

(No Model.)

J. LAWRENCE.

DEVICE FOR STOPPING LEAKAGE IN HOSE OR OTHER PIPES.

No. 454,279.

Patented June 16, 1891.

Fig. 2.

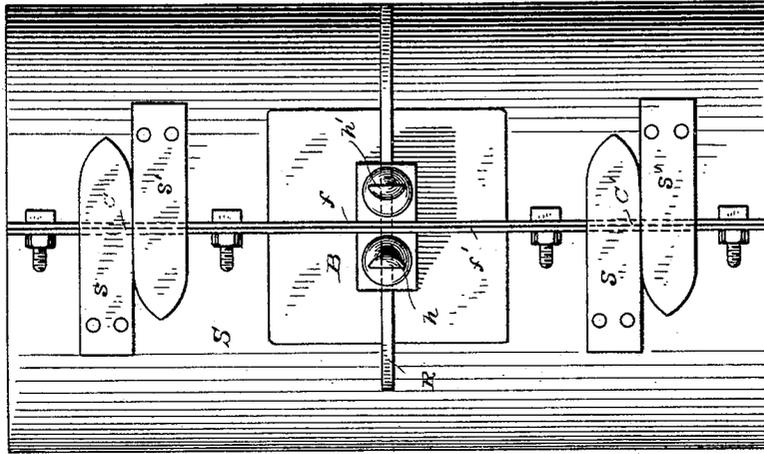


Fig. 3.

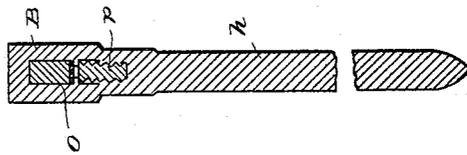
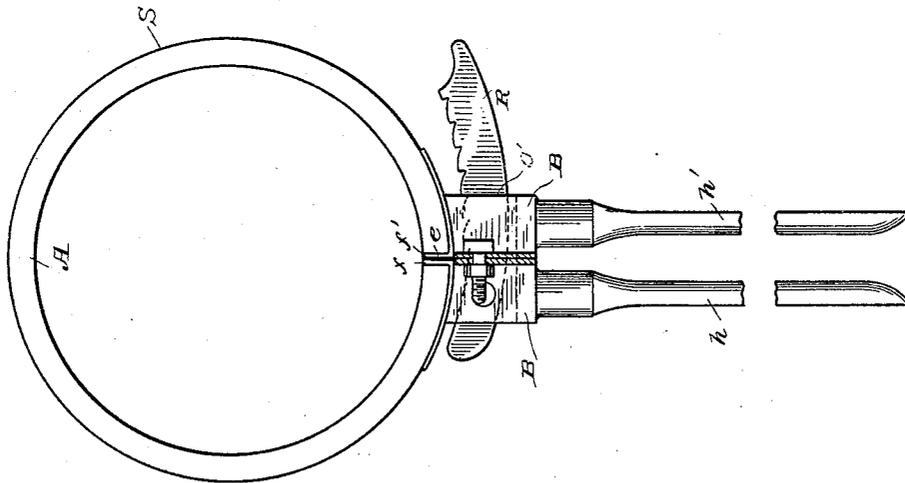


Fig. 1.



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UNITED STATES PATENT OFFICE.

JOHN LAWRENCE, OF UCKFIELD, ENGLAND.

DEVICE FOR STOPPING LEAKAGE IN HOSE OR OTHER PIPES.

SPECIFICATION forming part of Letters Patent No. 454,279, dated June 16, 1891.

Application filed November 26, 1888. Serial No. 291,935. (No model.) Patented in England August 25, 1888, No. 12,273, and in Germany June 5, 1889, No. 47,230.

