

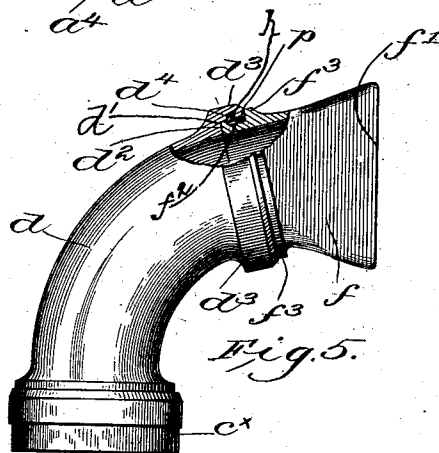
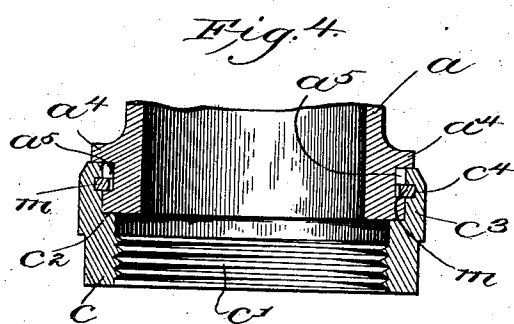
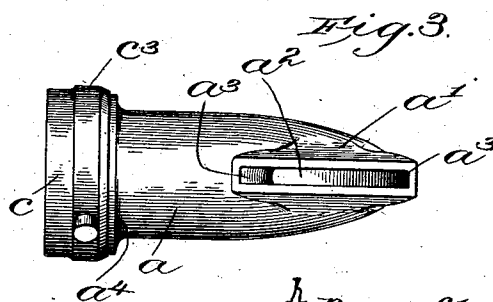
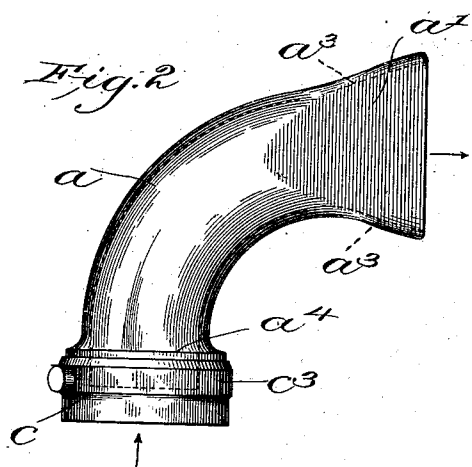
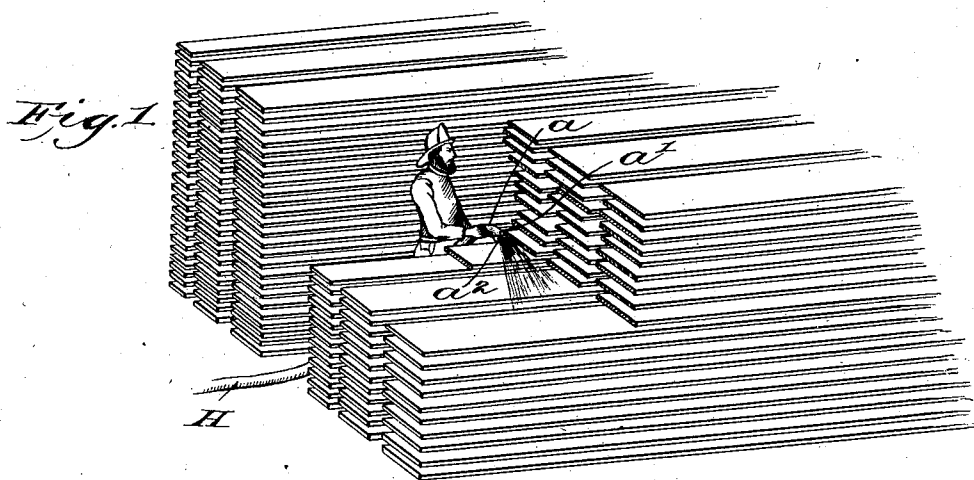
No. 721,746.

PATENTED MAR. 3, 1903.

C. R. ROBINSON.
HOSE NOZZLE.

APPLICATION FILED MAY 23, 1901.

NO MODEL.



Witnesses,
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UNITED STATES PATENT OFFICE.

CYRUS R. ROBINSON, OF CONCORD, NEW HAMPSHIRE.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 721,746, dated March 3, 1903.

Application filed May 23, 1901. Serial No. 61,513. (No model.)

To all whom it may concern:

Be it known that I, CYRUS R. ROBINSON, a citizen of the United States, residing at Concord, county of Merrimack, State of New Hampshire, have invented an Improvement in Hose-Nozzles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of a delivery-nozzle for hose or other water-conduits, whereby a thin, broad, and flat sheet or stream of liquid is discharged.

In some cases the use of a round column of water is inefficient in extinguishing fire, owing to the character of the burning structure and the difficulty of getting a stream fairly upon it. Lumber-yard fires are usually very disastrous, because the alleys between the piles of lumber are so narrow that the firemen cannot direct a stream directly against the pile without kinking or snarling the hose and stopping the flow, and the diagonal column of water strikes the side of the pile and is dissipated. The planks or boards are generally stacked up with spaces between superposed layers, which spaces afford a good draft for air, and thus feed the fire; but a round stream cannot enter.

30 One of the results attained by my invention is the ability to direct a thin, flat, and broad sheet of water against the burning object and substantially at right angles thereto without bending or kinking the hose.

