

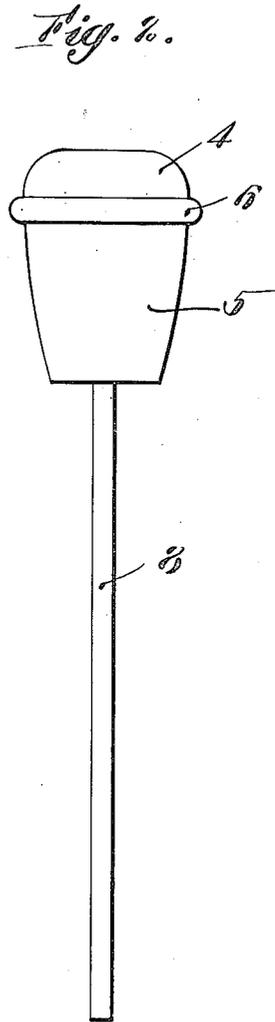
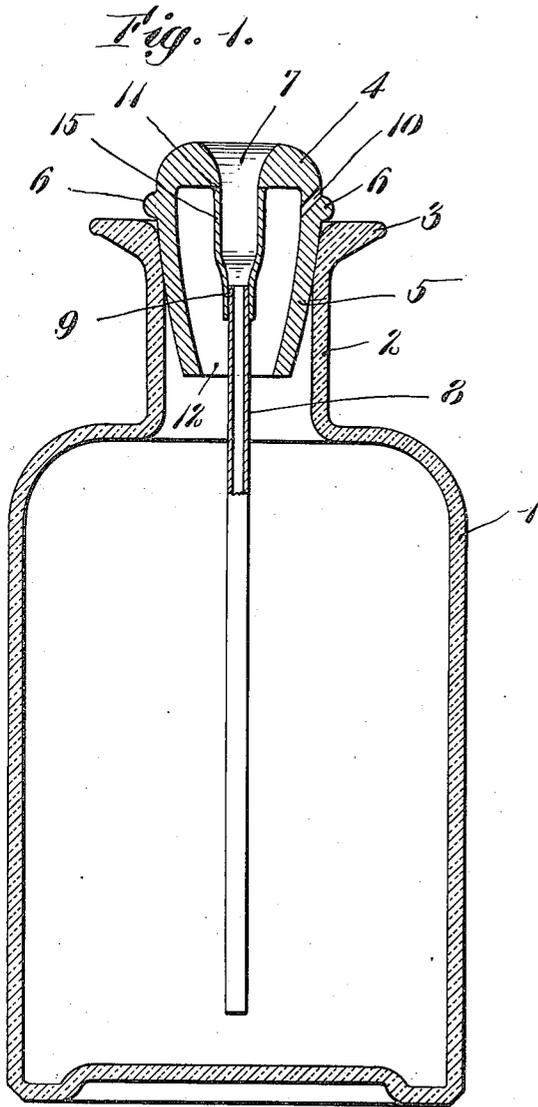
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W. M. LATREMORE

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STOPPER

Filed March 16, 1922



Inventor:
William M. Latremore
By James R. Hodder
att'y.

UNITED STATES PATENT OFFICE.

WILLIAM M. LATREMORE, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO
JAMES H. WALLACE, OF BOSTON, MASSACHUSETTS.

STOPPER.

Application filed March 16, 1922. Serial No. 544,078.

To all whom it may concern:

Be it known that I, WILLIAM M. LATREMORE, a citizen of the United States, and resident of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Stoppers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention relates to stoppers for bottles and the like, and more particularly to such stoppers for use in conjunction with fountain pens of the so-called "self-filling" type.

The modern fountain pens of the self-filling type, as is well known, consist of the usual pen holder, feeder and tip, secured to a barrel of hard rubber or the like, within which barrel is a sac, preferably of soft elastic material, such as rubber. The sac is adapted to be collapsed by various means, ejecting the air therefrom and thereupon, when the tip of the pen is placed in the ink stand, bottle, or the like, and the collapsing pressure is released, the suction resulting from the inflation of the sac draws up sufficient ink from the well to fill the sac. Heretofore the usual and customary method was to place the pen point in the ink well, collapse the sac and then permit it to inflate, sucking in the ink for filling. The disadvantage of this method was that if the ink well was full, not only the point, but a portion of the holder is very liable to be inserted in the ink, resulting in soiled hands, getting ink on the outside of the holder, necessitating cleaning the pen and holder, and other inconveniences.

Therefore, an important object of my present invention is to provide a specially formed stopper for ink bottles, ink wells and the like which will act as an efficient stopper and will also permit a fountain pen of the self-filling type to be filled in a neat, clean, convenient and expeditious manner.

Furthermore, if the ink well or bottle from which it is desired to fill the pen is very nearly empty, the pen point must be dipped to the very bottom of the inkwell, clogging the point and feed of the pen with sediment usually in the bottom of such inkwell or bottle.

A further object of my invention, therefore, is to provide a device which will per-

mit only clean ink to be drawn into the sac of the pen and thus keep the feeding means of the pen clear at all times, facilitate action of the pen, and render the use of a fountain pen more satisfactory and desirable than heretofore.

Various attempts have been made to produce an automatic fountain pen filler, but such devices have been expensive, tedious of operation, complicated and unsatisfactory in use, and furthermore have not been commercially practicable because of the expense of manufacture and the resulting high cost to the public. Such prior devices have also been required to be closed by a stopper or the like when not in use, in order to prevent dust, dirt, and other foreign substances from entering the ink and polluting the same.

