

L. H. DOWNING.  
Hydraulic Hose.

No. 138,867.

Patented May 13, 1873.

Fig. 1.

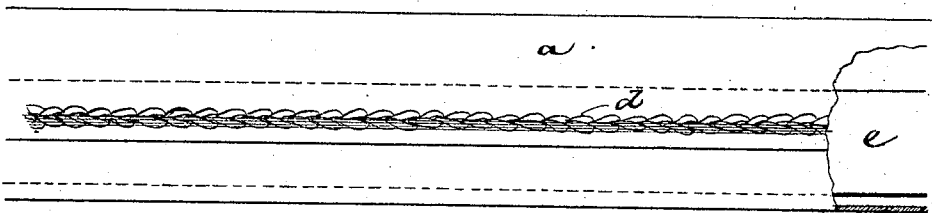
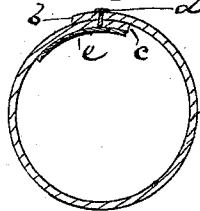


Fig. 2.



Witnesses.  
M. W. Frothingham.  
L. M. Catmer.

Inventor.  
Leverett H. Downing.  
By his Atty.  
Crosby & Gould

# UNITED STATES PATENT OFFICE.

LEVERETT H. DOWNING, OF NORTH ANDOVER, MASSACHUSETTS.

## IMPROVEMENT IN HYDRAULIC HOSE.

Specification forming part of Letters Patent No. **138,867**, dated May 13, 1873; application filed May 9, 1873.

*To all whom it may concern:*

Be it known that I, LEVERETT H. DOWNING, of North Andover, in the county of Essex and State of Massachusetts, have invented an Improvement in the Manufacture of Hydraulic Hose; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In the manufacture of sewed hydraulic hose there is more or less difficulty from leakage when the hose is subjected to severe hydraulic pressure. To remedy this the sewed seams have been formed in various ways, sometimes with a welt and sometimes without, sometimes by sewing several parallel seams, and sometimes by bending and interlocking the edges previous to uniting them; but all these methods, although possessing value, are not sufficient in themselves to effectually stop all leakage under severe pressure.

In my invention I lap one edge over the other and unite the two by a simple sewed seam, the stitches passing through from outside to inside, or vice versa, and cement to the inner surface of the tube, and covering the stitches, a welt or inner strip, the pressure against which can only force it tighter upon the seam. My invention consists in a sewed

hose having this inner strip applied, not as a part of the seam, but wholly independent thereof, and to cover the seam.

The drawing represents a piece of hose embodying my improved construction.

Figure 1 shows a view of the hose from the outside. Fig. 2 is a cross-section of it.

*a* denotes the body of the hose or the hose-strip. *b c* are the two united edges, the edge *b* lapping the edge *c*. *d* denotes the line of stitches that unites the edges. The joint or connection being thus made, a strip, *e*, is cemented to the inner surface of the tube, and covers the inner part of the stitches.

This strip renders the joint inaccessible to the water within the hose, even under the greatest pressure, as the pressure only serves to pack the welt against or over the seam.

The seam may be variously made; but the strip is always applied substantially as shown, and its application is preferably effected as the sewing or the connection of the edges progresses.

I claim—

A hose having the inner surface of the seam covered by the cemented strip *e*, substantially as described.

L. H. DOWNING.

Witnesses:

FRANCIS GOULD,  
M. W. FROTHINGHAM.