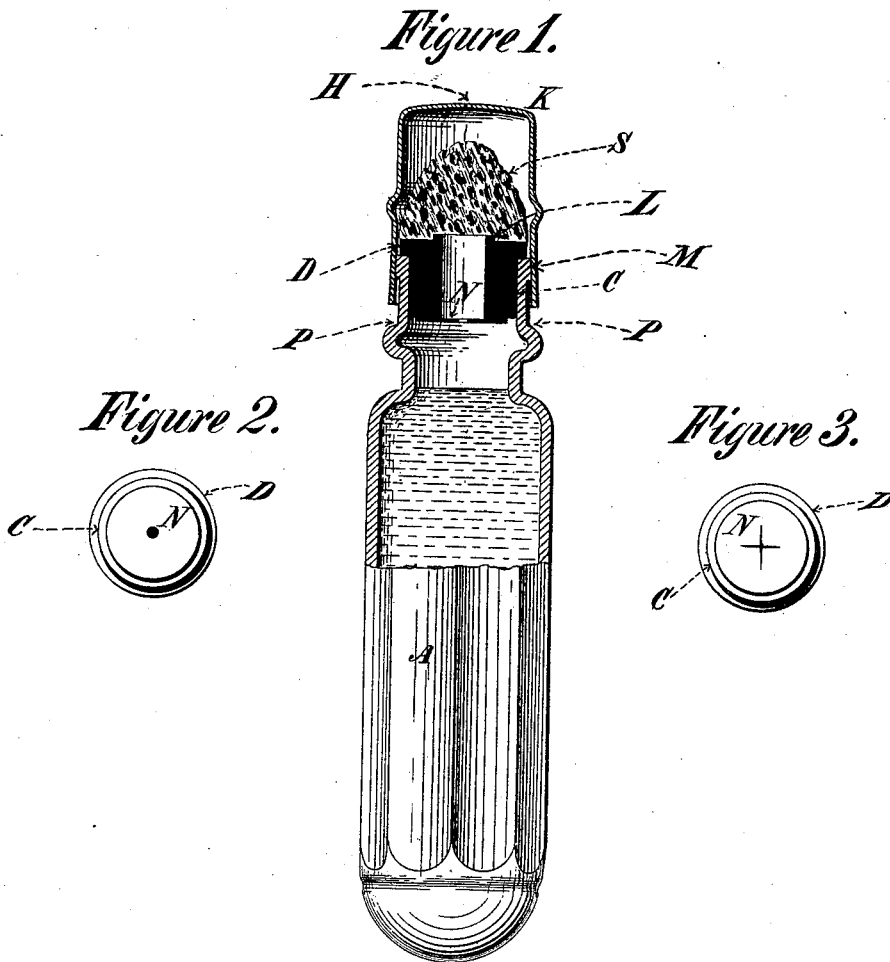


G. W. ROSS.
Mucilage-Holder.

No. 201,127.

Patented March 12, 1878.



Witnesses:

Geo. Evans

T. H. Harsh.

Inventor:

George W. Ross

By his Attorney

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UNITED STATES PATENT OFFICE.

GEORGE W. ROSS, OF TROY, NEW YORK.

IMPROVEMENT IN MUCILAGE-HOLDERS.

Specification forming part of Letters Patent No. **201,127**, dated March 12, 1878; application filed September 7, 1877.

To all whom it may concern:

Be it known that I, GEORGE W. ROSS, of Troy, New York, have invented a new and useful Improvement in Bottle-Stoppers, especially such as are applicable to mucilage-bottles, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

It has been found very advantageous to insert a sponge in the stoppers of bottles from which the contents are to be taken in small quantities and laid on a surface. This sponge absorbs the liquid which passes from the bottle, and by this means mucilage, blacking, and similar substances can be laid evenly onto the surface which is intended to receive them; but it has been found that the mucilage or other substance contained in such bottle will escape through the pores of the sponge unless there be some means of keeping it in the bottle, and allowing it to escape only in small quantities; and it is to remedy this defect that I have made my present improvement.

A cap has sometimes been employed to keep the mucilage from running over and escaping; but this accomplishes but very imperfectly the result at which I aim in my present improvement.

