

(Model.)

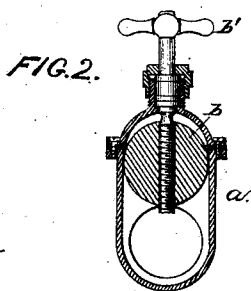
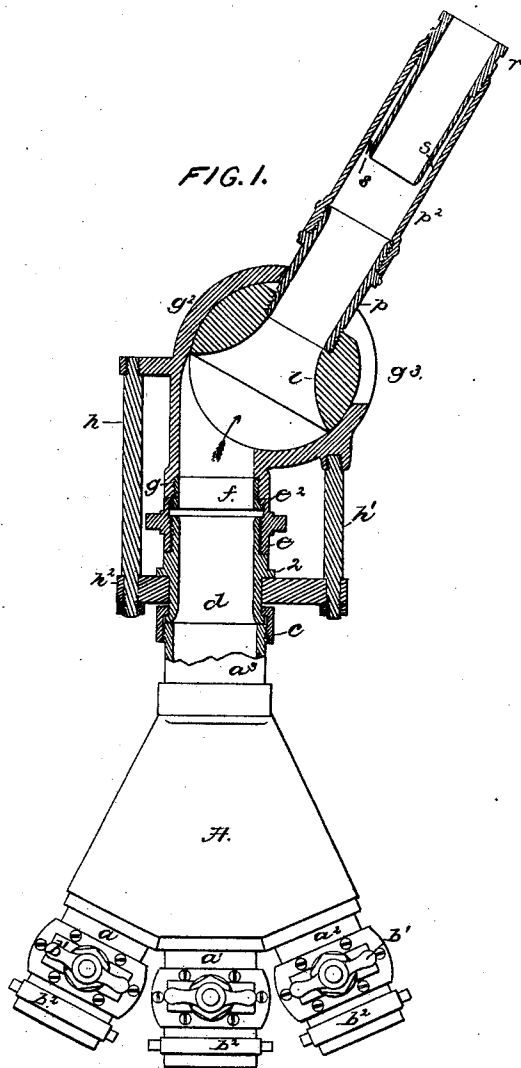
2 Sheets—Sheet 1.

A. J. MORSE.

NOZZLE.

No. 245,007.

Patented Aug. 2, 1881.



Witnesses.

Arthur Reynolds

Bernie J. Noyes

Inventor

Andrew J. Morse,

by Crosby & Gregory, Attys.

(Model.)

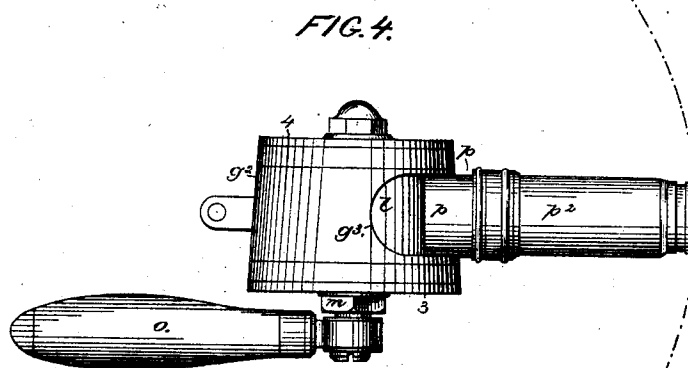
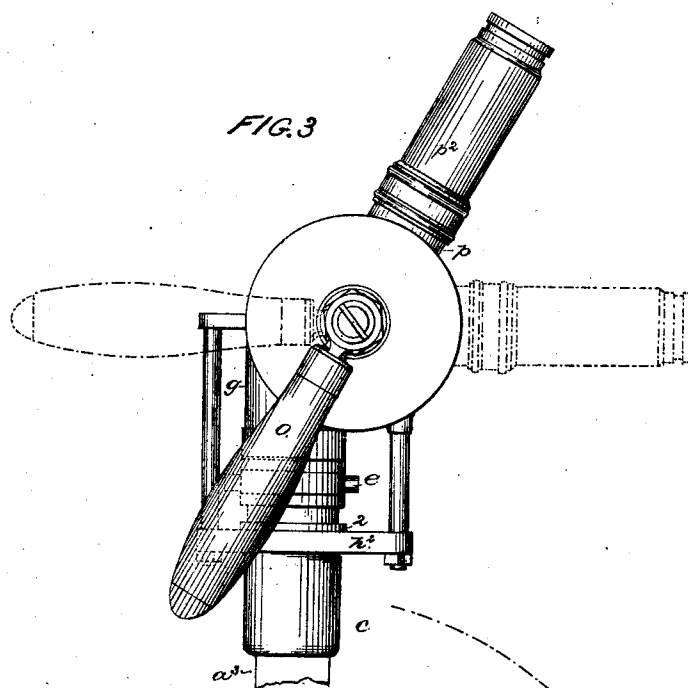
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UNITED STATES PATENT OFFICE.

