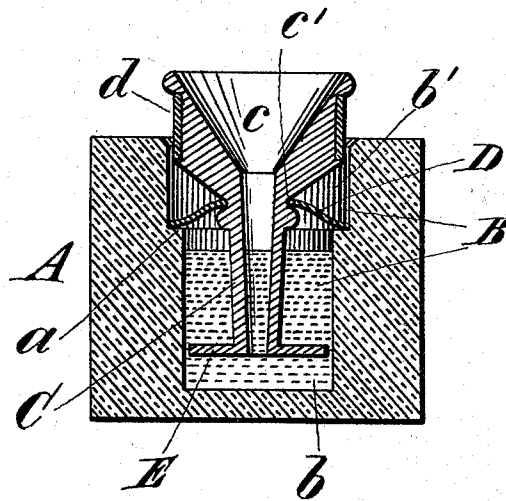


(No Model.)

L. N. THOMAS.
FOUNTAIN INKSTAND.

No. 579,285

Patented Mar. 23, 1897.



Attest

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UNITED STATES PATENT OFFICE.

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FOUNTAIN-INKSTAND.

SPECIFICATION forming part of Letters Patent No. 579,285, dated March 23, 1897.

Application filed September 16, 1896. Serial No. 606,023. (No model.)

To all whom it may concern:

Be it known that I, LINCOLN N. THOMAS, a citizen of the United States, residing at Madisonville, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Fountain-Inkstands, of which the following is a specification.

My invention relates to an improvement in fountain-inkstands having a dip-tube which is elastically suspended on a yielding diaphragm in an ink-well whose contents are forced upward to the dip-cup through said tube when the pen is brought to bear upon said dip-cup for a charge of ink thereto; and my invention consists in the novel features of construction and combination of parts hereinafter fully described, and particularly pointed out in the claims.

In the drawing the view shown represents a central sectional elevation of a fountain-inkstand embodying my invention.

A represents the inkstand, which may be made of glass or other suitable material, and B represents the chamber or reservoir in which the ink and the automatic fountain devices are placed. This chamber is constructed with a circumferential shoulder *a* between its top and bottom, which divides it into two diameters *b* and *b'*, the diameter *b* being the lower and lesser one and constituting the well or receptacle for the ink and the other diameter *b'* being the upper and greater one and forming a guideway-orifice above said ink-well.

C represents the vertical ink-tube, having a dip-cup *c* at its upper end and provided just beneath said dip-cup with a circumferential groove *c'*.

D represents the diaphragm, which is composed of a thin inverted-cup or bell shaped piece of soft rubber having a closely-fitting central orifice therein and thereby adapted to hold firmly upon the ink-tube, the latter passing downwardly through said central orifice, which is slightly smaller in diameter than the grooved portion *c'* of the ink-tube, and which, in stretching or springing over the tube into said groove *c'*, is caused to become inverted-dish shaped. The ink-tube, when in place in chamber B, is elastically or resili-

ently supported by this diaphragm, whose rim rests freely upon the shoulder *a*, and the orifice *b'* forms a receptacle or guideway for the dip-cup *c*, which is slightly smaller in diameter than said guideway *b'*, and thereby rides freely up and down therein when the tube is depressed for the feeding of the ink to the dip-cup.

The dish shape produced in the diaphragm, as aforesaid, makes it respond quickly and gives it greater power for the upward return movement. It also makes the best elastic support for the ink-tube.

E represents a flange, preferably constructed at the bottom or lower end of the ink-tube. This flange is of slightly smaller diameter than that of the ink-well *b*, and is so made that it rides freely up and down in said ink-well and just misses its wall, so that it may not stick thereto, but at the same time forms an accurate guide in connection with the wall of the ink-well to prevent the ink-tube wobbling from side to side to any material extent in operation. Thus the dip-cup may be struck at any point in its bowl portion or cavity without detriment to the action of the pen in forcing the ink-tube down for feeding, and said depression of the ink-tube is accomplished with the greatest facility and regularity at all times. This flange-guide feature is especially efficacious, too, in case the dip-cup should be too small and fit too loosely within its upper guide-orifice *b'*, as is clearly obvious. The flange E, being in the ink, also acts as a float or support to assist the diaphragm in holding up the weight of the ink-cup.

The dip-cup and the ink-tube are preferably made integral and of wood, which, if properly seasoned, will neither swell nor crack, and the expense incurred would be about one-fourth that of hard rubber, which latter is the material usually adopted. To provide against swelling and the consequent sticking of the dip-cup in the chamber B, I shrink a band *d* of hard rubber, thin metal, or the like around said dip-cup, which may be done both readily and cheaply, and it thus forms a reinforce or auxiliary device which safely guards against any accidents from

poorly-seasoned or unseasoned wood and the resultant refusal of the ink-tube to act, and also injury to the point of the pen.

In operation the ink is placed in the ink-well *b* to a height never to exceed a level with the shoulder *a* and so that the elastic diaphragm shall not be exposed to the chemical action of the ink. The ink-tube is elastically suspended therein on the yielding diaphragm, which rests freely on said shoulder without any fastening and without any stopper above. On depressing the ink-tube with the pen a slight touch only is necessary, as the movement is very prompt, free, and easy, and the ink is automatically caused to rise within said tube to the dip-cup by the usual compressing action of said diaphragm.

My automatic fountain device is certainly very simple, economical, and readily placed into and withdrawn from position within the chamber *B*, and a very important point gained in its being freely placed within the said chamber is that the expansive action of any hot air under the diaphragm in a heated atmosphere at any time (especially at a time when the stand is not in use and the operator absent) will cause the diaphragm, together with the ink-tube, to float or rise over the ink and not permit the latter to rise in the tube to overflow the dip-cup and cause great inconvenience and injury to surrounding objects, such as important papers and the like on the desk.

I claim—

1. In combination with an inkstand having an integral body with a small chamber below and an enlarged chamber above, and a shoulder between said chambers, a dip-cup of diameter to easily fit the enlarged upper chamber of the inkstand and having a stem, an elastic diaphragm resting on the shoulder between the chambers, through which the stem of the dip-cup passes with a close fit, and a flange on the stem below the diaphragm serving as a guide in the lower chamber of the inkstand, all combined substantially as described.

2. The integral inkstand having an enlarged upper and a small lower chamber and a shoulder between these chambers, a dip-cup of wood surrounded with a ring of hard material which approximately fits said upper chamber, the hollow wooden stem extending from said cup into the lower chamber, and the elastic diaphragm through which the stem passes, said diaphragm having its outer edge on the shoulder between the chambers of the inkstand, the stem having a wooden float in the lower chamber to assist the diaphragm in supporting the ink-cup all combined substantially as described.

LINCOLN N. THOMAS.

Witnesses:

L. M. JONES,
JOHN ELIAS JONES.