

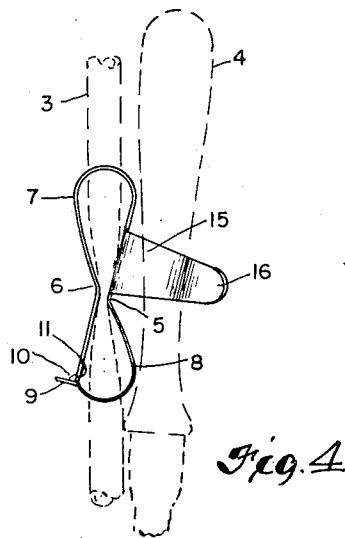
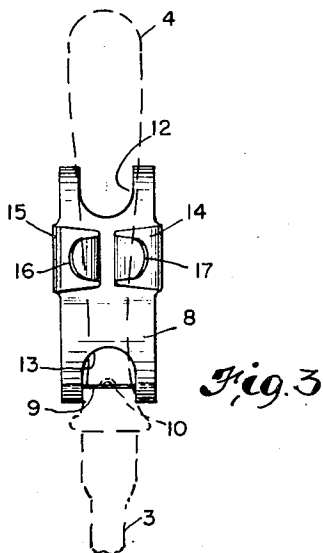
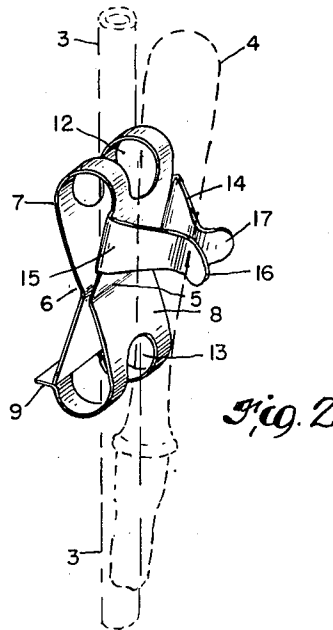
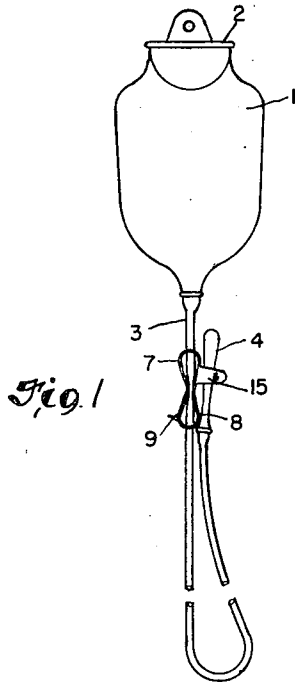
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B. A. VAN HYNING

2,603,237

COMBINED SHUTOFF CLAMP AND NOZZLE HOLDER

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INVENTOR.
BETTY A. VAN HYNING

BY

Oberlin & Limbach
ATTORNEYS

UNITED STATES PATENT OFFICE

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COMBINED SHUTOFF CLAMP AND
NOZZLE HOLDER

Betty A. Van Hyning, Akron, Ohio

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1 Claim. (Cl. 137-744)

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This invention relates to fountain syringes and the like and particularly to a new and improved combined shut-off clamp and nozzle holder therefor.

The usual fountain syringe comprises a bag or container for liquid from the bottom of which a flexible rubber tube leads to a suitable nozzle. In order to stop the flow of liquid through the tube when desired a clamp is provided. Such clamps are usually made with openings at the ends through which the tube passes so that the clamp can be slid lengthwise of the tube and then snapped into clamping relation in any selected position therealong. However, when the tube is clamped so as to prevent the flow of liquid there-through from the container, it quite frequently happens that the tube between the clamp and nozzle is filled with liquid. Since the air cannot enter readily through the nozzle, the liquid entrapped between the nozzle and clamp is apt to drain out rather slowly. Even if the container is emptied and rinsed, a certain amount of liquid or water adheres to the inner wall of the tube and drains down toward and out of the nozzle very gradually. While the clamps heretofore provided are convenient for their purpose, no provision has been made thereon or otherwise for holding the nozzle in such a position as to prevent the drainage of the portion of the tube between the clamp and nozzle nor has any provision been made to hold the nozzle conveniently so that it does not come into contact with the floor or other surface which is apt to soil or contaminate the nozzle.

