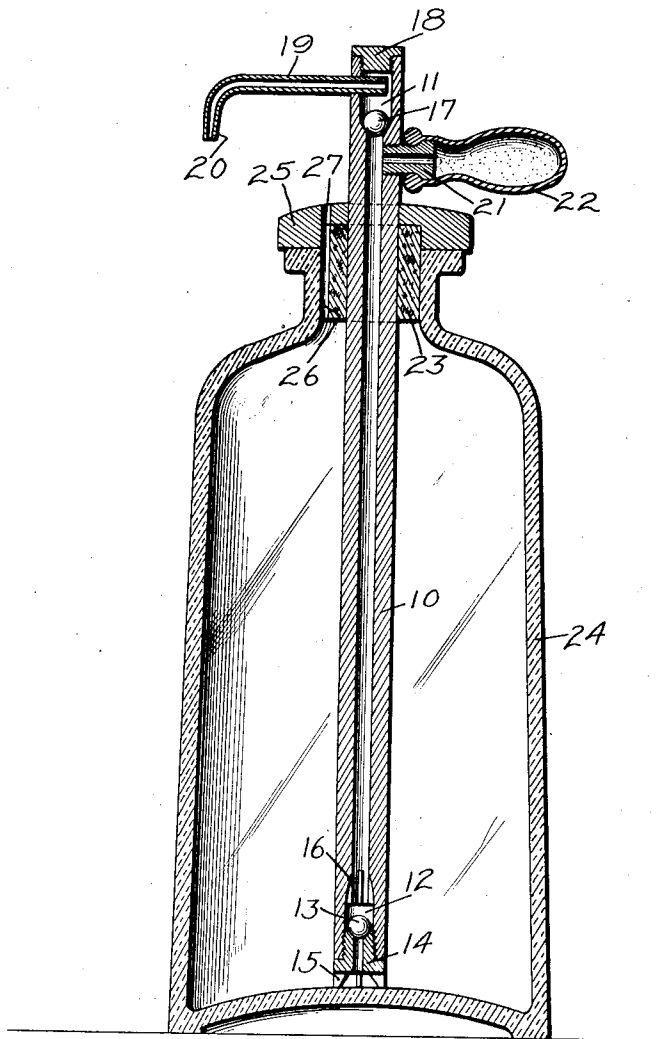


A. T. CROSS.
FOUNTAIN PEN FILLING DEVICE.
APPLICATION FILED APR. 11, 1919.

1,348,211.

Patented Aug. 3, 1920.



WITNESS
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ALONZO TOWNSEND CROSS, OF PROVIDENCE, RHODE ISLAND.

FOUNTAIN-PEN-FILLING DEVICE.

1,348,211.

Specification of Letters Patent.

Patented Aug. 3, 1920.

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To all whom it may concern:

Be it known that I, ALONZO T. CROSS, a citizen of the United States, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Fountain-Pen-Filling Devices, of which the following is a specification.

My present invention relates generally to fluid dispensing apparatus, and more particularly to a simple form of hand controlled dispensing arrangement to be applied to bottles, and while my invention is capable of more or less general application, is especially designed for the filling of fountain pens other than what are at present known as self fillers, the object of my arrangement being the provision of a simple device for dispensing ink from bottles, whose structure is such that it may be readily inserted in and removed from the applied position, with but a single movement, as well as one which will be sufficiently rigid in use to permit of its manipulation with but one hand, while the other hand holds the fountain pen or other device to be filled.

With the above in mind, my invention resides in the details of construction, arrangement and operation to be now described with respect to the accompanying drawing, forming a part of this specification, and wherein:

The figure is a vertical longitudinal section of my invention, illustrating its practical application.

Referring now to this figure, my invention proposes a liquid dispensing device which includes an elongated rigid dispensing tube 10 having counter bores 11 and 12 at its relatively opposite ends. The counter bore 12 receives a ball 13 which, in cooperation with the apertured plug 14, threaded within this end of the tube, forms an intake opening, the plug having lower extensions 15 which support the respective end of the tube 10 away from contact with the adjacent parts so as to provide for the free inflow of fluid through the opening of the plug 14 and into the tube 10. Between its counter bore 12 and its main bore, the tube 10 has a series of internal ribs 16, against which the ball 13 moves in its inward travel to prevent obstructing the inflow of fluid.

