(No Model.) 2 Sheets—Sheet 1.

J. R. HANDY.

BAROMETER INKSTAND.

No. 572,483. Patented Dec. 1, 1896.

Fig. 1.

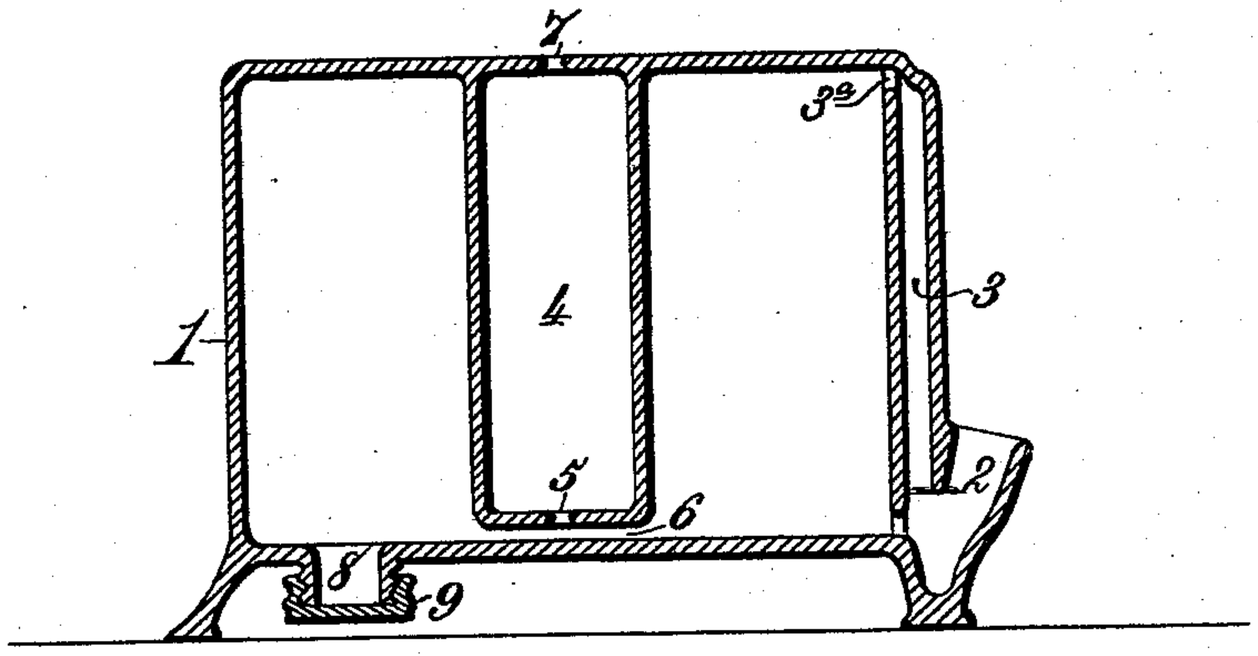


Fig. 2

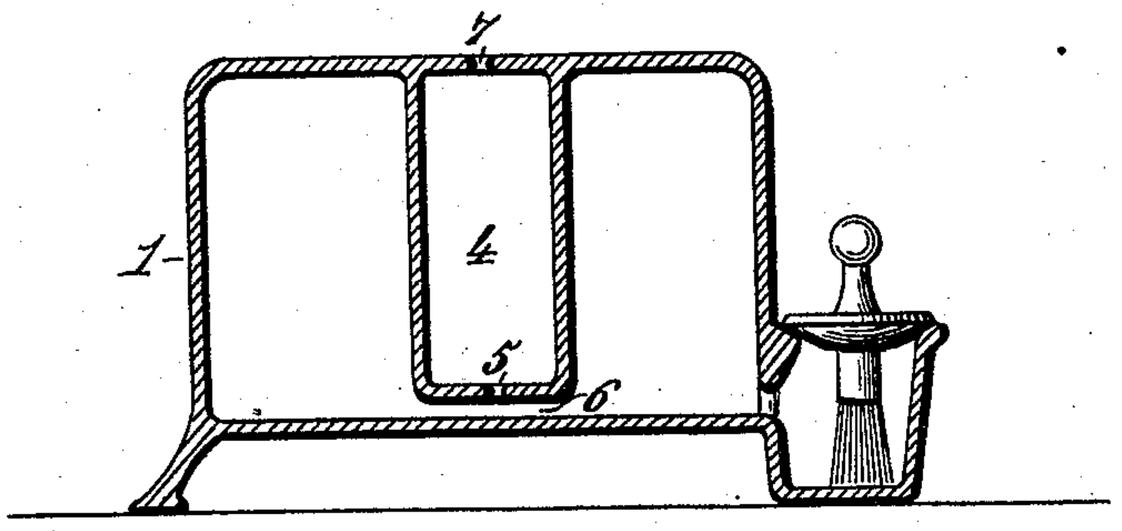
