(No Model.)

W. H. UNDERWOOD.

SPREADING TIP FOR LIQUID RECEPTACLES.

No. 421,362. Patented Feb. 11, 1890.

Fig. 1.

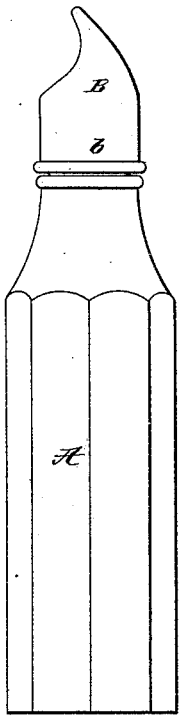


Fig. 2.

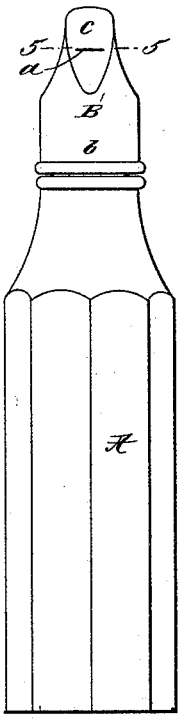


Fig. 6.

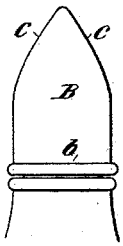


Fig. 7.

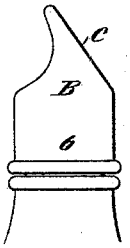


Fig. 5.

Fig. 3.

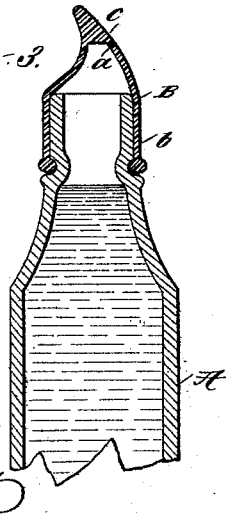
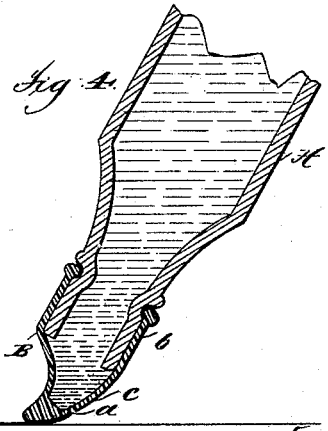


Fig. 4.



Attest.
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UNITED STATES PATENT OFFICE.

WALTER H. UNDERWOOD, OF YONKERS, NEW YORK, ASSIGNOR OF ONE-HALF TO NORTON P. OTIS, OF SAME PLACE.

SPREADING-TIP FOR LIQUID-RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 421,362, dated February 11, 1890.

Application filed July 30, 1889. Serial No. 319,201. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. UNDERWOOD, a citizen of the United States, residing at Yonkers, county of Westchester, and State of New York, have invented certain new and useful Improvements in Spreading-Tips for Liquid-Receptacles, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to a flexible spreading-tip which is designed for use upon those bottles and other receptacles which are designed to contain mucilage and other liquids.

The tip embodying the present invention is of the same general construction as that described in United States Letters Patent Nos. 378,742 and 378,743, heretofore granted me, the present invention being designed to effect an improvement upon the construction shown in said Letters Patent.

In the construction shown in the Letters Patent referred to the tip is so formed that when in its normal condition the side or sides which constitute the spreading surface or surfaces for applying the liquid are slightly concave lengthwise of the tip. From this it resulted that after the tip had been used to apply mucilage to a surface and had been allowed to resume its normal condition, so as to close the slit, it was extremely difficult, owing to the concave shape of the spreading-surface, to wipe the spreading-surface so as to remove all of the mucilage therefrom by rubbing it gently over the surface to which the mucilage was being applied. As a consequence of this a small amount of mucilage was liable to remain and harden upon the concave spreading-surface after each use.

It is the object of the present invention to avoid this objectionable feature and to provide an improved tip so formed that when in its normal condition the spreading-surface will be of such contour that all parts of it can readily be brought into contact with a plane surface without bending the tip, thereby rendering it easy to wipe the spreading-surface so as to remove all of the mucilage therefrom by passing it over the surface to which the mucilage is being applied after the tip has been allowed to resume its normal position, so as to close the slit and prevent the further escape of the mucilage.

With this object in view my invention consists of a flexible elastic tip formed as hereinafter described and claimed.

