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SELF FILLING FOUNTAIN PEN FILLING DEVICE

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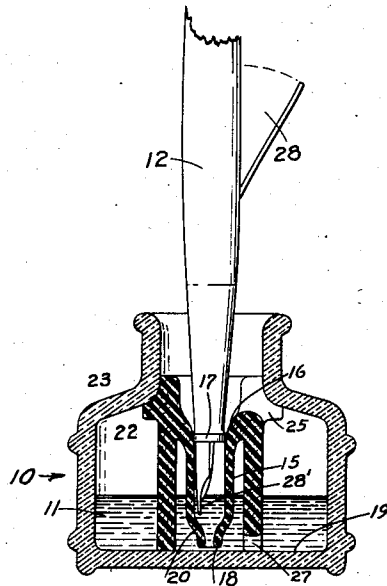


Fig. 1.

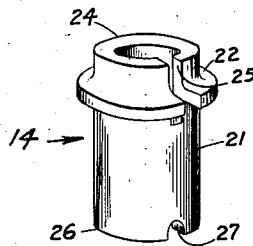


Fig. 2.

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## SELF-FILLING FOUNTAIN PEN FILLING DEVICE

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Application February 15, 1934, Serial No. 711,379

8 Claims. (Cl. 120-4)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This invention relates to a filling device for self-filling fountain pens and has for an object to provide a filling device adapted to cooperate with the interior of an ink container and make it possible to fill a self-filling fountain pen therefrom even though the level of the ink supply within the bottle is so low that it can not reach the neck of the pen.

A further object of this invention is to provide a filling device for self-filling fountain pens which may be inexpensively molded of a single piece to cooperate with an ink bottle of conventional size, and which may be easily inserted therein and after being inserted will not interfere with the corking, emptying or filling of the bottle.

Another object of this invention is to provide a filling attachment for ink bottles especially adapted for cooperating with self-filling fountain pens but which will not interfere with the use of the bottle for other types of pens.

In the accompanying drawing, which forms part of this specification:

Fig. 1 is a sectional view of an ink bottle and of this device in operative position therein;

Fig. 2 is a perspective view of this device per se.

There is shown at 10 an ink bottle or container of conventional size and shape, and further shown as having a somewhat depleted ink supply 11 therein. Ordinarily it is difficult or impossible to satisfactorily fill a fountain pen 12 when the ink supply 11 is at a low level except by tilting the bottle and the pen, with the probable result of spilling the ink and soiling the pen. To obviate this disadvantage and difficulty the device 14, constituting this invention, is provided. This device 14 is preferably made of an integral piece of soft rubber although, as will be obvious from the description hereinafter, it need not be of this material, nor necessarily a one-piece unit.

This device 14 includes a tubular throat 15, one end of which 16 is of such material and finish as to permit the establishment of a substantially airtight contact with the neck 17 of the pen 12. The other end 18 of the throat 15 is supported a slight distance above the bottom 19 of the bottle 10. The end 18 may be constricted as at 20, as shown.

The means for supporting the end 18 above the bottom 19 may preferably consist of a cylindrical member 21 having a shoulder 22 at its upper end sufficiently yielding and resilient to permit insertion into the bottle 10 and thereafter to cooperate with the bottom of neck 23 of the ink bottle 10, as shown in Fig. 1. The throat 15 is secured at its upper end 16 so as to depend within the cylinder 21. The shouldered end 24 of cylin-

der 21 is apertured as at 25; and the other end 26 is apertured as at 27.

In operation the device 14 is inserted into the bottle 10 and assumes its operative position as shown in Fig. 1. When it is desired to fill a self-filling fountain pen, such as 12, the neck 17 of the pen is inserted into the open end 18 of the throat 15 with the point 28 received within the throat. The filling lever 28 is manipulated to create a vacuum within the throat 15 and draws the ink 11 into the pen 12; the ink in throat 15 entering through opening 18 and being replaced through the aperture 27 in the bottom 16 of cylinder 21, the aperture 25 at the shouldered end preventing formation of a vacuum within the bottle.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon.

