

(No Model.)

G. R. WEED.  
STOPPER ATTACHMENT FOR INK BOTTLES.

No. 500,982.

Patented July 4, 1893.

Fig 1

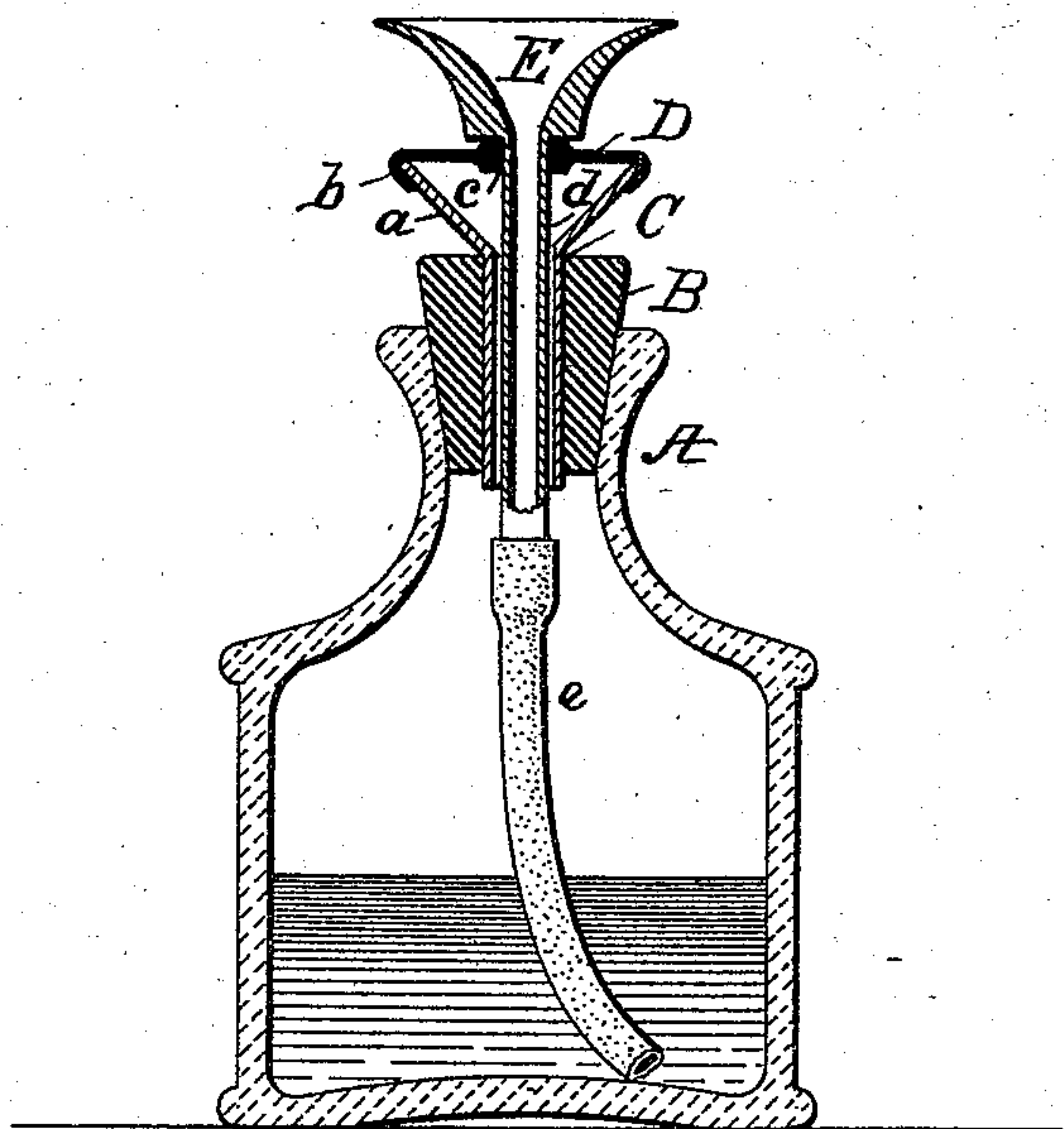
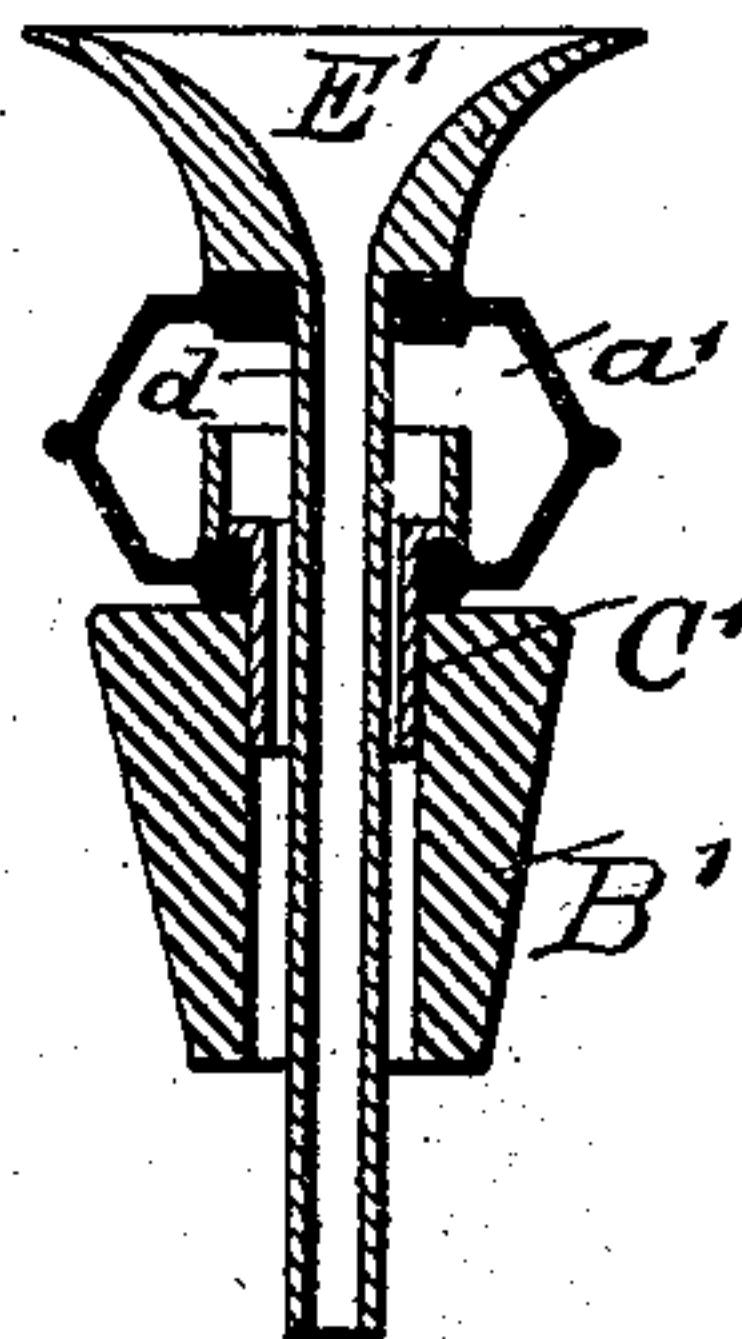