35 The various novel features of my invention will be fully described hereinafter and particularly pointed out in the following claims.

Figure 1 is a perspective view of a nozzle embodying my invention in use, illustrating its adaptability and handiness in working in close quarters. Fig. 2 is an enlarged top or plan view of the nozzle. Fig. 3 is a view thereof looking at it from in front of the discharge-opening. Fig. 4 is an enlarged section taken through the inlet end of the nozzle, showing the coupling for attaching the nozzle to a hose or other conduit; and Fig. 5 is a plan view, partly broken out, of a modification to be described.

50 Referring to Figs. 2 and 3, the nozzle consists of a cylindrical tubular body portion a , having a coupling c mounted on its inlet end,

the inlet-opening being cylindrical. The body portion is bent or curved in the direction of its length, as clearly shown in Fig. 2, and its delivery end is flattened and expanded laterally, as at a' , to present a narrow elongated discharge-opening a^2 , Fig. 3. The inner side walls a^3 diverge from the cylindrical portion of the body to the end of the tip or flattened portion a' , so as to impart a fan shape to the sheet of liquid as it issues from the discharge-opening a^2 .

By making the body portion cylindrical from its inlet end to the base of the tip, with an easy curve in the direction of the length of the body, the liquid passing therethrough is not materially retarded by friction, and it is discharged in a powerful thin and fan-shaped sheet.

Viewing Fig. 1, it will be seen that in using the nozzle in a contracted space—as, for instance, an alley between piles of lumber—the hose H , coupled to the inlet end of the nozzle, forms a straight continuation thereof, while the stream is discharged at right angles to the line of hose. The thin flat sheet of water is readily introduced between the superposed layers of boards and can be directed upon the burning portion with great effect.

Referring to Fig. 2, it will be seen that the inlet and discharge openings are located in planes substantially at right angles to each other.

The bent or hook-like form of the nozzle enables it to be caught over the rung of a ladder, or it may be hooked over the sill of a window to direct the stream into a room, and the fireman can change the direction of the stream by turning the inlet end of the nozzle as desired.

In Fig. 4 I have shown the manner of connecting the coupling c , the latter being interiorly threaded at c' for attachment to a hose or other conduit, and the interior of the coupling is annularly shouldered at c^2 and extended beyond the shoulder to form an annular wall c^3 , provided with an internal groove c^4 . The inlet end of the body a of the nozzle has an external flange a^4 and an external groove a^5 , in which a split ring m is held, and when the end of the body is forced into the wall c^3 of the coupling the ring is compressed until the body rests on the shoulder c^2 . At such

time the groove c^1 is opposite the ring, which expands into the groove, and the coupling is securely held onto the nozzle, while permitting relative rotative movement of coupling 5 and nozzle. The flange a^4 projects over the end of the wall c^3 and protects the same, making a snug closure thereat.

In Fig. 5 I have shown a modified form of nozzle wherein the flattened tip is connected 10 by a swivel connection with the body. The body d , having a coupling c^x on its inlet end, is cylindrical and shown as bent or curved longitudinally, its cylindrical form being maintained throughout, while the tip f is cylindrical at its end connected with the body and 15 flattened and widened at its discharge end, as at f' , to deliver a thin flat sheet. An annular external groove f^2 is made in the cylindrical end of the tip, which enters the cored-out portion d' of the body, resting against the 20 shoulder d^2 , an external flange f^3 on the tip overhanging the end of the enlargement d^3 of the body. An expansion-ring h is inserted in the groove f^2 , and it springs out into the 25 internal groove d^4 in the enlargement d^3 , locking body and tip together with a swivel connection, a packing-ring p being also inserted in the groove f^2 , as shown, to render the joint tight. By means of the swivel connection the 30 tip can be turned upon the body to change the plane of the discharged sheet of liquid as desired without altering the position of the body itself.

While I have illustrated in Fig. 1 and referred to one very useful adaptation of my 35 nozzle, the use thereof is not restricted thereto, as it will be manifest that the nozzle can be used in many different ways and for various purposes wherein it is desired to discharge 40 a stream of water or other liquid in a broad thin flat sheet. For instance, in sprinkling apparatus which is located in the tops of elevator-wells or near the ceiling of a large room

where one or more nozzles are mounted upon a revoluble or swiveled support, rotation of 45 which is effected by the issuing stream from the nozzle or nozzles, the nozzle made in accordance with my invention, as herein set forth, will be very useful and will throw a sheet of water in a fan shape in various di- 50 rections.

The discharge of a stream in a broad flat sheet distributes the water or other liquid over a much larger surface than is possible 55 with a round or column-like concentrated stream, thus attaining greater efficiency in proportion to the amount of water discharged and the velocity of discharge.

Having fully described my invention, what I claim as new, and desire to secure by Letters 60 Patent, is—

1. A hose-nozzle consisting of a body portion bent in the direction of its length in an arc of substantially ninety degrees and cylindrical at its inlet end, and a flattened and 65 broadened tip at the other end of the body portion to present a narrow, elongated discharge-opening, in a plane passing through the longitudinal axis of the cylindrical end, and a coupling mounted on the inlet end of 70 the body portion.

2. A nozzle consisting of a cylindrical body portion, bent in the direction of its length, in an arc of substantially ninety degrees, a fan-like tip provided with an elongated, narrow 75 discharge-opening, and a cylindrical inlet end, and a swivel connection between the body portion and the inlet end of the tip.

In testimony whereof I have signed my name to this specification in the presence of 80 two subscribing witnesses.

CYRUS R. ROBINSON.

Witnesses:

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AUGUSTA E. DEAN.