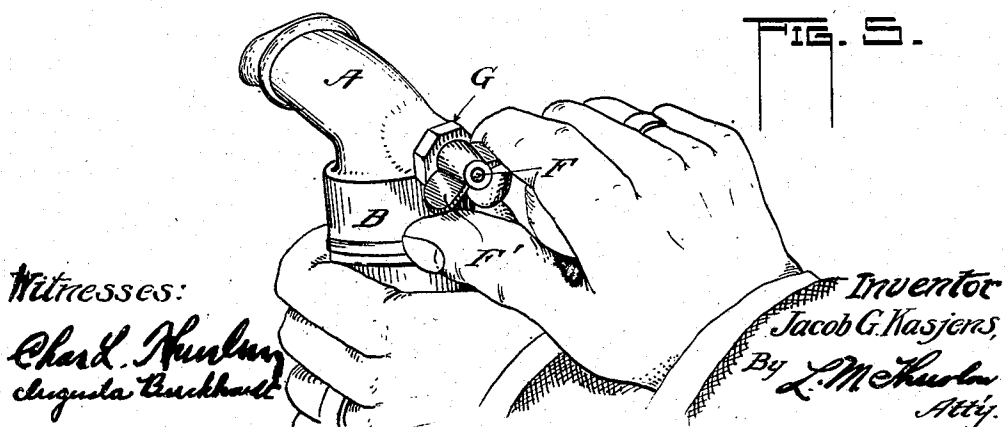
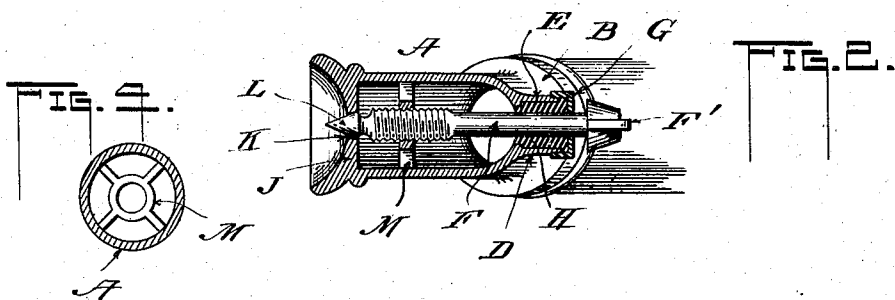
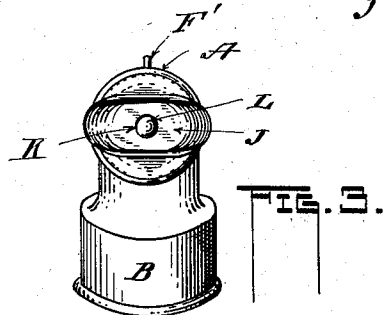
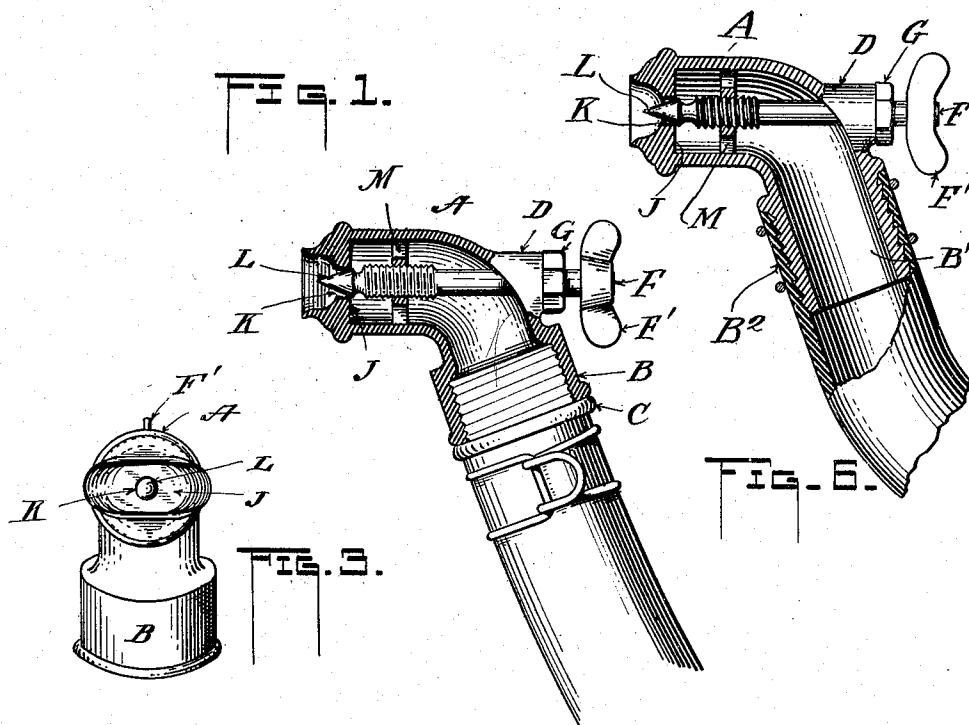


