No. 608,192.

Patented Aug. 2, 1898.

J. T. & P. F. GLAZIER.

UNIVERSAL NOZZLE FOR FIRES, LAWNS, &c.

(Application filed Sept. 7, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

Witnesses
Carl Schlegel
L. A. Minturn

Inventors
John T. Glazier, & Jr.
Peter F. Glazier,
By Joseph A. Minturn,
Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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3 Sheets—Sheet 2.

Fig. 4.

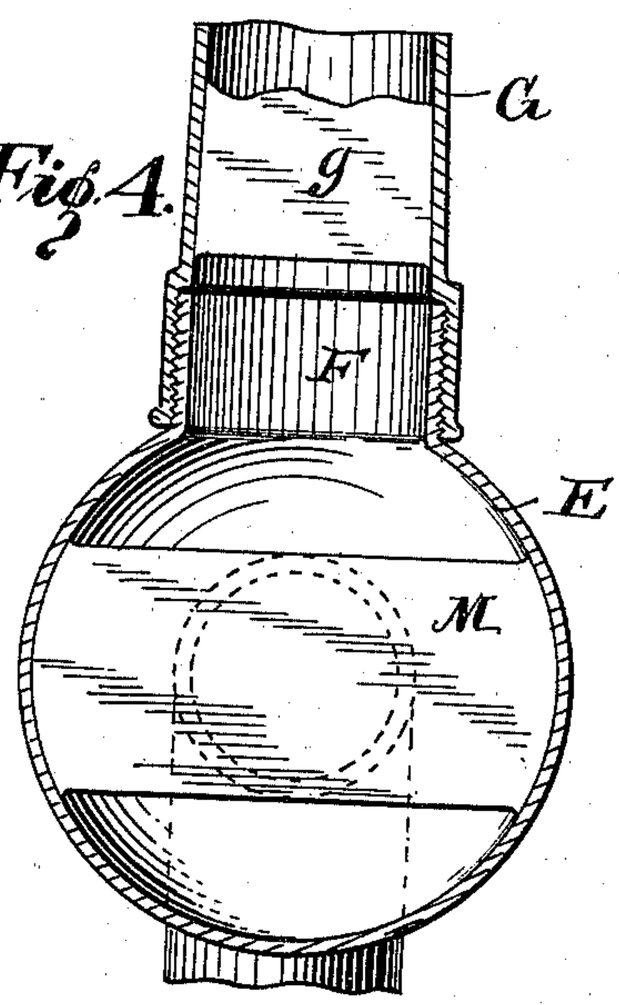

Fig. 3.

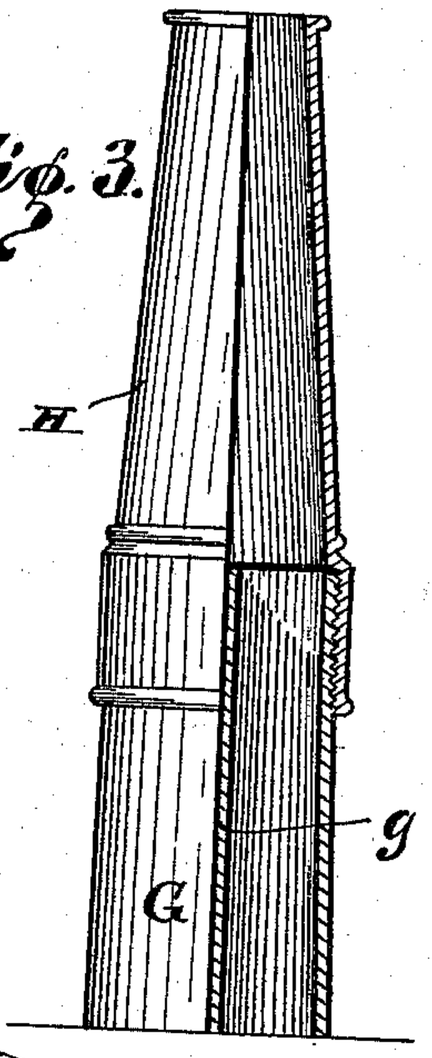

Fig. 2.

Witnesses
Carl Schlegel
L. A. Minturn

Inventors,
John T. Glazier, and
Peter F. Glazier.
By Joseph A. Minturn,
Attorney.

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Fig. 5.