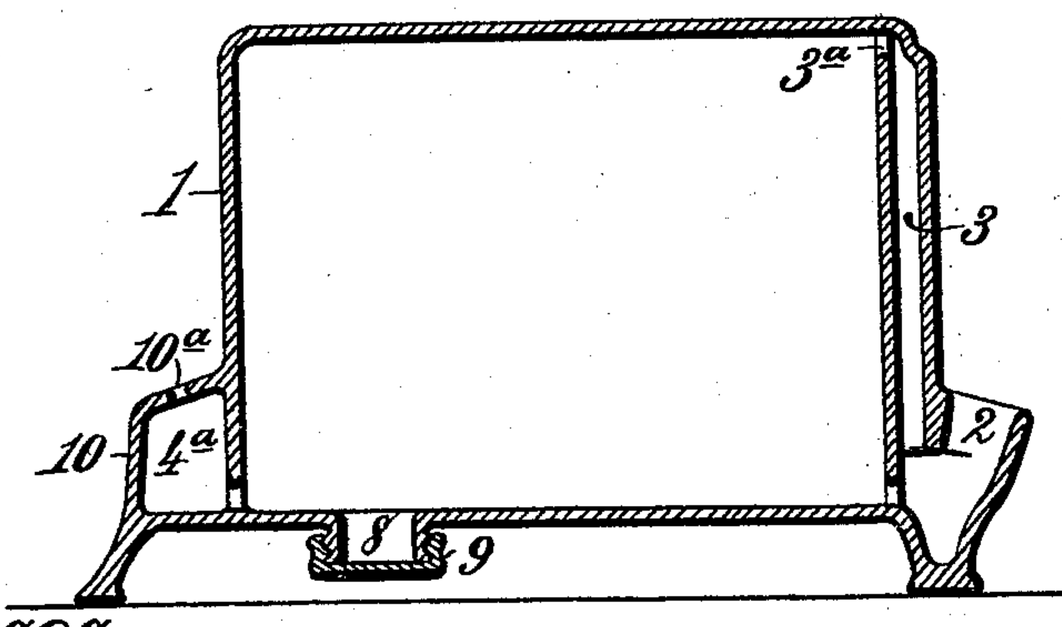


Fig. 3.



Witnesses.
Robt Everett.
Geo. N. Rea.

Inventor.
John R. Handy.
By James L. Norris.
Atty.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

