of the packing-rings E and G is circumferentially of the outer surface of the thimbles and the length of the tube as a whole is immaterial so long as it is made to extend in opposite directions through said rings. Hence accuracy of length of the sight-feed tube with reference to the distance between the tube-holders is not essential, so long as the length of the thimbles is sufficient to have seating engagement within said holders.

It is to be noted that one end of the sight-feed tube is free in the lubricator field tube holder B and thus said tube is unimpeded as to longitudinal expansion, this being an important feature of my invention.

To compensate for expansion and contraction, the glass shell of the sight-feed tube is of sufficiently less diameter than the jacket in which it is made fluid-tight by the packing-gaskets and nuts aforesaid, and the expansion and contraction of said jacket and that of the tube-holders is never detrimental to said glass shell. However, should there be a fracture of the aforesaid shell, the jacket for same will prevent the flight of particles of glass. As herein shown, the glass shell may be comparatively short, and this of itself tends to lessen the liability of

said shell to fracture under the conditions to which it is exposed when the apparatus is in service.

The lower tube-holder C, as shown, is provided with a pin-valve C', which valve is required when the apparatus is used as an oil feeder the passage of oil being thus controlled, but it should be understood that when the device is used in connection with water-gages this valve may be dispensed with.

Having described my invention in detail, particular attention is called to the simplicity and effectiveness of the union between the glass shell and thimble, whereby these parts may all be readily disconnected and replaced without the use of any special tools, it being understood that the thimbles are made in varying lengths and dimensions, whereby the sight-feed glass can be adjusted to fixed connections varying in size and having greater or less distance therebetween.

I claim:

A water-gage comprising an outer metallic tubular skeleton jacket having its ends exteriorly screw-threaded, a glass shell fitted within the jacket, packing gaskets fitted within the bore of said jacket at its opposite ends opposing the ends of the glass

shell, the bore of the gaskets being of less area than the bore of the aforesaid glass shell, hollow thimbles having shoulders extending partly into the bore of the jacket for engagement with the gaskets therein, the thimbles being provided with reduced extensions that pass through said gaskets and project into the glass shell but clear the walls thereof, nuts in screw-threaded engagement with the ends of the jacket, the nuts being provided with faces for engagement with the projecting faces of the thimble shoulders whereby the same are drawn tightly against the gaskets, a reservoir, tube holders extending therefrom into which the thimbles are loosely fitted, packing rings surrounding the thimbles and arranged to abut the ends of the holders, and sleeve nuts in threaded engagement with the holder ends adapted to compress the packing rings.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

FREDERICK LEONHARDT.

Witnesses:

MAY DOWNEY,
CASANAVE YOUNG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."