

(No Model.)

W. H. UNDERWOOD.
TIP FOR MUCILAGE BOTTLES.

No. 421,363.

Patented Feb. 11, 1890.

Fig. 1.

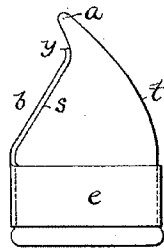


Fig. 2.

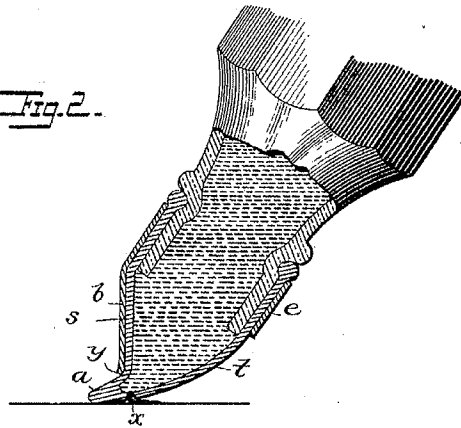


Fig. 4.

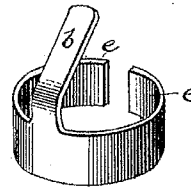


Fig. 3.

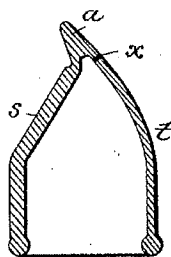


Fig. 5.

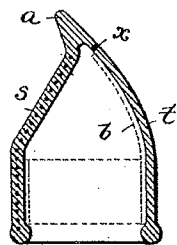
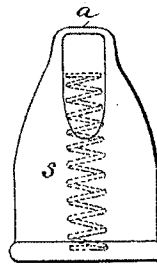


Fig. 6.



Witnesses
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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.

TIP FOR MUCILAGE-BOTTLES.

SPECIFICATION forming part of Letters Patent No. 421,363, dated February 11, 1890.

Application filed January 6, 1890. Serial No. 335,972. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. UNDERWOOD, a citizen of the United States, residing in the city of Yonkers, county of Westchester, and State of New York, have invented certain new and useful Improvements in Tips for Mucilage-Bottles, of which the following is a specification.

My invention relates to that class of tips generally used in connection with mucilage-bottles and having spreading faces and slits which are opened by bending the ends of the tips; and my invention consists in constructing such tips, as fully set forth hereinafter, so as to insure the opening of the slits upon application of pressure to deflect the terminal portions of the tips, as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is an external view of a mucilage-tip embodying my invention. Fig. 2 is a sectional view illustrating the same applied to a bottle and in use for spreading mucilage. Fig. 3 is a sectional view illustrating a modification. Fig. 4 is a perspective view showing one form of brace. Fig. 5 is a sectional view showing another form of brace. Fig. 6 is a side view of Fig. 5.

Self-sealing nozzles or tips for mucilage and other bottles have heretofore been made in the form of hollow rubber caps with slits and terminal spreading portions projecting beyond the slits, the object being to open the slit of a tip applied to a bottle by pressure upon the terminal portion, so as to deflect the same.

As heretofore made, it has been necessary to carefully proportion the various parts of the tip to insure the opening of the slit under pressure when the fluid has to be emitted, and yet insure the closing together of the lips of the slit when pressure is removed. This has been necessary, because any irregularities or accidental diminution of the thickness of the body of the tip or failure to proportion the parts properly may cause the tip to bend at other points than where necessary to open the slit, preventing the latter from opening properly, especially if the face should happen to be coated with the hardened mucilage. To avoid the expense and labor incident to such

care in the manufacture as is necessary to prevent the above-described result, and to insure positively the free opening of the slit upon application of pressure to the terminal spreader, whether there be a coating upon the surface or not, I provide the tip with a brace or support, which will prevent the yielding or bending of the tip, except at the point opposite the slit, as is necessary to open the slit.

The tip may be in any of the various forms heretofore made. As shown, it has a cylindrical base adapted to receive the end of the bottle and a conical body extending to the terminal flat spreader portion *a*, which is at an angle to the body, as shown, with a transverse slit *x* in the face of the spreader portion of the slit. The side of the tip opposite to that in which the slit *x* is made is braced or strengthened so as to impart increased rigidity from the base to a point nearly opposite the said slit, so that when pressure is applied to the spreading end *a* the latter will tend to bend at the point *y*, where the brace terminates, thereby distending the opposite side of the tip and drawing the lips of the slit apart, so as to permit a free discharge of the contents of the bottle. This strengthening or bracing of the tip may be effected in various ways. As shown in Figs. 1, 2, and 4 the brace is in the form of a plate *b*, extending along the side *s* of the tip opposite the slit side *t* and to the point *y*. This plate may be of metal, hard rubber, or other material, and may be cemented to or embedded in the tip; or, as shown, it may be provided with clamps *c* for embracing the base of the tip.

In the construction shown in Fig. 3 the brace is formed by thickening the side *s* of the tip, and in the construction shown in Figs. 5 and 6 it is formed by embedding in the side *s* a bent wire, as shown.

In dotted lines, Fig. 5, the brace is shown in position inside of the hollow tip, in which case it preferably bears against the slitted side of the tip, its point extending to or nearly to the point where the slit is situated. It will be understood, while I have referred to the tips as perforated, they are marked or partially indented in the first case and sold

in an imperforate state, in order to prevent the escape of the material, and are completely cut through when they are to be used.

In Letters Patent No. 378,742, issued to me February 28, 1888, I have shown a tip thickened at the sides to impart increased rigidity at such parts adjacent to the slit or slits; but this stiffening of the sides interferes in a measure with the flexibility or bending of the outer or spreading end beyond the body portion of the tip—that is, the portion between the slit and the receptacle. By my herein-described improvement the side portions may be left as flexible as desired, while by stiffening the body portion between the slit and the open neck, so that it is longitudinally braced to a point opposite the slit, either on the same side as or on the opposite side from the slit, I prevent the body from bending, and hold comparatively rigid that part upon which the inner transverse lip of the slit is formed, while the outer or spreading end of the tip is very flexible on all sides, and can bend readily to carry the outer lip of the slit away from the inner lip.

Without limiting myself to the precise construction shown and described, I claim—

1. A hollow tip perforated at one side, with a brace extending longitudinally to a point opposite the perforation, substantially as described.

2. A tip for bottles, marked for perforation, with a longitudinal brace extending from a point opposite the mark toward the neck of the tip, substantially as described.

3. A tip for bottles, provided with a spreading face, a slit at one side, and a brace at the opposite side to a point opposite the slit, substantially as described.

4. The combination, with a hollow tip having a spreading face and a slit at one side, of a brace provided with an attachment connecting it with the tip and terminating at a point opposite the slit, substantially as set forth.

5. A hollow tip having a spreading face and a slit at one side, combined with a plate secured at the side opposite the slit and retained in connection with the tip by means of wings *e*, substantially as set forth.

6. A hollow tip having a transverse slit at one side and braced transversely and longitudinally to a point opposite the inner lip of the slit, leaving the portion beyond the slit flexible, for the purpose set forth.

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

WALTER H. UNDERWOOD.

Witnesses:

CHARLES B. MEYER,
HARRY H. HIERS.

