

June 10, 1969

D. STRAHMAN ET AL

3,448,929

WATER-CONTROL FITTING FOR THE END OF A HOSE

Filed Oct. 24, 1966

Sheet 1 of 2

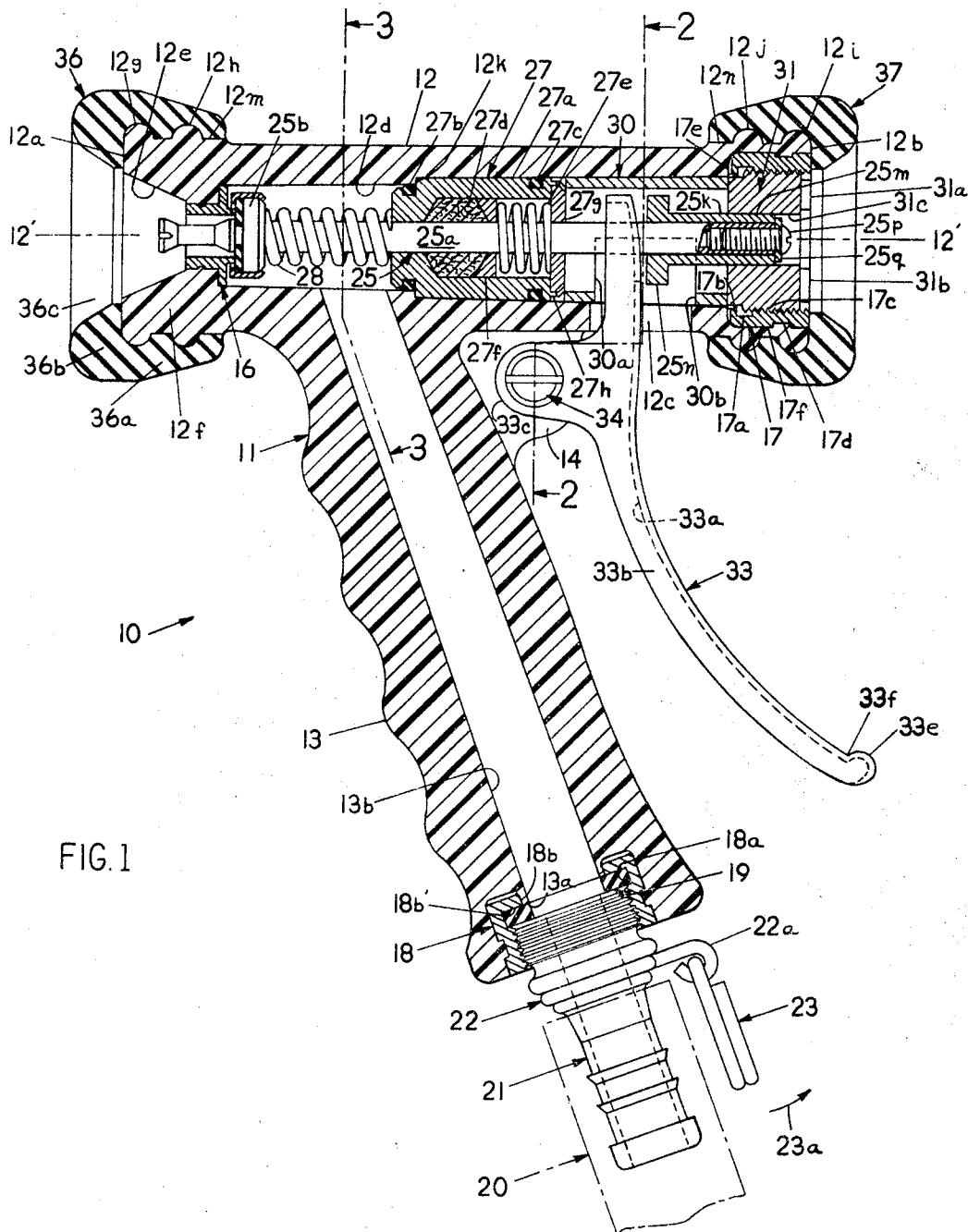


FIG. 1

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Sheet 2 of 2

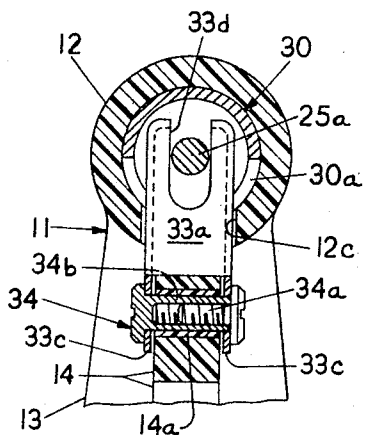


FIG. 2

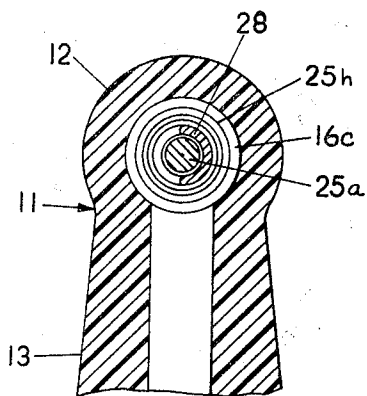


FIG. 3

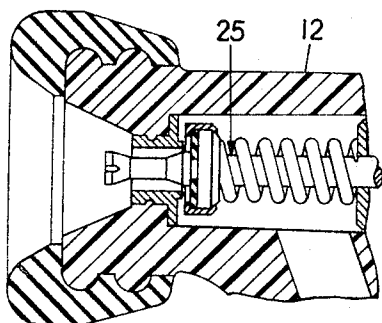


FIG. 4

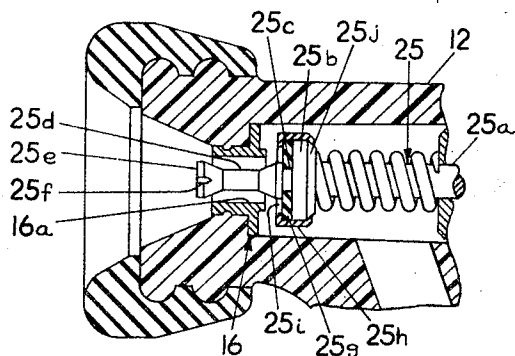


FIG. 5

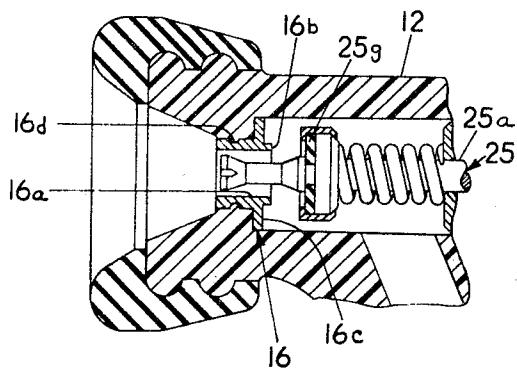


FIG. 6

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3,448,929

## WATER-CONTROL FITTING FOR THE END OF A HOSE

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U.S. Cl. 239-288.5

9 Claims

### ABSTRACT OF THE DISCLOSURE

The water-control fitting is in the nature of a hand-held adjustable nozzle which can be manually manipulated to direct the water that is discharged and vary the flow thereof. The fitting has a T-shaped plastic body composed of a horizontal barrel and a tubular handle which depends from the barrel. The end of the hose is attached to the lower end of the plastic handle. The water flows through the handle to the plastic barrel and is discharged through the front end of the barrel.

The body is molded in one piece of high-impact plastic that, as compared to brass, is light in weight and has low heat-conductivity. The plastic barrel has enlargements adjacent to its front and rear ends. Each end together with its companion enlargement is covered with an annular bumper that is composed of a tough elastomer.

Spaced inwardly from the front end of the plastic barrel there is a metal orifice-member, about which the barrel is molded. This orifice-member has an orifice through which the water passes and is then discharged through the front end of the plastic barrel. Coacting with the orifice-member there is flow-varying means which, in effect, closes the orifice or opens it by varying amounts. The flow-varying means includes a pin, a valve-member carried by the pin, and a coil spring which embraces the pin. The plastic barrel is of such internal configuration that the pin and valve-member and the coil spring can be inserted into the barrel from the rear thereof and then moved into coacting relationship with the orifice-member that is toward the front of the barrel.

### Background of the invention

The present invention relates to a water-control fitting of the type disclosed in United States patent to Strahman 2,657,098 issued Oct. 27, 1963. That patent discloses a hand-held water-control fitting for attachment to the end of the hose. That fitting has a T-shaped body composed of a horizontal barrel and a depending tubular handle. The end of the hose is attached to the lower end of the metal handle. The water flows through the handle to the metal barrel and is discharged through the front end of the barrel. While the hand held water-control fitting of that patent has been quite successful, it has certain undesirable limitations and is not well-adapted to withstand the abuse that it often receives at the hands of impatient workers.