ANDREW J. MORSE, OF BOSTON, MASSACHUSETTS.

NOZZLE.

SPECIFICATION forming part of Letters Patent No. 245,007, dated August 2, 1881.

Application filed February 23, 1881. (Model.)

To all whom it may concern:

Be it known that I, ANDREW J. MORSE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Nozzles, of which the following description, in connection with the accompanying drawings, is a specification.

This invention in nozzles has for its object the production of a universal nozzle by which a stream of water may be instantly thrown in any desired direction by a simple change in the position of the nozzle-outlet, and be continued mechanically in that direction until the outlet is changed as to its direction or the flow of water is cut off.

My universal nozzle is more especially designed to be used in connection with fire-extinguishing apparatus for fire departments, but is of use for other purposes.

The nozzles from which issue the large streams of water discharged upon fires by steam fire-engines, and by other water systems now in use by which water is supplied under pressure, are controlled as to their position and the direction in which they deliver their streams by the pipemen, and a number of such men, varying from four to eight, are frequently required to hold the nozzle, according to the size of the nozzle and stream being discharged therefrom, the nozzle being commonly attached to a so-called "Siamese" device, which may rest on the ground or be connected with a suitable wheeled carriage, as in United States Patent No. 139,550, or to an upright plank or iron shank. This Siamese has two or more inflow-collars to receive two or more streams from two or more fire-engines or water-pipes, and the streams joined in the Siamese are delivered therefrom through a single outflow-pipe into the nozzle.

It is very difficult and laborious for the pipemen to hold the nozzle in a direction not in exact line with the hose-pipe with which it is connected, or when there are bends in the hose-pipes near the inflow-collars of the Siamese, for they are obliged by main strength to overcome the tendency of the stream of water to straighten the hose and pipe. Pipemen are frequently thrown and injured by the movement of the pipe containing water under great pressure.

To change the delivery of the stream from one to another point the Siamese and nozzle must be moved, which often requires several men for some minutes, according to the number of lines of hose connected with the Siamese, which hose also has to be moved to the new position and be kept free from sharp or short bends.

In this my invention, by the employment of my universal nozzle, the direction of the stream may be quickly changed by one man, who has only to grasp a handle or lever and turn the outlet-pipe to enable the stream to be delivered at either side of the street, or in the direction of the basement or any story or window of the building in the line of the nozzle and within the reach of the stream. The stream may be instantly changed from one to the opposite side of the street, or from one to any other radial direction from the position occupied by the Siamese or other water-pipe supplying the nozzle, and the nozzle, supported by the Siamese or other water-supply pipe, may be left by the pipeman should the smoke or heat compel him to abandon his post, the nozzle continuing to discharge a stream in the direction in which it was left operating.

In case my universal nozzle is connected with the stand-pipe of a building the nozzle may be quickly turned horizontally, or in the arc of a vertical circle, or in a path the resultant of both, to discharge the stream in the desired direction, and it will continue to discharge the stream in that direction until the nozzle is turned from such position to another position to direct the stream in some other quarter.

With my universal nozzle on a stand-pipe extended above the roof of a building, the latter may be kept wet by merely turning the nozzle about or on the street-pipe in different directions, and water may be directed from the said nozzle upon the roofs of adjacent buildings, or into the upper windows of opposite buildings, thus affording material assistance to the fire-department far from the ground or street, the upper stories of which buildings cannot readily be reached.

Figure 1 represents my improved universal nozzle in section, it being secured upon the outflow or pipe, such as employed in the so-called "Siamese," the latter deriving its name

from the fact that the devices designated by it compel two or more separate streams of water from two or more engines or water-mains to be merged into one larger stream to be discharged therefrom into and from the outlet of the nozzle. Fig. 2 is a sectional detail of one of the valves in one of the inlet-pipes of the Siamese. Fig. 3 is a side elevation of my universal nozzle, the full and dotted lines showing it in different positions, and Fig. 4 a top view of Fig. 3, the dotted lines showing the direction in which the outlet may be moved about the pipe which supplies it with water.