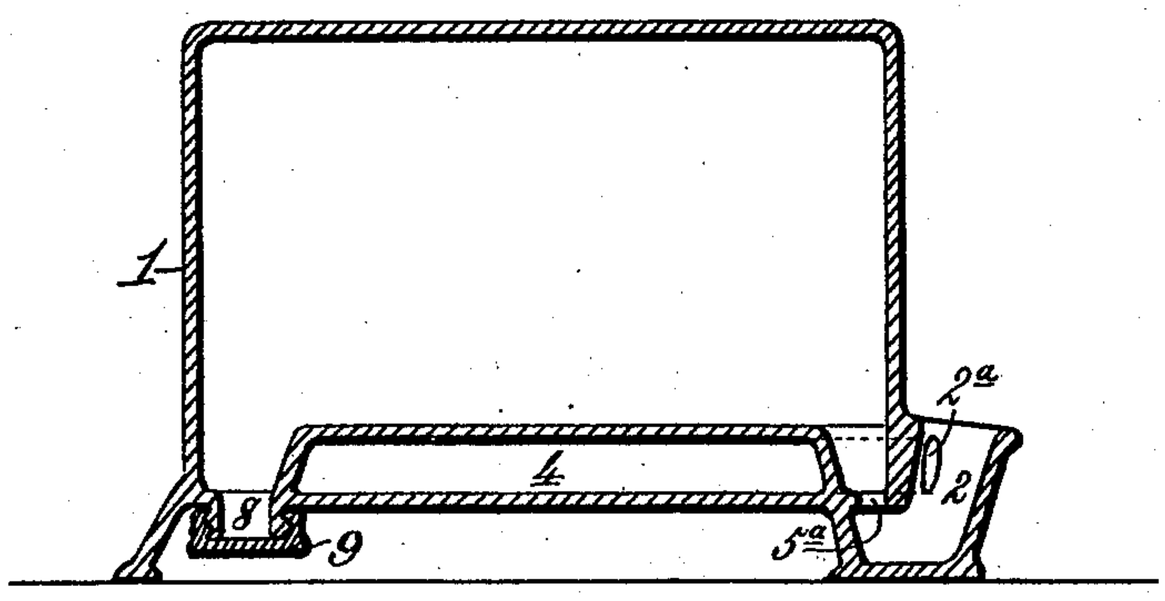
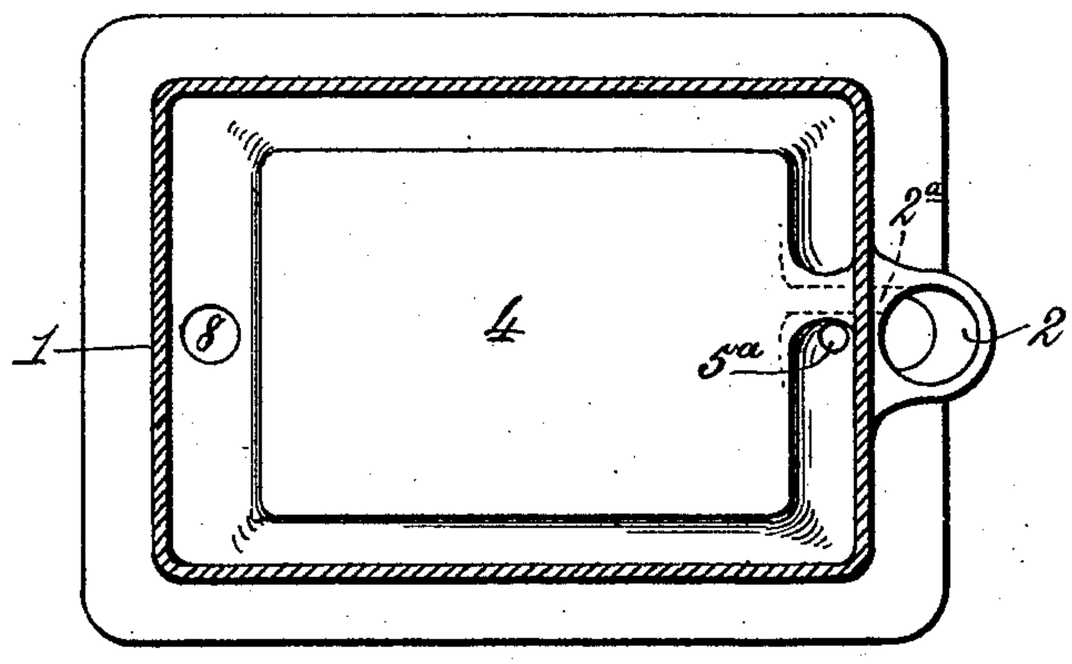


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN R. HANDY, OF JAMESON, MISSOURI.

BAROMETER-INKSTAND.

SPECIFICATION forming part of Letters Patent No. 572,483, dated December 1, 1896.

Application filed March 24, 1896. Serial No. 584,652. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. HANDY, a citizen of the United States, residing at Jameson, in the county of Daviess and State of Missouri, have invented new and useful Improvements in Barometer-Inkstands, of which the following is a specification.