Fig 2



WITNESSES:

H. Walker  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

GUSTAVUS R. WEED, OF ORANGE, NEW JERSEY.

## STOPPER ATTACHMENT FOR INK-BOTTLES.

SPECIFICATION forming part of Letters Patent No. 500,982, dated July 4, 1893.

Application filed January 13, 1893. Serial No. 458,241. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAVUS R. WEED, of Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Stopper Attachment for Ink-Bottles, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical transverse section of an ink bottle to which my improved attachment has been applied; and Fig. 2 is a vertical transverse section of a modified form.

Similar letters of reference indicate corresponding parts in both views.

The object of my invention is to provide an attachment for ink bottles and ink stands, which will force up a small quantity of ink for use, when a slight pressure is applied by the pen, and which will practically seal the bottle so that evaporation cannot take place, thus permitting of keeping the ink in usable condition until it is exhausted.

The invention will first be described and then specifically pointed out in the claim.

To the neck of the ink bottle A, which is of ordinary form, is fitted a stopper B, preferably made of soft rubber. The said stopper B is bored axially and in it is inserted a tube C, having formed upon the upper end thereof a funnel-shaped chamber *a*, closed at the top by the flexible diaphragm D. The said diaphragm D is furnished with a rim *b*, which is stretched over the upper edges of the walls of the chamber *a*. The middle of the diaphragm D is provided with an aperture *c*, and the said diaphragm is reinforced or thickened around the aperture, to cause it to press firmly on the tube *d* inserted in the diaphragm and extending through the tube C. Upon the upper end of the tube *d* is formed a funnel E, and to the lower end of the tube *d* is attached a flexible tube *e*, which is of sufficient length to extend downward to the bottom of the bottle A. When the funnel E is pressed by the pen, the diaphragm D is depressed, thus compressing the air in the chamber *a* and in the ink bottle A, thereby forcing upwardly, by the pressure

of the air created within the bottle, a sufficient amount of ink to partly fill the funnel and charge the pen. When the funnel E is released by the removal of the pen, the diaphragm D regains its original position by means of its own elasticity, and in so doing creates a partial vacuum in the chamber *a* and in the bottle, and thus causes air to be drawn in through the tubes *d*, *e*, and through the body of ink contained in the bottle, thus replacing with air the ink removed by the pen.

In the modification shown in Fig. 2, the chamber *a'* is made wholly of elastic material, and its upper and lower sides are perforated, the lower side receiving the tube C', which extends into the perforated stopper B', while the upper side receives the tube *d'* projecting downwardly from the funnel E'. The tube C' in this case is enlarged in diameter and extends upwardly in the chamber *a'*, to form a stop for limiting the compression of the elastic chamber. When the funnel E' is pressed by the application of a pen, the air is forced from the chamber *a'* through the space around the tube *d'* into the bottle, as in the other case.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

An attachment for ink bottles comprising the centrally apertured stopper B, an air tube C entering said aperture to force air down into the bottle and provided with a funnel shaped or flared upper end *a*, a flexible diaphragm D provided with a rim *b* embracing the rim of the funnel shaped end *a* and having a central aperture *c* provided with thickened walls, the ink funnel E having an ink tube *d* extending down through the aperture *c* and through the air tube C and of less diameter than said air tube, substantially as set forth.

GUSTAVUS R. WEED.

Witnesses:

E. M. CLARK,  
C. SEDGWICK.