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HOSE VALVE AND NOZZLE

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Fig. 1

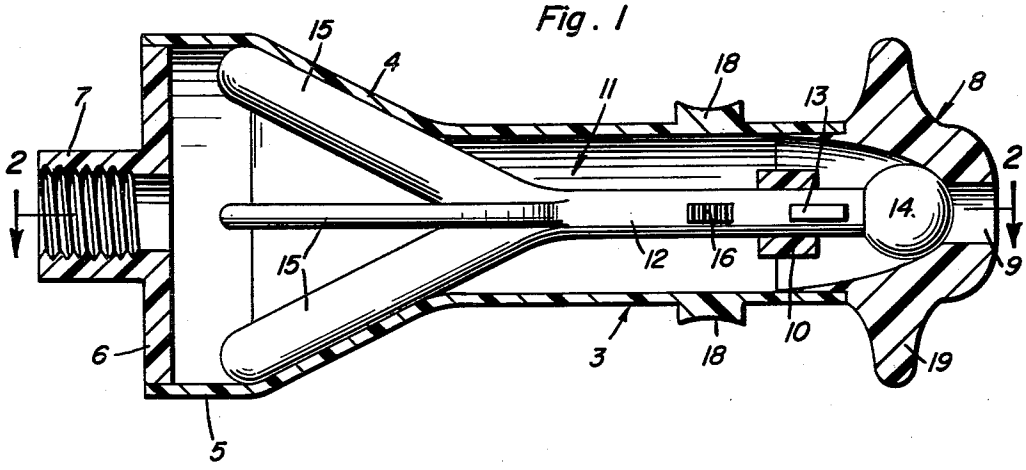
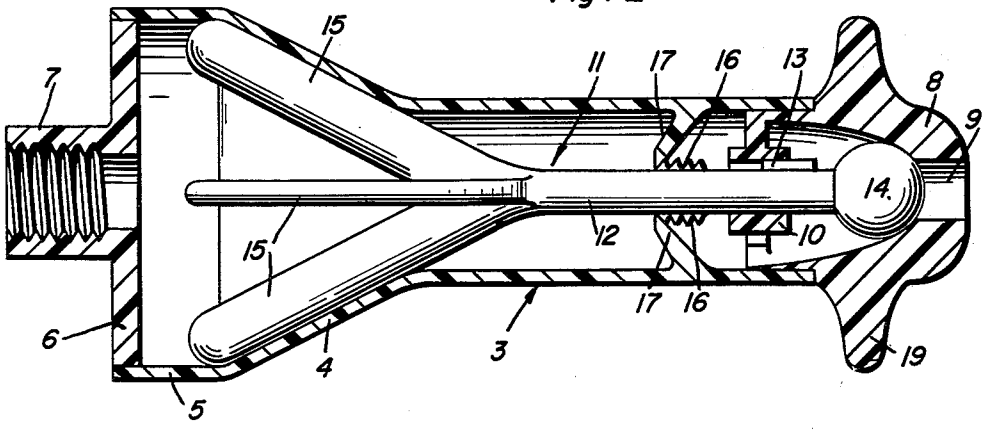


Fig. 2



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HOSE VALVE AND NOZZLE

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This invention relates to new and useful improvements in nozzles particularly but by no means necessarily, for garden hoses and has for its primary object to provide, in a manner as hereinafter set forth, a nozzle of this character comprising unique valve means for controlling and regulating the flow of the water.

Another important object of the present invention is to provide an improved nozzle of the aforementioned character wherein the valve is conveniently operable with the hand which grips the nozzle, thus leaving the other hand free at all times.

Still another important object of the invention is to provide a nozzle of the character set forth which comprises novel means for releasably securing the valve in adjusted position whereby the nozzle may be left unattended if desired.

Another object is to provide a nozzle of the character set forth comprising no metallic parts which may contact and damage the work such as, for example, an automobile.

Other objects of the invention are to provide a plastic hose nozzle of comparatively simple construction which is strong, durable, compact, of light weight and which may be manufactured at low cost.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in longitudinal section through a nozzle constructed in accordance with the present invention; and

FIGURE 2 is a longitudinal section view through the device, taken substantially on the line 2—2 of FIGURE 1.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a compressible or collapsible tubular body of a suitable resilient plastic which is designated generally by reference numeral 3. The tubular body 3, which may also be of any desired dimensions, includes a substantially frusto-conical intermediate portion 4 which merges with an enlarged cylindrical rear end portion 5 which is closed by a rigid rear end wall 6. The rear end wall 6 is provided with suitable means 7 for connecting the nozzle to a hose.

Mounted in the forward end portion of the tubular body 3 and projecting forwardly therefrom is a tip or head 8 of a suitable hard plastic. The tip 8 is provided in its forward portion with a centrally located discharge port of orifice 9. Mounted centrally in the rear end portion of the tip 8 in alignment with the port or orifice 9 is a guide 10.

