J. ERWIN.

FLUID DISPENSER AND SPREADER.

APPLICATION FILED JUNE 20, 1918.

1,340,028. Patented May 11, 1920.

Fig. 1

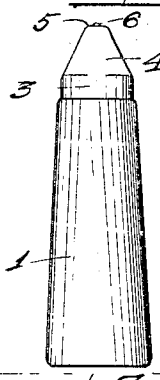


Fig. 2

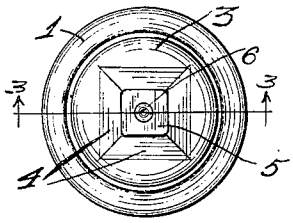


Fig. 6



Fig. 3

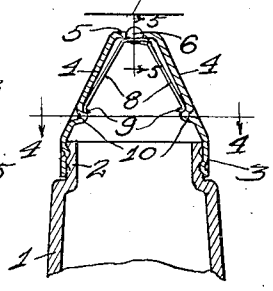


Fig. 7

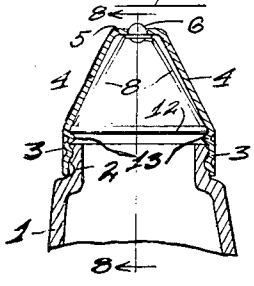


Fig. 8

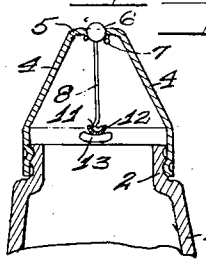


Fig. 4

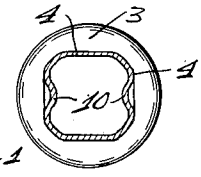


Fig. 5

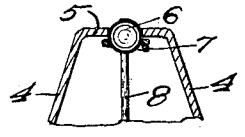


Fig. 10.

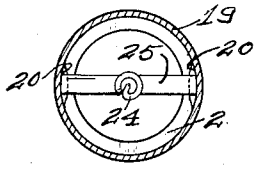


Fig. 12.

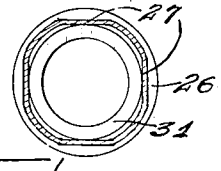


Fig. 9.

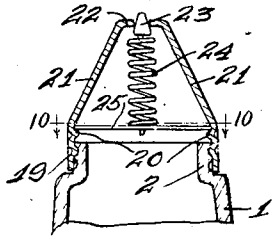
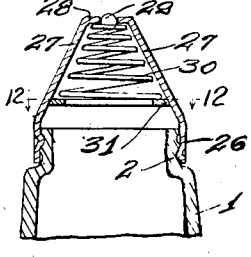


Fig. 11.



Witnesses

Rudolph J. Berg.

Charles Fielding Jr.

Inventor

Jeremiah Erwin.

By Charles Orfield Atty.

UNITED STATES PATENT OFFICE.

JEREMIAH ERWIN, OF CHICAGO, ILLINOIS.

FLUID DISPENSER AND SPREADER.

1,340,028. Specification of Letters Patent. Patented May 11, 1920.

Application filed June 20, 1918. Serial No. 240,905.

To all whom it may concern:

Be it known that I, JEREMIAH ERWIN, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fluid Dispensers and Spreaders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to fluid dispensing and spreader tops for mucilage bottles and the like, said top being adapted to be threaded or frictionally pressed into position on the neck of a bottle and having automatically acting stopper closing means disposed therein independently of the bottle.

The main object of the invention is the construction of an apertured mucilage bottle top wherein a stopper is adapted to be held in closed position to close the apertured top by means of automatically acting mechanisms disposed entirely within said top independently of the bottle.

Other and further important objects of this invention will be apparent from the disclosures in the specification and drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a side elevation of a bottle equipped with a fluid dispenser and spreader top embodying the principles of this invention.

Fig. 2 is an enlarged top plan view thereof.

Fig. 3 is a section taken on line 3—3, of Fig. 2, showing parts in elevation and with the bottle partly broken away.

Fig. 4 is a section taken on line 4—4, of Fig. 3.

Fig. 5 is an enlarged fragmentary detail section on the line 5—5, of Fig. 3.

Fig. 6 is an enlarged top plan view of the spring with the supporting ends broken away.

Fig. 7 is a sectional view similar to Fig. 3, of a modified form of top.

Fig. 8 is a section taken on line 8—8, of Fig. 7.

Fig. 9 is a central vertical section of another modified form of top.

Fig. 10 is a section taken on line 10—10, of Fig. 9.

Fig. 11 is a central vertical section of still another modified form of the device.

Fig. 12 is a section taken on line 12—12, of Fig. 11.

As shown on the drawings:

The reference numeral 1, indicates a glue or mucilage container or bottle provided with an integral threaded neck portion 2. As shown in Figs. 1 to 6 inclusive, the cap or top embodying the principles of this invention is preferably made of metal and comprises a circular threaded collar or base portion 3, having integrally formed on the upper marginal edge thereof an upwardly tapering dome or head embracing converging flat spreader sides 4, and an integral flat top plate 5. The top plate 5, is provided with a central discharge opening or valve outlet aperture, which is normally closed by means of a valve closure ball 6, disposed within the top below the outlet opening and held seated against the inner rim thereof by means of a resilient spring member. Said supporting spring comprises a looped spring 7, affording a seat for the valve ball 6. Integrally formed with the looped spring seat 7, are a pair of downwardly diverging oppositely disposed arms 8, the lower ends of which are bent to afford lugs or feet 9, adapted to rest on or engage inwardly projecting stops or projections 10, integrally formed on the inner surfaces of two oppositely disposed walls 4, thereby normally holding the valve ball 6, seated in the outlet opening to close the same.