In United States Patent 2,657,098 the body of the fitting is made of metal and, when the fitting is used with hot water, the handle may become unbearably hot to the hand even though it is covered with a rubber jacket. Brass with which the body was made, and other suitable corrosive-resistant metal with which the body might be made, are heavy. The weight of the metal body makes the hand-held fitting of United States Patent 2,657,098 undesirably heavy for holding in the hand for prolonged hosing operations.

In United States Patent 2,657,098 the water is automatically cut off as soon as the operator's grasp is re-

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leased. While this is a highly advantageous and water-saving feature, it leads to abuse of the hand-held fitting. When the operator pauses in his hosing, he is likely to just let go of the fitting and allow it to fall to the floor. Time after time the water-control fitting lands on a concrete floor, the front end of the barrel striking the floor, and thereby receiving a heavy blow. Before too long the front end of the barrel is likely to become badly battered. First the front-end portion of the rubber jacket becomes split and is pushed back. Thereafter the blow of landing on the floor strikes directly against the metal nozzle-member that is screwed into the front end of the metal barrel. Repeated blows impair the functioning of the water-control fitting. In time the nozzle-member and its screw-threaded connection to the barrel become so battered that repair is difficult or impossible.

In addition to the abuse of dropping the water-control fitting, dairy workers tend to use the hand-held fittings as a hammer to pound the covers of milk cans for loosening them. This too batters the front end of the barrel, if the hammering is done with the front end. Some dairy workers pound with the rear end, and then the rear end of the rubber jacket becomes split.

The present invention overcomes the foregoing difficulties. The body of the hand-held fitting has low heat-conductivity as compared to brass and other metals and thereby protects the operator's hand from too great heat when the fittings is held in the hand for prolonged periods while hosing with hot water. Further, the body of the hand-held fitting of the present invention is light in weight as compared to the body of the hand-held fitting of United States Patent 2,657,098. Thus the hand-held fitting of the present invention is less tiring to use. Still further, the end portions of the horizontal barrel of the present fitting are large and tough and, in addition, are protected by tough elastomer bumpers. Moreover the front end of the present water-control fitting is of rugged and durable construction, having no screw-threaded nozzle-member as in United States Patent 2,657,098.

### Description of the preferred embodiment

For both convenience and ready understanding, specific names may be used at times in the specification and claims, but all such nomenclature is to be understood as having the broadest meaning consistent with the context and with the concept of the invention as distinguished from the pertinent prior art. Except as may be otherwise indicated, the description hereinafter refers to the particular form of the invention shown in the drawings; it does not necessarily refer to any other form in which the invention may be embodied. The claims, however, do embrace other forms in which the invention may be embodied.

The best mode thus far contemplated of carrying out the invention is herein disclosed. Nevertheless the disclosure is by way of illustration and example, since other specific modes are possible, and in some instances it may be sufficient to realize only some of the advantages of the invention.

For convenience of reference, both the specification and claims refer to the water-control fitting of the invention on the basis of its being in the oriented position shown in the drawings, viz. the barrel being horizontal and the handle being in a vertical plane and extending downwardly from the barrel. It is to be understood, however, that the water-control fitting can be used in any oriented position and will ordinarily be shifted into various oriented positions while being used.

FIGURE 1 of the drawings is a central vertical section of a hand-held water-control fitting embodying the invention, certain parts being shown in elevation and the flow-

varying means being in the position of no flow. The hose is indicated. At the end of the hose there is shown the male connector which makes threaded connection to the hand-held water-control fitting.

FIGURE 2 is a vertical detail section taken generally on the line 2—2 of FIGURE 1.

FIGURE 3 is a vertical detail section taken generally on the line 3—3 of FIGURE 1.

FIGURE 4 is a vertical section of the front end of the barrel and adjacent parts. This view is the same as the corresponding portion of FIGURE 1 except that the flow-varying means is shown in position for permitting very small flow.

FIGURE 5 is the same as FIGURE 4 except that the flow-varying means is shown in position for permitting medium flow.

FIGURE 6 is the same as FIGURES 4 and 5 except that the flow-varying means is shown in position for permitting maximum flow.

In FIGURE 1 the hand-held water-control fitting is designated as a whole by 10. This hand-held fitting has a molded body, designated as a whole by 11, which is homogeneous throughout. The body 11 includes a horizontal barrel 12, a depending tubular handle 13, and a gusset 14 which extends downwardly and rearwardly from the junction of the barrel and handle. The body 11 is injection molded in one piece of high-impact plastic, which is tough and resilient and which withstands repeated blows without fracture, chipping or noticeable distortion. A high-impact plastic that has been used for the body 11 is nylon, type 6.

