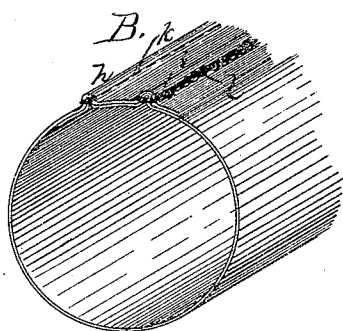
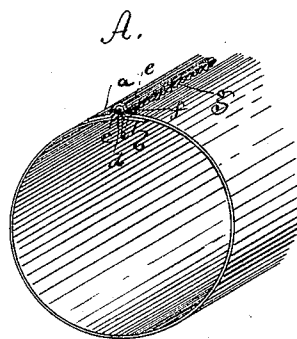
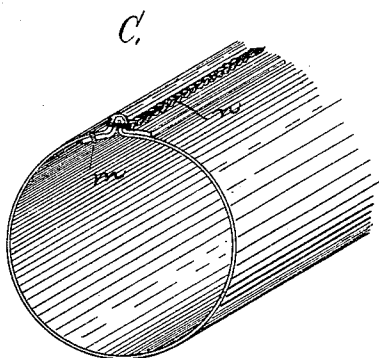
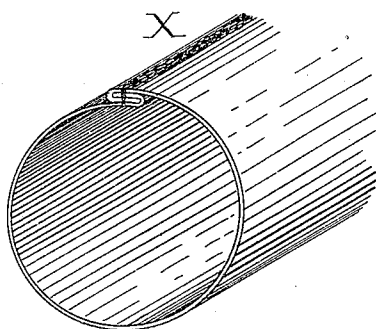


A. S. LIBBY.

Improvement in Hose.

No. 133,044.

Patented Nov. 12, 1872.



Witnesses.
M. W. Frothingham.
L. S. Porter.

Inventor.
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By his Attys.
Crosby & Gould

UNITED STATES PATENT OFFICE.

ASA S. LIBBY, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN HOSE.

Specification forming part of Letters Patent No. 133,044, dated November 12, 1872.

To all whom it may concern:

Be it known that I, ASA S. LIBBY, of Lawrence, in the county of Essex and State of Massachusetts, have invented an Improved 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.

United States Letters Patent No. 130,303 have been granted to me for an improved hydraulic hose, which hose consists of a strip of woven material, preferably canvas or duck, formed into a tube by uniting the edges, the opposite edges being protected and the impermeability of the joint increased by doubling, folding, or re-enforcing them where the stitches pass through the material to effect the union of the edges. In such patent the edges are shown as united by stitches passing from the inside to the outside of the tube.

My present invention also relates to the manufacture of hose formed from a woven strip by uniting the opposite edges; but, instead of effecting the union of the edges by stitches, or only by stitches passing through the lapped edges from the inside to the outside of the tube, or vice versa, I lap the edges and then fold or double the lapped edges together, and then sew through the four thicknesses from outside to outside. My invention consists in a hose thus made.

By my improved method of making hose the sewing can be effected on an ordinary sewing-machine, as no supporting instrument has to enter the tube. Preferably, however, the union is effected or strengthened by using two rows of stitches, one row formed with a special hose-sewing machine—such, for instance as is shown in United States Letters Patent No. 74,289—and the other row formed with a common wax-thread sewing-machine.

The drawing represents several pieces of hose embodying my present invention, except at X, where I show a piece of hose formed as described in my said patent No. 130,303.

At A I show my present improvement in its simplest form. The edge part *a* is lapped over the opposite edge part *b*, and then the lapped parts are pressed together so as to bring the four parts *c d e f* into position for all to be united together upon an ordinary wax-thread sewing-machine, the flat tube with its lapped edges being fed to and by the machine the same as would a strip of ordinary flat work, the stitches *e* passing directly through the four thicknesses and from outside to outside thereof. At B the laps are sufficiently wide for two such seams as are shown at A, each part, *h* and *i*, being in turn laid flat upon a sewing-machine work-supporting plate, and the stitches *k l* of each seam passing from outside to outside of the hose. At C the opposite edges are first united by the row of stitches *m*, extending from inside to outside of the tube, this seam being made by a machine similar to what is shown in said patent No. 74,289, and then the tube is folded flatwise, and the line of stitches *m* is made with a common wax-thread sewing-machine.

I claim—

1. The improved hydraulic hose, formed from a woven strip by uniting the edges by one or more rows of stitches, each row passing through the four thicknesses from outside to outside of the tube.

2. Also, in combination with the row of stitches *n*, the row of stitches *m*, passing through the edges from outside to inside, or vice versa, substantially as shown and described.

ASA S. LIBBY.

Witnesses:

FRANCIS GOULD,
M. W. FROTHINGHAM.