

No. 684,320.

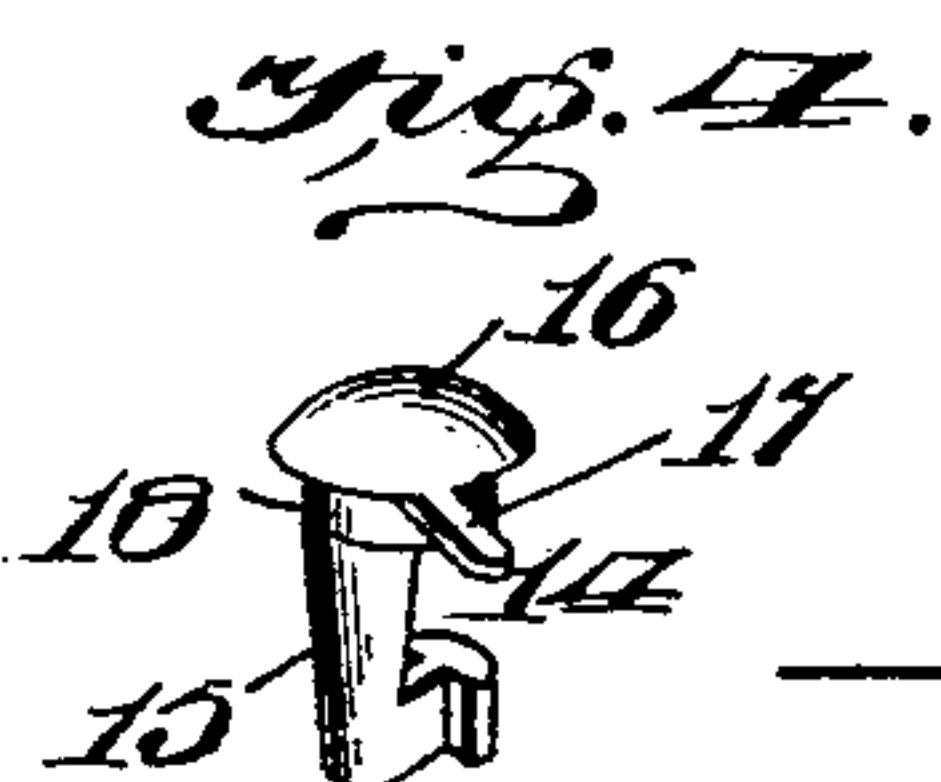
