G. E. PRESTON.

HOSE.

APPLICATION FILED MAY 16, 1910.

988,384. Patented Apr. 4, 1911.

Fig. 1

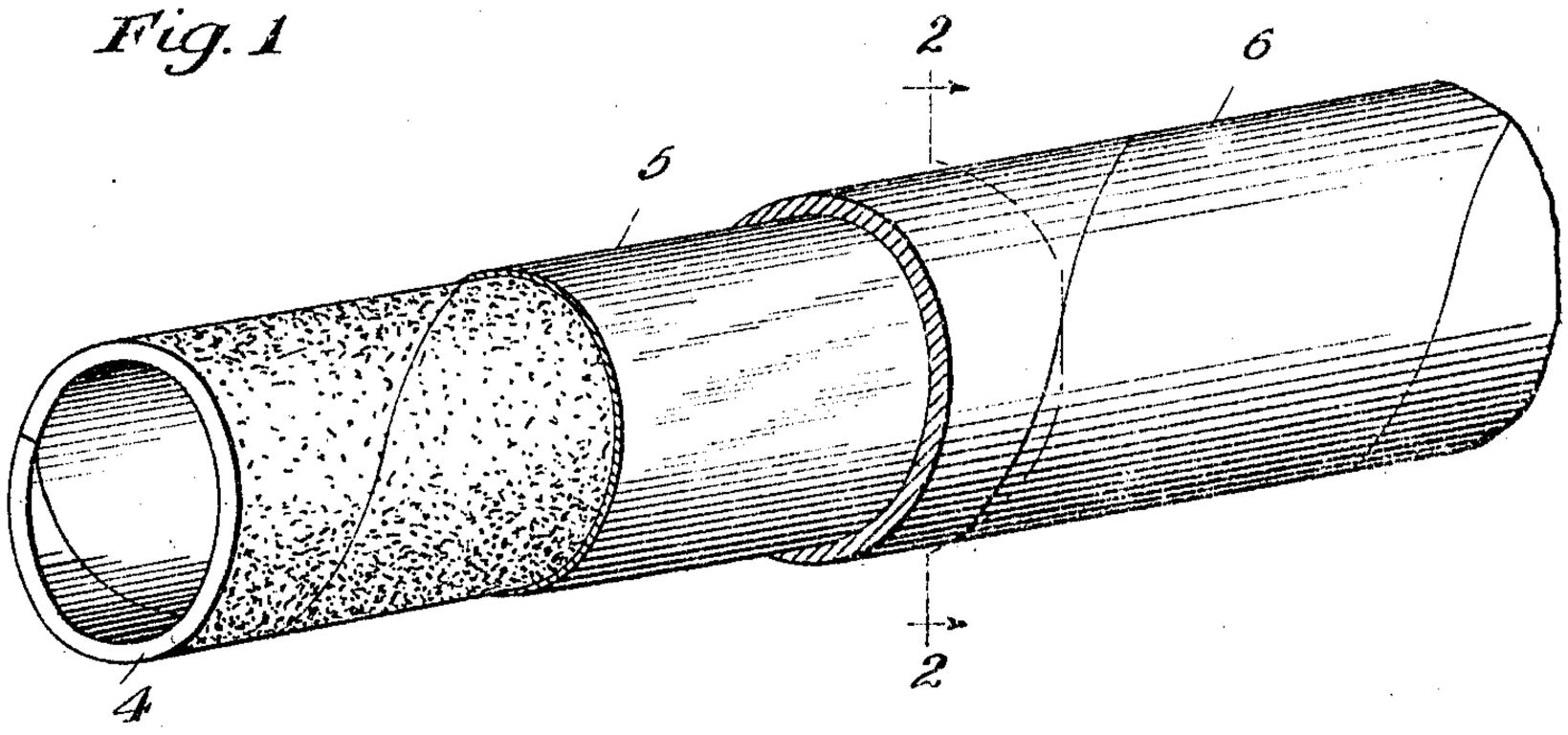


Fig. 2

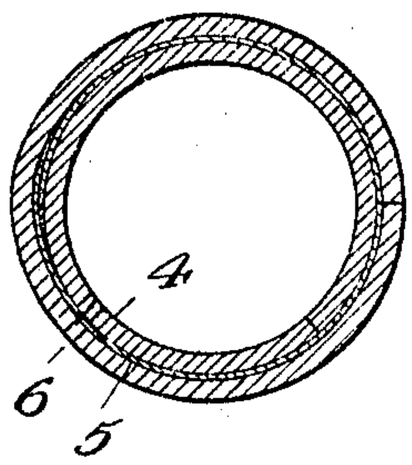
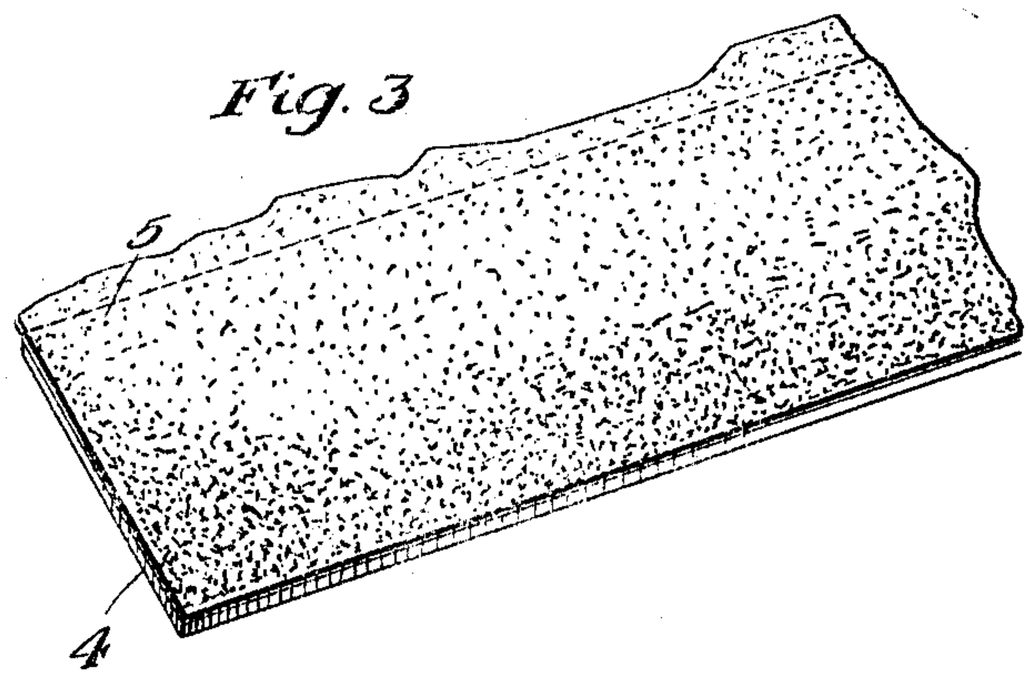