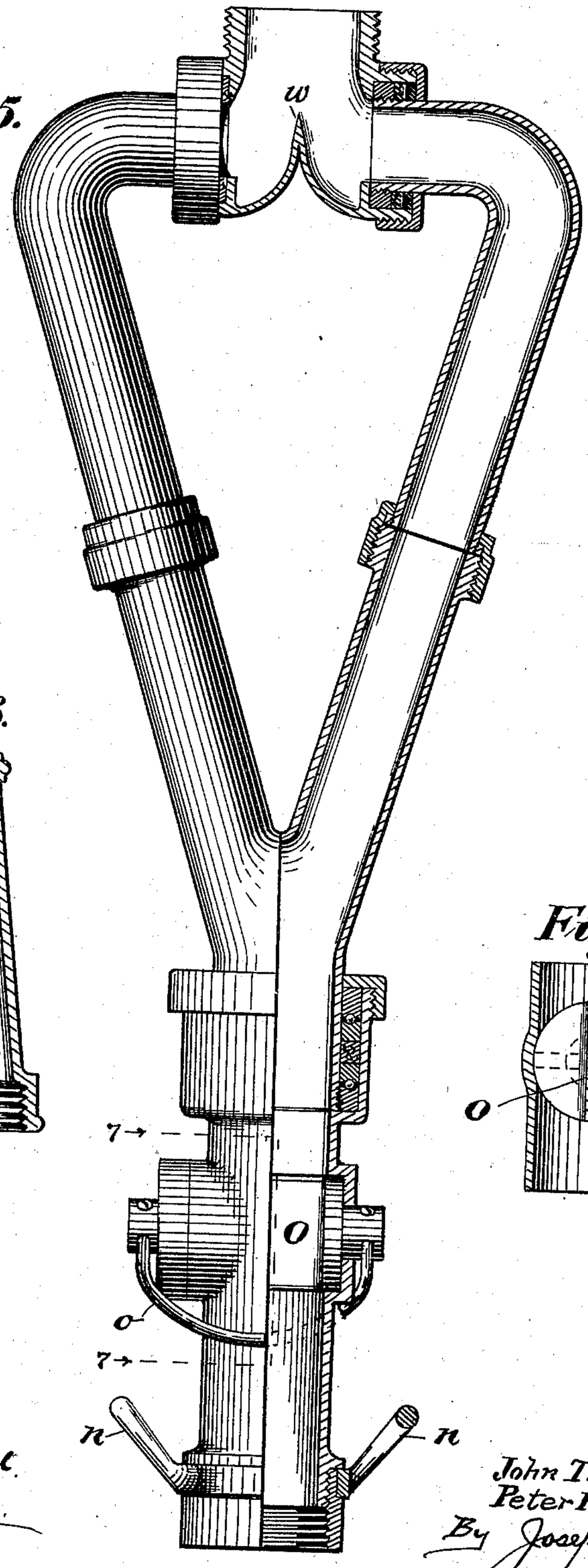


Fig. 6.

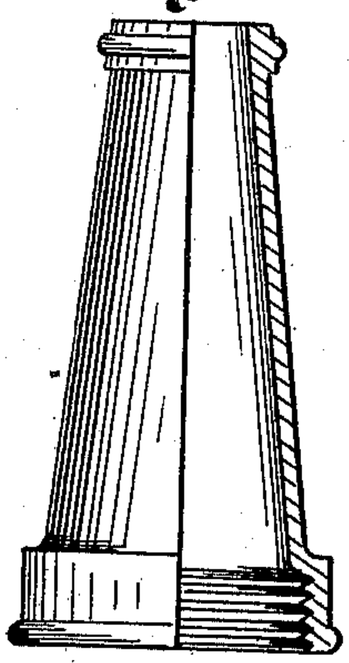
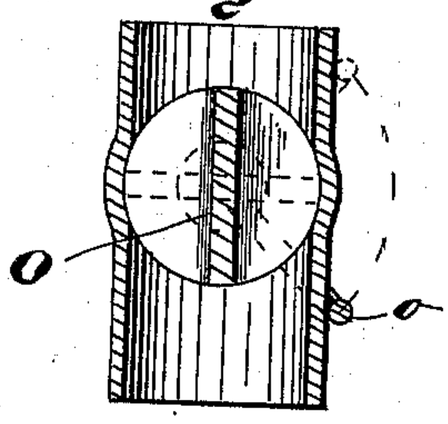


Fig. 7.



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Carl Schlegel.
L. A. Minturn.