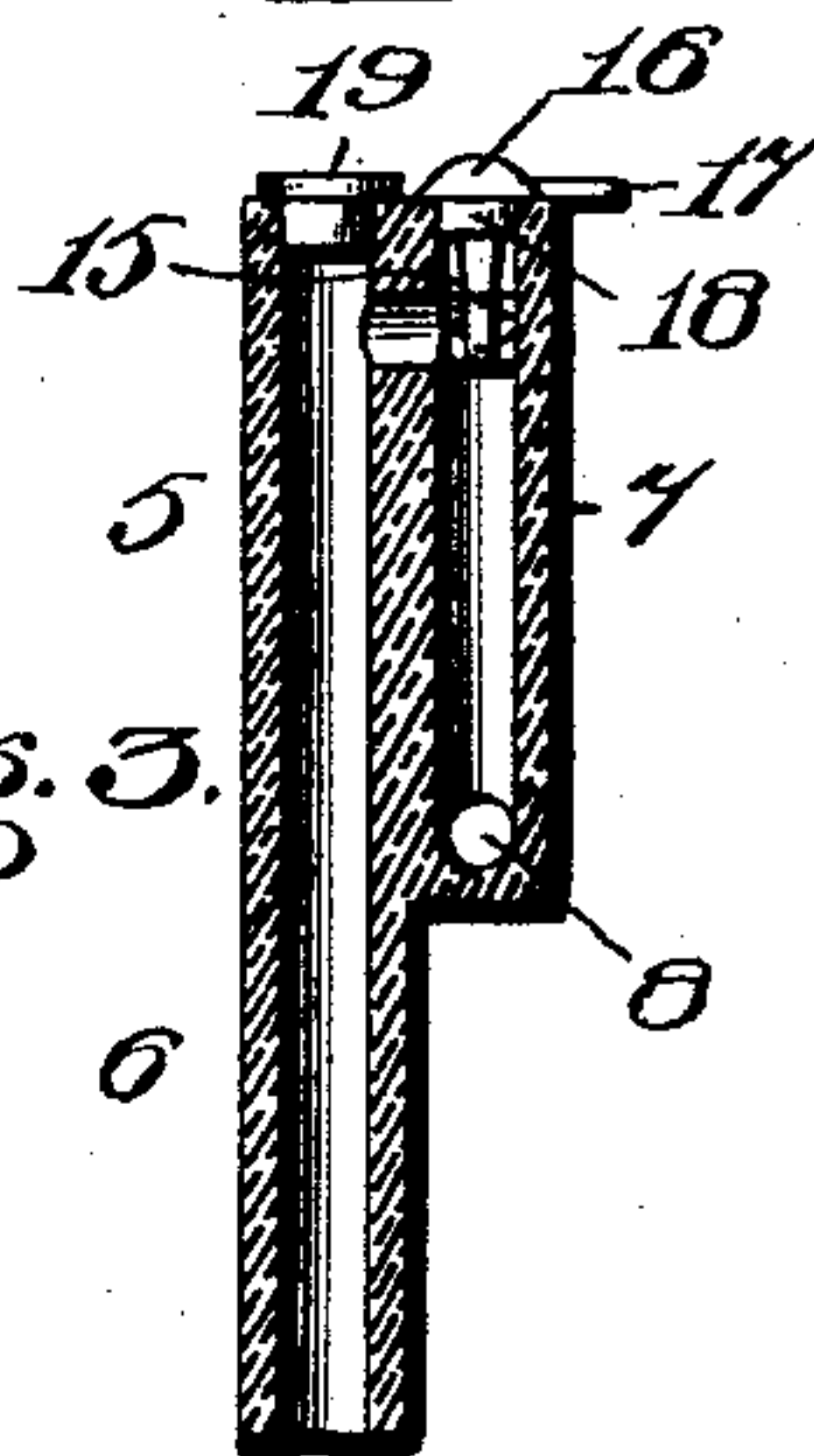
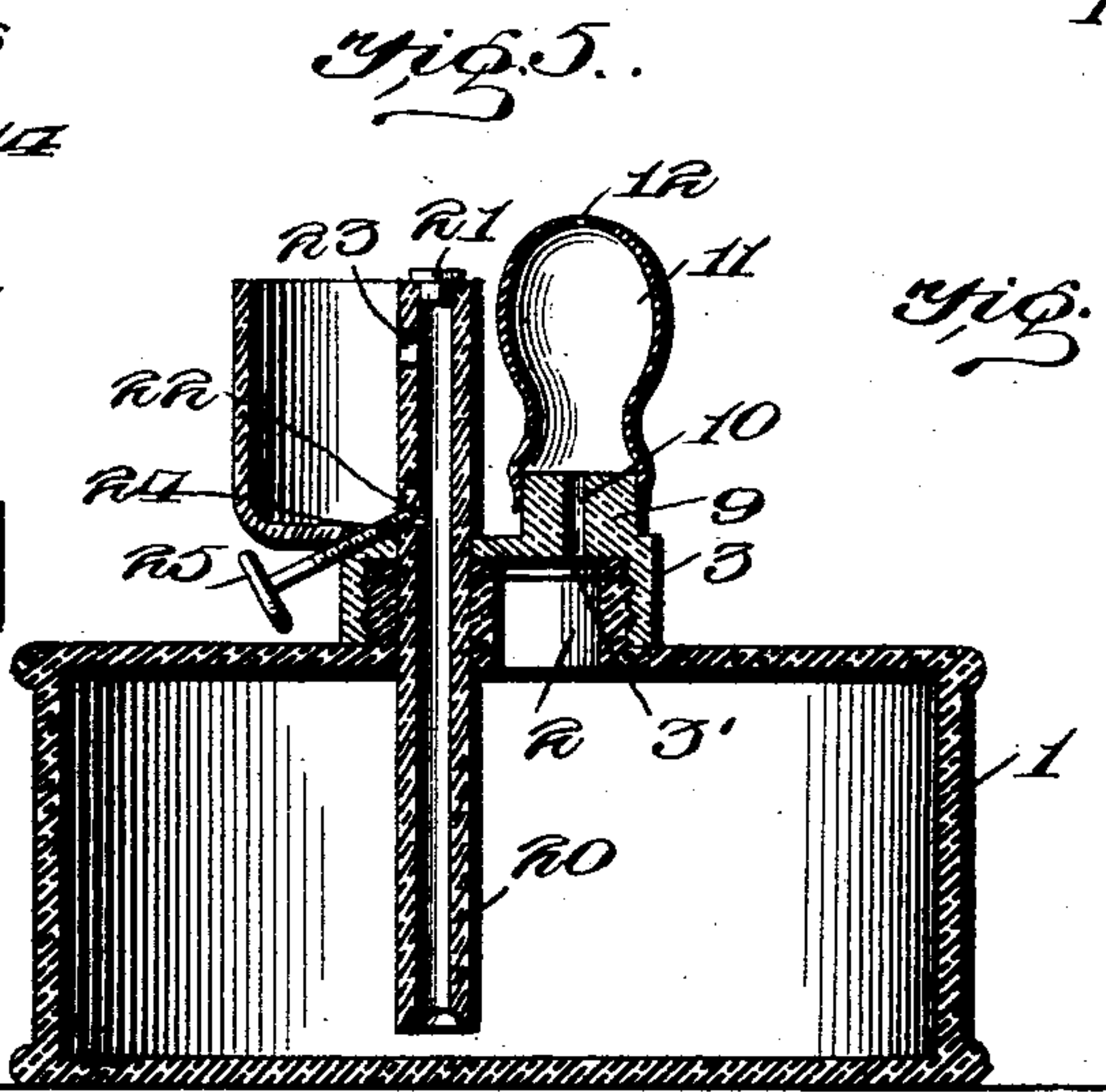