In order to convey a full understanding of the invention, it will now be described more in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a mucilage-bottle provided with a tip constructed according to the preferred form of the present invention. Fig. 2 is a similar view looking from the right of Fig. 1. Fig. 3 is a vertical section of the tip, showing it in its normal condition. Fig. 4 is a similar view showing the tip in use. Fig. 5 is a cross-section taken on the line 5 of Fig. 2. Figs. 6 and 7 illustrate other embodiments of the invention, which will be hereinafter referred to.

Referring to said figures, it is to be understood that A represents a mucilage bottle or receptacle of any appropriate form, and B the flexible elastic spreading-tip with which the bottle is provided. The tip B is made of rubber, its base portion *b* being adapted to be sprung over the neck of the bottle. The tip is flattened upon one side, as indicated at *c*, to form a surface for spreading and distributing the mucilage which is discharged from the bottle through a slit *a* formed in the said flattened portion crosswise of the tip, and so arranged that when the tip is bent, as will be the case when its extreme end is pressed against the surface which is to receive the coating of mucilage, as indicated in Fig. 4, it will be caused to gap by reason of the strain exerted transversely of the slit.

In the construction shown in my former patents the spreading-surface *c* is, as before stated, slightly concave lengthwise of the tip, and as a result more or less mucilage is liable to accumulate and dry upon the spreading-surface, as before explained. To obviate this difficulty, the tip is in the present case so constructed that when in its normal condition, as indicated in Figs. 1, 2, 3, 6, and 7, the spreading-surface *c* is of such contour that all parts of it can be readily brought into contact with a plane surface, and as a result any mucilage remaining upon the spreading-

surface when the tip is allowed to resume its normal condition to close the slit *a* can be readily removed by wiping said tip over the surface to which the mucilage is being applied without, however, exerting pressure upon the tip to bend it and open the slit. The contour of the spreading-surface to secure this result may be perfectly flat or plane, as shown in Fig. 7. When the spreading-surface is of this form, all parts of it can readily be brought into contact with a plane surface, and it can consequently be wiped clean. The spreading-surface will, however, preferably be convex transversely of the slit or lengthwise of the tip, as shown in Figs. 1 to 6, as this form permits it to be more readily wiped. The spreading-surface will also, preferably, be slightly convex crosswise of the tip, as shown in Fig. 5. This will also facilitate the wiping, and the pressure upon the surface during the wiping will tend to press the lips of the slit more tightly together.

The tip may be provided with only one spreading-surface and slit, as shown in Figs. 1 to 5, and in this case the opposite side of the tip will preferably be concave transversely to the slit, as shown, as this form facilitates the opening of the slit by pressure upon the extreme point of the tip. In some cases it will be desirable to provide the tip with two spreading-surfaces *c*, and in such case it may be made of the form shown in Fig. 6.

The tip has been herein referred to as being applied to mucilage bottles or receptacles; but it is to be understood that its use is not limited to mucilage.

My invention is not to be limited to a tip provided with a spreading-surface having a slit; but covers also a tip having one side made concave lengthwise of the tip and having on its opposite side a spreading-surface of the form described, whether the spreading-surface be provided with a slit or formed of a solid wall. It is also to be understood that, as described in my prior patent, No. 378,743 above referred to, the tip constituting the present invention may either be provided with a slit, as manufactured and sold, or when about to be used, and it is evident also that the index-mark of said patent is equally applicable to the improved form of tip.

What I claim is—

1. A flexible elastic tip for liquid-receptacles, provided on one side with a spreading-surface, all parts of which can be brought into contact with a plane surface without bending the tip, and a slit located in said spreading-surface, and having its opposite side made concave transversely to the slit, substantially as described.

2. A flexible elastic tip for liquid-receptacles, having a spreading-surface provided with a slit, the spreading-surface being made convex transversely to the slit, substantially as described.

3. A flexible elastic tip for liquid-receptacles, having a spreading-surface made convex lengthwise of the tip, and a slit located in said spreading-surface and extending crosswise of the tip, substantially as described.

4. A flexible elastic tip for liquid-receptacles, having a spreading-surface made convex lengthwise and crosswise of the tip, and having a slit located in said spreading-surface, substantially as described.

5. A flexible elastic tip for liquid-receptacles, provided on one side with a spreading-surface having a slit therein, said spreading-surface being made convex transversely to the slit, and the opposite side of the tip being made concave transversely to the slit, substantially as described.

6. A flexible elastic tip for liquid-receptacles, having one of its sides made concave lengthwise of the tip, and provided at the opposite side with a spreading-surface, all parts of which can be brought into contact with a plane surface without bending the tip, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WALTER H. UNDERWOOD.

Witnesses:
J. J. KENNEDY,
G. M. BORST.