

[54] **HOSE NOZZLE WITH IMPROVED INSULATING PROTECTOR STRUCTURE**

[75] Inventor: **Glenn I. Beal**, Somerset, Pa.

[73] Assignee: **R. M. Smith, Inc.**, Somerset, Pa.

[22] Filed: **Apr. 19, 1973**

[21] Appl. No.: **352,703**

[52] U.S. Cl. **239/288.5, 239/526, 239/530**

[51] Int. Cl. **B05b 11/00**

[58] Field of Search **239/526, 530, 288, 208.3, 239/288.5**

[56] **References Cited**

UNITED STATES PATENTS

3,711,028	1/1973	Hengesbach.....	239/288.5
3,076,608	2/1963	Valles.....	239/526

Primary Examiner—Lloyd L. King
 Attorney, Agent, or Firm—Cushman, Darby & Cushman

[57] **ABSTRACT**

A hose nozzle assembly comprising a hollow metal body including an elongated hand grip portion having socket means on one end thereof constituting a water inlet for connection with a hose end and an elongated flow control element mounted in the hollow metal body for movement into different positions for controlling the flow of water from a water outlet in the body, a pair of insulating hand grip protector parts disposable with respect to each other in cooperating surrounding relation to the hand grip portion of the nozzle body and fasteners for operatively fixedly securing the parts in such surrounding relation, the parts in such surrounding relation including (1) interior surfaces cooperating with surrounding exterior surfaces of the hand grip portion of the body to define a plurality of flow channels open to the atmosphere for the dissipation of heat or cold by flow therethrough and (2) exterior surfaces for manual engagement by an operator during use so as to prevent manual contact with the hollow metal body when an extremely hot or cold liquid is flowing therethrough.