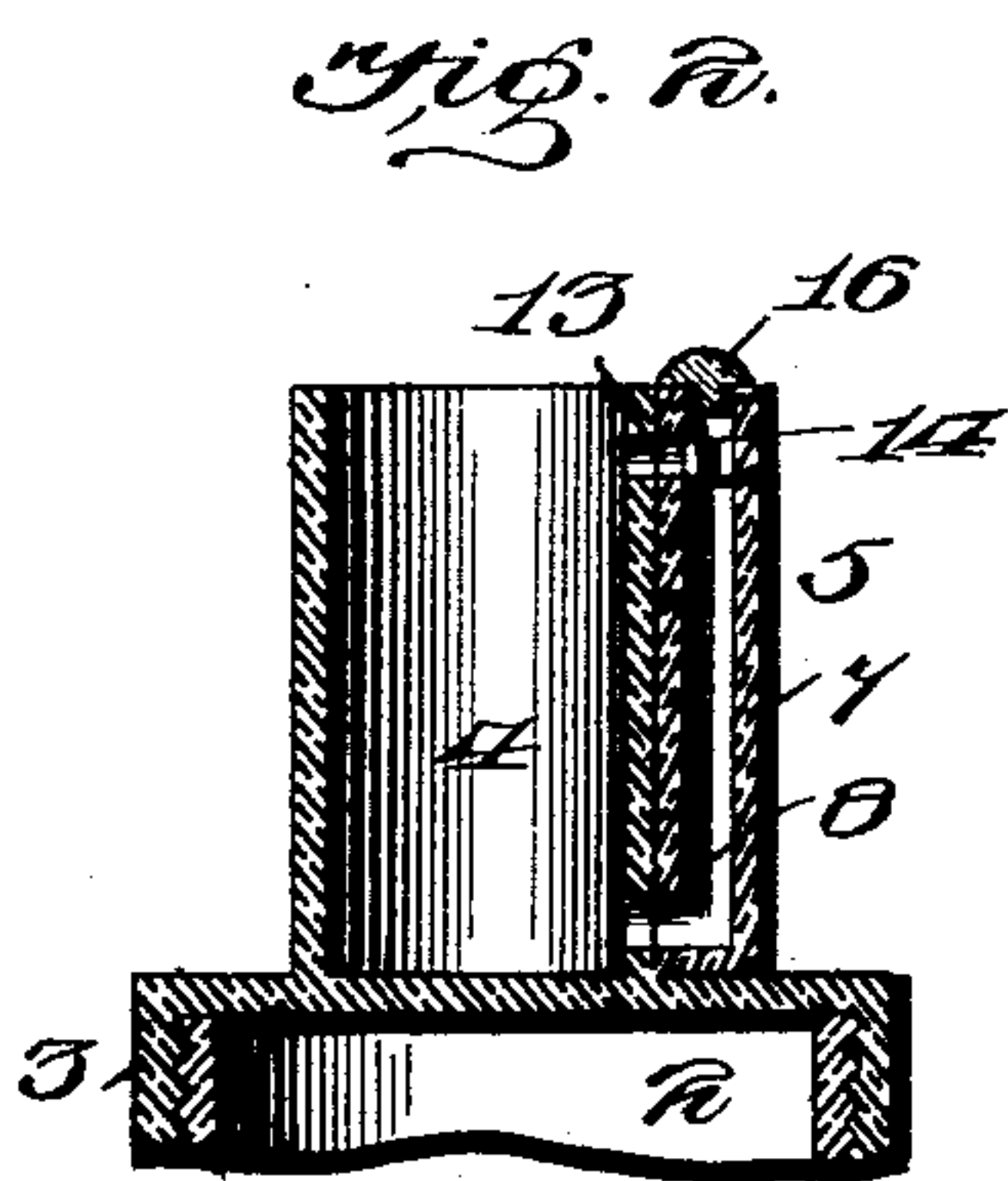