J. G. KASJENS.
NOZZLE FOR GARDEN HOSE.
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Witnesses:

Charles H. Hurling
Augusta Buckhardt

Inventor

Jacob G. Kasjens,

By L. M. Hurling
Atty.

UNITED STATES PATENT OFFICE.

JACOB G. KASJENS, OF PEORIA, ILLINOIS.

NOZZLE FOR GARDEN-HOSE.

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To all whom it may concern:

Be it known that I, JACOB G. KASJENS, citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Nozzles for Garden-Hose; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains to a nozzle for garden hose and has for its purpose to provide a nozzle of convenient form in that the hand in holding it can be maintained in a natural position with no strain or inconvenience, that is to say, the nozzle is constructed in such a way that the bore of its discharge end and the bore of its inlet end will lie at an angle to one another so that the hose will hang or be suspended from said nozzle in a natural unflexed position so as to require no effort or unnatural strain of the hand in directing the stream from the said discharge end; this being one of the main objects of the invention.

Another object is to provide a nozzle of small size and of a minimum of metal, and one that is exceedingly simple in construction so as to make it low in cost.

Another object is to provide a nozzle of small size with a minimum of metal and one that by reason of its simplicity will require but little machine work to finish it so that it can therefore be produced at a very low cost.

Another and important object is to construct a nozzle in a form which will require no separate attachment for the hose but to which the hose may be directly attached.

A further object is to provide a simple form of valve conveniently and invitingly arranged so that the user may readily adjust the same quickly to obtain a discharge of water of the desired form.

A further object is to provide a nozzle for a garden hose so constructed that it can be adapted for throwing a solid stream to a considerable distance and for providing a wide flat spray convenient for spraying purposes, and furthermore that in providing for a flat spray the garments or feet of the person will not be wet in spraying close at hand.

In addition to these objects the nozzle, while of small size provides for a very large

carrying capacity so that it presents the smallest possible resistance to the flow of water thereby reducing the strain upon the hose the nozzle being thus also particularly adapted for low pressures for instance in localities where such pressures are below 60 pounds.

In the appended drawing:—Figure 1 is a vertical section of my nozzle showing the hose attached thereto. Fig. 2 is a front elevation of the nozzle. Fig. 3 is a horizontal section thereof. Fig. 4 is a transverse section of the nozzle showing a spider to receive a valve. Fig. 5 is a perspective view of the nozzle showing the manner of holding it and the ease with which its valve may be operated. Fig. 6 is a vertical section of the nozzle showing a slightly modified form.

