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V. DUNHILL
 DEVICE FOR FILLING MECHANICAL FLINT
 LIGHTERS AND FOR SIMILAR PURPOSES
 Filed Oct. 31, 1927

1,728,154

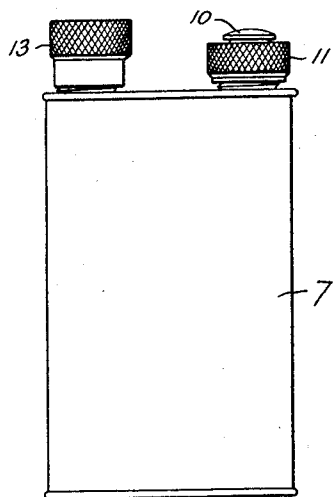


FIG. 1.

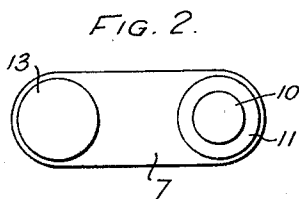


FIG. 2.

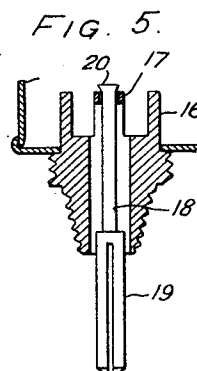


FIG. 5.

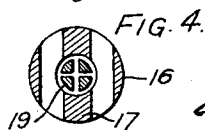
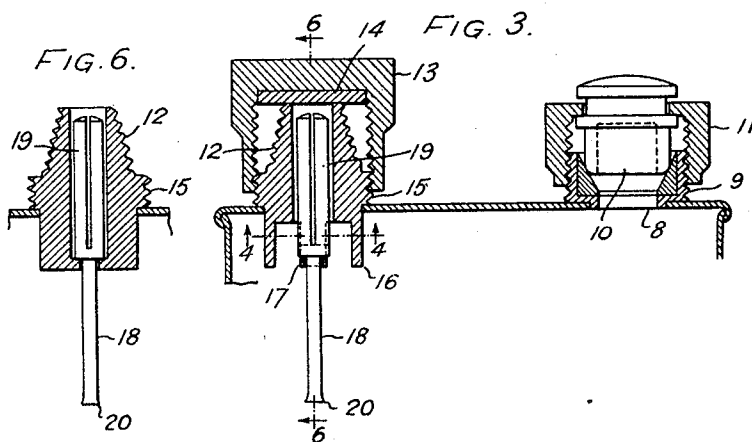


FIG. 4.

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DEVICE FOR FILLING MECHANICAL FLINT LIGHTERS AND FOR SIMILAR PURPOSES.

Application filed October 31, 1927, Serial No. 230,039, and in Great Britain November 19, 1926.

This invention relates to an improved device for filling mechanical flint lighters and for similar purposes. Flint lighters usually comprise a reservoir containing a wick soaked in an inflammable substance such as petrol or benzene, the reservoir having a filling opening closed by a screwed plug or the like.

Filling devices for use with flint lighters in which the action of the device depends on the capillary action of the wick within the reservoir of the lighter are already known.

The present invention has for its object to provide a filling device, the action of which is not dependent on the capillary action of the wick within the reservoir, so that it may also be used for example for filling articles without a wick.

According to the invention a container is provided having a delivery nozzle fitted with a member slidably mounted therein which, when the container is tilted or inverted, projects through the nozzle outlet and so assists the capillary flow of the contents towards the outer end of the member and at the same time allows air to pass into the container between the internal sides of the nozzle and the member causing a continuous delivery of the liquid.

It will be understood that, with the exception of the nozzle opening, the container is airtight.

The slidable member may consist of an open-ended tube of smaller diameter than the nozzle and of which the end which projects through the nozzle when the container is tilted is preferably slit or provided with a series of slits. It has been found that a tube without a slit end will operate successfully. The projecting movement of the tube when the container is tilted is limited by a suitable stop preferably so arranged that, when the tube is projected to its limit, the ends of the slit or slits therein extend to a point just within the nozzle.

With such an arrangement, when the container is tilted the tube projects through the nozzle and the slit or slits in the end of the tube assist the capillary flow of the con-

tents towards the end of the tube, and at the same time air is permitted to enter between the tube and the interior of the nozzle, causing a continuous delivery of the liquid. The projecting end of the tube may obviously be introduced into the reservoir of a lighter or other article to fill same. When the container is tilted back to its upright position the tube returns within the nozzle and the latter may be screw-threaded and closed with a suitable cap or plug. The tube may be replaced by a rod having a slit end or threads or grooves therein or by a coiled spring.