My invention relates to that class of inkstands commonly known as "barometer-inkstands," in which a body of ink contained in a closed reservoir and held therein above the normal level of ink in the dip-cup by atmospheric pressure is supplied to said cup by the occasional entrance of air to the reservoir, caused by the ink in the dip-cup being lowered, either by evaporation or by use, to a point at or near the opening communicating with the reservoir.

It is an objection common to all inkstands of this type that if they happen to stand where they are exposed to the sun or to a temperature higher than that of the interior of the reservoir the expansion of the confined air will drive the ink out, overflow the dip-cup, and pour a quantity of ink upon the table or desk, by which the table cover or spread or the desk-top, as the case may be, is ruined, besides wasting the ink and requiring that the inkstand be cleansed and refilled. For these reasons it has been necessary to provide inkstands of this kind with a pan or surrounding dish to catch and retain the overflowing ink, which not only increases the expense, but fails to remove the cause producing the overflow. All that is accomplished is the prevention of injury to the table or desk cover and the recovery of most of the ink which overflows into the pan.

It is the purpose of my present invention to provide a simple and economical construction and combination of parts whereby the ink shall be prevented from overflowing the dip-cup under all the different temperatures to which the inkstand may be subjected; and my invention consists to this end in the novel features and in the parts and new combinations of parts hereinafter fully explained, and then particularly pointed out and defined in the claims which conclude this specification.

To enable others to clearly understand and to make and use my said invention, I will now describe the same in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a central vertical section of a barometer-inkstand constructed in accordance with my invention. Fig. 2 is a sectional view showing the application of the invention to a mucilage-cup. Fig. 3 is a central vertical section of a barometer-inkstand, showing a modified form in which the invention may be incorporated. Fig. 4 is a vertical central section showing a modified construction of inkstand. Fig. 5 is a horizontal section of Fig. 4.

The reference-numeral 1 in said drawings indicates the ink-reservoir of a barometer-inkstand, which is usually formed of glass, though any suitable material may be used. The inkstand may also be of any preferred shape and size, as my invention imposes no limitations in these respects. The reservoir 1 communicates at its bottom with a dip-cup 2 in the manner heretofore practiced in inkstands of this type. Immediately in rear of the dip-cup 2 and outside of the wall which separates said cup from the reservoir 1 is formed a vertical passage 3, which is inclosed by a vertical wall having a semicylindrical or other suitable form. The upper end of said passage communicates with the interior of the reservoir 1, a communicating-passage 3^a being provided for this purpose between the top of the reservoir and the top of the front vertical wall of the same. Its lower end enters the dip-cup and terminates at or about the point where the ink will normally stand in said dip-cup.

Within the reservoir 1 at any suitable point is arranged a vertical overflow or expansion chamber 4, which extends from the top of the reservoir to a point near the bottom or floor. I have shown this chamber in the drawings arranged centrally, but it may have any other location preferred. It is provided at its lower end with an opening 5, through which the ink may pass into its interior from the channel 6 between the bottom of the reservoir and the lower end of said overflow or expansion chamber. At its upper end the said chamber 4 has an opening 7 through the top wall of the reservoir, by which it communicates with the exterior of the reservoir. The ink is supplied when necessary through an opening 8 in the

bottom of the reservoir, said opening being closed hermetically by a stopper or plug 9.

The purpose of the overflow or expansion chamber 4 is to receive the ink which would otherwise flow into the dip-cup 2 when the air confined in the reservoir 1 is expanded by heat. When the temperature falls or returns to the normal point, the ink flows from said chamber 4 back into the reservoir, thus preventing all overflow of the dip-cup and the waste and damage usually produced.

It is evident that I may apply this invention without change to mucilage-cups, and I have shown such an application in Fig. 2 of the drawings. It permits the brush to remain at all times at a suitable depth in the liquid mucilage and avoids all danger of overflow. When applied to barometer-inkstands, the invention possesses all the advantages belonging to this type of inkstand, besides the special advantages hereinbefore mentioned.