11 Claims, 6 Drawing Figures

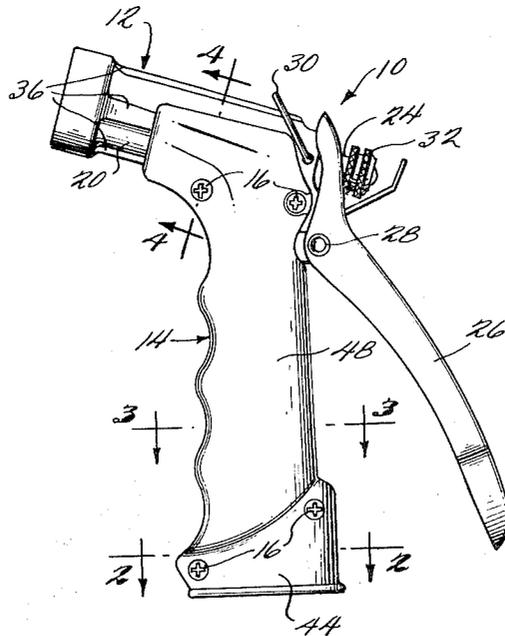


Fig. 1

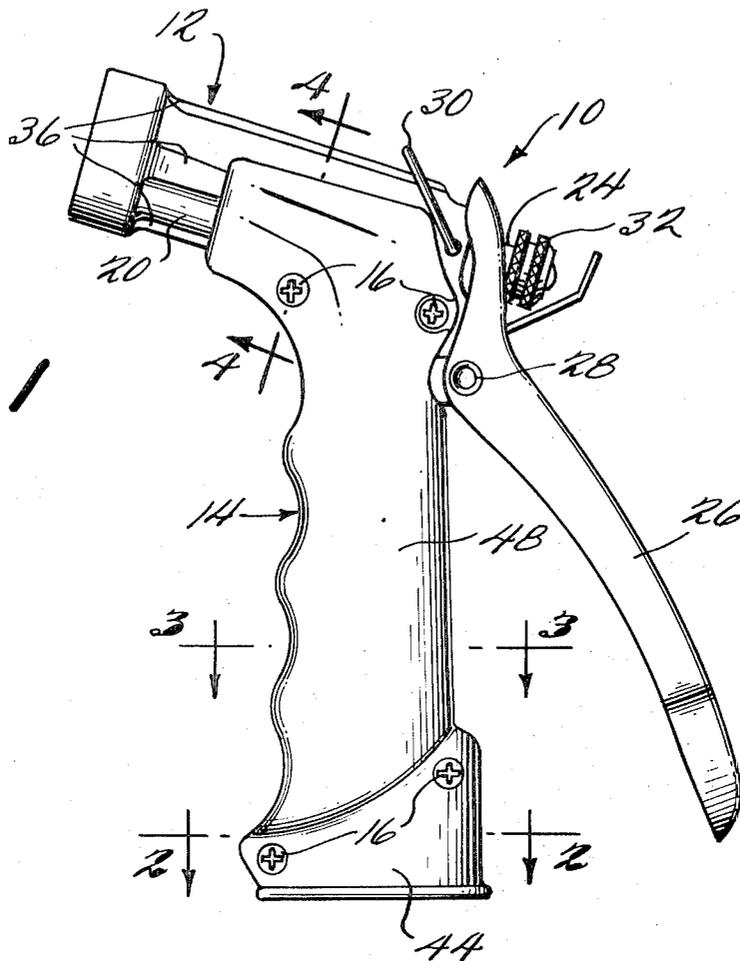


Fig. 2

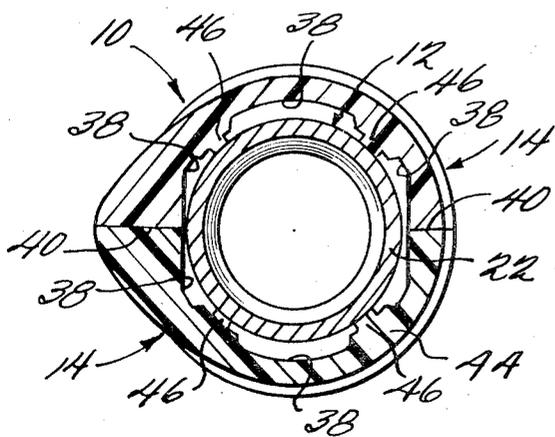


Fig. 3

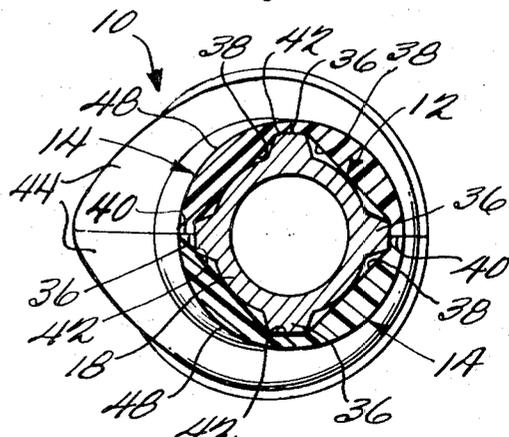


Fig. 5

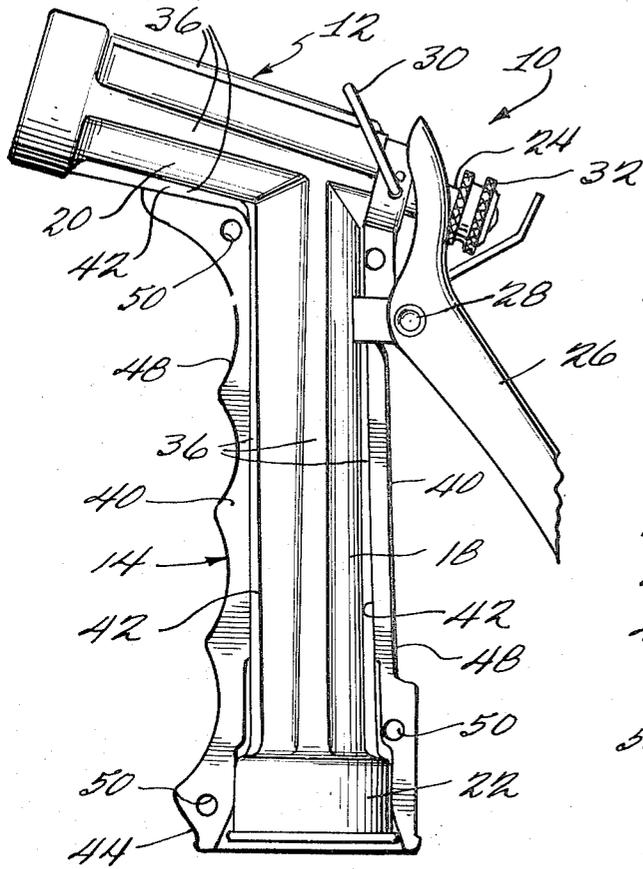


Fig. 6

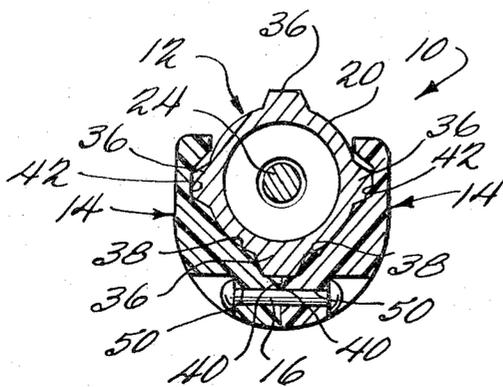
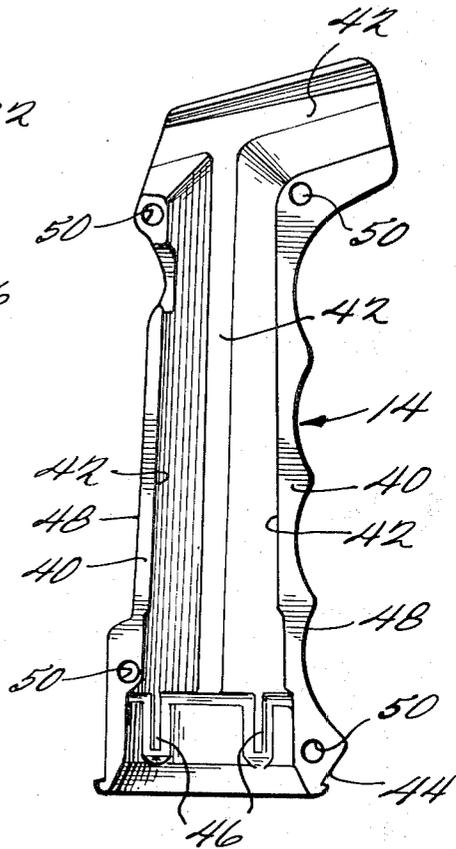


Fig. 4

HOSE NOZZLE WITH IMPROVED INSULATING PROTECTOR STRUCTURE

This invention relates to hose nozzles and more particularly to an improved temperature insulating protector structure for hose nozzles which render the same more convenient to operate with liquids which are very hot or very cold.

Conventional hose nozzles are frequently used to handle water at temperatures which, when transmitted through the metal handle portion of the nozzle body, make manual contact quite uncomfortable, if not, in some cases, almost impractical, for example, when using hot water to clean vehicles and other instrumentalities. Moreover, it is well known that hose nozzles are subjected to considerable abuse during normal use, such as being dropped or thrown down on the pavement, etc. and the provision of some means to protect the cast metal body from excessive damage under such circumstances would prolong the useful life thereof. Molded rubber protectors of this type have been proposed in the patented literature, as for example, U.S. Pat. No. 2,657,098.

It is an object of the present invention to provide a hose nozzle assembly including a temperature insulation protector structure capable of obtaining the advantages noted above while at the same time presenting the additional advantages of being economical to manufacture and assemble. In accordance with the principles of the present invention this objective is obtained by providing a plurality of insulating hand grip protector parts which are preferably molded of a high impact plastic material and capable of being disposed in cooperating surrounding relation to the hand grip portion of a hose nozzle body and of being fixedly secured in such relation by the use of conventional fasteners, such that there is provided between the exterior surfaces of the hose nozzle body and the interior surfaces of the parts a plurality of flow channels for dissipating the transfer of heat or cold from the cast metal body to the manually gripped exterior surface of the protector parts.