Figs. 7 and 8 disclose a modified form of spreader top which is similar in construction to the top already described except that the spring feet 9, are rounded to form hooks 11, which seat in a curved open trough or cross-piece 12, the ends of which rest in curved oppositely disposed stops or projections 13, integrally formed on the inner surface of the collar portion 3, and which replace the projections 10.

Another modified form of the device is disclosed in Figs. 9 and 10, and in this case the top comprises a threaded collar 19, having integrally formed or rigidly secured on opposite sides of the interior thereof lugs or

projections 20. Integrally formed on the collar 19, is a dome or head embracing integrally connected converging flat spreader sides 21, and an integral flat top plate 22. The top plate 22, is provided with a central discharge opening or valve outlet, which is normally closed by means of a cone shaped or tapered valve closure member or stopper 23, disposed within the top and projecting through the discharge opening. The valve closure member 23, is rigidly secured on the upper end of a cylindrical coiled spring 24, the lower end of which is secured to the middle of a cross-bar or support 25, the ends of which rest upon the projections 20.

Figs. 11 and 12, show still another modified form of a bottle top consisting of a threaded collar 26, having integrally formed thereon a dome or head comprising integrally connected converging flat spreader sides 27, and an integral flat spreader top plate 28. Said top plate is provided with a central discharge opening or valve outlet, which is normally closed by means of a ball closure member or stopper 29, disposed within the top and projecting through the discharge opening. The ball stopper 29, is seated in the upper smaller loop of a spiral controlling spring 30, the lower or largest loop or coil of which rests upon a washer or ring 31, rigidly secured within the top between the inner surfaces of the flat spreader sides 27.

While the various tops described and illustrated are provided with threaded collars to permit the same to be secured upon the threaded necks of bottles, it will of course be understood that said collars may be made without threads to permit the same to be frictionally pressed into position upon the necks of bottles which are not threaded. If desired the top way be provided with a round flat spreader top plate, in which case the discharge opening for the fluid to be dispensed may be formed in one side of the top and normally held closed by means of a valve closure member or stopper which is controlled by a horizontal spring diametrically or transversely disposed within the top.

The operation is as follows:

Referring to Figs. 1 to 6, inclusive, the bottle 1, with the top removed may be filled with mucilage, glue or any other desired fluid. The top is then removably secured upon the bottle by threading the collar 3, upon the neck 2. The controlling spring 7—8—9, is mounted in position within the head of the top, independently of the bottle, and acts to hold the valve closure ball 6, projected through the discharge opening of the top plate 5, to close said opening. To use the mucilage bottle the same is inverted and by pushing the ball stopper 6, against the surface to which mucilage is to be applied the ball stopper is pressed or forced inwardly against the action of the controlling spring thus opening the discharge opening and permitting the mucilage to flow from the bottle. Upon lifting the bottle the ball stopper 6, is automatically forced outwardly again into position to close the discharge opening, by the action of the compressed controlling spring. The quantity of mucilage dispensed may be properly spread upon the surface to which it has been applied by using any one of the flat spreader sides 4, as the spreading means. It will be observed that by this construction the ball 6 and its supporting spring not only are disposed entirely within the cap, but the lower ends of the arm 8 of said spring are supported by the cap and are in no way dependent upon the top of the container 1 to maintain them in position. By this construction the cap 4 readily may be removed for the purpose of refilling the container 1 without danger of displacing the ball 6 and its spring.

The operation of the various modified forms of the device shown in Figs. 7 to 12, inclusive, is sbustantially the same as that above described; in each case the fluid contained within the bottle is dispensed through the outlet opening by pressing or forcing the projecting stopper inwardly against the action of the controlling spring, which in each case is disposed within the top. The dispensed fluid is spread by using any one of the flat spreader surfaces as a spreader, thus obviating the use of a brush and doing away with the necessity of securing or forming an extra spreader attachment upon the bottle tops.

When a round top is equipped with a transverse controlling spring which acts to hold a stopper projected through a discharge opening provided in the side of the top, a fluid contained within the bottle is dispensed by pressing the stopper against the surface on which the fluid is to be deposited. In this case the mucilage or fluid may be spread by using the flat top plate of the top as the spreader, or if a tapered top is used the flat sides thereof may be used as spreaders.

It will be understood that any desired means may be used to hold the spreader top removably secured upon the neck of a bottle, and that numerous other ways may be devised and mounted in the top independently of the bottle for automatically holding the stopper seated in closed position, without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. The combination with a mucilage bottle, of an apertured head removably secured

thereon, a stopper within said head, a spring for holding said stopper seated normally to close the aperture in said head, and means within said head for supporting said spring independently of said bottle.

2. The combination with a mucilage bottle, of an apertured head removably secured thereon, a stopper within said head, stops integrally formed on the inner surface of the sides of said head, a spring for normally holding the stopper seated to close the aperture in said head, and arms formed on said spring adapted to seat against said stops.

3. A fluid dispenser and spreader comprising a fluid container, a tapered four sided cap removably secured thereon, said cap having an outlet aperture therein, a stopper disposed within said cap, projections integrally formed on the inner surfaces of two opposite sides of said cap, and resilient means engaging said projections and holding said stopper normally seated to close said aperture.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JEREMIAH ERWIN.

Witnesses:

LAWRENCE REIBSTEIN,

FRANK A. BREMER, Jr.