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R. NAMIKI

2,132,313

CLOSURE OF INK BOTTLES

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Fig. 1

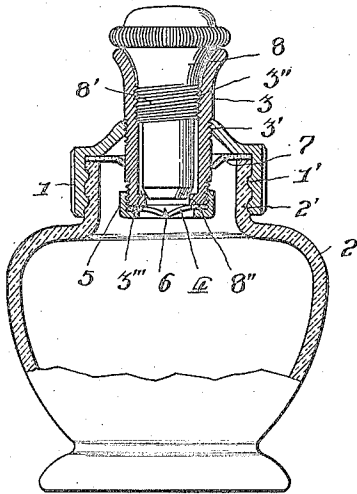


Fig. 3

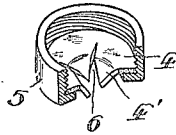


Fig. 4

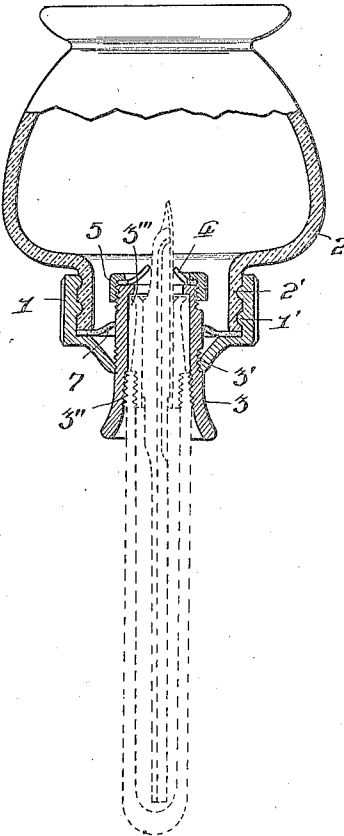
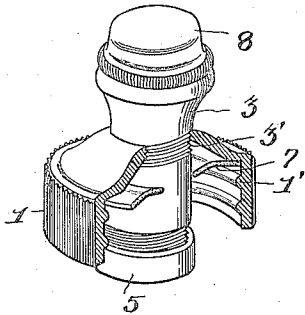


Fig. 2



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## CLOSURE OF INK BOTTLES

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5 Claims. (Cl. 120-68)

This invention relates to closures of ink bottles and has for its object to a closure adapted to be turned upside down with the nib-end of a fountain-pen extending through the passage in the closure into the ink bottle without a leak of ink.

In the accompanying drawing:—

Fig. 1 is a vertical sectional view of a closure embodying the invention, applied to the mouth of a bottle.

Fig. 2 is a perspective view of the closure, partly in section.

Fig. 3 is an enlarged perspective view of a valve in its operated position with its holder, partly in section.

Fig. 4 is a similar view to Fig. 1, but showing the parts in the positions for filling ink in a fountain-pen, the plug being removed.

Referring now to the drawing, 1 represents a cap, which is threaded internally at 1' to engage to the threaded neck 2' of an ink bottle 2. A mouthpiece 3 is engaged to the threaded central opening on the top of the cap 1 by a threaded portion 3'. If desired, the mouthpiece may be formed integral with the cap. The mouthpiece 3 may be somewhat flared at the outer end, and is provided on the bottom end with a valve 4 held in position by means of a valve holder 5 engaged to the inner threaded end. The valve 4 is made of an elastic plate, such as rubber sheet, and is cut radially from the center, for example in cross at 6, to form a plurality of flaps 4'. A sheet packing 7 is provided to tightly engage with the outer surface of the mouthpiece 3 and to seal the joint between the neck of the ink bottle and the cap 1. A plug 8 is partly threaded at 8' and is engaged to the internally threaded portion 3'' of the mouthpiece to seat its inner end 8'' on the seat formed on the annular shoulder 3''' on the inner end of the mouthpiece 3.

With this construction, when the plug 8 is removed and the nib end of a fountain-pen is inserted in the ink bottle through the mouthpiece 3 by forcing the valve 4 to open and with an externally threaded end of the casing of a fountain-pen engaged with the internally threaded portion 3'' of the mouthpiece, the closure can be turned upside down with the bottle, as shown in Fig. 4 without a leak of ink, whereby ink can readily be filled in the ink-reservoir of the fountain-pen by surface tension, the fountain-pen being of a special construction adapted to fill ink in the reservoir in this manner. The details of the fountain-pen are not shown and described as these form no part of the invention.

I claim:

1. A closure of the character described including in combination, a container having a threaded neck, a tubular mouthpiece positioned in the neck, a sheet packing arranged about the mouthpiece, a flanged cap detachably supporting the mouthpiece and also acting to detachably clamp the sheet packing to the neck of the bottle, an in-turned shoulder on the inner end of the mouthpiece constituting a support and a valve seat, a flap valve detachably clamped against the outer surface of the shoulder, and a plug for removably closing the outer end of the mouthpiece and seated against the inner surface of the shoulder to seal the mouthpiece.

2. A closure of the character described including in combination a container having a threaded neck, a tubular mouthpiece concentrically arranged in spaced relation to and in the neck, a sheet packing arranged in sealing relation about the mouthpiece and disposed on the outer edge of the neck, an internally threaded flanged and apertured cap serving to detachably support the mouthpiece and detachably clamp the packing in sealing engagement with the neck.

3. A closure of the character described including in combination a threaded neck, a tubular mouthpiece detachably supported on the neck, an internal annular shoulder at the inner end of the mouthpiece constituting a combined valve seat and support, a flap valve arranged against the outer surface of the shoulder, a valve holder detachably clamping said valve against the shoulder, a plug member removably secured within said mouthpiece and having a bevelled inner portion adapted to seat against the said internal annular shoulder of the mouthpiece.

4. A device as claimed in claim 3 in which the mouthpiece is provided with internal threads near its outer end for detachable engagement with the plug, the distance between the threads and the shoulder corresponding to the distance between the threads and outer end of the fountain pen whereby when the plug is removed the pen may be engaged with the threads of the mouthpiece and the outer end of the pen pressed against the shoulder while the pen point pierces the flap valve and is in sealing engagement therewith.

5. A closure for ink containers including in combination with the threaded neck of a container, a cap for detachable engagement with said neck and having a threaded central opening therein, a tubular mouthpiece in threaded engagement with the opening and projecting above and below the cap and having interior threads near its outer end, an internal annular shoulder

at the inner end of the mouthpiece forming a combined valve seat and support, said mouthpiece also having exterior threads adjacent its inner end, a flap valve arranged against the outer surface of the shoulder, a valve holder in threaded engagement with the inner end of said mouthpiece for firmly clamping the valve against the shoulder, a plug member provided with threads to engage the threads on the interior of said mouthpiece and constituting a valve and having a bevelled inner end which seats against the inturned annular shoulder of said mouthpiece. 5

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