(No Model.)

C. B. SMITH.

INKSTAND.

No. 595,739. Patented Dec. 21, 1897.

Fig. 1.

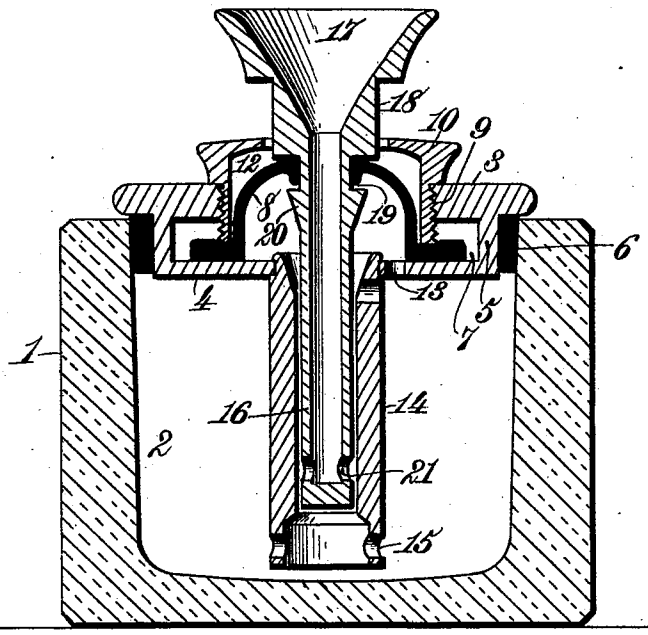
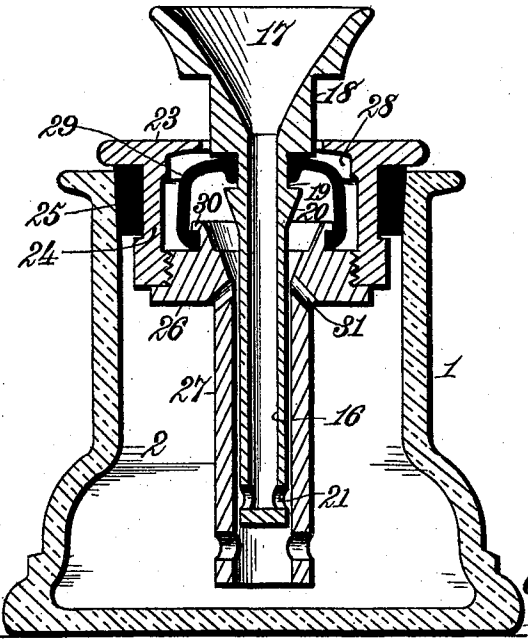


Fig. 2.



Witnesses.
Robert Emmett,
A. H. Norris.

Inventor.
Charles B. Smith.
By
James L. Norris.
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES B. SMITH, OF ELIZABETH, PENNSYLVANIA.

INKSTAND.

SPECIFICATION forming part of Letters Patent No. 595,739, dated December 21, 1897.

Application filed April 5, 1897. Serial No. 630,848. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. SMITH, a citizen of the United States, residing at Elizabeth, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Inkstands, of which the following is a specification.

This invention relates to that class or type of inkstands wherein a stationary tube communicates with the ink-well and contains a vertically-movable tubular stem supported by an elastic diaphragm and having a dip-cup at its upper end and a perforation at its lower end which is closed by the stationary tube when the tubular stem is elevated by the diaphragm, as in Letters Patent No. 526,059, issued to me September 18, 1894.

The objects of my present invention are to improve inkstands of the character referred to, to provide a construction wherein the elastic diaphragm is housed within a stopper fitted air-tight into the mouth of the ink-well, and to provide novel means whereby a fresh supply of ink can be conveniently introduced into the ink-well without detaching or removing the stopper from the mouth of the ink-well. These objects are accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a central vertical sectional view, on a large scale, of an inkstand provided with my invention; and Fig. 2 is a similar view showing a modification of the invention.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a body of glass or any other material suitable for the purpose in hand, which is constructed with an ink-well 2 for containing the supply of ink.

The stopper for closing the mouth of the ink-well air-tight is preferably made of hard rubber and is composed of a top wall 3, a bottom wall 4, and an annular vertical wall 5, connecting the top and bottom walls together. The top wall 3 extends a sufficient distance beyond the vertical wall 5 to rest upon the upper surface of the glass or other body 1, and around the vertical wall 5 is placed an elastic packing-ring 6, preferably of india-rubber, whereby the stopper may be fitted perfectly air-tight into the mouth of the ink-well.

The stopper is constructed with a chamber 7, designed to contain and house the elastic or rubber diaphragm 8, and the center of the top wall 3 of the stopper is provided with central screw-threaded orifice 9, into which is screwed an externally-screw-threaded plug 10, having in its under side a concavity 12 to accommodate the dome-shaped part of the elastic or rubber diaphragm, whereby the diaphragm has freedom of motion and at the same time the depth or height of the stopper itself can be materially reduced.

The bottom wall 4 of the stopper is provided with a series of orifices 13 and with a central pendent tube 14, which is fixed in a stationary position to the bottom wall and is preferably provided at its lower open end with lateral perforations 15 for the free flow of ink into the tube. The tube 14 contains a vertically-movable tubular stem 16, having a dip-cup 17 at its upper end. The vertically-movable tube extends through the chamber 7 of the stopper and through a central orifice in the screw-plug 10. A cylindrical part 18 of the stem, directly under the dip-cup, more or less accurately fits the central orifice in the plug, so as to aid in guiding the tubular stem in its vertical motions. The tubular stem is provided immediately below the cylindrical portion 18 with an annular groove 19 and a conical portion 20 in such manner that the tubular stem can be inserted through the central orifice in the dome-shaped diaphragm until the edge of such orifice rides over the conical portion 20 of the stem and snaps into the groove 19. The connection of the stem and diaphragm is facilitated by giving the stem a slight rotary motion as the conical portion 20 passes the edge of the orifice in the diaphragm. The tubular stem is provided at its lower end with a perforation 21, (one or more,) which is closed by the wall of the fixed tube 14 when the tubular stem is elevated by the diaphragm, but which permits ink to flow into the stem when the latter is depressed until the perforation 21 is opposite or registers with the perforation 15, in

which position of the parts ink will flow laterally into the tubular stem.

