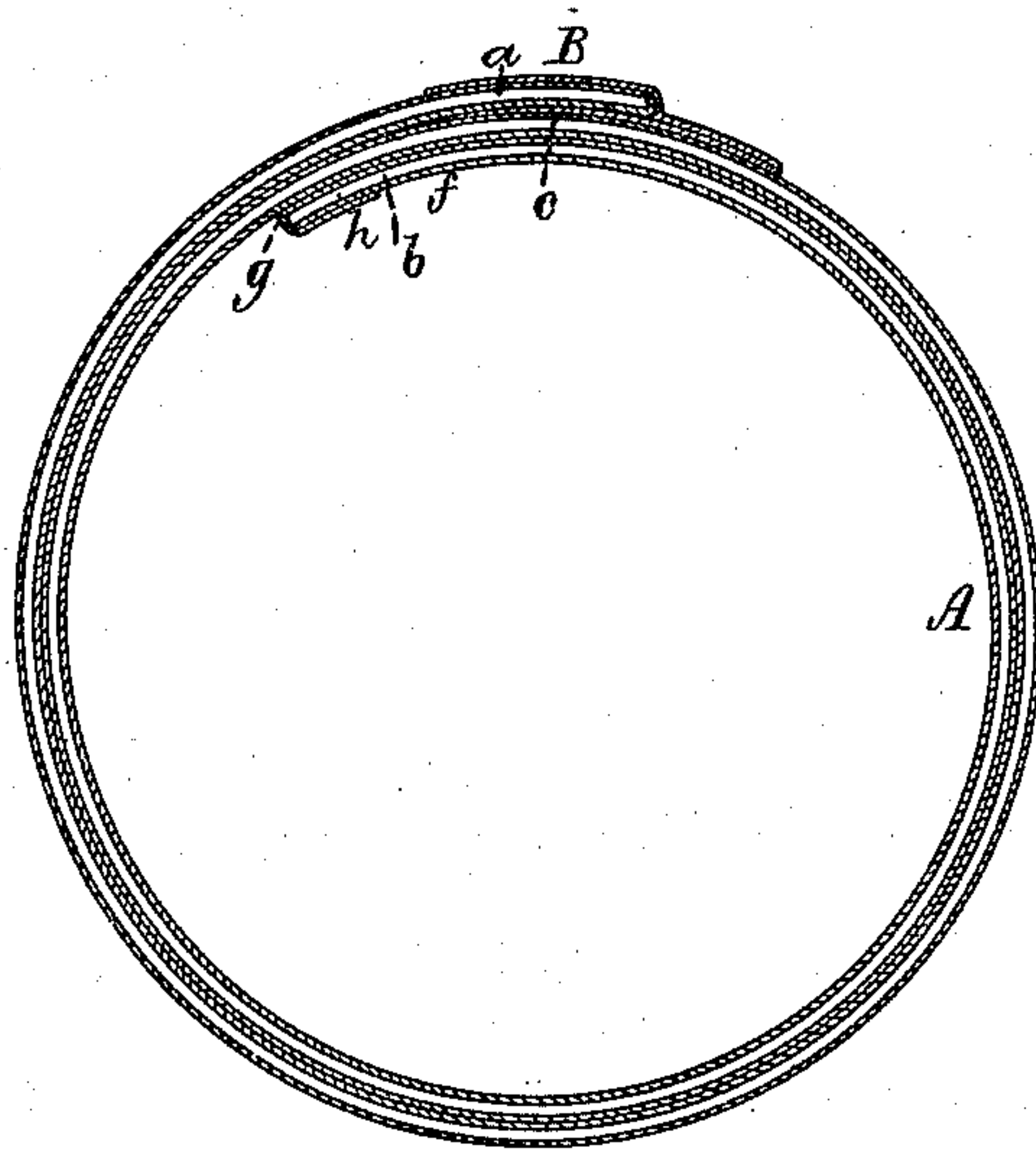
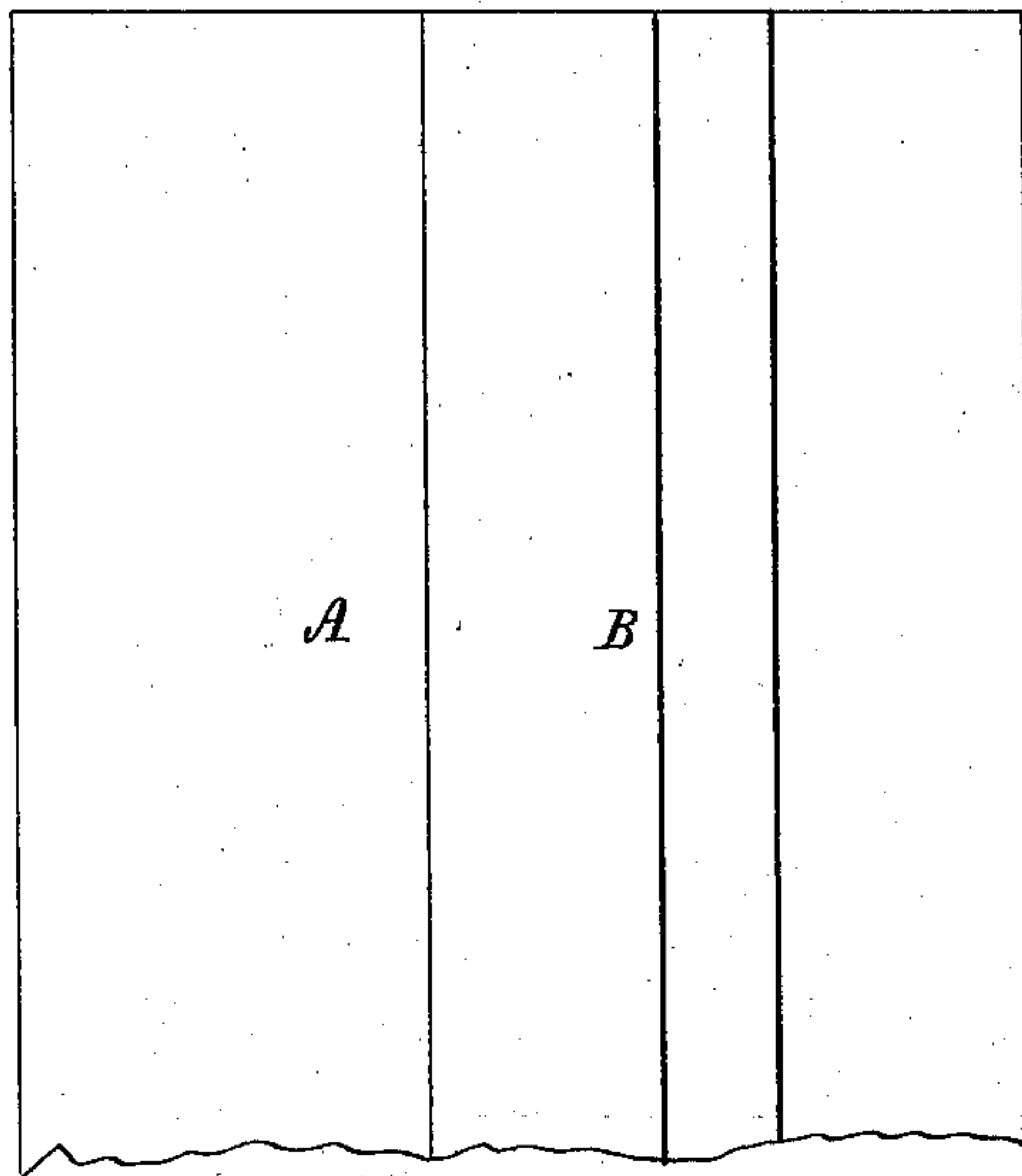


