

No. 772,707.

PATENTED OCT. 18, 1904.

M. ELFSTRAND.
DROP STOPPER FOR BOTTLES OR THE LIKE.

APPLICATION FILED JULY 10, 1902.

NO MODEL.

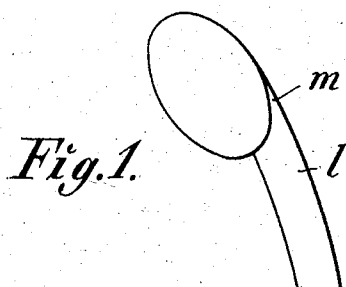


Fig. 2.

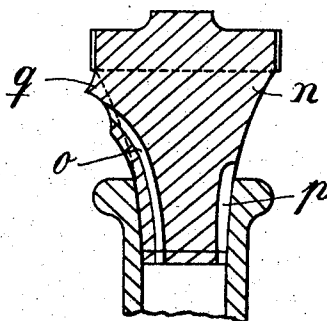


Fig. 3.



Fig. 6.



Fig. 4.



Fig. 5.



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DROP-STOPPER FOR BOTTLES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 772,707, dated October 18, 1904.

Application filed July 10, 1902. Serial No. 115,075. (No model.)

To all whom it may concern:

Be it known that I, MÅRTEN ELFSTRAND, a subject of the King of Sweden and Norway, and a resident of Upsala, Sweden, have invented new and useful Improvements in Drop-Stoppers for Bottles or the Like, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof.

The present invention relates to improvements in drop-pipes or drop-channels for drop-bottles and the like.

Drop-pipes or drop-channels heretofore known suffer from the disadvantage that the liquid is partly wasted each time the drop-bottle is used, inasmuch as the drop that hangs in the mouth of the drop-pipe or drop-channel will flow down outside the drop-pipe or the drop-bottle when the latter is brought back from horizontal or inclined into vertical position. In distributing expensive liquids, such as oil of roses and the like, the said wasting of liquid will cause comparatively large economical losses, and the distributing of corrosive liquid or the like will cause other inconveniences. In order to overcome the said disadvantages, I make the outer mouth of the drop-pipe or drop-channel of such shape that the drop that hangs in the said mouth will flow back into the drop-bottle when the latter is brought back into vertical position.

The invention consists principally in providing at the upper side of the outer mouth of the drop-pipe or drop-channel a tongue-shaped extension to which the liquid will adhere in such manner that it will flow back into the drop-bottle when the latter is brought into its usual upright position, no liquid being thus wasted. By the term the "upper side" is in this specification meant the side of the mouth which will be up when the liquid is poured out.

In the accompanying drawings I have shown some constructional forms of my invention.

Figure 1 shows in side elevation a drop-pipe constructed in accordance with my pres-

ent invention. Fig. 2 shows a vertical section of a drop-stopper inserted in a neck of a bottle and having a drop-channel according to the present invention. Figs. 3 to 6 show each a constructional form of my improved drop-pipe.

Referring to Fig. 1, the drop-pipe *l* is provided on the upper side of its drop-mouth with a tongue-shaped extension *m*, the length of which is greater than the diameter of the pipe. The said extension may preferably be obtained by giving the outer end of the said drop-pipe seen from the side the form of a quadrant of an ellipse, as plainly illustrated in Fig. 1. If the said drop-pipe be arranged in any suitable manner in the stopper of a drop-bottle containing a liquid and the latter be brought into inclined or horizontal position, the liquid will flow out drop by drop through the drop-pipe *l*. When the bottle is thereupon brought into vertical position, the drop that hangs in the mouth of the drop-pipe *l* will on account of adhesion to the tongue-shaped extension *m* be prevented from flowing down on the outside of the drop-pipe *l* and will by gravity be drawn back into the bottle.

Though I prefer to give the drop-mouth the form of a quadrant of an ellipse, as illustrated in Fig. 1, as being most suitable, the same may have other shapes—for instance, such as illustrated in either of the Figs. 3 to 6.

My invention may also be applied to drop-channels, as shown in Fig. 2, a stopper *n*, of glass or other suitable material, being provided with a drop-channel *o* and an air-channel *p*. The outer mouth of the said drop-channel is of the same shape as the drop-mouth of the drop-pipe illustrated in Fig. 1. The simplest manner in which the said shape may be given to the outer mouth of the channel *o* is to provide the stopper *n* with a lateral projection *q*, in which the said channel *o* ends and which is cut off in the manner above described.

Having now described my invention and in

what manner the same may be performed, what I claim as new, and desire to secure by Letters Patent, is—

5 A drop-pipe whose upper wall at the outer mouth is provided with a tongue-shaped extension, the length of which is greater than the diameter of the pipe, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 10

MÅRTEN ELFSTRAND.

Witnesses:

EVALD DELMAR,
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