The orifices 13 in the bottom wall of the stopper permit the passage of air into the ink-well above the ink when the stem 16 and diaphragm 8 are depressed, and these orifices 13 also enable a fresh supply of ink to be conveniently introduced into the ink-well without detaching or removing the stopper by simply unscrewing the plug 10, withdrawing the vertically-movable stem and the diaphragm, and pouring the ink into the hollow stopper through the screw-threaded opening 9 thereof, as will be obvious.

The improved construction above described renders it possible to conveniently and quickly remove and replace the diaphragm and to introduce fresh supplies of ink into the ink-well without displacing the stopper, which is fitted air-tight into the mouth of the ink-well and serves to contain and house the elastic dome-shaped diaphragm.

The screw-plug 10 is of sufficient size that when screwed into the orifice 9 of the hollow or chambered stopper the lower edge of the plug bears against the lateral annular flange 22 of the diaphragm, and thus the diaphragm and the vertically-movable stem are securely retained in proper position, but are susceptible of convenient detachment or removal whenever necessary.

In the modified construction illustrated in Fig. 2 of the drawings I dispense with the screw-plug 10, present in the construction shown in Fig. 1, but retain the chambered or hollow stopper fitted air-tight into the mouth of the ink-well. In Fig. 2 the stopper comprises a top wall 23 and a pendent vertical wall 24, around which a packing-ring 25, of rubber or other material, is placed for the purpose of fitting the stopper air-tight into the mouth of the ink-well. The bottom wall of the stopper is composed of a disk 26, formed with or attached to the stationary depending tube 27, and this disk is screwed into the stopper, so that a chamber 28 is provided in the latter for the reception of the elastic or rubber diaphragm 29. The tube 27 projects slightly above the disk 26 and is formed with an annular rib 30, into engagement with which the margin of the diaphragm is sprung or snapped prior to screwing the disk 26 into the stopper-body. The vertically-movable stem 16, Fig. 2, is constructed substantially the same as the vertically-movable stem, Fig. 1, and is readily snapped into engagement with the diaphragm, as hereinbefore explained. The tube 27 is constructed with a series of orifices 31 for the passage of air into the ink-well above the ink when the diaphragm is depressed by pressure applied to the dip-cup.

While I prefer to construct all the parts, except the packing-ring and diaphragm, of hard rubber, I do not wish to be understood as confining myself thereto, as the parts referred to may be made of any material suitable for the purpose in hand.

In Fig. 2 the form or shape of the glass or other body containing the ink-well is of a different form from that represented in Fig. 1; but the form or shape of the inkstand proper is not material and may be changed or varied as may be desirable.

Having thus described my invention, what I claim is—

1. The combination with an ink-well having a stopper-receiving mouth at its top portion, of a stopper constructed with a diaphragm-containing chamber and fitted air-tight into the mouth of the ink-well, a tube suspended from the chambered stopper, a diaphragm housed within said stopper, and a vertically-movable tubular stem engaged with the diaphragm, extending through the stopper into the pending tube, having a suitable dip-cup at its upper end and provided with a perforated lower end housed within said suspended tube, substantially as described.

2. The combination with an inkstand having a stopper-receiving mouth at its top portion, of a stopper constructed with a perforated bottom wall and a diaphragm-containing chamber and fitted air-tight into the mouth of the ink-well, a tube suspended from the perforated bottom wall of the chambered stopper, a diaphragm housed within said stopper, and a vertically-movable tubular stem engaged with the diaphragm, extending through the stopper into the pendent tube, having a suitable dip-cup at its upper end and provided with a perforated lower end housed within the suspended tube, substantially as described.

3. The combination with an ink-well, of a stopper fitted to the mouth of the ink-well and constructed with a perforated bottom wall and a diaphragm-containing chamber, a dome-shaped diaphragm housed within the chamber of said stopper, a plug detachably secured in the stopper and clamping the base of the diaphragm against the bottom of said stopper, and a vertically-movable tubular stem detachably engaged with the diaphragm and having a suitable dip-cup at its upper end, substantially as described.

4. The combination with an ink-well, of a stopper fitted to the mouth of the ink-well and constructed with a perforated bottom wall and a diaphragm-containing chamber, a tube suspended from the perforated bottom wall of the chambered stopper, a diaphragm housed within said stopper, a plug detachably secured in the top wall of the stopper, and a vertically-movable tubular stem extending through said plug into the suspended tube, engaged with the diaphragm, and having a suitable dip-cup at its upper end, substantially as described.

5. The combination with an ink-well, of a

stopper fitted to the ink-well and constructed with a diaphragm-containing chamber, and a screw-threaded orifice in its top wall, a diaphragm housed within said stopper, a screw-threaded plug screwed into said orifice and clamping a marginal portion of the diaphragm against the bottom of the stopper, and a vertically-movable tubular stem extending through the plug, engaged with the diaphragm and having a suitable dip-cup at its upper end, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES B. SMITH.

Witnesses:
J. H. SNOWDEN,
R. L. PANCOAST.