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A. B. MERRILL

2,263,221

NOZZLE FOR FUEL HOSE AND METHOD OF MAKING SAME

Filed March 25, 1939

Fig-2

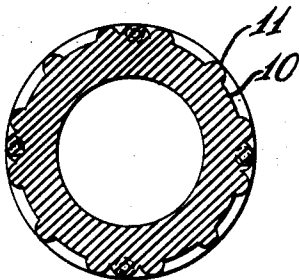


Fig-3

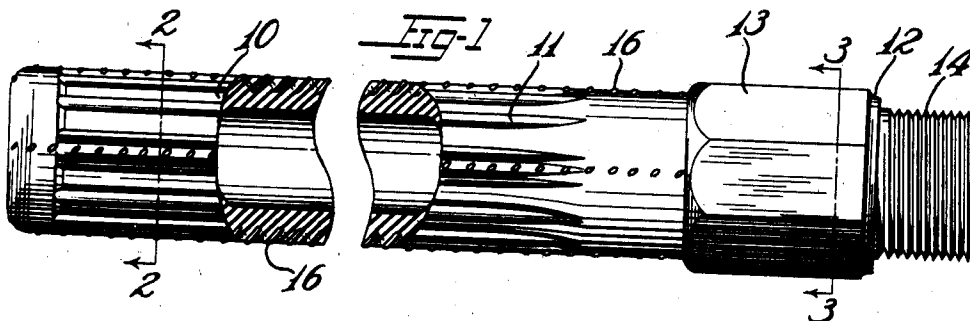
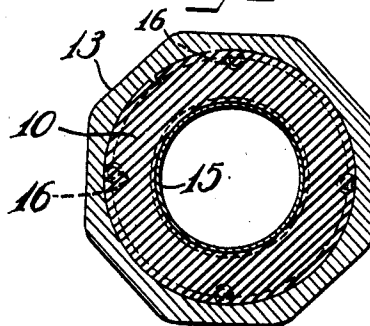
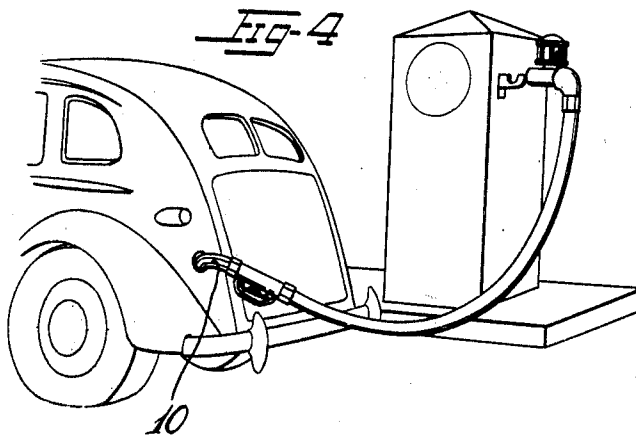


Fig-4



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UNITED STATES PATENT OFFICE

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NOZZLE FOR FUEL HOSE AND METHOD OF
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Application March 25, 1939, Serial No. 264,142

2 Claims. (Cl. 221—84)

This invention relates to nozzles for fuel hose and to the methods of making the same and is especially useful in connection with hose for handling gasoline or other liquid fuel.

The principal objects of the invention are to provide an improved nozzle having flexibility, resistance to solvents, and electrical conductivity, to reduce noise in filling a tank, to eliminate abrasion of finish of the vehicle being filled, to reduce danger of fire and explosion, and to provide economy and convenience of procedure in manufacture.

These and other objects will appear from the following description and the accompanying drawing.

Of the drawing:

Fig. 1 is a side elevation of the nozzle in its preferred form, parts being broken away and parts shown in section.

Fig. 2 is a cross sectional view of the same taken on line 2—2 of Fig. 1.

Fig. 3 is a cross sectional view of the same taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view showing the nozzle in use in filling the tank of an automobile from a gasoline pump.

Referring to the drawing, the numeral 10 designates a tubular flexible nozzle body of rubber-like moldable plastic dielectric material having a high resistance to gasoline and other oils and solvents, such as suitably compounded rubber compositions, polymerized vinyl chloride and mixtures thereof, neoprene compositions, polymerized olefine polysulphide compositions, and oil resistant butadiene polymers such as copolymers of butadiene and acrylic nitrile. The inner surface of the nozzle is preferably smooth so as to afford little resistance to flow of the liquid whereas the outer surface is preferably formed with upstanding longitudinal ribs 11 to provide a more cushioned surface where the nozzle contacts with the filler opening of the tank and to define grooves therebetween through which air may escape as the tank is being filled.

A coupling 12 of metal is secured to the base of the nozzle body and preferably comprises a polygonal outer sleeve 13 which may be engaged by a wrench for manipulating the puzzle, a threaded portion 14 for engaging the coupling of the filling hose, and an inner sleeve 15 expanded within the body to clamp the body to the outer sleeve.

To provide for conducting electrical charges away from the coupling, one or more conductive strips 16 of metal or other electrically conductive material extend along the outer surface of the body from the coupling to contact with the filler opening of the tank being filled and thereby to connect the tank to the coupling electrically. These strips are embedded in the wall of the nozzle and for further anchorage in the com-

position of the body and to promote pliability of the article these strips are preferably in the form of helically coiled wires arranged to extend lengthwise of the body and with portions of their coils at the surface of the body where they are exposed for electrical contact whereas other parts of the coils are looped through the composition of the body, the wire helix being of relatively small diameter so as to be enclosed within the wall of the tubular body.

At the coupling end of the body, the exposed portions of the coils are in contact with the coupling sleeve, being held in contact by the clamping of the body between the sleeve members.

In the preferred form of nozzle, the helically coiled conductors extend along the longitudinal ribs of the body so as to expose a greater area of the coils, the surface of the coils being of substantially the same contour as that of the rib. This relation assists in holding the conductors in proper position during the molding of the body as the coiled conductors may be laid in grooves provided in the mold cavity for forming the body and an extruded blank of composition of tubular form may be assembled therewith in the mold, the material of the blank being forced around and through the coiled conductors during the molding process by heat and pressure applied to the mold so as to embed the conductor in the composition. After the molding operation, the body may be buffed, if necessary, to expose the coils of the conductors. While the method of embedding the coiled conductors in the material of the tubular body is especially useful in the manufacture of such nozzles, it may also be employed for embedding such a conductor in other articles.

Variations may be made without departing from the scope of the invention as it is defined by the following claims.

I claim:

1. A flexible tubular body of rubber-like material, and a helix of continuous electrically conductive wire embedded therein along a surface thereof with portions only of its coils exposed at said surface, said body being formed with a longitudinal rib, and said coils being exposed along the surface of said rib.

2. A flexible hose nozzle comprising a tubular body of rubber-like material having a longitudinal rib on its outer surface, a helical coil of electrically conductive wire embedded in said body within said rib, and an electrically conductive coupling member at the end of said body and in electrical contact with said wire, portions of the coils of said wire being exposed only at the surface of said rib for electrical contact.

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