

L. H. DOWNING.
Hydraulic-Hose.

No. 158,631.

Patented Jan. 12, 1875.

Fig 1.

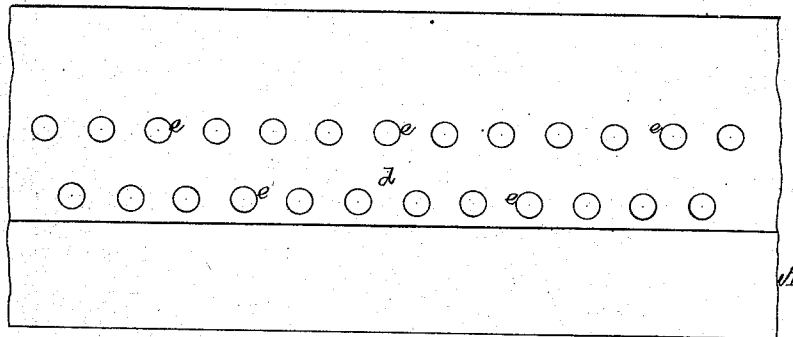
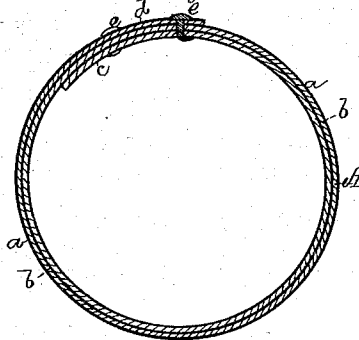


Fig 2.



Witnesses.

S. N. Piper

L. N. Hilden.

Leverett H. Downing

by his attorney.

R. W. Day

UNITED STATES PATENT OFFICE.

LEVERETT H. DOWNING, OF NORTH ANDOVER, MASSACHUSETTS.

IMPROVEMENT IN HYDRAULIC HOSE.

Specification forming part of Letters Patent No. 158,631, dated January 12, 1875; application filed June 10, 1874.

To all whom it may concern:

Be it known that I, LEVERETT H. DOWNING, of North Andover, of the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Hydraulic Hose; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, and Fig. 2 a transverse section, of a piece of hose constructed in accordance with my invention.

In making such hose, or a section thereof, I take a strip of canvas of the proper width—say, six and one-half times the diameter of the bore of the hose—and cover it on both sides with vulcanizable rubber or other material, such as will, when dry, render it water-proof. While such covering is in a tacky state, or one in which it is adhesive, I wind tightly the sheet somewhat more than twice around a cylinder of iron, or compound partly of iron. This having been done, I insert through the laps a series of nails or rivets, and, by driving them against the metal surface of the cylinder, clinch them with their heads on the outer surface of the outer lap. The mode of winding the sheet is represented in Fig. 2, in which *A* is the sheet; *a* and *b*, its coatings of rubber; *c d*, its laps, and *ee* the clinched nails. Having thus prepared the sheet of canvas, and secured its laps by nails, I next subject the whole to the process of vulcanization, all of which will be well understood by those skilled in the art of making articles, in whole or in part, from india-rubber or gutta-percha.

I am aware that it is not new to make a hose or tube of several pieces of cloth covered with india-rubber, or a vulcanizable composition of which such rubber was a constituent, the said

pieces of cloth being laid one over another, and cemented together by the rubber, the several pieces, at their edges, being lapped together and fastened by rivets. I make no claim to such.

The advantage of my improved hose over that herein last mentioned is in it having but two laps, with the middle portion of the sheet interposed between them, a construction which produces a far better and stronger joint—one less liable to leak.

I do not claim a hose constructed as described in the United States Patent No. 148,428, granted to George Pomroy Dodge, which is formed by a single winding of a coated woven strip, and sewing such together, and applying welts to cover the seams, the whole being subsequently vulcanized, as in my hose I have no such welts; nor does such become necessary, owing to the interposition of the continuous layer of the material between its two laps. Nor do I claim a hose constructed as represented in United States Patent No. 78,260, to Edwin N. Chaffee, in which the hose is shown as composed of several stratum or layers without any fastenings or nails.

I claim—

As an improved manufacture, a hydraulic hose, or section thereof, formed of a single sheet of canvas or cloth, covered on both sides with a vulcanizable water-proof composition, and wound twice or more times upon itself, and fastened at its laps by nails, and subsequently vulcanized, all being substantially as described and represented.

LEVERETT H. DOWNING.

Witnesses:

R. H. EDDY,
J. R. SNOW.