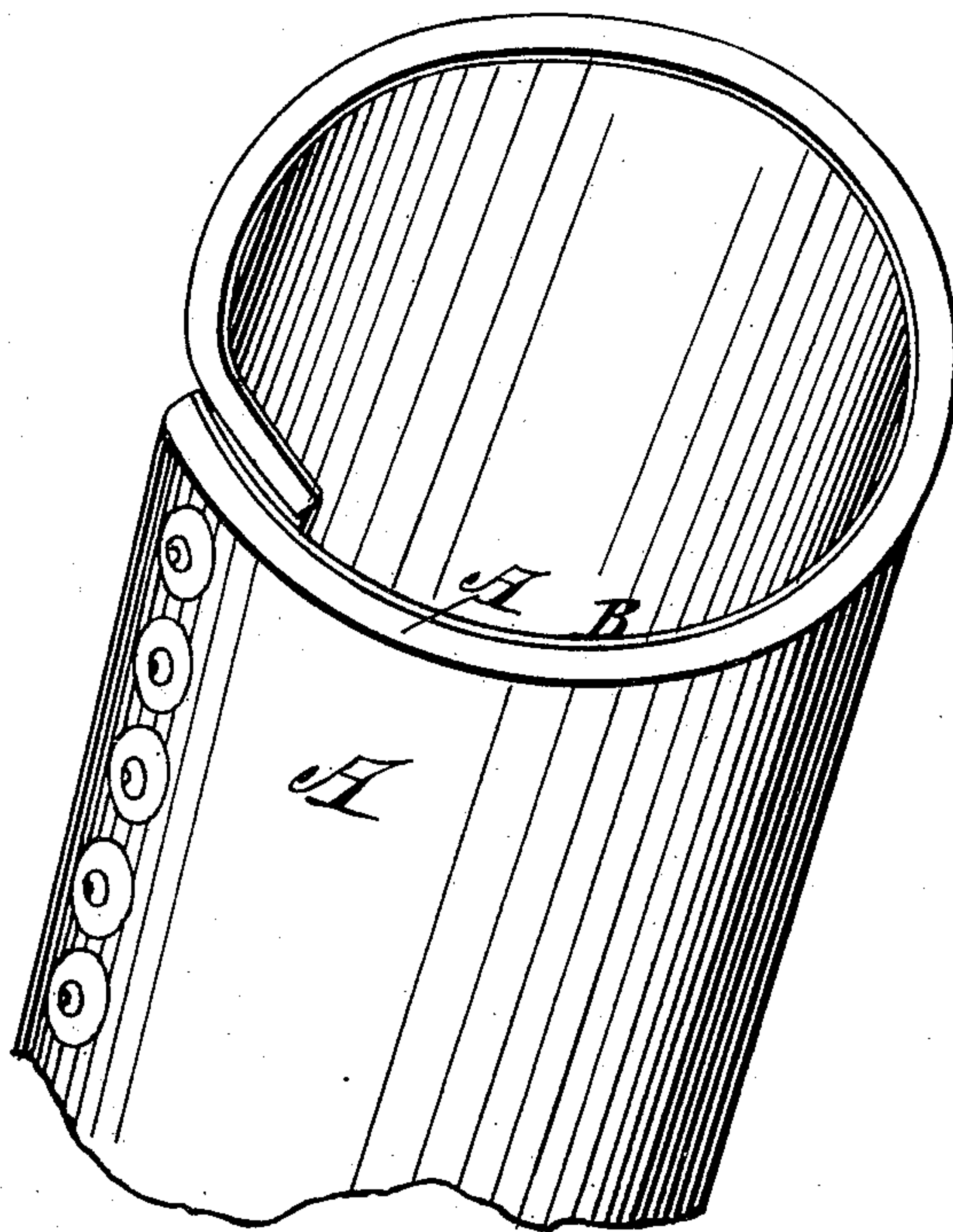


J. PUNDERFORD.

Waterproof Leather Hose.

No. 23,781.

Patented Apr. 26, 1859.



Witnesses.
C. R. Benson
Lockwood Sanford

Inventor.
J. Punderford

UNITED STATES PATENT OFFICE.

JAMES PUNDERFORD, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN WATER-PROOF LEATHER HOSE.

Specification forming part of Letters Patent No. **23,781**, dated April 26, 1859.

To all whom it may concern:

Be it known that I, JAMES PUNDERFORD, of the city and county of New Haven, in the State of Connecticut, have invented a new and useful or Improved Manufacture of Leather Hose; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing.

In carrying out my invention I spread over the inner surface of the leather forming the body of the hose a layer of gutta-percha, india-rubber, or other like water-proof material, the leather having first been prepared for its reception by the aid of chemical agents, the effect being to render the hose impervious to the water passing through it, thereby preventing the ordinary leakage and waste through the pores of the leather and at the seams, and preventing the inner surface of the leather from the usual effects of mold and rot so deleterious to the hose as at present prepared and made.

To enable others skilled in the art to make and use my invention, I will proceed to describe it more particularly.

After the leather is tanned, curried, and cut ready for the riveting, as in the manufacture of the ordinary leather hose now in common use, I proceed by the use of the currying-knife to buff off a thin shaving from the entire surface of the grain or flesh, and then apply with a brush a coat of oxalic acid in the liquid state for the purpose of destroying or neutralizing the oily particles upon and near to the surface, which give to the leather its tendency to resist gutta-percha, india-rubber, and like ma-

terials, and prevent their proper adhesion to it. I next apply a coat of camphene and three coatings of gutta-percha or india-rubber cement, each successively as they dry. In order to form a lining to the hose which will protect the layer of water-proof material thus applied, (as well as to add to its strength,) I in the same manner apply the same number of coatings of cement to an equal surface of cotton, cloth, leather, or other suitable material, and when the coatings on the leather and its lining are sufficiently dry I place the lining on the prepared surface of the leather and unite the two together by the adhesion of the cement or by additional cement. The hose material so made is next to be rolled into shape, the lapped edges being spread with the cement and the lining being extended between them. Next the lapped parts are to be riveted in the usual manner.

Having thus described my invention, I would have it understood that I am aware that it is not new to apply india-rubber to cloth, nor to cement cloth to leather by india-rubber cement; nor is it new to cover with india-rubber the interior of a hose made of a woven material. Therefore I do not claim such; but

What I do claim as my invention is—

The new or improved manufacture of riveted leather hose made with a water-proof lining applied to its inner surface and extending between the joint or lapping where the rivets are inserted, substantially as described.

JAMES PUNDERFORD.

Witnesses:

D. A. BISHOP,
WM. B. JOHNSON.