The plastic barrel 12 has a front end 12a and a rear end 12b. Throughout its length the barrel is circular inside and out, about a central longitudinal axis 12'—12'. The handle 13 and the gusset 14 extend outwardly from the circular configuration of the outside of the barrel 12. The rear half of the barrel is molded with a longitudinal slot 12c which is at the bottom of the barrel and extends through the wall of the barrel as shown in FIGURE 1. The purpose of this slot will appear later.

At a substantial distance from its front end 12a the plastic barrel 12 is provided with a metal orifice-member that is designated as a whole by 16 and which is coaxial with the barrel. This metal orifice-member, which will be described, is an insert about which the plastic barrel 12 is molded. Adjacent to its rear end 12b the plastic barrel 12 is provided with a metal thimble that is designated as a whole by 17 and which is coaxial with the barrel. This thimble, which will be described, is also an insert about which the plastic barrel is molded.

The bore 12d of the barrel 12 extends from the orifice-member 16 to the thimble 17, and increases in diameter as it is traversed from the orifice-member 16 to the thimble 17. The mouth 12e of the barrel is funnel-shaped, with the small end of the funnel formation at the orifice-member 16. The configuration of the barrel 12 is such as to give the wall of the barrel an annular thickened portion 12f toward its front end. This thickened portion extends from the forward end of bore 12d to the front end 12a of the barrel. The exterior of the thickened portion 12f of the barrel is formed with annular beads 12g and 12h, which are separated a little lengthwise of the barrel and each of which encircles the barrel. Toward its rear end the barrel is formed with annular beads 12i and 12j; these duplicate the beads 12g and 12h and are in the same relationship to the rear end 12b of the barrel that beads 12g and 12h are to the front end 12a of the barrel. The front end-portion of the barrel is annularly enlarged at 12m and the annular enlargement is increased by the beads 12g and 12h. The rear end-portion of the barrel is annularly enlarged at 12n and the annular enlargement is increased by the beads 12i and 12j.

The orifice-member 16 will now be described, in connection with the reference characters that are in FIGURE 6. The orifice-member 16 is in one piece, and may be

made from rod stock by conventional operations. The orifice-member has a central tubular portion 16a, the rear end of which constitutes a valve seat 16b. The rear half of the tubular portion 16a is embraced by a washerlike portion 16c. The front half of the tubular portion 16a is encircled by an annular groove 16d. The orifice-member 16 is a metal insert, about which the plastic barrel 12 is molded. The plastic embraces the washerlike portion 16c and also engages the front face thereof. Also, the plastic embraces the tubular portion 16 from the front end thereof to the washerlike portion 16c, entering and filling the groove 16d. The plastic of the barrel 12 is in fluid-tight relation with the orifice-member 16 and is so effectively interlocked therewith that the orifice-member is, in effect, integral with the barrel 12.

Returning to FIGURE 1, the thimble 17 is a one-piece metal insert which may be made from rod stock by conventional operations. This thimble, which is generally tubular, has at all points along its length an internal diameter which is somewhat greater than the diameter of the rear end of bore 12d of the plastic body 12. Toward its front end the thimble 17 is provided with an internal annular groove 17a, from the bottom of which an annular flange 17b extends inwardly a short distance at the front end of the thimble. From the groove 17a to the rear end of the thimble, the thimble is interiorly threaded at 17c. The exterior of the thimble is encircled with a groove 17d. The forward annular face of the thimble 17 is traversed by two or four radial grooves 17e which are equally spaced. On both sides of the groove 17d the entire exterior cylindrical-surface of the body 17f of the thimble is knurled. The plastic of the barrel 12 embraces the body 17f of the thimble, filling the groove 17d and also filling the depressions in the knurling on the exterior of the body 17e of the thimble. The plastic of the barrel also engages the forward face of annular flange 17b of the thimble, filling the radial grooves 17e. The plastic of the barrel 12 is intimately engaged with the thimble 17 and is so effectively interlocked therewith that the thimble is, in effect, integral with the barrel 12.

Adjacent to its lower end, the plastic handle 13 is provided with a thimble which is designated as a whole by 18. The thimble 18 is a one-piece metal insert that is similar to the thimble 17—being similarly threaded, similarly knurled, similarly grooved, similarly embedded in and engaged by the plastic, and being integral with the handle 13 in effect. The thimble 18 serves as the female-threaded member of a hose coupling. In this connection the plastic of the handle 13 extends over the interior cylindrical surface of the annular flange 18b (corresponding to flange 17b in thimble 17) and terminates flush with the adjacent wall of the groove 18a (corresponding to groove 17a in thimble 17). The groove 18a receives a conventional hose-coupling gasket 19, one sealing-surface of which engages the adjacent face 18b' of flange 18b and the plastic-handle face 13a which is flush therewith.