To enable the invention to be fully understood it will now be described by reference to the accompanying drawing in which:—

Fig. 1 is an elevation of a container having a delivery nozzle constructed according to one form of the invention, and

Fig. 2 is a plan view thereof.

Fig. 3 is a sectional elevation of the upper portion of the container drawn to a larger scale.

Fig. 4 is a sectional underside plan view on the line 4—4, Fig. 3.

Fig. 5 is a sectional view of the nozzle in the inverted filling position, and

Fig. 6 is a sectional view of the nozzle, with the cap removed, when not in use, the section being taken on line 6—6, Fig. 3.

The device comprises a container 7, preferably of metal, having a filling opening 8 (Fig. 3) in which is mounted an externally screw-threaded collar 9, the interior of which is shaped as a seat for a closure plug 10 normally held pressed tightly against the seat by a flanged internally screw-threaded collar 11. A tapered externally screw-threaded nozzle 12 is secured to the container, as by brazing or soldering, and is adapted to be closed by an internally screw-threaded cap 13 having a sealing washer 14, the cap engaging the screw threads at the base of the nozzle. The nozzle has a portion 16 depending into the container and forming a spider 17 which acts as a guide for a rod 18 slidably mounted therein, the access of the contents of the con-

tainer to the nozzle not being interfered with. The outer end of the rod 18 carries, or is formed with, a portion 19 of larger diameter which is slit longitudinally as best shown in Fig. 4. The inner end of the rod 18 is formed with a stop 20 so that, when the container is inverted and the nozzle cap removed, the portion 19 will project beyond the nozzle with the ends of the slits just within the nozzle (Fig. 5).

The above described device is used as follows:—

The nozzle cap 13 is removed and the tapered screw-threaded end of the nozzle is inserted into the filling opening of a lighter or other article and the two articles are then inverted. This causes the portion 19 of the rod to project beyond the nozzle as shown in Fig. 5 and the slits in said portion assist the capillary flow of the contents towards the end of such portion and at the same time air is permitted to enter between the portion 19 and the interior of the nozzle causing a continuous delivery of the liquid. When the container is tilted back to its upright position the portion 19 of the rod returns within the nozzle and the latter is then closed by the cap 13. The portion 19 of the rod may be replaced by a coiled spring, or by a solid rod having threads or grooves therein or by a tube without a slit end. In the latter case the tube is preferably of slightly larger diameter than the portion 19 of the rod 18 illustrated, but must, of course, allow sufficient clearance between it and the sides of the nozzle for the entry of air into the container. The tube may have a slit end if desired.

It will be obvious that the invention may be used for delivering liquids for various purposes, for example, a closed perfume container may be fitted with a nozzle according to the invention so that perfume can be delivered by tilting or inverting the container.

The nozzle need not be screw-threaded and may be covered by any suitable type of cap or plug.

Having thus described the nature of my said invention and the best means I know of carrying the same into practical effect, I claim:—

1. A device for filling receptacles comprising a container, a longitudinally bored externally-screw-threaded tapered delivery nozzle on said container for insertion into the filling opening of a receptacle, said nozzle having a portion depending into said container and a centrally apertured partition at the lower end of said depending portion, and a rod-like member of smaller cross section than and normally positioned wholly within the longitudinal bore of said nozzle, said rod-like member having a rear

extension of smaller cross section than the aperture of said partition, and said rear extension having means to engage said partition when the container is tilted and prevent the rod-like member from being entirely withdrawn from the nozzle.

2. A device of the character described, comprising a container, a delivery nozzle on said container for insertion into the filling opening of a reservoir, a rod-like member freely slidable in said nozzle and normally positioned wholly within the latter, said rod-like member having a groove to permit the flow of liquid from said container when the container is tilted.

3. A device of the character described, comprising a container, an externally-threaded tapered delivery nozzle on said container for insertion into and connection with the filling aperture of a receptacle, means for sealing said delivery nozzle, a rod-like member in said nozzle and having a longitudinally grooved portion freely slidable beyond the outlet end of the nozzle when said container is tilted, said grooved portion being normally housed within said nozzle, and means for preventing the rod-like member from being wholly withdrawn from the nozzle.

In testimony whereof I have signed my name to this specification.

VERNON DUNHILL.