To all whom it may concern:

Be it known that I, JOHN LAWRENCE, a subject of the Queen of Great Britain, residing at Uckfield, in the county of Sussex, England, have invented a certain new or Improved Device for Stopping Leakage in Hose and other Pipes, (for which I have previously obtained Letters Patent in Great Britain, dated August 25, 1888, No. 12,273, and in Germany, No. 47,230, dated June 5, 1889,) of which the following is a full, clear, and exact description.

This invention relates to a new or improved device for stopping leakage in hose and other pipes—such as cold, hot water, or steam-pipes—subjected to high pressure, which can be carried out without there being any necessity for stopping or turning off the supply or pressure.

My invention is particularly applicable in cases where the hose of a hydrant may burst while in use for extinguishing a fire, and in other similar cases:

My improved device consists, essentially, of a cylinder of india-rubber or of other suitable water-proof material divided vertically and of sufficient thickness to resist the pressure exerted by the liquid which projects with force from the leakage. This india-rubber cylinder is inclosed in another cylinder, of iron, steel, or other suitable metal, made of two parts or halves hinged together at the rear or made integral, of flexible material, and provided at their front edges with vertical bars furnished with tapped holes, in which are screwed one or more pairs of handles; or I may use for inclosing the india-rubber cylinder a continuous sheet of flexible steel; or, again, I may rivet vertical bars such as above mentioned directly to the india-rubber cylinder and fix handles thereto. The said hinged plate or flexible sheet metal is provided with a flange formed on its outer edges and cut away in parts for the passage of straps which overlap one another when the device is closed, and thus press the edges of the india-rubber inwardly.

In order that my invention may be more fully understood, I have shown the same in the accompanying drawings, in which—

Figure 1 is a plan of my improved device, Fig. 2 being an elevation of the same in a closed position, and Fig. 3 being a sectional view of one handle and its socket.

A is the india-rubber split cylinder, over which is placed a sheet of flexible steel S, (or as the case may be a cylindrical casing composed of two curved plates hinged at the back,) whose edges are furnished with two flanges $f f'$, by the side of which are formed, shrunk, riveted, or screwed two vertical bars B B, each bar being provided with one or several (one only is shown in the drawings) tapped perforations $p p$, in which are screwed the handles $h h'$. The flanges $f f'$ are cut off at $c c'$ for the passage of two or several pairs of straps $s s'$ (two only are shown in the drawings) overlapping each other and having for their object, as already stated, to prevent the edges of the india-rubber cylinder $e e$ from protruding between the flanges $f f'$ of the steel or other metal sheet, and hence the device from being properly closed. The handles $h h'$ have each a rectangular shank carrying a central screw to be fixed in the tapped perforation $p p$, above mentioned, these shanks having rectangular openings $o o'$, through which is passed a curved rack R. The opening o' acts as a catch or pawl to enter the teeth of the said rack R, which is pivoted in the opening o of the other bar h . The flanges $f f'$ are furnished with perforations formed at different intervals opposite one another to receive suitable bolts. When a leakage occurs in a pipe, the india-rubber split cylinder is placed around the same and the steel sheet is made to inclose the latter, while the handles being screwed on the parts B B are pressed or squeezed together by hand to bring the flanges in sufficiently close contact for bolting, the straps assisting in the meanwhile in keeping the edges of the india-rubber cylinder in position. The flanges are prevented from separating while being bolted by reason of the catch formed in the opening o' entering successively between the teeth of the rack R as the handles are being firmly tightened. The bolts having now been passed through their respective perforations in flanges $f f'$ are tightened by suitable nuts, and when the

whole device is thus properly fixed and consolidated so as to effect a hermetical closure and efficiently stop the leakage the handles are then unscrewed and withdrawn, the joint
5 being complete.

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

10 In improved devices or apparatus for stopping leakage in hose or other pipes, the combination of an india-rubber split cylinder with

a metallic cylindrical casing or envelope provided with flanges secured by bolts, with vertical bars, overlapping straps, and removable handles, substantially as and for the purpose
15 described.

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