As a modified form of said invention I may place the chamber 4 upon the exterior of the reservoir 1, as shown in Fig. 3. In this form it will be a trough-shaped chamber 4^a, which will preferably surround the base of the reservoir and may extend wholly around it, save the space occupied by the dip-cup, or it may extend part way around only. The exterior chamber 4^a is inclosed by a wall 10, and at a suitable point in said wall, at or near the highest point, is formed an opening 10^a, by which the chamber communicates with the exterior.

The principle of operation is the same in each of the different forms shown. When ink is introduced through the opening 8, the aperture 7 in the top of the chamber 4, or the opening 10^a in the chamber 4^a when that construction is used, is closed by the finger and is held closed until the reservoir is filled and the inkstand turned right side uppermost. The ink then rises in the dip-cup until it covers the lower end of the passage 3, when the finger is removed from the opening 7. Ink also enters the chamber 4 and stands therein at the same level with the ink in the dip-cup. Should any expansion of air take place in the reservoir, ink will pass into the chamber 4 or 4^a, as the case may be, and will also flow into the dip-cup, standing at the same level in both dip-cup and expansion-chamber under all circumstances, any expansion causing the ink to rise in unison, but as the capacity of the chamber 4 is very much greater than that of the dip-cup said chamber and cup will easily accommodate all the ink driven out of the reservoir by any ordinary expansion. Even when unusual expansion occurs the chamber 4 has so much greater cubic area than the dip-cup and so much greater quantity of ink enters it than that flowing into the cup 2 that there will practically be no danger of any overflow.

The operation in the construction shown in Figs. 2 and 3 is the same and due to the same causes, as already explained.

In order to permit a suitable degree of rise and fall of ink in the dip-cup 2 and also preserve a sufficient depth of ink therein for the pen, I may make the said cup with its bottom below the bottom of the ink-reservoir and cause the lower end of the air-passage 3 to lie so far below the top of the dip-cup that the ink will never, under normal conditions, stand very near the top of said cup, leaving ample space for the rise produced by expansion of the air in the reservoir. I prefer, also, to make the mouth of the dip-cup circular to enable it to be closed by a plug or cork.

I may omit the air-passage 3 by simply making the passage which permits ink to flow from the reservoir into the dip-cup large enough to allow the passage of air at the same time. I may also arrange the overflow or expansion chamber beneath the ink-reservoir, as shown in Fig. 4. In this figure I also show the air-passage 3 omitted, the opening 2^a into the dip-cup being of such form and size as to admit air as well as to allow the passage of ink in the opposite direction. This opening is preferably arranged at one side of the dip-cup, as shown in Fig. 5. In this construction the ink flows from the reservoir 1 into the dip-cup 2 through a vertical opening 5^a and rises in the dip-cup until it closes said opening. When expansion takes place in the reservoir, the ink is forced out through this opening 5^a into the dip-cup and flows from the latter into the expansion-chamber 4 through the passage 2^a, which is of such height as to permit the outflow of air and inflow of ink simultaneously. The ink rises in both dip-cup and expansion-chamber at the same rate, and the same level is maintained in both, as already explained, but the capacity of the expansion-chamber is so great relatively to that of the dip-cup that the latter will never overflow under any ordinary rise of temperature.

What I claim is—

1. A barometer-inkstand having a communicating dip-cup and an overflow or expansion chamber communicating by an opening in its bottom with the interior of the reservoir, said chamber being open at its top to the exterior air, said dip-cup having a vertical passage the lower end of which lies in said cup and the upper end communicates with the interior of the reservoir, substantially as described.

2. A barometer-inkstand having a dip-cup communicating with a reservoir for the ink, and a separately-inclosed overflow, or expansion chamber, the lower end of the latter having an inlet and outlet opening for the ink below the normal level of ink in the dip-cup and an opening in its top for the inflow and outflow of air, substantially as described.

3. A barometer-inkstand having a vertical overflow or expansion chamber extending from a point below the top of the ink-reservoir to a point below the normal level of ink in the dip-cup, the lower wall of said chamber having an ink-inlet, and the upper wall

an outlet, to the exterior, and a passage extending from the top of the reservoir to the level of the ink in the dip-cup the upper end of said passage communicating with the interior of the reservoir, substantially as described.

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

JNO. R. HANDY.

Witnesses:
EUGENE A. MARTIN,
HAMLET WYNN.