A conventional hose 20 supplies under pressure water, which may be at regulated temperature. Conventionally affixed to the end of the hose is a male-threaded hose-coupling member 21 which mates in usual manner with the female coupling member 18 of the handle 13. The gasket 19 makes a water-tight seal in usual manner between the coupling members 18 and 21. The coupling member 21 has an annular groove which receives and retains a split spring-ring 22. At one end of its split formation the ring 22 is provided with a radial extension 22a that is looped as shown about a metal ring 23 which may be either endless or composed of somewhat less than two convolutions. The ring 23 is held captive, being free to be swung upwardly as indicated by the arrow 23a for a purpose that will appear.

From the hose 20 the water flows through the coupling members 21 and 18 to the longitudinal passage 13b that runs the length of the handle 13. From the handle-passage 13b the water flows into the forward portion

of the bore 12d of the barrel 12. The water is discharged out the front end of the barrel as permitted by flow-varying means which is under the control of the operator. The flow-varying means includes the orifice-member 16 and parts and mechanism which will now be described.

A rod-assembly, designated as a whole by 25, is disposed longitudinally within the barrel 12 and is coaxial therewith. This assembly includes a rod 25a which extends throughout most of the length of the barrel 12 and projects through the orifice-member 16. Referring to FIGURE 5 for reference characters which will now be used, the rod 25a is provided toward its front with an annular abutment 25b which is either homogeneous with the rod 25a or is operatively integral therewith. Immediately in front of the abutment 25b the rod 25a is provided with an annular groove 25c. The front end-portion of the rod 25a, which extends forwardly from the groove 25c, is coaxial with the tubular portion 16a of the orifice-member 16, and is formed as shown with a waist 25d and a nose 25e. About its periphery, the nose is provided with four equally spaced longitudinal notches 25f.

A washerlike gasket 25g is telescoped over the front end of the rod 25a and brought against the forward face of the annular abutment 25b, the gasket being somewhat expandable and contractible and seating in the annular groove 25c. A cuplike retainer 25h, which has a hole 25i in the bottom, is telescoped over the gasket 25g and the annular abutment 25b as seen in FIGURE 5 and other figures. By a stamping operation the mouth of the cup formation is shrunk over the chamfered annular edge 25j of the abutment 25b, thereby securing the gasket 25g to the front face of the annular abutment 25b. The abutment 25b, the retainer 25h and the gasket 25g constitute a valve member which co-operates with the valve seat 16b (FIGURE 6) of the orifice-member 16.

Telescoped over the rear end of the rod 25a there is a tubular guide 25k. This guide has a tubular body portion 25m and, at its forward end, an annular flange portion 25n which extends outwardly from the body portion 25m. The guide 25k, which may make a sliding fit with the rod 25a, is held captive on the rod by a screw 25p which is threaded into the rear end of the rod 25a and which is provided with a lock washer 25q.

A stuffing box, designated as a whole by 27, is nested within the bore 12d and abuts as shown against an annular shoulder 12k that is on the wall of the bore 12d. The stuffing box 27 is of circular cross section, the body 27a being tapered to correspond with the taper of the bore 12d. Toward its front and rear ends, the stuffing box is exteriorly grooved as shown and provided with elastomer sealing rings 27b and 27c which seal the exterior of the stuffing box to the interior wall of the barrel 12. The sealing rings 27b and 27c are commercial rings which are circular in cross section and are sometimes referred to as O rings.

The body 27a of the stuffing box is generally cup-shaped and is provided with bulk packing 27d that is held compressed by a coil spring 27e and a gland 27f. The open end of the cup formation is closed by a disklike cover 27g which holds the spring 27e compressed. The cover 27g is secured to the body 27a by an annular rim 27h which is homogeneous with the body 27a and which, by stamping, is shrunk over the chamfered edge of the cover member 27g as is shown in the drawing. The rod 25a passes longitudinally through the stuffing box which, through the bulk packing 27d and the sealing rings 27b and 27c, makes a watertight seal between the rod 25a and bore 12d of the barrel. The front and rear ends of the stuffing box 27, which are pierced in sliding-fit manner by the rod 25a, act as bearings which support the rod 25a for reciprocation lengthwise of the barrel 12.

A compressed coil spring 28 embraces the rod 25a between the stuffing box 27 and the annular abutment

25b that is integral with the rod 25a toward its front end. This spring biases the rod 25a forwardly to the FIGURE 1 position, in which the rod-carried valve member closes the orifice in the orifice-member 16.

