

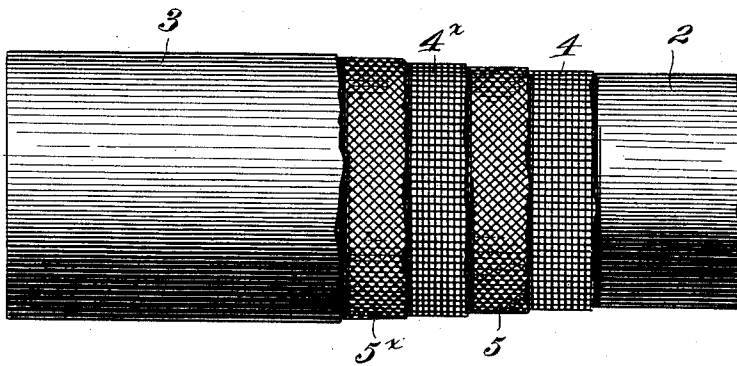
No. 757,877.

PATENTED APR. 19, 1904.

F. B. BOSCH.
HOSE.

APPLICATION FILED DEC. 20, 1901.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK B. BOSCH, OF PHILADELPHIA, PENNSYLVANIA.

HOSE.

SPECIFICATION forming part of Letters Patent No. 757,877, dated April 19, 1904.

Application filed December 20, 1901. Serial No. 86,686. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. BOSCH, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hose; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain novel improvements in hose, and is more intimately associated with that type of hose utilized for water or other fluid under pressure, wherein provision must be made to prevent distortion or bursting of the fabric owing to the bending or longitudinal and circumferential expansion, contraction, or the twisting of the hose.

Many attempts have been made to construct a hose which will meet the requirements above mentioned; but such attempts have proven more or less unsuccessful; and it is the object of the present invention to improve upon such known constructions, so as to afford an article which will be efficient in every respect and susceptible of various adaptations, and more particularly as a fire-hose, in that the tension upon the fabric incident to the pressure of the water will be balanced or evenly distributed throughout.

With the foregoing object in view I construct a hose with the usual interior and exterior protective coverings of rubber (though the employment of rubber is not always essential) and interpose therebetween a plurality of layers of cotton duck or other suitable fabric, the strands or threads of each alternate layer being disposed longitudinally and circumferentially relative to the hose, while the strands or threads of the other intermediate layers run on the bias relative thereto.

Of the prior art hereinbefore referred to I specifically disclaim the constructions disclosed in the two patents, Nos. 296,436 and 587,679, both granted John Murphy and issued, respectively, April 8, 1884, and August 3, 1897.

The novel details and arrangements of the

several parts of my construction will be apparent upon an inspection of the accompanying drawing, forming part hereof, when considered in connection with the detail description hereinafter and the appended claim.

While in the drawing one embodiment of the invention is disclosed, it is, however, to be understood that it is not the intention to be restricted to the precise construction shown, inasmuch as such construction has been delineated simply for the purpose of facilitating a clear comprehension of the invention.

In said drawing the figure is an elevation of a section of the hose, parts being broken away to expose the interior arrangement.

2 designates the interior lining of the hose, which, as usual, is preferably of rubber, and 3 the corresponding exterior covering.

4 and 4^x are layers of cotton duck or other appropriate material, the threads of which are disposed longitudinally and circumferentially relative to the hose, and 5 and 5^x are layers of a similar fabric arranged with the threads or strands thereof running on the bias relative to the threads or strands of the layers 4 and 4^x. The intermediate layers are joined to each other and to the inner lining and outer covering by the frictional process common to the trade, and the whole then vulcanized. I have shown four inner layers of fabric; but it will be obvious that a much larger number may be employed or even three, according to the strength of the hose desired; but irrespective of the number of layers it is essential that they be arranged alternately—i. e., a single layer of the fabric 4 or 4^x and then a single layer of the fabric 5 or 5^x, and so on. Neither is this precise arrangement of the layers necessary, inasmuch as that layer immediately surrounding the rubber interior lining may as well be of the bias thread instead of the straight thread. When three layers are employed, however, the two outer ones only will have the threads similarly arranged. By having the single layers alternating the tension upon the hose is evenly balanced in all directions, inasmuch as any excessive tendency of the threads of any one layer to expand or contract in the particular direc-

tion of their arrangement will be prevented or equalized by the contrarily-disposed threads of the immediately adjacent layers.

Having thus described my invention, what
5 I claim as new, and desire to secure by Letters Patent, is—

A hose comprising in its construction inner and outer coverings of impervious material, and a series of three intermediate layers of
10 textile material, the threads of the middle layer of the intermediate series being disposed in a given manner and the threads of the inner

and outer layers being disposed in a contrary manner, whereby the tendency of the threads of one intermediate layer to expand or contract is resisted by the contrarily-arranged threads of an immediately adjoining layer. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK B. BOSCH.

Witnesses:

ROBERT W. DUTTON,
FERD. DONNELLY.