

(No Model.)

C. B. SMITH.
SELF FEEDING INKSTAND.

No. 512,336.

Patented Jan. 9, 1894.

Fig. 1.

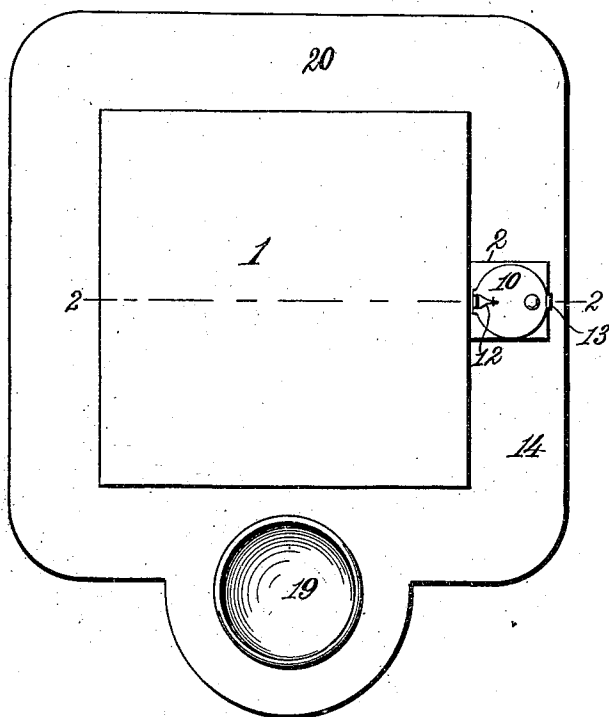


Fig. 3.

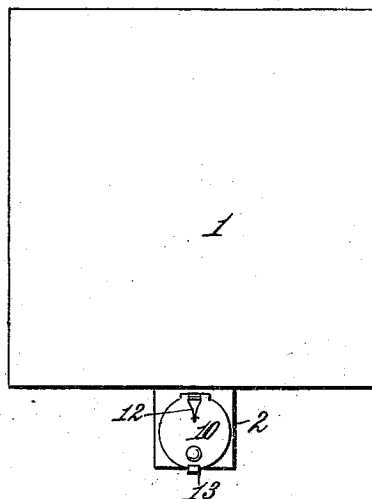


Fig. 2.

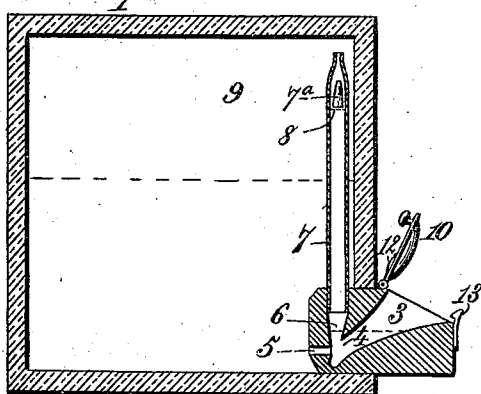
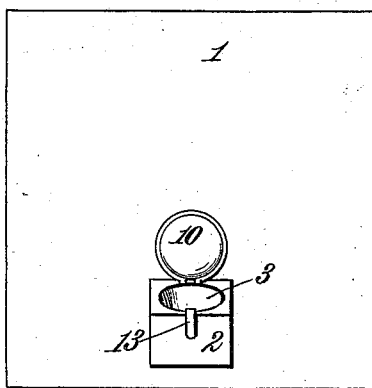


Fig. 4.



Witnesses.
Robert Emmett.
G. W. Rea.

Inventor:
Charles Barnabas Smith.
By *James L. Morris.*
Atty.

UNITED STATES PATENT OFFICE.

CHARLES BARNABAS SMITH, OF WARREN, PENNSYLVANIA.

SELF-FEEDING INKSTAND.

SPECIFICATION forming part of Letters Patent No. 512,336, dated January 9, 1894.

Application filed March 28, 1893. Serial No. 468,021. (No model.)

To all whom it may concern:

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

My invention relates to that type of ink-stand, or ink-well, in which the writing-fluid is sustained by atmospheric pressure in a suitable reservoir flowing therefrom automatically to a dip-cup which is so arranged as to be readily accessible to the pen.

It is the purpose of my invention to provide an ink-stand of this type in which the ink-reservoir shall have but a single point of communication with the exterior, at which the ink shall enter the dip-cup, and to combine therewith novel and simple means whereby the relative atmospheric pressure within and without the reservoir shall be substantially maintained at all times and a suitable quantity of ink supplied to the dip-cup, and a uniform depth of ink preserved therein.

It is a further purpose of my invention to provide an ink-stand of this type with simple and improved means for permitting an inflow of air from time to time, and for conducting the same, as it enters, to the air-space in the upper part of the reservoir without passing through the body of ink contained therein, whereby the air entering the reservoir and the ink flowing from the latter to the dip-cup shall have a separate inlet and exit, respectively.

Finally, it is my purpose to provide simple means whereby, upon inverting the ink-stand, ink shall be prevented from entrance to the air-inlet.

My invention consists to the ends specified, in the several novel features of construction and new combinations of parts hereinafter described and then more particularly pointed out in the claims which follow and conclude this specification.