The result aimed at I accomplish by combining together a sponge and an elastic diaphragm provided with an automatic valve, which are attached to a stopper made of india-rubber, which stopper has a hole cut through its center for the escape of the mucilage which communicates at one end with the sponge, and is closed at the other by means of an elastic rubber diaphragm, provided either with two transverse slits or with a very small hole, which hole is so arranged as to open on pressing the sponge against a sheet of paper or other flat surface.

I am aware that a valve has been previously patented by J. Vincent Browne for the same purpose, said patent being numbered 191,751, June 12, 1877. This valve is a metallic valve operated by a spring, and is inferior to my improvement, in that mucilage, getting under the valve, keeps it constantly open, and that the spring tending to close such valve also gets clogged with the fluid in the bottle; that a sponge has been heretofore inserted in

stoppers of mucilage-bottles; and that a rubber diaphragm provided with a small puncture has been used in ink-bottles; but, so far as I know, these two have never before been combined together to effect the result aimed at in the present application, this result being the retention of the fluid in the bottle until the sponge is compressed, whereby a certain amount of air is forced through the elastic diaphragm, thereby opening said hole and allowing the escape of a certain amount of mucilage into the sponge, while ordinarily said valve remains closed. To obtain this result, the cap also is useful, which cap has before now been used, but never in combination with a punctured elastic diaphragm, for the purpose of opening the valve in said diaphragm to allow the escape of the liquid within.

Similar letters of reference indicate similar parts in all my drawings, in which—

Figure 1 represents a general view, partly in section, of my bottle and stopper combined. Figs. 2 and 3 represent views of different arrangements of the diaphragm of my stopper.

A represents a bottle, which should preferably have a rounded bottom. C represents a stopper made of rubber, in which is inserted a sponge, S, by means of some sort of cement, although it may be held there by tacks. D represents an annular abutment or collar bearing against the end of the bottle, and preventing the passage of the cork into the bottle. This cork or stopper, formed preferably of rubber, has a tube cut through its center, at the bottom of which is a rubber diaphragm, N. This rubber diaphragm is made very thin, and has cut into it holes of various shapes, preferably a cross-slit, such as is shown in Fig. 3, although a simple puncture, as shown in Fig. 2, would suffice. The stopper is provided at its upper extremity with an annular collar, L, entering slightly into the attached sponge. This collar serves the purpose of conducting the mucilage into the body of the sponge, and, if the sponge be attached to the stopper C by means of cement, this collar prevents the cement from flowing into and covering the part of the sponge which is situated over the central tube piercing the stopper. The bottle is provided with the cap or cover K, which has the vent-hole H. This cap bears against the

bottle-neck on the ring or collar M, below which the neck is recessed, so that the cap is free of the bottle, excepting where it comes in contact with this ring. This cap may be slid down so as to rest against the ring or shoulder P; or it might be arranged to rest against the bottle itself at the point of junction with the neck.

The purpose of the vent-hole H has been previously described in a patent of the United States No. 179,892 of July 18, 1876, granted to J. Vincent Browne and myself; but it is particularly useful in combination with the punctured diaphragm N.

The result of placing a rubber diaphragm across the entrance to this stopper is to prevent the too ready escape of the mucilage or other liquids into the sponge, while, if sudden pressure be applied to the sponge, or by the sudden forcing on of the cap with the vent in the top closed, the pressure, acting upon this diaphragm, will cause it to expand, thereby opening the round hole, valve, or other incision, and letting air into the bottle, which takes its place in the rear of the mucilage or other liquids, causing or forcing said liquids into the tube of the cork by transverse action,

the flow ceasing when the air finds its place in the bottle.

When not in use, the diaphragm will be sufficiently tight to prevent the escape of the liquid or overflow, unless some additional force be applied to open it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A bottle-stopper consisting of an india-rubber body, having a tube or hole cut through it, one end of said hole being covered by the sponge which is attached to said stopper, and is used for the application of the contained liquid, the other end of said hole being closed by an elastic punctured diaphragm, which acts as an automatic valve, substantially as described.

2. The combination of a rubber bottle-stopper, C, having a hole or tube cut through it, punctured elastic diaphragm N, sponge S, and punctured cap K, substantially as and for the purposes described.

GEO. W. ROSS.

Witnesses:

EDWARD B. ARNOLD,
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