Mounted for reciprocation in the tubular body 3 is a manually opened, fluid pressure closed valve 11 of a suitable plastic which controls the orifice 9. The valve 11 includes a rod, shaft or stem 12 which is splined in the guide 10, as indicated at 13. On the forward end of the stem 12 is a ball head 14 which is seatable in the orifice 9 for controlling same. Formed integrally with the rear end portion of the stem 12 is a member comprising a plurality of rigid rearwardly divergent cam fingers 15 which are operable in the portion 4 of the tubular body 3.

Rearwardly of the guide 10 the stem 12 is provided

on diametrically opposite sides with teeth or ratchets 16. Formed integrally with the tubular body 3 in the forward portion thereof are diametrically opposite, rearwardly inclined resilient pawls or dogs 17 which are engageable with the ratchets 16 for releasably securing the valve 11 in open position against the pressure of the water in the nozzle. On the periphery thereof the tubular body 3 is provided with thumb and finger pads 18 which are spaced circumferentially 90 degrees from the pawls 17.

It is thought that the operation of the nozzle will be readily apparent from a consideration of the foregoing. Briefly, the nozzle is connected at 7 to a hose or other suitable conduit for receiving water under pressure therefrom. The pressure of the water in the tubular body 3 normally keeps the valve head 14 in closed position in the orifice 9. To open the valve, the tubular body 3 including the portion 4 thereof is squeezed with the hand which is holding the nozzle. Thus, the tubular body is compressed or collapsed and the rearwardly divergent fingers 15 are cammed rearwardly in the portion 4 of said body in an obvious manner. In this manner the valve head 14 of the valve 11 is unseated or opened. Of course, the opening movement of the valve may be regulated as desired. As the stem 12 moves rearwardly in the guide 10 the pawls 17 ride on and engage the ratchets 16 for securing the valve in adjusted position. If desired, the open nozzle may now be left unattended. Toward this end the tip or head 8 includes a flange or the like 19 for supporting the forward end of the nozzle on the ground or other surface. To release the valve 11 and permit same to be closed by the water pressure, the tubular body 3 is squeezed at the points 18. In this manner the portions of the body 3 which carry the pawls 17 are bulged outwardly in an obvious manner for disengaging said pawls from the ratchets 16 thus releasing the valve 11.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A hose valve and nozzle comprising a resilient collapsible tubular body for connection at one end to a hose for receiving fluid under pressure therefrom, said body having a discharge orifice in its other end, a control valve for the orifice operable in the body, said control valve including cams engageable by the body and operable thereby upon collapsing thereof for opening the control valve, and means for releasably securing the control valve in open position.

2. A hose valve and nozzle in accordance with claim 1, said means including ratchets on the control valve, and pawls in the tubular body operatively engageable with said ratchets.

3. The combination of claim 2, said pawls being on diametrically opposite portions of the body and disengageable from the ratchets upon bulging of said body in response to the collapsing thereof between the pawls.

4. The combination of claim 2, said pawls being circumferentially spaced in the body and disengageable from the ratchets in response to expansion of said body.

5. A nozzle comprising a resilient, collapsible tubular body of circular cross-section for connection at one end to a water conduit and having a discharge orifice in its other end, said body including a generally conical portion, a reciprocable control valve for the orifice operable in

the body, said valve including a longitudinally slidable stem in the body, a head on one end of the stem seatable in the orifice, and divergent cam fingers on the stem engaged in said generally conical body portion for actuation thereby upon collapsing thereof for unseating the head, together with means for releasably securing the valve in open position.

6. A nozzle in accordance with claim 5, said means including ratchets on the stem, and pawls on the interior of the body engageable with the ratchets and disengageable therefrom in response to expansion of said body.

7. A nozzle in accordance with claim 6, and means for securing the stem against rotation in the body.

8. A nozzle in accordance with claim 7, the last-named means including a guide in the body slidably and non-rotatably receiving the stem.

9. A hose nozzle comprising a resilient, collapsible, plastic tubular body of circular cross section including a generally frusto-conical intermediate portion terminating in an enlarged cylindrical rear end portion for connection to a hose, a rigid tip on the forward end of the body having a discharge orifice therein, a guide in the tip, a control valve for the orifice including a stem splined in the guide, a head on the forward end of the stem seatable in the orifice for closing the same, rearwardly divergent cam fingers on the rear end of the stem engaged in the generally frusto-conical body portion for actuation thereby upon collapsing thereof for opening the valve, and

means for releasably securing the valve in open position.

10. A hose nozzle comprising a resilient, collapsible plastic tubular body of circular cross section including a generally frusto-conical intermediate portion terminating in an enlarged cylindrical rear end portion for connection to a hose, a rigid tip on the forward end of the body having a discharge orifice therein, a guide in the tip, a control valve for the orifice including a stem splined in the guide, a head on the forward end of the stem seatable in the orifice for closing same, rearwardly divergent cam fingers on the rear end of the stem engaged in the generally frusto-conical body portion for actuation thereby upon collapsing thereof for opening the valve, and means for releasably securing the valve in open position, said means comprising ratchets on the stem, and resilient diametrically opposite pawls in the body integral therewith and engageable with the ratchets for retaining the stem against forward movement, said pawls being disengageable from the ratchets in response to expansion of the body for releasing the stem.

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