To enable those skilled in the art to which my invention pertains to clearly understand and practice the same, I will now describe said invention in detail, reference being had, for such purpose, to the accompanying drawings, in which—

Figure 1 is a plan view of the ink-stand with its base, or tray, showing the completed structure. Fig. 2 is a vertical section of the ink-reservoir taken upon the line 2—2, Fig. 1, the tray being omitted. Fig. 3 is a plan view of the parts shown in Fig. 2, and Fig. 4 is a front elevation of the same.

In the said drawings the reference numeral 1 indicates the ink-well, or ink-reservoir, which is usually, though not necessarily, a rectangular receptacle formed of glass, hard rubber, metal, or any suitable material. Upon one side of this reservoir, at or near the bottom thereof, an opening is formed in the vertical wall, preferably at a point equally distant from the two angles of the reservoir adjacent to said opening. The form of the latter is not essential, but I prefer that it shall harmonize with the shape of the reservoir and therefore have illustrated said opening as rectangular. Within it is inserted a plug, or filling piece 2, preferably of hard rubber, closely fitting the opening to securely prevent the leakage of ink. In this filling-piece 2 is formed the dip-cup 3, which is practically upon the exterior of the reservoir, and in communication with said dip-cup is a channel, or passage, 4, lying partly within and partly without the wall of the reservoir 1, in which said opening is formed, and entering the dip-cup 3 at or near its bottom, said dip-cup being of the ordinary funnel-shape.

In that part of the plug, or filling-piece 2, which lies in the interior of the reservoir 1, is formed an inlet or supply-passage 5 for the ink which passes to the dip-cup 3. This inlet-opening is so termed by reason of the fact that it constitutes an inlet to the dip-cup although it is, relatively to the reservoir 1, an outlet. It penetrates the rearward wall of the filling-piece 2 substantially in a horizontal line, at or near the level of the bottom of the dip-cup 3.

In that portion of the filling-piece 2 which lies within the interior of the reservoir 1, is formed an air-inlet 6, vertical or nearly so, and entering the lowest point, or bottom of the dip-cup 3 just in front of, and substantially in the same vertical line with, the ink-inlet, or supply-passage 5. This air-inlet is formed by the insertion of a small tube 7, of glass, rubber or any other material suitable

for the purpose, said tube being either integral with the filling-piece 2, or, if preferred, inserted in an opening therein. The tube is extended from the point where it enters the filling-piece to a point near the top of the reservoir, as shown in Fig. 2. Its upper end is slightly contracted in diameter, thereby reducing the caliber of its bore, or channel, in a substantially similar degree. In said tube is placed a conical, or conoidal valve 7^a, which normally rests, by its own gravity, upon a pin, or other support 8, arranged at a suitable point in the tube 7. In this position air may pass freely from the lower end of said tube to the confined air-space 9, in the top of the reservoir. When the ink-stand is inverted however, the valve drops by gravity to the diminished, or tapered end of the tube and by reason of its shape seats therein and closes the air-passage, thereby preventing the entrance of ink within the tube.

The exterior open end of the dip-cup is closed by a lid 10, which I prefer to throw open by means of any ordinary spring 12, locking it, when closed, by a catch, or latch 13 of suitable form. This lid is made of any preferred material, such as hard rubber, and provided with a gasket to enable it to be closed hermetically.

The ink-stand may be mounted upon a base, or tray, 14, which may, if desired, form an integral part of the reservoir 1, or capable of separation therefrom. Upon this tray or base is mounted, or formed, a cup 19, adapted to receive shot, sponge, or other suitable material. The marginal portions of said tray project beyond the base of the ink-stand and two of the same, as, for example, those indicated by the reference numeral 20, may be utilized as trays for pens and pencils.

I may substitute a ball valve or other form of check valve for the conoidal valve shown in the drawings.

What I claim is—

1. An ink-stand consisting of a reservoir having a single opening at or near the bottom, a filling-piece inserted in said opening and having an exterior dip-cup and an interior supply-passage for the ink entering the

dip-cup, and an air-inlet consisting of a tube having one end communicating with the ink-space in the filling-piece and the other end communicating with the air-space in the top of the reservoir, substantially as described.

2. In an ink-stand the combination with a reservoir of a filling-piece, or plug, closing an opening in the wall of said reservoir and having a dip-cup in its exterior portion and an ink-inlet in its interior portion for the passage of ink from the reservoir to the dip-cup, an air-inlet consisting of a tube arranged within the reservoir, one end of said tube entering the filling-piece, or plug, just in front of said ink-inlet, and a valve arranged in said tube and normally permitting entrance of air, but capable of falling by gravity to the end of said tube near the top of the reservoir to close the same and prevent the entrance of ink, when the reservoir is inverted, substantially as described.

3. In an ink-stand, the combination with a suitable reservoir of a filling-piece, or plug, arranged in an opening at or near the bottom of said reservoir and having a dip-cup in its exterior portion and an ink-inlet to said dip-cup in its interior portion, and air-inlet consisting of a tube entering the interior portion of the filling-piece and communicating with the lower portion of the dip-cup, its diminished upper end being extended into the air space in the upper part of said reservoir, a conical or conoidal valve arranged in said tube, and normally resting upon a support therein to permit the inflow of air, its conical end being adapted to seat in and close the diminished end of the tube when the reservoir is inverted, a spring-raised lid for the dip-cup and a locking device to hold said lid hermetically closed, substantially as described.

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

CHARLES BARNABAS SMITH. [L. S.]

Witnesses:

C. B. AYERS,

A. J. HAZELTINE.