A 1-piece sleeve 30 abuts as shown against the rear end of the stuffing box 27. While this sleeve is generally cylindrical, the exterior surface thereof is tapered to correspond with the taper of the bore 12d of the plastic barrel 12. The front and rear end-portions of the sleeve 30 are circumferentially continuous, but from 30a to 30b a 180° sector cut is out, providing the sleeve with a large side-opening. This side opening points downwardly and overlies the slot 12c through the wall of the plastic barrel (see FIGURE 2).

As has been pointed out the front end of the plastic barrel 12 is annularly thickened at 12f and is molded in integral manner about the orifice-member 16—without any screw-threaded plug, insert or the like as in U.S. Patent 2,657,098. This rugged construction of the front-end of the plastic barrel 12 is made possible by the construction and arrangement of the present invention whereby all necessary parts can be assembled into the barrel from the rear end thereof. In making up the rod-assembly 25 the coil spring 28, the stuffing box 27 and the guide 25k are telescoped into the rod 25a. Then screw 25p with its lock washer 25q is applied to the rear end of the rod 25a. The thus-assembled parts are inserted into the plastic barrel 12 from the rear end thereof, the sleeve 30 being telescoped into the bore and brought against the rear end of the stuffing box 27. Then a screw plug 31 is screwed into the thimble 17, the plug being provided with aligned radial slots 31a and 31b to receive a tool for screwing the plug home. When the plug 31 is screwed home as shown in FIGURE 1, the forward end of the stuffing box 27 is snug against the annular shoulder 12k on the inside of the plastic barrel, the front end of the sleeve 30 is snug against the rear end of the stuffing box 27, and the front end of the plug 31 is snug against the rear end of the sleeve 30. The plug 31 is axially bored at 31c to telescope over and make a sliding fit with the tubular body 25m of the guide 25k that is on the rear end of the rod 25a.

A pivoted lever 33 is manually operable to retract the rod assembly 25 against the bias of spring 28 and thereby open the orifice 16b (FIGURE 6) for discharge of water through the front end of the barrel 12. The lever 33, which is formed in one piece from heavy sheet metal, has a body 33a which runs the full length of the lever. From each longitudinal edge of the body 33a there extends perpendicularly a flange 33b (one shown in FIGURE 1) which also extends for the full length of the lever 33. In the upper half of the lever, each flange 33b is locally extended to form an ear 33c (see also FIGURE 2). The ears 33c, 33c lie on opposite sides of the gusset 14 of the plastic body 11, being closely adjacent to the opposite faces of the gusset as is seen in FIGURE 2. A pivot, designated as a whole by 34, extends through the ears and the gusset to pivotally mount the lever 33 on the gusset. The pivot 34 consists of male and female screw-members 34a and 34b which are threaded together as is seen in FIGURE 2. The hole through the gusset 14 is larger than the exterior of the female screw-member 34b and is lined with a soft nylon bushing 14a which makes a bearing fit with the exterior of the female screw-member 34b.

Above the pivot 34 the lever extends through the slot 12c in the plastic barrel and thence through the side opening in the sleeve 30. The upper end of the lever 33 is bifurcated, by reason of a longitudinal slot 33d (FIGURE 2) which has a width slightly greater than the diameter of the rod 25a and which extends for a distance into the length of the lever-body 33a. The bifurcated upper end of the lever 33 is astride of the rod 25a as is seen in FIGURE 2. When the lower end of the lever 33 is swung toward the plastic handle 13 of the hand-held

water-control fitting 10, the upper end of the lever moves to the right (FIGURE 1) thereby pressing the guide 25k to the right and retracting the rod assembly 25 against the bias of spring 28. This opens the orifice 16b (FIGURE 6) for discharge of water through the orifice-member 16 and thence through the front end of the barrel 12.

The lever 33 is manually operated by squeeze pressure from the operator's hand which holds the water-control fitting 10. For small flow the lever 33 is depressed slightly toward the handle 13, thereby bringing the rod-assembly 25 to the FIGURE 4 position in which the orifice is open slightly. Further depression of lever 33 brings the rod-assembly 25 to the position shown in FIGURE 5, in which the orifice is more widely open. Full depression of the lever 33 brings the rod-assembly 25 to the position shown in FIGURE 6, in which the orifice is fully open. The rate of flow through the front end of the barrel 12 will increase as the rod-assembly 25 is moved from the closed position of FIGURE 1 to the fully open position of FIGURE 6. As the opening movement of rod-assembly 25 progresses, the stream of water discharged through the front end of the barrel 12 will be modified by the waisted front-end portion 25d of the rod 25a that extends through the orifice-member 16. Mist and spray may be obtained, and full streams of various size may be obtained.

