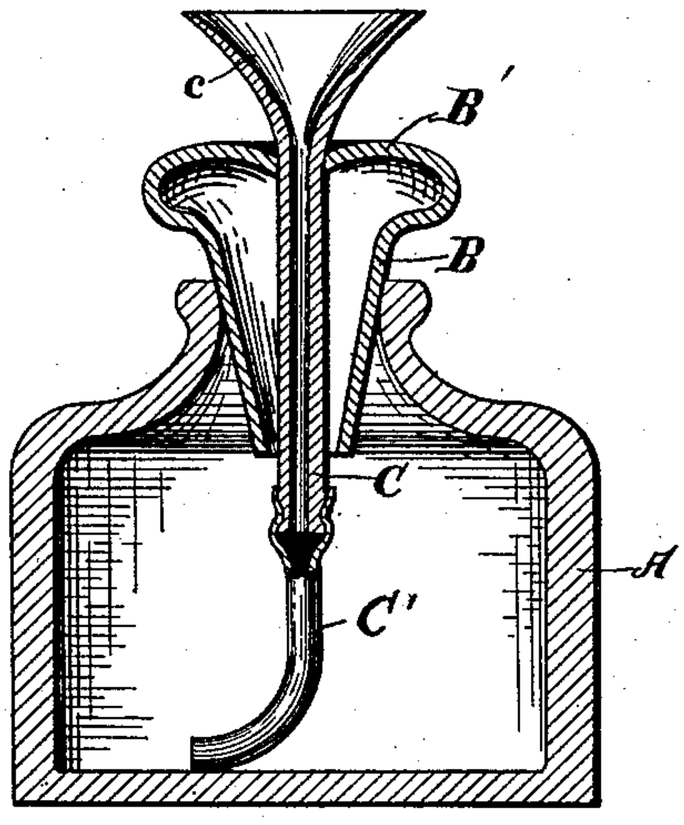
(No Model.)

W. C. PARSONS.

AUTOMATIC INK WELL.

No. 452,481. Patented May 19, 1891.

Fig. 1



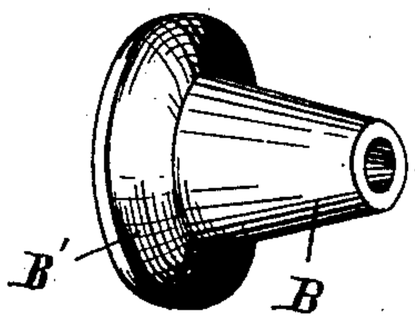


Fig. 2

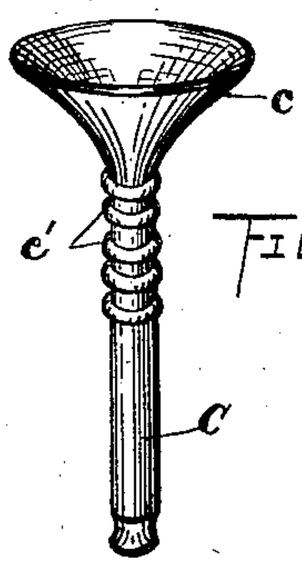


Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM C. PARSONS, OF AKRON, OHIO.

AUTOMATIC INK-WELL.

SPECIFICATION forming part of Letters Patent No. 452,481, dated May 19, 1891.

Application filed May 29, 1890. Serial No. 353,604. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. PARSONS, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Automatic Ink-Wells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in automatic ink-wells; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims, the object being to provide a simple and inexpensive device connected with and including a stopper, so arranged that it may be applied to any ordinary inkstand or ink-bottle, and that it may readily be changed from one ink stand or bottle to another.

In the accompanying drawings, Figure 1 is a side elevation in section through the center of the device. Fig. 2 is a view in perspective of the stopper and bulb detached. Fig. 3 is an elevation of the ink tube and funnel detached.

A represents an ordinary ink bottle or inkstand.

B is a hollow inverted conical-shaped stopper, having on top a bulb B′, preferably of the spheroidal form shown, the stopper and bulb being preferably of rubber.