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John T. Glazier, and
Peter F. Glazier,
By Joseph A. Minturn.
Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN T. GLAZIER AND PETER F. GLAZIER, OF INDIANAPOLIS, INDIANA.

UNIVERSAL NOZZLE FOR FIRES, LAWNS, &c.

SPECIFICATION forming part of Letters Patent No. 608,192, dated August 2, 1898.

Application filed September 7, 1897. Serial No. 650,717. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. GLAZIER and PETER F. GLAZIER, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Universal Nozzles for Fire, Lawn, and other Purposes, of which the following is a specification.

The object of this invention is to provide means whereby the power of a plurality of pumping-engines can be combined to discharge water through a single nozzle, thereby throwing a larger volume of water to a greater distance than is possible with a single engine of the class in common use for fighting fires.

The object also is to counteract the back pressure at the end of the nozzle, which makes the latter hard to control, and to counteract this back pressure without losing any of the efficiency of the discharge, whereby the nozzle will be under the complete control of a single man, whose only duty will be to set it in the direction of the desired discharge, and whereby ample support for the nozzle under all conditions of pressure will be afforded by mounting it on the bed of an ordinary hose-wagon.

The object also is to provide a nozzle which can be handled with safety by a single fireman from a ladder or other exposed place with a heavy discharge of water through the hose and which will enable the water to be thrown where needed, as into hollow walls, to the right or left through a door or window into a room, or through a cellar-way or under floors or the like.

The object also is to provide a hose-nozzle which because of its universal adjustment and faculty of retaining an adjustment until reset is desirable for lawn-hose, for sprinkling, and for other purposes than for fire-hose.

We accomplish the objects of this invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective of our improved stand-pipe and nozzle mounted on a shelf or bracket which is projected laterally from the bed of a hose-wagon. The style here shown is provided with connections for three lines of hose, and the drawing shows a fireman in the act of training the nozzle to throw a stream of water on a burning building. Fig. 2 is a view in elevation, partially in vertical section, of a stand-pipe with connections for four lines of hose. The stand-pipe is somewhat modified in form from that shown in Fig. 1, but otherwise is the same in general construction. Fig. 3 shows the tip and part of the nozzle, which were too long to be shown continuously with Fig. 2. Fig. 4 is a vertical section on the line 4 4 of Fig. 2. Fig. 5 is an elevation, partially in longitudinal section, of a modified construction of our device adapted to be carried by the firemen into position for fighting the fire at close range. Fig. 6 shows the tip used on the construction shown in Fig. 5, and Fig. 7 is a section of the valve on the line 7 7 of Fig. 5.

Similar letters of reference indicate like parts throughout the several views of the drawings.

As shown in Fig. 2, the stand-pipe A is in two principal parts B and B′, which are united by a joint which allows of the horizontal rotary movement of the top section. The lower section B has the flange b, with bolt-holes, through which the bolts for fastening the stand-pipe to its supporting-platform are projected. It is also provided with a number of threaded openings b^3 for the attachment of the hose from the pumping-engines. The number of possible hose connections will be limited by the circumferential area of the walls of this lower section, and as this area can be increased any desired number of hose-openings within reasonable limits can be provided. Four openings are shown in Fig. 2.

C is a gate-valve to regulate supply of water into the stand-pipe. Each opening for the attachment of hose will be provided with a valve.

In the construction of the joint between the two sections of the stand-pipe a shoulder b' is formed on the inside of section B, and an outside flange b^2 is formed around its upper edge. The top section B′ is inserted into the lower section B and rests on the shoulder b', and a difference in their diameters is made to permit of the insertion of the four metal rings d, d', d^2, and d^3 between the two sections in

the manner as shown in the drawings. The ring d is internally threaded and screws onto the externally-threaded end of the section B′, but not, however, until after the other rings d', d^2, and d^3 and a still wider ring d^4 have been slipped on over the end of the section B′. In the adjacent sides of the rings d and d' and rings d^2 and d^3 runs are formed, in which the balls D are placed, and between the inside rings d' and d^2 is the packing-ring D′, of any usual and suitable material. The sides of the rings d' and d^2 which contact with the packing-ring are at a sufficient inclination toward each other to force the packing hardest against the section B′ when the rings are forced together in tightening up the joint. The packing-ring, while making close enough contact with the outer section to provide a water-tight joint, will not be tight enough to interfere with the free movement of the joint between the two sections. The ring d^4 has openings which register with openings in the flange b^2, whereby the ring will be bolted to the flange.

