

PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION.

Improved Device for Filling Mechanical Flint Lighters and for similar purposes.

We, ALFRED DUNHILL, LIMITED, a British company, and VERNON DUNHILL, a British subject, both of 137—143, High Street, Notting Hill Gate, London, W. 11, do hereby declare the nature of this invention to be as follows:—

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.

In a co-pending application for British Letters Patent No. 28,425 (Serial No. 275,835) dated 11th November, 1926 a filling device for use with flint lighters has been described, the action of the device depending on the capillary action of the wick within the reservoir of the lighter.

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 or the like provided with means for ensuring a flow of liquid through the nozzle when the container is tilted or inverted. It will be understood that with the exception of the nozzle opening the container is airtight.

For ensuring a flow of liquid through the nozzle an open ended tube may be slidably mounted within the container so that when the latter is tilted the tube projects through the nozzle. This tube is

of considerably smaller diameter than the nozzle and the end which projects through the nozzle is preferably slit or provided with a series of slits. 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 contents towards the end of the tube, and at the same time the flow allows air to enter between the tube and the internal sides 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 slit tube above described may be replaced by a coiled spring or by a solid rod having grooves, slits or threads in its projecting end.

It has also been found that a tube without a slit end will operate successfully provided it is of a sufficient diameter. Such a tube is of larger diameter than the slit tube referred to above, 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 or other means may be mounted and guided in the container in any suitable manner and may extend the

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full length of the container or not. The container is preferably of metal and may also be provided with a filling opening closed by a screwed plug or other airtight stopper.

The invention may be applied to the container described in the aforesaid specification, for example, and it will be

obvious that it may be used for delivering liquids for various purposes.

Dated the 19th day of November, 1926.

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Agents for the Applicants.

COMPLETE SPECIFICATION.

Improved Device for Filling Mechanical Flint Lighters and for similar purposes.

We, ALFRED DUNHILL, LIMITED, a British company, and VERNON DUNHILL, a British subject, both of 137—143, High Street, Notting Hill Gate, London, W. 11, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

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 are already known in which the action of the device depends on the capillary action of the wick within the reservoir of the lighter.

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, the end which projects through the nozzle when the container is tilted being 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 contents towards the end of the tube, and at the same time the flow allows air to enter between the tube and the internal sides 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.

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The device comprises a container 7, preferably of metal, having a filling opening 8 (Fig. 3), surrounded by a screwed 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 screw collar 11 as shewn. A tapered nozzle 12, screw-threaded as shewn is secured to the container as by brazing or soldering for example, and is adapted to be closed by a screwed cap 13 having a sealing washer 14, the cap engaging the lower threads 15 at the base of the nozzle. The base of the nozzle is formed with a depending portion 16 which is cut as shewn to form a spider 17 which acts as a guide for a rod 18 slidably mounted therein, the access of the contents of the container 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 shewn 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 rod 19 will project through 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 is removed and the screwed end of the nozzle is inserted into the filling opening of a lighter or other article and the two articles inverted. This causes the rod 19 to project as shewn in Fig. 5 and the slits in the rod assist the capillary flow of the contents towards the end of the rod and at the same time the flow allows air to enter between the rod and the internal sides of the nozzle causing a continuous delivery of the liquid. When the container is tilted back to its upright position the rod 19 returns within the nozzle and the latter is then closed by the cap 13. The slit rod 19 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 rod 19 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 now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A device for filling mechanical flint lighters and for similar purposes comprising a container provided with a delivery nozzle having 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.

2. A device according to Claim 1, wherein the slidable member consists of a slit tube or a solid rod having grooves, slits or threads in its projecting end, or a coiled spring substantially as described.

3. A device according to Claim 1, wherein the slidable member consists of a plain tube substantially as described.

4. A device according to any of the preceding claims wherein the nozzle is formed with a depending portion projecting into the container, said portion being cut to form a spider in which the slidable member of the nozzle is mounted without interfering with the access of the contents of the container to the nozzle, substantially as described.

5. A device according to any of the preceding claims wherein the container is provided with a nozzle which is externally threaded and preferably tapered and adapted to be closed by a screw cap, a filling opening also being provided and normally closed by a plug held against a seating by a screwed ring, substantially as described.

6. Devices for filling mechanical flint lighters and for similar purposes, constructed substantially as hereinbefore described with reference to the accompanying drawing.

Dated the 31st day of March, 1927.

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[This Drawing is a reproduction of the Original on a reduced scale.]