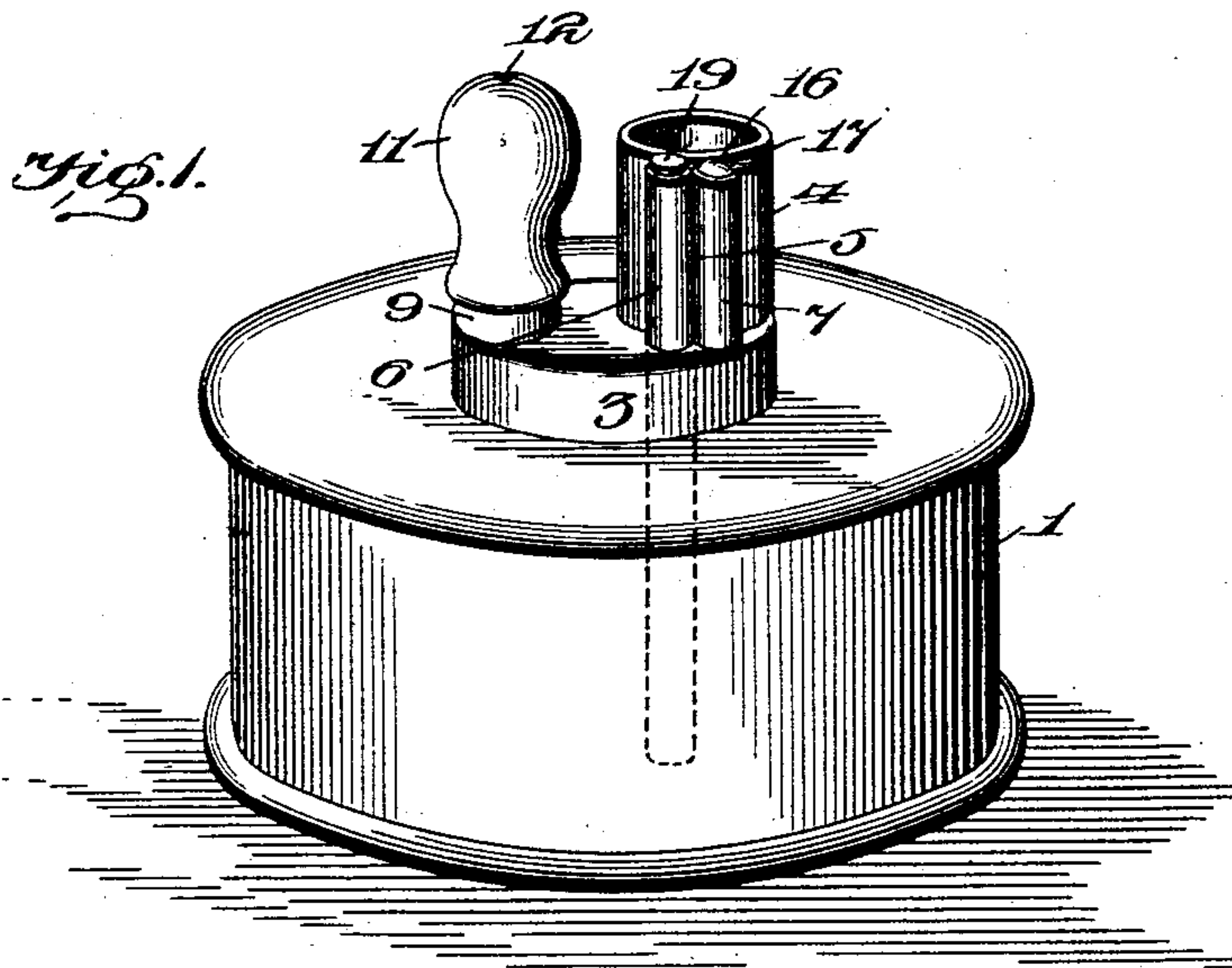
Patented Oct. 8, 1901.