Immediately above the joint just described the section B′ is divided into two equal tubular parts, which continue in a lateral and upward direction for a suitable distance and then, making a partial return-bend, approach each other on an axial line which intersects the axial line through the joint mentioned above at right angles.

E is an oblate spheroidal chamber, with annular flanges E′ projected from its flattened walls and which form sockets into which the bifurcated ends B^2 and B^3 of the sections B′ are inserted, making a joint which permits of a rotary adjustment of the chamber E in a vertical plane. The joint is packed, as shown, to make it water-tight.

e is a metal ring which screws onto the threaded end of the pipe B^2.

e' is the packing-ring, e^2 the gland, and e^4 a threaded coupling which screws onto the flange E′ and brings the parts together.

The arms B^2 and B^3 will be jointed at B^4 to allow the ends to be inserted into the sockets.

F is a neck providing an outlet from the chamber E and having outside threads whereby the nozzle G is removably attached. The nozzle is provided with the removable tip H. The tip and nozzle are both of usual and well-known construction. The long nozzle G, besides giving direction to the stream of water issuing from it, serves as a handle or lever for its own adjustment both vertically and horizontally, and it will readily be seen that joints permitting vertical and horizontal movement of the nozzle secure a universal adjustment to the nozzle.

The water passing up from the pumps through the stand-pipe will be divided into two equal streams, which will be brought together in the chamber E in direct opposition to each other. Contact between the two streams while they are in direct opposition would be detrimental, and to prevent that we provide the partition M, which crosses the chamber in front of the mouths of the two pipes B^2 and B^3 midway between them.

In order to take the twist out of the water, which causes it to scatter by centrifugal action after it leaves the nozzle, we provide a longitudinal partition g in said nozzle, as shown in the drawings.

In the modification shown in Figs. 5 and 7 the lower tube is provided with the handholds $n\,n$ and with the fly-valve O, having the bail-handle o, by which the valve can be quickly opened and closed. This takes the place of the gate-valve shown in Figs. 1 and 2, and this style (fly-valve) might be used to advantage in both constructions. In all other respects this modified construction is practically the same as that shown in Fig. 2, except that the chamber at the base of the nozzle is shaped like an inverted Y, in which the inside walls w of the arms form the partition to keep the incoming streams from clashing.

With joints constructed and packed as we have here shown and described we have found that the pressure of the water draws the joints together, thereby increasing the efficiency of the packing, the tightness of the joint increasing with the increase in pressure.

We are aware that a wall or partition has been placed at the confluence of two streams of water to prevent a counteracting and retarding influence on each other and do not separately claim such a construction.

Having thus fully described our invention, what we claim as new, and wish to secure by Letters Patent of the United States, is—

1. The combination, with a pipe in two rotary adjustable sections, the lower of said sections having connection with a water-supply and the upper section being bifurcated and having outside separable bands at their ends, of a nozzle mounted between the bifurcated ends of the upper section of the pipe having rotative adjustment on said ends and internal communication therewith and having a wall or partition between the two supply-openings, threaded coupling-rings on the threaded ends of the nozzle, enveloping the flanged ends of the bifurcated pipe, and a compressible packing between each coupling-ring and flange, all substantially as described and for the purposes specified.

2. In a stand-pipe joint, an outside section of said pipe having an inside shoulder, an inner section of said pipe resting on said inside shoulder, an outside ring or flange secured to the end of the inner section of pipe, a ring above the flange having ball-bearings on said flange, a second ring above the flange separated therefrom by a compressible packing, the sides of both rings adjacent to the packing being beveled inwardly, a compressible packing, a third ring from the flange having ball-bearings on the second ring therefrom and means for holding the outer ring at

a predetermined maximum distance from said shoulder, all substantially as described and for the purposes specified.

3. The combination, with a pipe in two rotary, adjustable sections having double ball-bearings in the joint between the two sections and a compressible packing in said joint which expands by the pressure of the water in the pipe, the lower of said pipe-sections having connection with a water-supply and the upper section being bifurcated, of a nozzle mounted between the bifurcated ends of the upper section of the pipe and having rotative adjustment on said ends and having internal communication therewith, all substantially as described and for the purposes specified.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, this 10th day of April, A. D. 1897.

JOHN T. GLAZIER. [L. S.]
PETER F. GLAZIER. [L. S.]

Witnesses:
CARL SCHLEGEL,
F. W. WOERNER.