Another object of the present invention is the provision of a hose nozzle assembly of the type described which is formed of a minimum number of parts which can be simply and economically produced and assembled and which are effective and efficient in operation once assembled.

These and other objects of the present invention will become more apparent during the course of the following detailed description and appended claims.

The invention may best be understood with reference to the accompanying drawings wherein illustrative embodiments are shown.

In the drawings:

FIG. 1 is a side elevational view of a hose nozzle assembly embodying the principles of the present invention;

FIG. 2 is an enlarged sectional view taken along the line 2—2 of FIG. 1;

FIG. 3 is an enlarged sectional view taken along the line 3—3 of FIG. 1;

FIG. 4 is an enlarged sectional view taken along the line 4—4 of FIG. 1;

FIG. 5 is a side elevational view of the nozzle assembly with one of the cooperating insulating hand grip parts removed; and

FIG. 6 is a side elevational view of the removed part of FIG. 5, illustrating the interior surface configuration thereof.

Referring now more particularly to the drawings, there is shown in FIG. 1 thereof a nozzle assembly, generally indicated at 10, embodying the principles of the present invention. The assembly 10 comprises, in general, a hose nozzle, generally indicated at 12, a plurality of insulating hand grip protector parts, generally indicated at 14, and fastening means, generally indicated at 16, for securing the parts 14 in operative relation with the nozzle 12.

The preferred nozzle assembly 10, as shown, embodies a nozzle 12 of the pistol grip type. However, it will be understood that the principles of the present invention have applicability to any nozzle providing a hollow body with a hand grip portion, including straight nozzles and particularly nozzles of the type disclosed in U.S. Pat. No. 2,601,3.