Within the counter bore 11 at the upper opposite end of the dispensing tube 10, is a ball 17 which is arranged to seat in the lower portion of the counter bore, and within the upper end of the main bore of the dispensing tube, to form an outlet valve, the extreme upper end of the tube, and consequently the upper end of the counter bore 11, being closed by an imperforate plug 18.

Adjacent the last mentioned end of the tube 10, a filling spout 19 extends laterally from the counter bore 11 provided with a downturned extremity 20 which may be projected partly within the barrel of a fountain pen so as to effectively guide the stream of fluid into the pen as desired.

The tube 10 is similarly provided with a laterally projecting nipple 21 communicating with its main bore between the inlet and outlet valves above mentioned, and serving as a support and a rigid connection for a flexible compressible bulb 22, each pressure upon which serves to expel from the tube 10, through the outlet valve 17, liquid which has previously been drawn into the tube through the inlet valve when the bulb is allowed to expand.

Around the tube 10 is slidably mounted a plug 23 for the purpose of closing the mouth of a bottle, such as for instance the bottle 24, within which the dispensing arrangement may be utilized.

In connection with this plug 23, which is slidable along the tube 10 so as to compensate for bottles of different heights, is a cap 25 which partly receives the plug 23 and which in practice overlies the shoulder around the upper mouth of a bottle so as not only to protect the bottle but the plug 23 as well, the latter being in most instances formed of a more or less perishable material in the nature of cork. It will also be noted that the plug 23 has an opening 26 at one side through which atmospheric pressure is constantly supplied to the interior of the bottle 24 in connection with which the dispenser is utilized, by virtue of a vent opening 27 through the cap 25. These openings 26 and 27 are alined with one another when the device is in use, but when in dis-use and in order to prevent oxidation of the contents of the bottle, the cap 25 may be rotated, it being freely movable on the tube 10 with the plug 23, so as to shift its vent opening 27

out of registration with the opening 26 of the plug and thus result in complete closing of the bottle 24.

It is obvious that my invention and the construction thus clearly explained and pointed out, is capable of ready insertion in and removal from its connection with the bottle as shown, is equally as ready of adjustment to bottles of different types, and may be applied in and removed from operative position, as well as manipulated in use, with but one hand, leaving the other hand entirely free for holding and manipulating the pen to be filled.

15 I claim:—

1. A fluid dispenser for bottles consisting of a dispensing tube having intake and outlet valves and provided with a discharge spout, a hand compressible bulb connected with said tube and in communication with its bore between said valves, a bottle closing plug around and shiftable along said tube, and a cap around the tube and rotatable on the plug, said cap and said plug having openings parallel to the axis of the tube and movable into and out of registry with one another by virtue of rotation of the cap.

2. A fluid dispenser for bottles, consisting

of a dispensing tube having a main bore and counter bores in its opposite ends, balls in said counter bores, forming intake and outlet valves, a dispensing spout leading from the counter bore of the outlet valve, a laterally projecting nipple carried by the tube adjacent one end, a compressible bulb supported by said nipple, and a bottle engaging plug mounted around and slidable on said tube, as described.

3. A fluid dispenser for bottles, comprising a straight rigid tube having a main bore and counter bores at opposite ends in communication with the main bore, balls seated in the counter bores and forming intake and outlet valves, a rigid discharge spout leading from the counter bore of the outlet valve, a plug surrounding the tube and slidable therealong, a cap also surrounding the tube and slidable therealong and rotatable with respect to the said plug, said plug and said cap having vent openings movable into and out of registry with one another, a nipple extending laterally from the tube between its inlet and outlet valves, and a compressible bulb secured to and carried by the said nipple, as described.

ALONZO TOWNSEND CROSS.