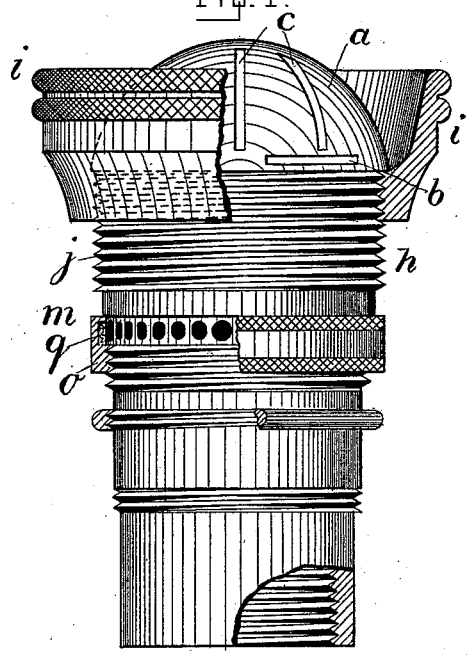
(No Model.)

M. H. HART.

SPRAY NOZZLE FOR FIRE HOSE.

No. 523,768. Patented July 31, 1894.

Fig. 1.



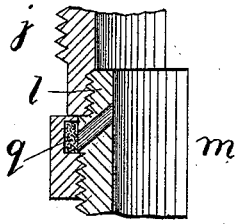


Fig. 2.

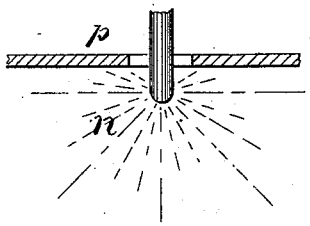


Fig. 3.

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SPRAY-NOZZLE FOR FIRE-HOSE.

SPECIFICATION forming part of Letters Patent No. 523,768, dated July 31, 1894.

Application filed December 5, 1893. Serial No. 492,814. (No model.)

To all whom it may concern:

Be it known that I, MILTON H. HART, a citizen of the United States of America, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Spray-Nozzles for Fire-Hose, of which the following is a specification.

The object of my invention is to produce an effective device for converting water into a vapor practically instantaneously when thrown upon a burning object or into a room where there is a conflagration.

For the purpose of carrying out my invention I have annexed hereto drawings which have been made from a full working device.

Figure 1. is a view partly in section and partly in elevation of the apparatus. Fig. 2. is a section of a portion of the device shown in Fig. 1. Fig. 3. shows an application of a device.

The nozzles *a*, have approximately the form of half of a hollow sphere, and ports *b*, are cut into the same, said ports being four in number and extending nearly around the circumference of the hemisphere; in addition, the slots *c*, are cut into the sphere, from near the ports *b*, toward the pole, leaving a small portion of the metal solid around the pole. These nozzles are attachable to an ordinary hose by means of screw threads shown in the lower broken away portion of Fig. 1. The water enters the nozzle from the hose, and issues from the various openings and is broken up into spray, and thus made to cover a large area, varying in diameter according to the size of the machine and the pressure applied in forcing the water through the nozzle. The water which issues from the slots *c*, is thrown forward in spray in the general shape of a half ball.

In Figs. 1 and 2, is shown a device whereby the volume of spray can be concentrated, enlarged and regulated as to direction.

This nozzle is mounted upon, a straight pipe of convenient length, and provided with a screw thread *j*, cut upon its outer surface. Upon the pipe a sleeve *i*, is mounted, and it can be moved axially to any position on the pipe by causing it to travel along the screw thread. Thus if it is at the nozzle end of the pipe, the water issuing from the ports *b*, instead of flying radially, will be diverted, and thrown out more in the direction of the axes of the pipe, so that the volume of spray will be concentrated into a smaller space, and its direction fixed in that of the axis of the pipe. The remaining details of the device are as follows: Below the thread *j*, is attached a pipe *k*, by means of the screw thread *l*. The pipe *k*, has ports *m*, which do not radiate in a plane perpendicular to the axis of the pipe, as in the case of the ports *b*, but backward so that if the nozzle is thrust through the hole of a floor *p*, into a room below, as in Fig. 3, the water will be forced backward upon the ceiling as well as forward and sidewise. The dotted lines *u*, in Fig. 3, show the numerous directions of the streams of spray which immediately become converted into an atmosphere of steam which will not support combustion.

In order that the ports *m*, may at pleasure be closed effectively a ring *o*, having a packing *q*, is movable by means of proper screw-threads, along the length of the pipe *k*, to such an extent that the packing *q*, closes the holes *m*.

The devices are intended to be used primarily in extinguishing fires in closed spaces, such as cellars, warehouses, holds of vessels or docks, as such spaces can be entered and the smoke filling them driven before the operator until the fire is located and extinguished.

I claim as my invention—

1. A spray nozzle consisting of the combination of a pipe a portion of which has approximately the form of half of a hollow sphere and having ports extending in the direction of the circumference of the hemisphere, and slots cut into the spherical part from near the said ports toward the pole; and a ring applied to the pipe and surrounding the ports and slots.

2. A spray nozzle consisting of the combination of a pipe a portion of which has approximately the form of half of a hollow sphere and having ports extending in the direction of the circumference of the hemisphere, and slots cut into the spherical part from near the said ports toward the pole; and a ring applied

to the pipe and surrounding the ports and slots, said ring being adjustable along the length of the pipe.

3. A spray nozzle consisting of the combination of a pipe a portion of which has approximately the form of half of a hollow sphere and having ports extending in the direction of the circumference of the hemisphere, and slots cut into the spherical part from near the said ports toward the pole; and a ring applied to the pipe and surrounding the ports and slots, and a second pipe attached to the first at the end opposite the spherical part and provided circumferentially with holes whose axes extend backward from the spherical end of the nozzle.

4. A spray nozzle consisting of the combination of a pipe a portion of which has approximately the form of half of a hollow sphere and having ports extending in the direction of the circumference of the hemisphere, and slots cut into the spherical part from near the said ports toward the pole; and a ring applied to the pipe and surrounding the ports and slots, a second pipe attached to the first at the end opposite the spherical part and provided circumferentially with holes whose axes extend backward from the spherical end of the nozzle and means for opening and closing said holes.

5. A spray nozzle consisting of the combination of a pipe a portion of which has approximately the form of half of a hollow sphere and having ports extending in the direction of the circumference of the hemisphere, and slots cut into the spherical part from near the said ports toward the pole; and a ring applied to the pipe and surrounding the ports and slots, a second pipe attached to the first at the end opposite the spherical part and provided circumferentially with holes whose axes extend backward from the spherical end of the nozzle and means for opening and closing said holes said means consisting of a threaded ring movable along the length of the pipe and provided with packing.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 23d day of November, 1893.

MILTON H. HART.

Witnesses:
WILLIAM A. COURSEN, Jr.,
EDWARD P. THOMPSON.