A indicates the nozzle provided at one end, as usual, with an internally threaded extension B as the inlet to receive the usual hose coupling C. The axis of the outlet of the nozzle as shown in Fig. 1 is disposed at an angle of about 110° to the axis of the inlet just mentioned which in practice is found to be about the angle from which the hose will naturally hang and where no strain will be imposed upon the hand in holding the nozzle and directing its discharge. In providing this angle the person is not called upon to strain the wrist as is the case when using an ordinary straight nozzle which makes it necessary to place and hold the wrist in an unnatural and exceedingly tiresome position and where constant downward pressure must be maintained upon the nozzle in order to overcome the natural tendency of the hose to straighten under pressure of the water and its own natural tendency to return to its own straight unflexed position. Cast at the back of the nozzle is a boss D having a bore E whose axis coincides with the axis of the bore of the discharge portion and receives a valve stem F. A cap G serves to retain a suitable packing H within the boss and prevent leakage of water around said stem F. Near the outlet end of the nozzle is a wall J provided with a discharge orifice K for receiving the cone shaped forward extremity L of the valve stem; the shoulder behind the cone or head serving as the closure for the said orifice. Rearward from the wall is a perforated partition M in the form of a spider bored centrally and internally threaded and whose axis coincides with the axis of the bore of the boss D and also with the axis

of the discharge orifice K. The rear end of the valve stem outside the cap G is provided with a conveniently formed finger-piece F¹ by which the valve may be readily adjusted.

Contrary to the usual form of nozzles for garden hose of which I am aware at this time the one under consideration is adapted both for throwing a full, solid stream and a peculiar form of broad flat spray. The structure by which the latter is accomplished is shown in several of the figures and particularly in Fig. 3. It is to be noted that a projecting hood or bell is provided at the forward or discharge end which is constricted in its vertical measurement to quite a narrow form as compared with its other or horizontal measurement where it is quite broad and slightly broader in fact than the internal diameter of the nozzle; the inner walls of the hood in the shortest measurement being substantially parallel to each other and to the axis of the discharge orifice, for instance as shown in Fig. 1. When the valve stem is withdrawn from the discharge orifice a solid stream will be projected through the opening as in other nozzles but when but partially entered the water is caused to leave the nozzle in a spray in which form it strikes the surrounding lips of the hood, the constricted portion serving to change the direction of travel of the resulting spray, that is to say when the head of the valve is carried to that point where the neck behind the head lies within the orifice the water in following the curve of said neck is projected in a hollow cone-shaped sheet upon the wall of the cavity at the bottom and then must follow around said wall. In the present case, therefore, the water is confined in its vertical measurement so that the spray projected is flat but at the same time the bell or hood being elongated in the other direction allows the water to be thrown to a considerable angle at each side of the central point. By this means spraying may be done over a wide territory and by constructing the hood so as to form a flat discharge the spraying may be done quite close to the feet and to a considerable distance in each direction without wetting the person or clothing.

Fig. 6 illustrates the nozzle in its preferred form wherein no attachment is necessary by which to attach the hose. In all respects the nozzle in this figure is identical with that of the other figures except that the extremity B¹ which corresponds to B of the other figures is not internally threaded to receive the coupling C but is slightly extended in length and retains substantially its same exterior diameter throughout and is provided with the usual serrations or friction members B² for aiding in holding the hose in position. By thus constructing the device a nozzle and hose attachment is provided in a single member thereby reducing the cost

of a hose outfit; the buyer merely purchasing the nozzle and dispensing with the usual separate coupling. No gasket is necessary since there is no joint to leak.

The drawings represent the nozzle in its full size or the size it is used in practice and as is evident is quite small as compared with those generally employed and therefore is of light weight by reason of the small amount of metal used. It is low in cost of manufacture for this reason and for the further reason of its simplicity and few parts.

The valve is conveniently in reach at the back of the nozzle so that the user with the finger and thumb of one hand can readily adjust it to obtain the desired form of discharge whether a solid stream or spray it being natural to turn the valve to the right or to the left to effect the closing or opening of the discharge aperture and thereby at once obtain the needed adjustment without first having to determine the proper direction to turn it by experimenting as is necessary in some of the older forms of nozzles having a revoluble portion the parts being concealed from view in the interior.