The principal object of the present invention is to provide a combined clamp and nozzle holder for clamping the tube to stop the flow of liquid from the container and also for holding the nozzle detachably, yet securely, in position to prevent drainage of the tube and accidental contact of the nozzle with any other surface.

Another object is to provide a clamp of this character which is simple in construction and can be formed from a single piece of resilient metal.

Other objects and advantages will become apparent from the following description wherein reference is made to the drawings in which:

Fig. 1 shows a conventional fountain syringe with the combined clamp and nozzle holder in operating position thereon;

Fig. 2 is a perspective view of the clamp and nozzle holder, with the tube and nozzle of the syringe clamped and detachably held respectively in position therein; and

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Figs. 3 and 4 are front and side elevations respectively of the clamp illustrated in Fig. 2, the position of the tube and nozzle relative thereto being shown in dotted lines.

Referring to the drawing, the fountain syringe illustrated comprises a bag 1 which is preferably of rubber, open at the top as indicated at 2, for introducing the liquid to be used and to the bottom of which one end of a tube 3 is connected, a nozzle 4, usually of hard rubber, being connected to the opposite end of the tube.

A preferred embodiment of the clamp comprises a single strip of sheet metal of sufficient resiliency to be self-restoring after deformation. The strip of metal is bent to provide a front body portion 5 connected at one end to one end of a rear body portion 6 by an integral loop portion 7 so that the rear body portion 6 is movable relatively toward the front body portion for clamping the rubber tube 3. At the opposite end of the front member is a portion in the form of a loop 8 which extends rearwardly and at its rear or free end has a central portion which is upwardly deformed, as indicated at 9, to provide a cam surface 10 which slopes upwardly and forwardly and terminates at its forward edge in an abrupt shoulder 11. The rear or back portion 6 of the clamp is arranged so that when pressed toward the front portion its lower or free end rides up the cam surface 10 and drops behind the shoulder 11 for locking the portions in clamping relation.

The clamp is provided at its ends with openings 12 and 13 which preferably are in the looped portions 7 and 8 and are of such size as to accommodate the tube 3 endwise between the front portion 5 and rear portion 6 so that the clamp, when released, can be slid along the tube and clamped by pressing the rear portion toward the front portion as described. The clamping pressure exerted pinches the tube sufficiently to prevent the flow of liquid therethrough.

The front portion 5 of the clamp is provided with a pair of forwardly projecting arms 14 and 15 which are preferably integral therewith and extend from the lateral margins thereof in converging relation forwardly part way of the length of the arms. The forward or free ends of the arms, indicated at 16 and 17, respectively, are divergent. Thus the arms define a socket, the axis of which is generally parallel to the length of the clamp and into which an entrance is provided by the forwardly flaring free ends 16 and 17 of the arms. The arms 14 and 15 are sufficiently resilient so that, upon pressing the nozzle

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4 between the flaring free ends 16 and 17 while it is held with its axis generally parallel to the length of the clamp, the arms 14 and 15 are cammed and permit movement of the nozzle into the socket between the arms. Thereupon the arms resiliently engage the nozzle sufficiently tightly to hold it in place.

The frictional engagement of the clamp and tube is sufficient without clamping engagement to retain the clamp in place thereon, even when it is supporting the nozzle and a portion of the tube hanging therefrom.

Thus the nozzle can readily be held in position to prevent drainage of the tube and to prevent its contact with any surface which is likely to contaminate it regardless of the position of the clamp on the tube.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in the following claim or the equivalent of such be employed.

I, therefore, particularly point out and distinctly claim as my invention:

A combined clamp and holder for a rubber tube having a nozzle thereon and comprising a single strip of resilient metal having a front body portion and a rear body portion, an integral loop connecting the portions at one end for resilient movement toward each other into clamping position, an integral loop at the other end of the front portion and extending rearwardly there-

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from such rearwardly extending loop terminating in a free end having a central portion thereof of upwardly formed providing a cam surface which surface terminates in an abrupt shoulder at its forward edge, said loops having openings therein respectively for affording passage of a tube lengthwise between the front and rear portions, a pair of resilient arms connected to the lateral margins of one of said portions and extending abruptly from the plane thereof and initially converging relatively to each other away from said plane partway of their length and diverging relatively to each other for the remainder of their length.

BETTY A. VAN HYNING.

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