S. W. BAKER.

WATER-PROOF HOSE.

No. 169,760. Patented Nov. 9, 1875.

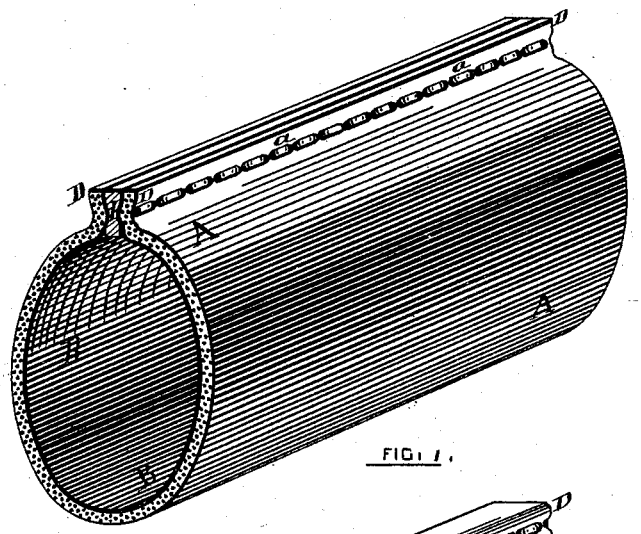

FIG. 1.

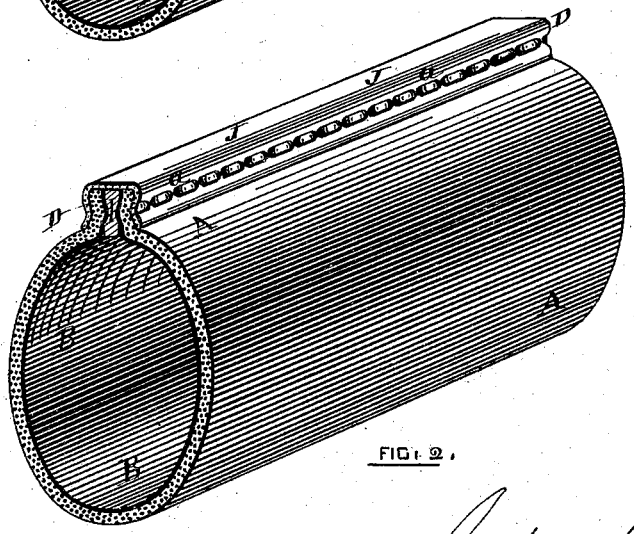

FIG. 2.

WITNESSES:

Isaac A. Brownell,

David Heaton

INVENTOR.

Seth W. Baker

UNITED STATES PATENT OFFICE.

SETH W. BAKER, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN WATER-PROOF HOSE.

Specification forming part of Letters Patent No. **169,760**, dated November 9, 1875; application filed March 24, 1875.

CASE 3.

To all whom it may concern:

Be it known that I, SETH W. BAKER, of the city and county of Providence, and State of Rhode Island, have invented a new and Improved Manufacture of Water-Proof Hose, of which the following is a specification, referring to the accompanying drawings, making part of the same, in which—

Figure 1 is a perspective view of my improved hose. Fig. 2 is a similar view of the same with a covered seam or joint.

The same letters mark like parts in both figures.

My invention relates to making hose from a textile fabric, with a water-proof lining; and consists in preparing and curing the lining upon the fabric beforehand, and afterward uniting the edges of the prepared fabric by a water-tight seam or joint, produced by securing the parts upon an elastic packing while under a state of compression.

Any woven fabric of sufficient strength and suitable texture may be employed in the manufacture of this hose; but the fabric which I prefer as being—all things considered—the best suited to the purpose is that described in the Letters Patent No. 20,267, granted to John Gujer, May 18, 1858, which may be briefly described as composed of a great number of warps and shoots of filling-threads closely interwoven and beaten up, and producing a fabric which is very thick and strong and light of weight, of smooth, fine texture, and of unusual durability. A web or strip of this or other suitable fabric, A, of the width required for the hose, is thickly coated upon one side with the vulcanizable compound of india-rubber B, and afterward subjected to the vulcanizing process between heated smooth metallic plates, by which the india-rubber is made perfectly smooth and uniform upon its surface, which is to form the water-proof lining. This forms the "vulcanized-hose fabric," so called. This hose fabric is then doubled together, the two edges D being put together evenly, and a narrow strip, of about three-fourths of an inch of elastic vulcanized india-rubber packing, inserted between the two edges D D, and then the two edges and the packing I inserted and compressed tightly between the two jaws of a powerful vise or similar machine, leaving a sufficient width extending above the jaws to receive the sewing, riveting, or other means of securing the two edges of the fabric together in a seam or joint. This is next done throughout the length of the compressed portion, after which the adjoining portion or length is compressed in like manner, and this secured in the same manner as before, and so on to the end.

After securing the seam by suitable means, the confined portion is released, and the packing I is permitted to expand, in doing which it effectually packs the space between the two confined edges D D, and thus makes the seam practically water-tight, under the severest hydraulic pressure to which it is subjected.

The advantage of the textile hose constructed as above described is, that by preparing and vulcanizing the india-rubber lining upon the suitable width of the fabric before making the hose, the lining can be cured under pressure against smooth surfaces, and by that means rendered as smooth and even-surfaced as is possible, whereas, in ordinary textile hose, where the hose is put together, and the whole vulcanized afterward, it is quite difficult, if not impossible, to give anything like the smoothness of pressed india-rubber to the lining or water-way, so that under the most favorable circumstances the ordinary india-rubber lining which is after-cured is quite rough and uneven, and inferior, as compared with that herein described and employed.

The seam or joint described may be secured by sewing with stout waxed ends, as shown at *a a* in both figures, or by means of rivets passing through in like manner, and said seam may be covered with stout duck or other fabric, J, as shown in Fig. 2. The said seam or joint, it will be understood, is all made from the outside of the hose, and after all its parts have been vulcanized, and it can, therefore, be repaired or replaced in case of leakage or bursting, when, in most cases, it would be impossible to do so with a differently-constituted seam, or in ordinary textile hose.

The article above specified for the elastic is

india-rubber; but leather, gutta-percha, and some other material may also be employed. The utility of the expansion seam or joint, it will also be understood, is applicable to other purposes than that singly mentioned herein; and also that the said seam may be also made by interposing and confining a packing between two edges when lapped one upon the other, and sewed or riveted together in the ordinary way.

Having described my invention, I claim—

1. In hydraulic hose constructed as hereinbefore described, the improved seam or joint, formed by the union of the edges D D with the elastic rubber packing I, having indented sides, within which said edges D D are forced, and secured therein, substantially as described and shown.

2. In hydraulic hose, the improved packing I, having indented sides, in which the edges D D are forced, and secured therein while the parts are subjected to compression by mechanical means, substantially as described.

SETH W. BAKER.

Witnesses:

ISAAC A. BROWNELL,

DAVID HEATON.