W. H. SIDENSTRICKER.

INK WELL.

(Application filed Nov. 16, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY SIDENSTRICKER, OF MOBERLY, MISSOURI.

INK-WELL.

SPECIFICATION forming part of Letters Patent No. 684,320, dated October 8, 1901.

Application filed November 16, 1900. Serial No. 36,735. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY SIDENSTRICKER, a citizen of the United States, residing at Moberly, in the county of Randolph and State of Missouri, have invented a new and useful Ink-Well, of which the following is a specification.

This invention relates to that class of ink-wells which comprehend a reservoir and a comparatively small dip-well designed to be supplied with a small quantity of ink from the reservoir from time to time in order to prevent the exposure and consequent evaporation of any considerable portion of the fluid.

In this class of devices it is common to provide means for forcing the ink from the reservoir into the dip-well through a supply-opening adjacent to the upper end of the latter, and as a consequence the ink exposed therein evaporates and leaves a thick deposit, which not only renders the well unfit for use, but frequently clogs the supply-opening and prevents the replenishing of the dip-well from the reservoir.

The object of my invention, therefore, is to provide a device of this character with means for filling the dip-well from the reservoir and for permitting the unused ink within the dip-well to be returned to the reservoir, and thus protect it from evaporation when the well is not in use.

A further object of the invention is to combine in an ink-well of this character a device for forcing the ink from the reservoir to the ink-well and means for controlling the return of the unused ink, so that while the latter is prevented from flowing back to the reservoir during the use of the dip-well it may be compelled to do so when there is no further necessity for its use.

A still further object of the invention is to provide for the refilling of the reservoir through the medium of the dip-well without necessity for removing the cap of the reservoir, which in the preferred form of my invention serves as a support for the dip-well and auxiliary devices.

To the accomplishment of the objects stated and others subordinate thereto, as will hereinafter appear, my invention consists in the construction and arrangement of parts herein

described, illustrated in the accompanying drawings, and defined in the appended claims.

In said drawings, Figure 1 is a perspective view of the preferred form of my ink-well complete. Fig. 2 is a longitudinal sectional view through the dip-well and the short leg of the siphon. Fig. 3 is a longitudinal sectional view through the siphon. Fig. 4 is a detail view of the siphon-valve, and Fig. 5 is a sectional view of another form of my invention.

Referring to the numerals employed to designate corresponding parts throughout the views, 1 indicates a receptacle or reservoir, of any desired shape, size, and material, provided with a neck 2, upon which is screwed a metal cap 3, provided with a gasket 3', designed to effect the air-tight closure of the reservoir to protect the ink therein from evaporation. Upon the cap 3 is supported in any suitable manner a dip-well 4 of a size suitable for the reception of such quantity of ink as may serve for immediate use, the form and dimensions of this well being susceptible of wide variation in adapting the device for various purposes or individual tastes. The dip-well 4 is designed to be filled from the reservoir through a siphon 5, having its long leg 6 passed through the cap 3 and extended to a point adjacent to the bottom of the reservoir. The upper end or bend of the siphon is located adjacent to the top of the dip-well, and its short leg 7 is disposed in close contact with the wall of the well and extends from the bend to the cap 3, where it terminates, as shown in Fig. 1. Adjacent to the end of its short leg the siphon is pierced by a transverse port 8, extending through the wall of the dip-well immediately above its bottom in order to establish communication between the well and reservoir through the siphon.