L. H. DOWNING.  
Hydraulic-Hose.

No. 165,159.

Patented July 6, 1875.



Witnesses.

S. W. Piper.

L. A. Hölter.

Leverett H. Downing

by his attorney

R. W. Sady

# UNITED STATES PATENT OFFICE.

LEVERETT H. DOWNING, OF NORTH ANDOVER, MASSACHUSETTS, ASSIGNOR  
TO JOHN A. WILEY, OF SAME PLACE.

## IMPROVEMENT IN HYDRAULIC HOSE.

Specification forming part of Letters Patent No. **165,159**, dated July 6, 1875; application filed  
May 22, 1875.

*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 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 transverse section, and Fig. 2 a top view, of a short piece of hose in accordance with my invention, such hose, with the exception of the re-enforce to be hereinafter explained, being made essentially as represented, described, and claimed in Letters Patent No. 158,631, granted to me January 12, 1875, without being fastened at its tops by nails or rivets, which may, however, be used.

In carrying out my invention, I protect the outer lap by applying to it, while the hose is being made, a strip of vulcanized rubber or composition or cloth covered with such, and folded at or near its middle, such strip being to embrace the lap on both of its opposite surfaces, and to extend beyond it. Where extending beyond the edge of the lap the lapped parts of the strip or re-enforce are to be connected together and to the hose. The part of the re-enforce going over the lap is to be cemented thereto, and the part going under it also to be cemented to it and to the hose-body.

In the drawings, A denotes the hose, and B the re-enforce, which, instead of being a strip simply lapped across the edge of either of the two laps *a b*, is, while in a tacky state, to be inserted about one-third of its width between the upper lap *a* and that part, *c*, of the hose which is immediately beneath such lap, after which the strip, at or near its middle, is to be folded and turned back upon itself and

upon the upper lap to the portion of the re-enforce so turned back, being cemented down to the part beneath it, and to the upper lap and the edge of the latter. The lower half or portion of the re-enforce is to be cemented throughout its width to the hose.

From the above it will be seen that a part of the re-enforce projects in a doubled or folded state beyond the edge of the lap, and that the remainder embraces the lap on its opposite surfaces.

The re-enforce so applied, when vulcanized, not only insulates the edge of the lap from water, but, very much more, prevents it from being injured or turn up than would a strip simply bent around the edge and a little under the lap, and also over its upper surface.

In order to protect from water the inner edge of the inner or lower lap, I carry around such edge and lap on the lower stratum *f*, of rubber, and cement thereto and the edge a portion, *h*, of the upper rubber stratum *g*.

I do not claim a hose made of a rubber-surfaced strip lapped together at its two opposite edges, and provided with a covering welt to each edge of the strip.

I claim as my invention—

A hose, A, made of cloth, covered with vulcanized rubber or composition, and provided with a re-enforce or strip, B, as described, folded back upon itself, and applied to opposite sides of a lap, *a*, and extended beyond its edge, and cemented together in the extension, and to the parts of the hose in contact with such re-enforce, all substantially as shown and explained.

LEVERETT H. DOWNING.

Witnesses:

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