In the drawings, A is supposed to be the body or main water-chamber of the so-called "Siamese," it having, as herein shown, three inflow pipes or ways, a a' a^2 , and one outflow-pipe, a^3 . Each inflow-pipe is provided with a suitable valve, b , (see Fig. 2,) having a stem, b' , by which the valve is moved to cause it to open or close the water-way of its inflow-pipe, so that the streams of water coming from lines of hose extended to two or more fire-engines and connected with the inflow-pipes by the running nuts b^2 , may all be collected and discharged from the outflow-pipe a^3 into the universal nozzle, joined with the bearing stem or collar d , connected therewith by the flanged nut c screwed upon the said outflow-pipe, and engaging loosely the flanged lower end of the said sleeve or collar, see Fig. 1. This sleeve or collar d , screw-threaded at its upper end, receives upon it the ring e , having at its top the inwardly-turned flange e^2 , which is engaged loosely, but water-tight, by the flanged part of the union f , screwed into the lower end of the slotted shell g of my universal nozzle, which is thus swivel-jointed to the stem d , the connection between the ring e , union f , and shell g being such that the base g and union may together be turned or swiveled freely about the ring e . Above its lower end the shell g is provided with an enlarged covered portion, g^2 , open at its ends, and slotted at its periphery, as at g^3 , for about sixty degrees of a circle, more or less, for the passage of the base p of the outlet-pipe p^2 .

The shell g is connected by rods h h' with a yoke, h^2 , fitted loosely to the neck of the collar d between a shoulder, 2, thereon and the top of the flanged nut c , the said yoke turning loosely on the collar d as the slotted shell g is rotated or turned about the said collar as a center. This shell g^2 , ground and tapered internally, receives the plug l , fitted into it water-tight and held in the shell g between the heads 3 4 by nut m , the stem of the plug having applied to it the lever or handle o , by which the said plug may be turned in the said shell far enough to move the pipe p p^2 from its upturned position, shown by full lines, Figs. 1 and 3, into the horizontal or dotted line position, Fig. 3. The plug l has an enlarged tapering inlet made in its side, as shown in Fig. 1, of such size and shape as to afford free entrance of the water from the cylindrical lower part of the

slotted shell g in all positions of the plug and outlet-pipe, the latter being screwed into the said plug, as represented.

The pipeman by engaging the handle o may turn the plug to elevate or depress the outlet-pipe, as in dotted and full lines, or at any point between, and may also turn the shell g about the collar d in the dotted circle partially shown in Fig. 4, and cause the stream issuing from the outlet-pipe to be thrown in the desired direction horizontally, and to a greater or less elevation from the shell g . When the pipeman removes his hand from the handle o the outlet-pipe p^2 will remain in the position in which it is left, and will continue to discharge water in the same direction so long as the water-supply is continued. This collar d may have applied to it a union or flanged loose nut, c , as in Fig. 3, long enough to be screwed directly upon an outflow-pipe, which may be the upper end of a stand-pipe connected directly with a street-main, the stand-pipe being located either in a room of a building or above the roof of a building or in a yard.

In some cases my nozzle may be joined with metal end pieces of woven or leather hose, the latter having connected with them, near the nozzle, if desired, any usual system of hooks by which to hook the hose and nozzle upon a ladder, and the outlet-pipe p^2 , suitably set, will continue the discharge of water therefrom in the desired direction, and may be adjusted from time to time as to the direction of the stream without changing the hose.

In order to preserve the solidity of the stream discharged from the outlet-pipe p^2 , the latter is provided with an independent sleeve-like mouth-piece, r , which is screwed into the outlet-pipe p^2 , and is of such size as to leave an open space or annular water-chamber, s , between the outside of the mouth-piece and the inner wall of the pipe p^2 , in which water is contained, enabling me, as it were, to cut out the center of the stream to be discharged with great force and steadiness.

I have not shown the wheels or supports for the Siamese or the line of base with which it is connected, for parts so omitted from the drawings are commonly used in most fire-departments, and are not of my invention.

I claim—

1. The water-chamber A, provided with a plurality of inlets adapted to be connected with hose, combined with a single outlet connected with said chamber by a shell, g g^2 , having a slot, g^3 , in which said outlet is adjustable by a handle to direct the outgoing stream in a variety of directions without moving the body, substantially as described.

2. The water-chamber A, provided with a plurality of inlets, a a' a^2 , and the connected shell g g^2 , slotted at g^3 , combined with the single outlet pipe or nozzle p , having the plug or seat l made with the internally-enlarged tapering water-way, and the handle o , connected with such plug to turn the pipe or nozzle in a va-

riety of directions without necessarily moving the whole device, substantially as described.

3. The slotted shell *g g*² and plug *l*, provided with the enlarged tapering water-way, as shown, the handle *o*, for turning the plug, and a discharge-nozzle connected to said plug and playing in the slot in the shell, combined with a body, *A*, having a plurality of inlet or supply openings, and separable connecting means between said shell and body, substantially as described.

4. The slotted shell *g g*² and plug *l*, provided

with the enlarged tapering slot, as shown in Fig. 1, combined with the handle to turn the plug and with the outlet-pipe screwed to the plug and extended out through the said shell, substantially as described.

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

ANDREW J. MORSE.

Witnesses:

G. W. GREGORY,
ARTHUR REYNOLDS.