The preferred nozzle 12, as shown, includes a main body casting having an elongated handle portion 18 and a barrel portion 20. The elongated handle portion is hollow and is formed at its lower end with a socket portion 22 which is interiorly threaded to receive a male hose fitting. The opposite end of the handle portion communicates with one end of the barrel portion. A spray adjusting stem 24 is slidably mounted within the barrel portion for movement into different positions of longitudinal adjustment to vary the pattern of the spray issuing from the outlet orifice in the free end of the barrel portion. In accordance with conventional practice, the stem 24 extends outwardly of the rear end of the barrel portion and is connected with one end of an actuating lever 26. The actuating lever is pivotally attached to the handle portion as at 28, so that when the handle portion and actuating lever are gripped in the hand of a user the spray can be adjusted by a squeezing action in which the upper portion of the actuating lever moves the stem longitudinally outwardly of the barrel portion. A spring (not shown) within the barrel portion serves to resiliently urge the stem longitudinally forwardly into a limiting position closing off flow through the outlet orifice. A pivoted bale 30 is provided for retaining the actuating lever in a depressed condition corresponding to the desired spray, the desired spray being determined by adjustment of a knurled nut 32 threadedly engaged on the outer end of the stem 24. The above components of the nozzle and the mode of operation are generally conventional.

A preferred form of nozzle 12 is illustrated in U.S. Pat. No. D 194,014 dated Nov. 6, 1962. This nozzle is preferred since there is provided on the exterior thereof both in the handle portion 18 and barrel portion 20 thereof a plurality of circumferentially spaced longitudinally extending ribs 36 which cooperate with the interior surface configuration of the hand grip protector parts 14, when secured in operative relation with the nozzle by the fastening means 16, to provide a plurality of flow channels 38 open to the atmosphere for the dissipation of heat or cold by flow therethrough. As shown, there is provided two hand grip protector parts 14 which are separately molded of a suitable high impact plastic material into configurations which bear a substantial mirror image relation with respect to each other. Examples of plastic materials which may be utilized include nylon, polypropylene, acetal, and high density polyethylene, with the latter being preferred.

With the preferred construction shown, the parts 14 are adapted to be moved together into cooperating relation with each other in surrounding relation to the handle or hand grip portion 18 of the nozzle body and an adjacent section of the barrel portion 20. The cooperation of the parts is provided by a pair of spaced end surfaces or edges 40 formed in each part and disposed in a common plane. Extending in generally concave relation between each pair of end surfaces 40 is a plurality of longitudinally extending interior rib engaging surfaces 42 spaced apart by intermediate longitudinally extending interior channel defining surfaces. It will be noted that each part 14 includes a lower socket surrounding portion 44 which is provided interiorly with a plurality of longitudinally extending socket engaging ribs 46 spaced apart by longitudinally extending interior channel defining surfaces.

Extending in generally convex relation between each pair of end surfaces 40 are exterior surfaces 48 shaped for manual engagement by an operator during use so as to prevent manual contact with the hollow metal body of the nozzle 12 when an extremely hot or cold liquid is flowing therethrough. While the surfaces 48 may assume any desirable and convenient configuration, as shown, the exterior surfaces are configured generally to fit the contours of a hand when assuming a pistol butt gripping position including ridges which tend to maintain the fingers from crowding together during actuation.

It will be understood that the parts 14 are assembled in surrounding relation to the nozzle body by simply moving the same on opposite sides thereof until the rib engaging surfaces 42 engage the ribs 36 and the end surfaces 40 about one another. Each part 14 is formed with four fastener receiving openings 50 which extend perpendicularly through the end surfaces 40 to the exterior surface 48. As shown, two openings 50 are formed in each part 14 within the socket surrounding portion 44 thereof and the other two openings are formed at positions corresponding to the juncture between the handle portion 18 and barrel portion 20 of the nozzle. The rearward end surfaces 40 of the parts 14 are formed with recesses 52 to receive the pivot lug of the nozzle body and the sections immediately thereabove are relieved to accommodate the aperture web of the nozzle body such as disclosed in U.S. Pat. No. 3,674,138.

