This invention relates to automatic hose nozzles and has for an object to provide a device of this character in which the trigger is suitably mounted on the valve stem so that regardless of the position in which the nozzle is thrown down upon the ground, the trigger is within convenient reach when the nozzle is picked up and furthermore, the hose need never be twisted when washing under fenders since the trigger readily turns on the valve stem.

A further object is to provide a device of this character in which the shape of the tip of the valve stem and the shape of the bore of the nozzle barrel at the tip permits of the water from the hose being so controlled that it will issue either in the form of a coarse spray, fine spray, or in a solid stream as desired.

A further object of the invention is to provide a novel adjusting nut which is threaded upon a tube carried by the swivel connection between the valve stem and the trigger to adjustably control the throw of the trigger.

A further object is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a longitudinal sectional view of an automatic hose nozzle constructed in accordance with the invention.

Figure 2 is a cross sectional view of the hose nozzle taken on the line 2—2 of Figure 1.

Figure 3 is a longitudinal sectional view of the valve stem detached from the nozzle.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates the barrel of the nozzle the upper end of which is formed with a flared portion 11 at the inner end of which the bore of the nozzle is reduced to provide an annular valve seat 12. Inwardly of the valve seat the bore is uniformly enlarged to provide a cylindrical chamber 13 and inwardly of the chamber is flared oppositely to the nozzle to provide a funnel shaped chamber 14 through which the water is directed into the chamber 13 and through the opening 15 in the valve seat. Inwardly of the funnel shaped chamber 14 the bore of the barrel is uniformly enlarged to the extreme inner end thereof. The inner end of the barrel is externally threaded as shown at 16 and is provided outwardly of the threads with a shoulder 17.

Mounted within the barrel is a tubular valve stem 18 having an integral internally threaded hose fitting 19 at the inner end into which the fitting on the end of a hose may be conveniently screwed. The valve stem is slidably fitted in the barrel and is secured water tight thereto through the medium of a gland nut 20 which is threaded onto the threaded inner end of the barrel 10 and confines a packing washer 21 and a metal washer 22.

The valve stem is provided with a circumferential groove 23 in which is confined a washer 24 which is received in a shouldered recess 25 formed in a thick washer 26 which is sleeved on the valve stem.

A helical spring 27 is sleeved on the valve stem and is confined under compression between the thick washer 26 and the thin washer 22, both washers being of metal to reduce wear when the barrel is slid longitudinally of the valve stem to regulate flow of water as will presently appear.

Outwardly of the circumferential groove 25 the valve stem is provided with diametrically opposite points with pear-shaped orifices 28 through which the water may flow into the funnel shaped chamber 14 in the bore of the barrel. The valve stem is of less external diameter than the diameter of the cylindrical chamber 13 and within the chamber is uniformly reduced and merges into a reduced beveled solid valve 29 adapted to seat against a conical surface 30 formed in the valve seat 12 and projects from the tip end of the valve a cone 31 which is smaller in diameter than the opening 15 in the valve seat 12.

When the valve stem is in the position shown in Figure 1 the flow of water will be cut off but by shifting the barrel 10 outwardly upon the valve stem 18 against the tension of the spring 27 until the cone is more or less within the opening 15 in the valve seat, the character of the stream of water can be modified so as to issue from the nozzle in the form of coarse spray, fine spray, or a solid stream.

For shifting the barrel 10 a trigger is provided comprising a lever 32 which terminates in a fork 33 which slidably embraces the valve stem 18. The lever is pivoted, as shown at 34, upon the
free end of a right angular fulcrum arm 35 which terminates in a ring 36 disposed in axial alignment with the fork 33 and adapted to swivelly encircle the valve stem 18. The lever 32 is directed at an angle at the free end to provide a securing means for a grip 38 formed from sheet metal and shaped to embrace the arm 37 and lever 32. A pivot pin 39 is passed through the grip and through the free end of the lever. The grip is provided with a pair of arms 40, best shown in Figure 2, which are pivotally engaged with the ends of the pivot pin 34 of the lever 32. When the grip 38 is depressed toward the hose theforked end 33 thereof will bear against the gland nut 29 and force the barrel 10 of the nozzle outwardly. When the grip is released the spring 27 will return the barrel to initial position.

By virtue of the trigger being swivelly mounted on the valve stem through the medium of the forked end 33 of the lever and the ring 36 of the fulcrum arm 35, the hose need never be twisted in washing underneath fenders since the trigger will swivel freely on the valve stem. Furthermore, regardless of what position the hose is dropped upon the ground the trigger will always be within convenient reach of the fingers to be easily manipulated when the nozzle is raised from the ground.

For adjusting the throw of the trigger the ring 36 is provided with an externally threaded nipple 41 which extends longitudinally of the valve stem 18. An adjusting nut 42 is threadedly engaged on the nipple. By adjusting the nut longitudinally of the nipple the forked end 33 of the lever may be initially disposed at various adjusted positions longitudinally on the valve stem 18 to control movement of the barrel 10 under urge of the spring 27, to initial position 5 after each actuation, and at the same time control movement of the forked end of the lever upon the valve stem under urge of the spring.

Since a description of the operation has been given as a description of the parts progressed it is thought that the invention will be fully understood without further explanation.

What is claimed is:

In an automatic hose nozzle, a tubular stem forming a valve, a barrel slidably mounted on the stem having a valve seat, a spring sleeved on the valve stem and engaging the barrel and the stem to normally hold the valve seated, an angular fulcrum arm having legs extending at a right angle relatively to each other, a ring on one leg swivelly receiving said stem, a lever pivoted on the other leg terminating in a fork embracing the stem and engaging the barrel to move the barrel against the tension of the spring to unseat the valve, a tubular exteriorly threaded nipple aligned with and formed integral with the ring of the fulcrum arm and swivelly receiving said stem, and an adjusting nut threadedly engaged with the nipple between the fork of the lever and the ring and bearing against said fork to limit throw of the lever.

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