Extending above the cap 3 to one side of the well 4 I provide a nipple 9, pierced by a small opening 10 and serving as a means of attachment for a rubber bulb 11, the mouth of which is drawn over the nipple and which is provided in its dome with a minute opening 12. The opening 10 obviously permits air to pass from the reservoir through the bulb 11.

The construction thus far described comprehends a complete embodiment of my in-

vention in its broadest aspect, because it will be observed that by compressing the bulb 11 air will be forced into the reservoir above the ink and the latter being subjected to pressure will pass through the siphon and will escape into the well 4 through the port 8. As a filling device for the well this construction without addition would not be effective, because it will be noted that upon the release of the bulb 11 the excess of air would be permitted to escape and the liquid within the well 4 will flow back into the reservoir under siphonic action. It is this peculiarity which renders the reservoir capable of being filled without removing the screw-cap 3, as it is evident that as the liquid is poured into the dip-well it will be siphoned into the reservoir. The provision of the siphon and bulb thus enables me to compel the ink to flow from the reservoir into the well or from the well back into the reservoir, and this action is exceedingly useful for the purpose of keeping the ink duct or channel—to wit, the siphon—perfectly clear and free from such sediment as would otherwise decrease the effectiveness of the device.

We have seen that with a closed siphon it will be impossible to maintain the liquid-level within the dip-well 4 unless the bulb 11 is held in its collapsed position. It therefore becomes necessary to provide means for making and breaking the siphon in order that it may be used to return the ink from the well or may be rendered inactive during such time as the well is in use. This end I accomplish by providing what I shall term an "overflow-port" 13, piercing the short leg of the siphon and the wall of the dip-well at such distance above the bottom of the well as will insure a proper depth of ink therein. Obviously when this port is open the siphon will be broken and, while any ink within the well 4 which may be above the port 13 will flow back into the reservoir, the liquid-level will be maintained in the horizontal plane of this port, because the siphonic action will be interrupted and the ink will be prevented from escaping through the lower port 8. As this port 13 is closed or opened the siphon will be complete or broken, and I therefore provide a siphon-valve 14, carried at the end of a reduced shank 15, inserted in the upper end of the short leg 7 of the siphon and provided with a cap 16, from which extends an indicator 17, designed to indicate the position of the valve. An air-tight connection around the shank 15 of the valve at a point above the port 13 is insured by a rubber gasket 18, surrounding the shank immediately under the cap and fitting closely within the siphon. It will now appear that as the valve 14 is swung opposite the port 13 the siphon will be closed and that siphonic action may be inaugurated by pressing the bulb 11 to expel the air from the siphon. On the contrary, when the valve is open the siphon will be inefficient and a proper quantity of ink will be

retained within the dip-well. If desired, the upper end of the long leg 6 of the siphon may be closed by a removable plug 19 to facilitate the cleaning of the ink-duct whenever it may be desirable. The operation of this form of the invention is as follows: Supposing it is desired to refill the reservoir, the bulb 11 is compressed for the purpose of forcing sufficient liquid through the siphon to expel the air. The ink is then poured into the dip-well, the bulb 11 is released, and if the ink is now poured continuously into the well 4 it will be siphoned into the reservoir until the latter is refilled, it being observed that necessity for the removal of the cap 3 is thus obviated. If now it is desired to use the dip-well, the siphon-valve is turned to its open position and the dip-well is filled by pressing the bulb 11, immediately upon the release of which latter the level of the ink will drop to the port 13, which constitutes an overflow-port and permits any excess of fluid to flow back through the ink-duct to the interior of the reservoir. Assuming that there is no further need for the ink in the well, the valve is turned to its closed position to reestablish the siphon, the bulb is compressed to expel the air and create siphonic action, and, as will be evident, the contents of the dip-well will be quickly siphoned into the reservoir and protected from evaporation until used.