Upon release of the lever 33 the flow of water is automatically cut off, the spring 28 closing the discharge orifice by moving the rod-carried valve member against the seat 16b (FIGURE 6) of the orifice-member 16. For prolonged hosing operations it may be desired to mechanically hold the flow-control means in open position. To this end, a protuberance 33e is provided at the lower end of the lever 33. With the lever 33 fully depressed toward the handle 13, so that maximum flow of water through the front end of the barrel is being achieved, the captive ring 23 is swung upwardly and over the protuberance 33e. Upon slight reverse movement of the lever 33 the ring 23 interlocks with the notch 33f at the juncture of the protuberance 33e and the body 33a of the lever. Thus the lever 33 is mechanically held in full-flow position for prolonged hosing. To release the lever 33 for cutting off the flow of water, pressure is applied to the lever and then ring 23 is swung clockwise to disengage it from the lever.

The molded body 11 is made of high-impact plastic, and the front end-portion of the barrel 12 is rugged and shock-resistant by reason of the thickening of the wall at 12f, the homogeneous ribs 12g and 12h which encircle the front end-portion, and the integral molding of the front end-portion about the orifice-member 16. Thus the barrel 12 will stand quite a lot by way of fortuitous blows on its front end. Nevertheless the front end portion of the barrel is rendered further shock-resistant by a bulbous 1-piece bumper 36 which surrounds the front end-portion of the barrel 12.

The bumper 36 has an annular wall 36a which is thick and the interior of which is molded to mate with the front end-portion of the barrel 12 including the annular ribs 12g and 12h. Extending perpendicularly inward from the annular side wall 36a at the front end thereof, the bumper has an annular portion 36b which is very thick and which corresponds to the peripheral zone of the bottom of a cup. This annular portion 36b lies snug against the front end 12a of the plastic barrel. At its center the rubber bumper has a funnel-shaped opening 36c which is generally in continuation of the funnel-shaped mouth 12e of the plastic barrel.

The bumper 36 is molded; it is a tough elastomer which is relatively hard, though the bumper is sufficiently stretchable to enable it to be forced over the front end of the barrel 12 and be brought to the position shown in FIGURE 1, in which the interior of the bumper is in intimate engagement with both the front end 12a of the barrel and the exterior annular surface of the barrel

which is within the annular wall 36a of the bumper. The bumper can be forcibly assembled onto the front end-portion of the barrel and can be forcibly removed therefrom for replacement. The bumper has been made of a commercial elastomer that has been referred to as polyurethane.

Nylon, type 6, has been used for the high-impact plastic of the molded body 11. Tests show that with such nylon bodies 11 the hand-held fitting 10 can be used for prolonged hosing with water at temperatures up to 200° F. The molded plastic body 11 withstands the temperature, and the thermal conductivity of the molded handle 13 is low enough to protect the user's hand from exposure to undue temperature.

The various parts of the hand-held water-control fitting 10, other than the plastic body 11, are made of durable metallic and nonmetallic materials which have suitable mechanical and corrosive-resistance characteristics. Suitable materials are known and available. Commercial elastomer sealing rings have been used for stuffing-box rings 27b and 27c. Commercial bulk packing has been used for the stuffing-box packing 27d. Various rubbers and other materials are suitable for valve gasket 25g; one material that has been used is a commercial material that has been referred to as acrylonitrile or vinylcyanide. Spring stainless-steel is contemplated for coil springs 27e and 28. Stainless steel is contemplated for lever 33, pivot 34, rings 22 and 23, plug 31, screw 25p, and orifice-member 16. Brass is contemplated for sleeve, 30, hose connector 21, retainer 25h, stuffing-box body 27a, gland 27f, stuffing-box cover 27g, the thimble 17, and the thimble 18. Bronze is contemplated for the rod 25a including the annular abutment 25b thereof. Bronze is also contemplated for the guide 25k. Spring bronze is contemplated for the lock washer 25q.

When the impatient user, such as a dairy worker, terminates his hosing by just letting go of the hand-held water-control fitting 10, the front end of the fitting lands on the concrete but the blow is effectively absorbed by the elastomer bumper 36. If in time the bumper 36 becomes damaged or worn out, it can be readily replaced. If the bumper 36 isn't timely replaced, the enlarged front end-portion of the plastic barrel 12 will itself withstand abusive blows as has been explained. If a dairy worker hammers milk-can lids with the front end of the hand-held fitting 10, the blows are absorbed and withstood, the same as when the fitting 10 is dropped front-end-down on a floor.

