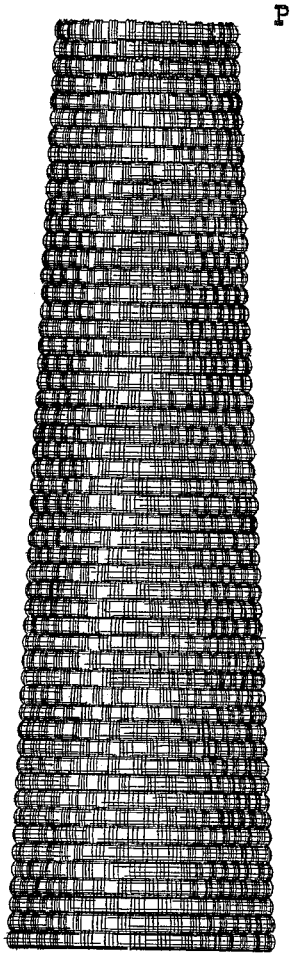
2 Sheets—Sheet 1.

J. VAN DUSSEN REED.

FIRE HOSE NOZZLES.

No. 180,790. Patented Aug. 8, 1876.

Fig. 1.



Witnesses:
Theodore Foster
B. S. Clark

Inventor:
John van Dussen Reed
By J. P. Fitch,
his atty.

2 Sheets—Sheet 2.

J. VAN DUSSEN REED.

FIRE HOSE NOZZLES.

No. 180,790. Patented Aug. 8, 1876.

Fig. 2.

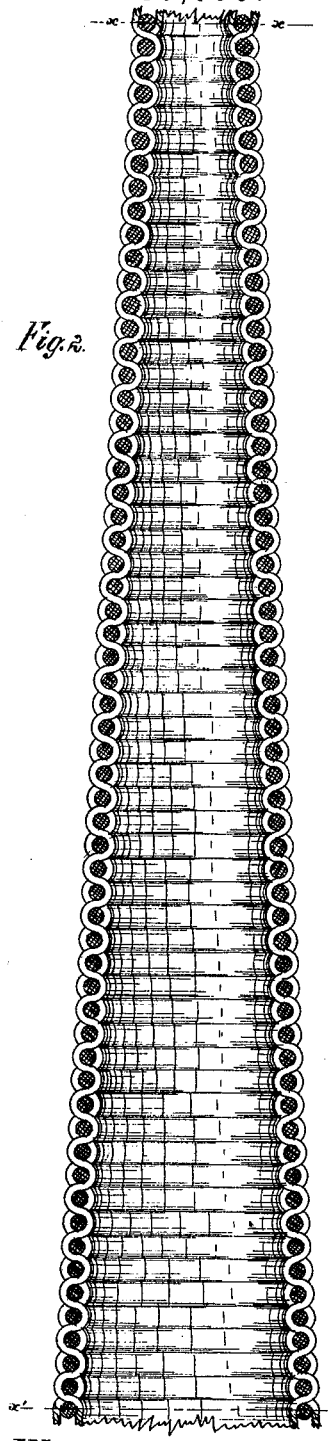


Fig. 3.

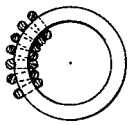


Fig. 6.

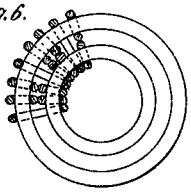


Fig. 5

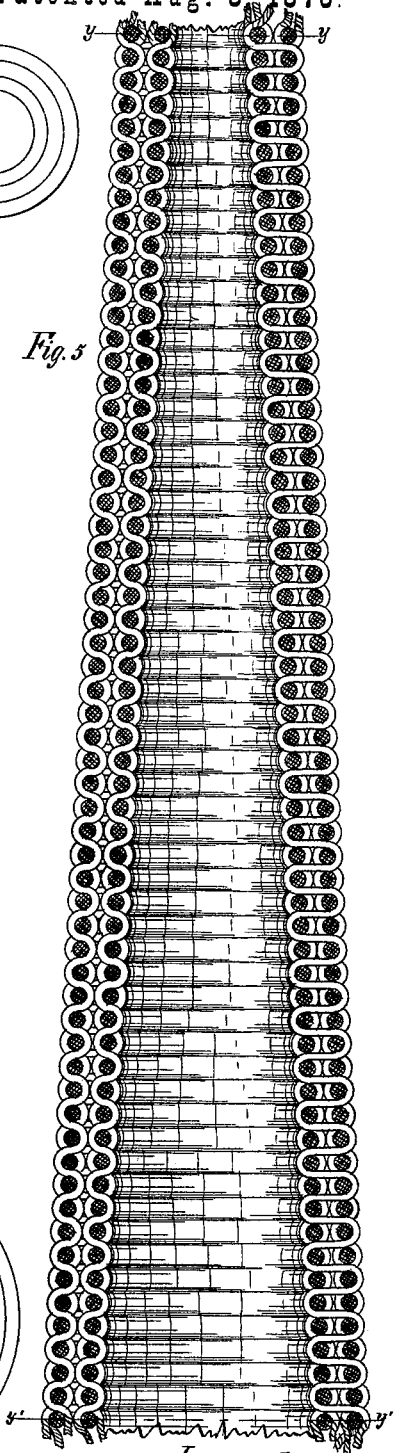


Fig. 4.