It will be understood, that the openings 50 of each part 14 aligns with corresponding openings 50 in the other part when the latter are disposed in surrounding relation to the nozzle body, as aforesaid, so that the fastening means 16 may be inserted and secured therein. The fastening means 16 may be of any conventional construction and, as shown, are of the rivet type. The rivets 16 serve to fixedly secure the parts 14 in their operative position with respect to the nozzle 12 so that the parts 14 can be subjected to severe impacts during use without being dislodged from their operative position thus serving to protect the nozzle body against damage by such impacts or other abuse during use. Moreover, since the exterior surfaces 48 serve to maintain the operator's hand out of contact with the nozzle body, the operator is further protected from any discomfort or inconvenience which would normally occur when an extremely hot or cold liquid is flowing through the nozzle body. Any extremes in temperature conducted directly to the metal of the nozzle body can be dissipated

to atmosphere by air flow through the open channels 38. This arrangement effectively prevents substantial temperature conduction from the nozzle body to the parts 14 particularly since there is contact between the two only along the ribs.

It thus will be seen that the objects of this invention have been fully and effectively accomplished. It will be realized, however, that the foregoing preferred specific embodiment has been shown and described for the purpose of illustrating the functional and structural principles of this invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

What is claimed is:

1. In a hose nozzle of the type comprising a hollow metal body including an elongated hand grip portion having socket means on one end thereof constituting a water inlet for connection with a hose end and a barrel portion extending from the opposite end of said hand grip portion having a water outlet therein, an elongated flow control element mounted in said barrel portion for movement into different positions for controlling the flow of water from said outlet, and an actuating member carried by said body in a position to be manually engaged by an operator gripping said hand grip portion and operatively connected with said element for effecting the flow controlling movements of said element, the improvement which comprises in combination therewith a plurality of insulating hand grip protector parts disposable with respect to each other in cooperating surrounding relation to the hand grip portion of the nozzle body and an adjacent section of said barrel portion, and means for operatively fixedly securing said parts in said surrounding relation to said body, said parts in said surrounding relation including (1) interior surfaces cooperating with surrounded exterior surfaces of said body to define a plurality of flow channels open to the atmosphere for the dissipation of heat or cold by flow therethrough and (2) exterior surfaces for manual engagement by an operator during use so as to prevent manual contact with said hollow metal body when an extremely hot or cold liquid is flowing therethrough.

2. The improvement as defined in claim 1 wherein said parts comprise a pair of separate parts each molded of a high impact thermoplastic material.

3. The improvement as defined in claim 2 wherein said material is high density polyethylene.

4. The improvement as defined in claim 2 wherein said separate parts are of mirror image configuration with respect to one another and include abutting edges and said securing means comprises a plurality of fasteners extending between said pair of separate parts adjacent said abutting edges.

5. The improvement as defined in claim 1 wherein the hand grip portion of said body is formed with a plurality of circumferentially spaced longitudinally extending ribs defining exterior surfaces other than said channel defining exterior surfaces, said parts including interior surfaces other than said channel defining interior surfaces engaging said exterior surfaces of said ribs.

6. The improvement as defined in claim 5 wherein said part include portions surrounding the socket means of said body, said socket surrounding portions including a plurality of circumferentially spaced longitudinally extending ribs on the interior thereof, said

5

6

ribs including surfaces other than said channel defining surfaces engaging the exterior of said socket means.

7. The improvement as defined in claim 6 wherein said barrel portion is formed with a plurality of circumferentially spaced longitudinally extending ribs defining exterior surfaces other than said channel defining exterior surfaces, said parts including interior surfaces other than said channel defining interior surfaces engaging said exterior surfaces of said ribs.

8. The improvement as defined in claim 7 wherein said parts comprise a pair of separate parts each molded of a high impact thermoplastic material.

9. The improvement as defined in claim 8 wherein said material is high density polyethylene.

10. The improvement as defined in claim 9 wherein said separate parts are of mirror image configuration with respect to one another and include abutting edges and said securing means comprises a plurality of fasteners extending between said pair of separate parts adjacent said abutting edges.

11. In a hose nozzle of the type comprising a hollow metal body means including an elongated hand grip

portion having socket means on one end thereof constituting a water inlet for connection with a hose end and an elongated flow control element mounted in said body means for movement into different positions for controlling the flow of water from a water outlet in said body means, the improvement which comprises in combination therewith a plurality of insulating hand grip protector parts disposable with respect to each other in cooperating surrounding relation to the hand grip portion of the nozzle body means, and means for operatively fixedly securing said parts in said surrounding relation to said body means, said parts in said surrounding relation including (1) interior surfaces cooperating with surrounded exterior surfaces of said body means to define a plurality of flow channels open to the atmosphere for the dissipation of heat or cold by flow therethrough and (2) exterior surfaces for manual engagement by an operator during use so as to prevent manual contact with said hollow metal body when an extremely hot or cold liquid is flowing therethrough.

* * * * *

25

30

35

40

45

50

55

60

65