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE E. PRESTON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO GUILFORD S. WOOD, OF CHICAGO, ILLINOIS.

HOSE.

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To all whom it may concern:

Be it known that I, GEORGE E. PRESTON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hose, of which the following is a specification.

The object of this invention has been to devise a substitute for rubber hose adapted to be used for conducting air under pressure. It has been devised more especially for use in the flexible pipes employed in coupling the air brakes of railroad cars together, but it obviously may be used elsewhere. In order to render the hose little liable to decay, I substitute for the rubber in its manufacture, other flexible material, such for instance as chrome leather. And to render the hose proof against leakage of air I form the body of the hose of two or more thicknesses or layers of the leather, and insert between each two layers a thin imperforate and impervious sheet of celluloid, this sheet being cemented to both of the opposing thicknesses of the body so that such thicknesses or layers and the interposed celluloid become practically one piece and the edges of the sheet are also lapped one upon the other and cemented together. The leather bodies of the hose are preferably formed in long lengths and wound spirally, the direction of the winding of the inner layer or layers being reversed from that of the outer layer or layers. These features of the invention are described fully in the specification below and are also illustrated in the accompanying drawing forming a part of this specification, and in said drawing Figure 1 is a perspective of a section of my improved hose partly broken away. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a perspective of a portion of the leather of one of the tubes in the flat and with the celluloid sheet applied to its upper face.

In said drawing, 4 represents the inner layer of the body material and which is first wound spirally or otherwise bent into cylindrical form around a mandrel so that it forms a core around which the celluloid sheet 5 may be positioned before winding the outer layer or cover 6. The layers 4 and 6 as already explained, are preferably made of chrome leather, united so as to form lengths sufficient for the length of hose it is desired to make and cut to a uniform width convenient for winding. After this layer 4 has been formed into cylindrical shape the sheet 5 of thin imperforate and impervious celluloid is wrapped closely around it, a cement solution or preparation being first applied to the inner surface of the celluloid or to the outside of the leather and the edges of the celluloid being also lapped and cemented together. The cement mixture or solution should be such as will unite the celluloid very closely and firmly to the tube. I next take a layer of the leather or other material and wrap it around the outside of the celluloid, the surface of the celluloid being first smeared or provided with the cementing solution. In wrapping the outside layer I exert some pressure by it upon the celluloid, though it need not be severe pressure. If it secures a close union of the celluloid with the body material both inner and outer, that will be sufficient. Both the layers of body material are made up in strips of sufficient length for the piece of hose to be made from them and wound spirally, the direction of the winding being reversed in the case of the outer layer from the direction used in the inner layer. This spiral winding increases the flexibility of the hose and renders it sufficiently flexible for most uses. Of course the flexibility will depend much upon the thickness of the material courses used in the manufacture, the thin material making the hose more flexible than the thick one. Whatever cementing preparation is used it must be one which will not destroy the integrity of the celluloid sheet nor form openings therein. If properly united the celluloid becomes practically incorporated with the thicknesses of the leather between which it is placed, and in so doing it loses even the natural slight stiffness which it possesses before being secured to the body thicknesses, and so becomes flexible in all directions and offers no resistance to the bending of the hose, but renders the same impervious to air.

I have indicated chrome leather as desirable material because of the known qualities of that kind of leather which render it serviceable for use in hose. And while I have indicated a preference for the spirally wound body material, I do not wish to be limited to that construction.

The joints between the different sheets, pieces or strips of celluloid which are used

in the hose are rendered air tight by lapping and cementing their adjacent edges one upon the other as seen at Fig. 2.

I claim:—

1. The tube for conducting air under pressure consisting of an inner thickness or tube of chrome leather, a sheet of flexible impervious celluloid having its edges cemented together and wrapped around said inner tube of leather, and a second thickness or tube of chrome leather placed outside the celluloid.

2. The tube herein described consisting of inner and outer tubes of chrome leather and a flexible sheet of impervious celluloid interposed between said tubes and cemented to both of them, and also having its own edges cemented together.

GEORGE E. PRESTON.

Witnesses:
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