What I claim is:

1. An adapter for an ink container, comprising a support within the ink container resting on the bottom thereof and of larger diameter near its upper end than the neck of the ink container, and an impervious hollow member attached to said support and extending adjacent the bottom of said container, said larger diameter portion of the support contacting under the throat of the ink container providing a substantially secure contact between the throat and bottom of the container.

2. A self-filling fountain pen filling device, comprising a tubular throat having at least one end thereof of soft rubber, said throat having a portion of a diameter slightly less than the diameter of the neck of a fountain pen, the other end of said throat being open, and means for supporting said other end of said throat in an ink container with said other open end spaced a slight distance from the bottom of the ink container, said instrumentalities being insertable into an ink container whose neck normally affords space for the reception of the usual cork.

3. A self-filling fountain pen filling attachment, comprising a throat member of soft rubber adapted to be inserted within an ink bottle, said throat member being adapted to snugly receive a neck of the fountain pen with the point of the pen within said throat, and means for supporting the other end of said throat slightly above the bottom of the ink bottle, said means comprising a cylindrical member integral with said throat, a shoulder at the upper end of said

cylindrical member adapted to wedge against the under side of the neck of the bottle and hold said device in operative position, the lower end of said cylindrical member being apertured to permit the ink to pass therethrough to said throat and the upper end of said cylindrical member being apertured to relieve the vacuum in the ink bottle.

4. A soft rubber, integral, one-piece device for cooperation with an ink bottle for use with a self-filling fountain pen, comprising a cylindrical member, a shoulder formed at the upper end of said cylindrical member adapted to cooperate with the under side of the neck of the bottle, an aperture in said shouldered end of said cylinder, a second aperture in the other end of said cylinder, and a tubular throat within said cylinder depending from said cylinder adjacent the shouldered end thereof and ending a slight distance above the other end thereof.

5. An article of manufacture comprising a self-filler for fountain pens when inserted through the mouth of an ink bottle consisting of a soft rubber filler member whose upper end is larger than and closes the mouth of the bottle into which it is designed to be inserted, a vertical well extending into the top of the member and adapted to receive the pen, said well having a portion fitting the pen end of the pen holder, vent means on the member for opening to the atmosphere the portion of the bottle surrounding the member, and said member having means for permitting ink in the bottle to communicate with the well.

6. An article of manufacture comprising a self-filler for fountain pens when inserted through the mouth of an ink bottle consisting of a soft rubber filler member whose upper end is larger than and closes the mouth of the bottle into which it is designed to be inserted, a vertical well

whose open top is accessible through the mouth of the bottle and extending into the top of the member and adapted to receive the pen, said well having a portion fitting the pen end of the pen holder, a vent opening in the top of the member for venting to the atmosphere the volume of the bottle surrounding the member, an opening in the bottom of the well and communicating with the contents of the bottle.

7. An article of manufacture comprising a self-filler for fountain pens when inserted through the mouth of an ink bottle consisting of a soft rubber filler member whose upper end is larger than and closes the mouth of the bottle into which it is designed to be inserted, a vertical well whose open top is accessible through the mouth of the bottle and extending into the top of the member, there being a soft-rubber wall surrounding the well, and an opening in said well through which the contents of the bottle flows into the well.

8. A soft rubber, integral, one-piece device insertable within an ink bottle for use with a self-filling fountain pen, comprising a member, a shoulder formed at the upper end of said member for contacting with the under side of the neck of the bottle, an aperture in said shouldered end of said member for leading fluid from the neck of the bottle to the interior of the bottle surrounding the member, a second aperture in the other end of said member for leading fluid from the interior of the bottle to a point within the member, and a tubular throat within said member depending from said member adjacent the shouldered end thereof and ending a slight distance above the other end thereof, said throat having an opening communicating with the fluid receivable through the second aperture.

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