Therefore, an additional and important object of my invention is to provide means which is simple in operation, inexpensive of manufacture, economical, which need never be taken out of the bottle or well or other receptacle in which it is placed, requires no additional stopper or closing means, and which will prevent dust or other substances from coming in contact with the ink, thereby effectually preserving it in normal condition at all times.

Further details of construction, novel combinations of parts and advantages will be hereinafter more fully pointed out and claimed.

Referring to the drawings, illustrating a preferred embodiment of my invention,

Fig. 1 is a longitudinal sectional view of my novel stopper applied to an ink bottle of conventional type; and

Fig. 2 is a front elevation of the stopper.

As shown in the drawings, I have illustrated an ink bottle of conventional form at 1, having the usual neck 2 and flanged top portion 3.

My novel stopper is illustrated generally at 4, having a neck 5 adapted to fit within the neck 3 of the bottle, forming a snug fit therein, and having in addition the flange or collar 6 extending around the stopper to contact with the top portion of the bottle, if desired, thus further insuring an air-tight and liquid-tight fit.

The top portion of my novel stopper 4 is rounded and provided with a downwardly projecting central aperture 7, preferably tapered in form, to receive the end of a

fountain pen barrel inserted therein. Depending from the aperture 7, and secured at the bottom thereof, as shown at 11, either by vulcanizing or the like, or by being molded
 5 as an integral part thereof, is a resilient rubber sac 15, into which the point of the pen, when in filling position, will fit. It will thus be seen that, even should the pen point come in contact with the sides of this sac
 10 15, it will not be injured, because of the softness and resiliency of the same.

The neck portion 5 of my novel stopper is formed hollow, with an opening through the bottom thereof, as illustrated at 12. Secured to the bottom of the sac 15, by vulcanizing, cementing or any other desirable manner, such as binding thereon by clamping means or the like, is a hollow cylindrical tube 8, preferably of hard rubber, glass
 15 or any other desirable material, said tube being adapted to extend through the opening 12 in the bottom of the stopper 4 to a point in the ink bottle or ink well as low as may be desired, preferably just clearing the
 20 bottom thereof, so that the ink from the lowermost portion of the bottle may be withdrawn, without leaving a sufficient amount of ink in the bottom to coagulate and clog up the tube 8.

It will be appreciated that this tube 8 may be of any length desired, and the same stopper can be used on different depths of bottles or receptacles, by changing the length of the tube 8, inserting a new tube, or the
 25 like, if desired, as it is not essential that the length of the tube be so changed, except for the advantages as enumerated.

Through the upper portion of the stopper 4, and preferably just above the flange 6, is an aperture or opening 10, adapted to permit the entry or discharge of air from the interior of the bottle. Thus, when ink is withdrawn from the bottle 1, a sufficient quantity of air will enter through the aperture 10 to equate the removal of the ink.
 30 Conversely, when ink is poured into the bottle through the opening 7 in the stopper 4, the air in the bottle will be discharged through the aperture 10 into the outer air until the desired quantity of ink has been placed in the bottle.

It will also be appreciated that the neck of my novel stopper may be threaded, for insertion into a bottle with a threaded neck,
 35 if desired.

The operation of my novel device will now be described: The person desiring to fill a fountain pen, inserts the pen into the opening 7 until the barrel of the pen fits
 40 snugly against the walls of the same, the

point extending down into the sac 15. The sac of the pen is then collapsed, by any means, either by the thumb or finger, or by a plate, lever or the like, with which the pen may be equipped, ejecting the air there-
 45 from, whereupon said air will pass downwardly through the tube 8 and thence through the ink and upwardly out of the opening 12 in the bottom of the stopper and thence through the aperture 10 into the open
 50 air. Upon release of the collapsing means in the pen, ink will be drawn up through the tube 8, into the sac or barrel of the pen until same is filled, when the pen is merely withdrawn from the stopper, ready for use,
 55 with no possibility of soiling the hands, necessity of cleaning the pen, or the like.

It will thus be seen that I have devised a novel, economical, simple and commercially practicable combination stopper and
 60 fountain pen filler; one that presents a neat appearance and is efficient and expeditious in use.

It will be understood that while I have necessarily described my invention somewhat in detail, that I may vary the size shape, and arrangement of parts within wide limits, without departing from the spirit of the invention.

My invention is further described and defined in the form of claims as follows:

1. A stopper of the kind described, comprising a hollow neck portion adapted to form a tight closing fit in the entrance of a receptacle, a flange or ring around the
 65 upper portion of said neck to further close the receptacle, a top portion having therein a depression adapted to receive a pen to be filled, a resilient non-injurious sac for the reception of the point of the pen to be filled,
 70 a downwardly extending tube secured to said sac, and air receiving or discharging means in said stopper to compensate automatically for the withdrawal or replacement of ink in said receptacle. 105

2. A stopper of the kind described, comprising a hollow neck portion adapted to form a tight closing fit in the entrance of a receptacle, a top portion having therein a depression adapted to receive a pen to be
 75 filled, a resilient non-injurious sac for the reception of the point of the pen to be filled, a downwardly extending tube secured to said sac, and air receiving or discharging means in said stopper to compensate auto-
 80 matically for the withdrawal or replacement of ink in said receptacle. 115

In testimony whereof, I have signed my name to this specification.

WILLIAM M. LATREMORE,