My nozzle combines extreme simplicity of construction, a large passage of water and in consequence a minimum of resistance to the passage of water up to the discharge opening, a valve quickly manipulated and easily and invitingly placed at the rear of the nozzle, a peculiarly formed spraying portion giving a wide flat spray, and a structure as to form of nozzle-body that can be conveniently held without tiring the hand that holds it.

Having thus described my invention, I claim:—

1. A nozzle for attachment to a garden hose comprising a body having an inlet opening and a discharge opening communicating with one another the latter being of smaller diameter than the former, the axes of which lie at an obtuse angle to one another, an extension on the nozzle projecting beyond the said discharge opening and having an ellipsoidal cavity with which that opening communicates, two opposite walls of which are substantially parallel to one another, and a valve-stem to enter the said opening, the same extending through and outside the rear wall of the nozzle.

2. A nozzle for attachment to a garden hose comprising a body having an inlet opening and a discharge opening communicating with one another by a passage, the discharge opening being of smaller diameter than the inlet and whose axis lies at an obtuse angle to the axis of the said inlet, an extension on the nozzle projecting beyond the discharge opening and having an ellipsoidal cavity whose minor axis lies in the same plane as the axes of the inlet and the

outlet openings, the walls of the cavity at said minor axis being substantially parallel, and a valve stem to enter the inlet opening and extending rearward through and outside the rear wall of the nozzle.

3. A nozzle for attachment to a garden hose comprising a body, having two extremities lying at an obtuse angle to one another and having an inlet opening in one of them and a discharge opening in the other of them in communication with one another, one of said extremities adapted for receiving the hose and furnishing the means for grasping and holding the nozzle, the other extremity having an extension beyond said discharge opening and provided with an ellipsoidal cavity, the axis of the discharge opening coinciding with the intersection of two planes perpendicular to each other, in one of which lies the major axis of the opening of the extension and in the other of which lies the minor axis of the opening of said extension and the axis of the inlet opening, and a valve to control the discharge from said discharge opening.

4. A nozzle for attachment to a garden hose comprising a body, having two extremities lying at an obtuse angle to one another and having an inlet opening in one of them and a discharge opening in the other of them in communication with one another, one of said extremities adapted for receiving the hose and furnishing the means for grasping and holding the nozzle, the other extremity having an extension beyond said discharge opening and provided with an ellipsoidal cavity, the axis of the discharge opening coinciding with the intersection of two planes perpendicular to each other, in one of which lies the major axis of the opening of the extension and in the other of which lies the minor axis of the opening of said extension and the axis of the inlet opening, and a valve to control the discharge from said discharge opening and extending rearward therefrom through and outside the rear wall of the nozzle.

5. A nozzle for attachment to a garden

hose comprising a body having two extremities lying at an obtuse angle to one another, one of them having an inlet opening, there being a discharge opening in the other of them, both openings being connected by a passage, the extremity having the said inlet adapted for receiving the hose, the other one having an extension beyond the discharge opening and provided with an ellipsoidal cavity whose minor axis lies in the same plane as the axis of both the openings, the walls of the cavity at the minor axis being substantially parallel, a valve-stem to control the discharge and having a threaded portion and extending rearward through and outside of the rear wall of the nozzle, and a diaphragm in the passage of the nozzle and provided with openings and likewise provided with a threaded opening axially coincident with the axis of the discharge opening for receiving the threaded portion of the said valve-stem.

6. A nozzle for attachment to a garden hose comprising a body having an inlet opening and a discharge opening communicating with one another the latter being of smaller diameter than the former, the axes of which lie at an obtuse angle to one another, an extension on the nozzle projecting beyond the said discharge opening and having an ellipsoidal cavity with which that opening communicates, two opposite walls of which are substantially parallel to one another, and a valve-stem to enter the said opening, the same extending through and outside the rear wall of the nozzle, its forward end being provided with a head and a reduced portion rearward thereof, both adapted to pass into the discharge opening, said head adapted to extend beyond said opening.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB G. KASJENS.

Witnesses:

C. B. McDUGAL,
L. M. THURLOW.