In Fig. 5 I have illustrated a variation of the construction shown and described, this variation consisting in the elimination of the siphon and in the substitution of a filling-tube 20, closed at its upper end by a plug 21 and pierced by lateral ports 22 and 23, coincident with the ports 8 and 13 through the wall of the dip-well. The port 8 is closed in this form of the invention by a controlling-valve 24, provided with a handle 25, exposed upon the exterior of the well and designed to close the port 8 for the purpose of preventing the ink within the dip-well from flowing back into the reservoir until such return is desired.

It will be noted that in both forms of the invention communication is established between an ink duct or tube and the dip-well at the top and bottom of the latter and that said tube or duct extends into the reservoir. In the first form of the invention the tube is comprehended by the siphon 5, comprising the long and short legs 6 and 7, and in the other form of the invention by the tube 20. In drawing the subjoined claims I shall recite a tube extending into the reservoir and communicating with a dip-well at a plurality of points, and by this term I desire to be understood as meaning either a branched siphonic tube, such as is shown in Fig. 3 of the drawings, or a straight tube, as illustrated in Fig. 5. It will also be observed that in both forms of the invention I have provided means for controlling the communication between the reservoir and the bottom of the dip-well. In

the first form of my invention this means is embodied in the siphon-valve 15, and it is evident that when this valve is opened the siphonic action is broken and there can be no communication between the bottom of the dip-well and the reservoir. In the second form of the invention (illustrated in Fig. 5) this means is embodied in the valve 24, which not only controls the communication between the reservoir and the bottom of the dip-well, but is also located at the bottom of the well.

From the foregoing it will be observed that I have produced a simple and effective ink-well embodying the construction best calculated to effect the accomplishment of the several objects stated; but while the present embodiment of my invention appears at this time to be preferable I desire to reserve the right to effect such changes, modifications, and variations thereof as may be clearly comprehended within the scope of the protection prayed.

What I claim is—

1. An ink-well comprising a reservoir, and a dip-well having its bottom disposed higher than the bottom of the reservoir, and means for establishing communication between the reservoir and dip-well at points adjacent to the top and bottom of the latter, whereby the fluid is permitted to flow from the dip-well to the reservoir.

2. An ink-well comprising a reservoir, a superposed dip-well communicating at points adjacent to its top and bottom with the reservoir, and means controlling the communication at one of said points to permit or prevent the escape of fluid to the reservoir from the point adjacent to the bottom of the dip-well.

3. An ink-well comprising a reservoir, a superposed dip-well communicating at points adjacent to its top and bottom with the reservoir, means controlling the communication at the bottom of the well to permit or prevent the escape of fluid to the reservoir, and means for forcing the fluid into the well from the reservoir.

4. An ink-well comprising a reservoir, a dip-well, a tube communicating with the reservoir and communicating with the dip-well at a plurality of points, and means for pre-

venting the fluid within the well from flowing into the tube at one of the points of communication.

5. An ink-well comprising a reservoir, a dip-well, a tube extending into the reservoir and communicating with the dip-well at points at or adjacent to the top and bottom of the latter, and a valve controlling the escape of fluid into the tube from the bottom of the well.

6. An ink-well comprising a reservoir, a superposed dip-well and a siphon establishing communication between the well and reservoir.

7. An ink-well comprising a reservoir, a superposed dip-well and an intermediate siphon, and mechanism for setting up or terminating the siphonic action at will.

8. An ink-well comprising a reservoir, a superposed ink-well, an intermediate siphon, mechanism for setting up or terminating the siphonic action at will, and means for forcing fluid from the reservoir into the well through the siphon.

9. An ink-well comprising a reservoir, a superposed dip-well, a siphon having its long leg extended into the reservoir and its short leg in communication with the bottom of the well, a port piercing the wall of the well above its bottom and communicating with the siphon at a point intermediate of its ends, and a valve controlling said port to complete the siphon and empty the well, or to break the siphon and establish communication with the well at an elevated point for the return fluid above a predetermined level.

10. An ink-well comprising a reservoir provided with a cap, a dip-well mounted upon the cap, a siphon piercing the cap and communicating with the reservoir and dip-well, respectively, an apertured nipple upstanding from said cap, and an apertured bulb retained upon the nipple.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM HENRY SIDENSTRICKER.

Witnesses:

ED J. WHEELER,
SCHUYLER C. LEEDOM.