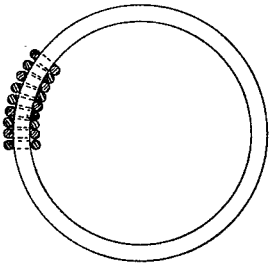
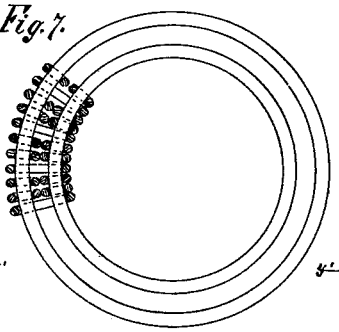


Fig. 7.



Witnesses:

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B. S. Clark

Inventor:

John van Dusen Reed

By J. P. Fitch his atty.

UNITED STATES PATENT OFFICE.

JOHN VAN DUSSEN REED, OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-HOSE NOZZLES.

Specification forming part of Letters Patent No. **180,790**, dated August 8, 1876; application filed July 22, 1876.

To all whom it may concern:

Be it known that I, JOHN VAN DUSSEN REED, of the city of New York, State and county of New York, have invented a new and useful Improvement in Fire-Hose Nozzles, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof, in which—

Figure 1 is an external side view of my improved woven fire-hose nozzle. Fig. 2 is a longitudinal section of the same, showing a single-ply web. Fig. 3 is a cross-section of the small end of said nozzle, or the body of the hose. Fig. 4 is a cross-section of the large or nozzle end of the same. Fig. 5 is a longitudinal section of my woven nozzle, the web being of more than one ply; and Figs. 6 and 7 are cross-sections of Fig. 5, the former near the nozzle, and the latter at the large end or the body of the hose.

The nozzles of fire-hose heretofore have been made of metal, and are expensive and heavy to handle.

My invention consists in a fire-hose nozzle fabricated from cotton, linen, or other analogous fibrous material, woven into the form of a conical or tapering tube, entire and without a seam, the warp-threads running longitudinally the entire length of the tube, and the filling wound spirally continuously around between the warp-threads, and packed up closely, forming a woven fabric sufficiently strong and compact to bear the strain to which fire-hose is subjected in use. This woven nozzle has the advantage of being light and comparatively inexpensive.

On the 23d of March, 1875, two Letters Patent of the United States, Nos. 161,272 and 161,273, were issued to me for improvements in fire-hose, the former relating to a woven hose of more than one ply, and the latter to similar hose of a single ply. The hose there described is a cylindrical tube, to which was necessarily intended to be attached, for use, the common metal nozzle. Reference is here made to the said Letters Patent for a description of the method and means by which cylindrical webs, both double and single ply, may be fabricated. In said patents, however, only the method and means of making a true cylindrical web are described and shown.

A modification of the method is necessary, in order to weave a conical or tapering tubular web. This modification is effected by commencing the tube with the number of warp-strands required to form a tube of the diameter of the small end of the nozzle, and, as the operation of weaving in the woof progresses, introducing into the web additional warp-strands at intervals, to gradually enlarge the diameter with a taper to the size of the general body of the hose on which the nozzle is to be used. Those skilled in the art of weaving the cylindrical tube will know how to introduce these additional strands without further description. Then, as the woof-strand is delivered, and beaten into the gradually-enlarging circular woof by the shuttle, the shuttle is caused to gradually recede from the axial center of the web in proportion as the diameter of the web is enlarged. This may be done by having a male and female screw-joint in the arm carrying the shuttle, and suitable devices connected therewith for operating said screw-joint, (by the revolving of said arm around the web,) to gradually shorten the arm, to adjust the shuttle to the enlarging tube.

A mechanic skilled in the construction of the loom for weaving tubular fabrics, described and shown in the patents above referred to, will know how to give the shuttle the said required movements.

A certain degree of taper may be given to the nozzle without the introduction of additional warp-strands by modifying the tension and the force applied by the shuttle in beating up the web.

The accompanying drawings represent fully and plainly my conical or tapering hose-nozzle, and will be readily understood without a more particular description.

I claim as a new manufacture—

A nozzle for hose, designed for the discharge of water, that is fabricated of cotton, linen, or other analogous fibrous material, woven into the form of a conical or tapering tube, and without a seam, as and for the purpose described.

Witness my hand this 20th day of July, 1876.

J. VAN D. REED.

Witnesses:

B. S. CLARK,

THEODORE HOSTER.