While the rear end of the barrel 12 is not likely to receive the damaging blows that the front end does, it too may occasionally be used to loosen the cover of a milk can. The rear end of the plastic barrel 12 is protected by an elastomer bumper 37 which is a duplicate of the bumper 36 and interlocks with the barrel in the same manner as the bumper 36 and is removable and replaceable in the same manner as the bumper 36.

We claim:

1. A hand-held water-control fitting for attachment to the end of a hose, said fitting comprising:

a horizontal plastic barrel having a front end and a rear end;

a tubular plastic handle depending from the barrel and through which the water passes to the barrel for discharge through the front end of the barrel,

the barrel and handle being portions of a plastic body that is molded in one piece of high-impact plastic which is tough and resilient and withstands repeated blows without fracture, chipping or noticeable distortion, and which has light weight as compared to brass and low heat-conductivity as compared to brass;

means for varying the flow of water,

said flow-varying means including a metal orifice-member having an orifice through which the wa-

ter passes and is then discharged through the front end of the plastic barrel,

said metal orifice-member in its entirety being spaced inwardly a substantial distance from the front end of the plastic barrel and the plastic barrel being molded about said orifice member;

and the plastic barrel having adjacent to its front end an annular enlargement which extends in front of the orifice-member.

2. A hand-held water-control fitting as in claim 1 in which the plastic barrel has an annular enlargement adjacent to its rear end.

3. A hand-held water-control fitting as in claim 1 in which the front end-portion of the plastic barrel is covered by an elastomer bumper that extends forwardly of the most forward part of the flow-varying means.

4. A hand-held water-control fitting as in claim 2 in which the front and rear end-portions of the barrel are covered by elastomer bumpers, and the front elastomer bumper extends forwardly of the most forward part of the flow-varying means.

5. A hand-held water-control fitting as in claim 3 in which the elastomer bumper is localized adjacent to the front end of the plastic barrel and extends bulbously from the plastic barrel,

the bumper providing a thick layer of elastomer surrounding the front end-portion of the plastic barrel and also a thick layer of elastomer extending a substantial distance in front of the front end of the plastic barrel.

6. A hand-held water-control fitting as in claim 4 in which the elastomer bumpers are localized adjacent to the front and rear ends respectively of the plastic barrel and extend bulbously from the plastic barrel,

the bumpers providing thick layers of elastomer surrounding the front and rear end-portions respectively of the plastic barrel, and also providing thick layers of elastomer extending forwardly and rearwardly from the front and rear ends respectively of the plastic barrel.

7. A hand-held water-control fitting as in claim 6 in which each of the elastomer bumpers interlocks with a plurality of annular beads formed on the exterior of the plastic barrel and which constitute annular enlargements of the barrel.

8. A hand-held water-control fitting for attachment to the end of a hose, said fitting comprising:

a horizontal plastic barrel having a front end and a rear end;

a tubular plastic hand depending from the barrel and through which the water passes to the barrel for discharge through the front end of the barrel;

flow-varying means within the barrel for varying the flow of water;

said flow-varying means including (a) an orifice member that is located toward the front end of the barrel and which is operatively integral with and inseparable from the barrel, (b) a rod extending longitudinally within the barrel, (c) a valve member carried by the rod and which coacts with the orifice in the orifice member to vary admission of water to the orifice, (d) and a coil spring surrounding the rod and acting to bias it to orifice-closed position;

and the hand-held fitting including means for assembling the rod and associated parts into the barrel from the rear end thereof;

said assembling means including (e) a bore in the barrel extending from the orifice member to the rear end of the barrel and free of any inward extension interfering with insertion of the rod and associated parts from the rear end of the barrel, and (f) a removable closure for the bore at the rear end of the barrel.

9. A hand-held water-control fitting as in claim 8 in which the removable closure at the rear end of the barrel is a screw plug.

#### References Cited

##### UNITED STATES PATENTS

|           |         |          |           |
|-----------|---------|----------|-----------|
| 1,992,490 | 2/1935  | Lewis    | 239—591 X |
| 2,657,098 | 10/1953 | Strahman | 239—459   |
| 3,095,154 | 6/1963  | Lange    | 239—456 X |
| 3,116,018 | 12/1963 | Kunz     | 239—460 X |

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,448,929

June 10, 1969

Dietrick Strahman et al.

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

Column 5, line 49, "ciriular" should read -- circular --. Column 6, line 25, "into" should read -- onto --; line 49, "ody" should read -- body --. Column 10, line 5, "hand" should read -- handle --.

Signed and sealed this 14th day of April 1970.

(SEAL)

Attest:

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Attesting Officer

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Commissioner of Patents