C is a small tube terminating above in a small funnel *c*, this tube being inserted with a snug fit in a hole at the top of the bulb, so that the tube will thereby be held in place and the top wall of the bulb will move up and down with the tube. The stopper, by reason of its length and tapering proportions, is adapted to fit about any ordinary inkstand or ink-bottle, and I propose to make a large-sized stopper adapted to fit inkstands or ink-bottles having exceptionally large mouths. The stopper having been placed in the nozzle of the ink-container, the tube is adjusted vertically in the stopper in position with its lower end near the internal bottom of the container. With the parts thus adjusted, by inserting the pen in the funnel and bearing down gently, so as to slightly depress the tube, the upper wall of the bulb, by reason of its firm grasp upon the tube, will also be depressed, whereby the air-space in the bulb will be reduced, the result being the forcing of the ink up through the tube in contact with the pen, this principle being well understood. On removing the pen the bulb by its elasticity regains its normal shape, whereby the tube is elevated and the ink in the tube is returned to the container. As the ink from using it becomes reduced in volume in the container, air in small quantities will from time to time pass down through the tube into the container to replenish the air-space therein, this air-space increasing inversely as the ink is extracted; hence the necessity of more air to prevent a partial vacuum. Also, the bulb may be compressed laterally with the hand, and the form of the bulb is such that the lateral compression thereof gives the bulb a more spherical form, whereby the air-space therein is increased, and this will draw air into the container through the tube. However, this is seldom necessary, for the device will usually regulate the air-supply automatically, a small quantity of air entering the container with the upward movement of the tube when the pen is removed, as may be seen from the small bubbles in the container.

Heretofore automatic ink-wells have usually been constructed with an inkstand of some peculiar form and constituting a part thereof, and these devices were usually quite expensive, whereas my improved device is quite inexpensive and may be applied to almost any inkstand or ink-bottle. For instance, on buying a bottle of ink and removing the cork my improved device may be attached in a moment ready for work. There is no necessity of adjusting the ink-tube, except as the ink becomes nearly exhausted in the container, and of course my improved device can in a moment be changed from one bottle or inkstand to another. In case the upper wall of the bulb is so thin and light that it might not grasp the tube with sufficient force so as to hold the latter from slipping, the tube may be provided with external annular grooves or ribs—for instance, as shown at *c′*, Fig. 3—to prevent the tube from slipping.

Both for convenience and for appearance the funnel should be located as close as practicable to the bulb, in which case a tube C, of

sufficient length to operate in a comparatively deep container, would be too long for a shallow container, and hence I propose to use a short tube C, such as would operate in a shallow container, and to the end of this tube I attach a flexible tube C′, usually of rubber, so that a comparatively short tube C, together with its flexible attachment, will operate in any ordinary inkstand or ink-bottle, with the further advantage that, as the free end of tube C′ will always rest on the bottom of the container, the ink may be drawn therefrom so long as enough ink remains to cover the end of the flexible tube.

What I claim is—

1. An automatic ink-well comprising an elastic hollow inverted conical-shaped stopper and connected bulb, the stopper being adapted to fit containers having different-sized nozzles, and an ink tube and funnel, the tube being inserted in a hole in the top wall of the bulb, the engagement of the bulb and tube being such as to hold the latter in place and cause the engaging members to move together, substantially as set forth.

2. In an ink-well, the combination, with an elastic hollow inverted conical-shaped stopper and connected bulb, substantially as indicated, of an ink-tube and connected funnel, the tube being inserted in a hole in the top wall of the bulb, such tube having one or more annular grooves or ribs allowing adjustability and preventing the tube from slipping in the bulb, substantially as set forth.

3. In an ink-well, the combination, with an elastic hollow inverted conical-shaped stopper and connected bulb, substantially as indicated, of an ink-tube and connected funnel, such ink-tube extending through a hole in the top wall of the bulb, the ink-tube having attached to the lower end thereof a flexible tube, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 10th day of May, 1890.

WILLIAM C. PARSONS.

Witnesses:
F. M. ATTERHOLT,
U. L. MARUIN.