

Dec. 11, 1945.

G. J. SENGBUSCH

2,390,667

INKSTAND

Filed Feb. 3, 1944

Fig. 1

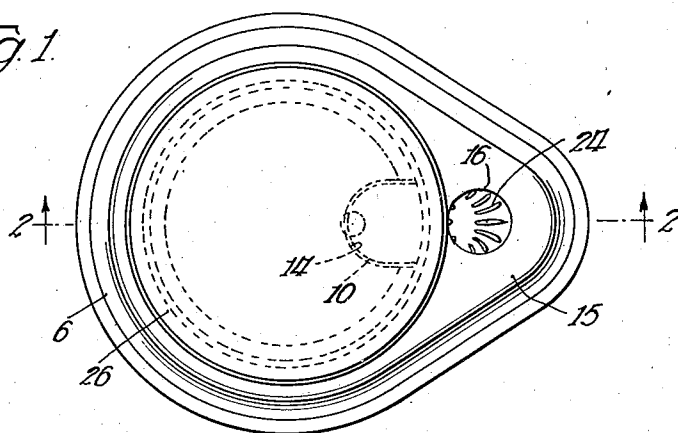


Fig. 2

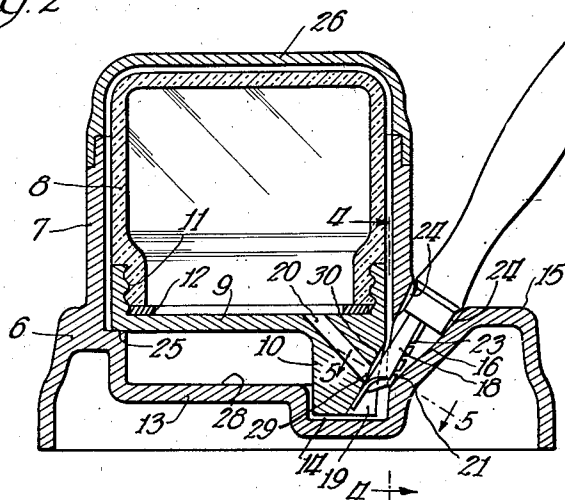


Fig. 4

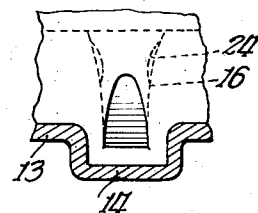


Fig. 3

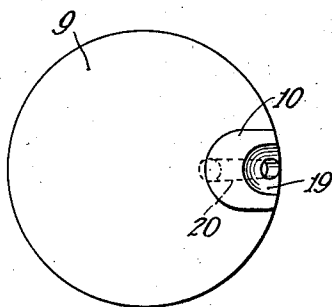
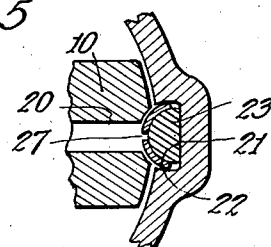


Fig. 5



Inventor

Gustav J. Sengbusch

By *Loans, Pond & Anderson* Attys.

## UNITED STATES PATENT OFFICE

2,390,667

## INKSTAND

Gustav J. Sengbusch, Milwaukee, Wis.

Application February 3, 1944, Serial No. 520,858

7 Claims. (Cl. 120—59)

This invention relates to improvements in inkstands, and more particularly, to inkstands of the type wherein a relatively large supply of ink is stored in a receptacle and provision is made for feeding ink from such receptacle to a pen supported in an upright, readily accessible position by means of a socket into which the lower end of the pen fits.

The main objects of the invention are to provide an inkstand of the character indicated in which loss of ink by evaporation with its attendant objectionable crust formation is substantially eliminated; to provide such an inkstand which may be easily refilled from time to time as needed but which, under ordinary circumstances, will require refilling only at widely spaced intervals of time; to provide an inkstand having the above indicated characteristics which will be easy to manufacture and which may be produced and sold at a relatively low cost; and, in general, it is the object of the invention to provide an improved inkstand of the character indicated.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawing wherein there is illustrated an inkstand embodying a selected form of the invention.

In the drawing,

Figure 1 is a plan;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a bottom plan of a part of the inkstand, and

Figs. 4 and 5 are sections on the lines 4—4 and 5—5 respectively, of Fig. 2.

The improved inkstand herein illustrated embodies a base 6 having an upstanding cylindrical housing 7. The base 6 is designed to rest on a desk or table top and the housing 7 receives an ink bottle 8 which is placed therein in inverted position, that is to say, with its mouth end down.

The ink bottle 8 is provided with a cap or closure 9, which has a downwardly projecting boss 10 formed thereon adjacent one side. The cap is preferably threaded on the mouth end of the ink bottle, as indicated at 11, a gasket 12 of cork, or other suitable material, being provided between the mouth end of the ink bottle and the inside of the cap to prevent leakage at that point.

The base 6 is provided with a bottom wall 13, which is recessed as shown at 14, to receive the lower end portion of the cap boss 10. At one side of the housing 7, the base is extended, as indicated at 15, to provide a socket 16 adapted to hold a writing pen 17 in an upwardly extending angular position, as best shown in Fig. 2. The pen point 18 of the pen extends through the socket 16 and into a transversely arcuate recess 19 provided in the cap boss 10. Said boss 10 is provided with a passageway 20 for conducting

ink from the ink bottle 8 directly to the surface of the pen point which engages the transversely arcuate recessed surface 19 in the boss 10.

In order that the pen 17 will normally be seated in the socket 16 with the front surface of the pen point 18 in engagement with the arcuate surface 19, the socket 16 is provided near its inner end with a transversely flattened wall portion 21 which is adapted to co-operate with the flat rear wall portion 22 of the feed bar 23 of the pen. The pen structure may be of the character shown in Patents Nos. 1,915,338 and 2,179,727, and is accordingly such that a small supply of ink will be retained by the feed bar 23 so as to enable the pen to write a large number of words without requiring dipping of the pen in ink, or frequent insertion of the pen in the described inkstand. The upper end portion of the socket may be provided with a series of relatively spaced ribs 24 for centering the lower end of the pen holder relative to the socket. Said ribs co-operate with the boss 10 to support the pen in the angular, upwardly extending position shown, since the pen normally tends to fall by gravity to a horizontal position, thereby causing the pen point 18 to engage against the arcuate recessed wall 19 of the boss 10.

The co-operating flat surfaces 21 of the pen socket and 22 of the pen feed bar serve to cam the pen in a rotary movement about the axis of the pen upon insertion of the pen into the socket. It is, of course, possible to insert the pen into the socket in such a position that the feed bar 23 will not initially engage the flattened portion 21, but in that event, it will be readily noticeable that the pen cannot be properly seated in the socket. When the pen is properly seated, it is held quite firmly against wobbling, and it extends upwardly in a concentric relation to the axis of the socket.

The ink bottle 8 is preferably supported in the base 6 and housing 7 by means of a shoulder 25 provided in the base and on which the peripheral portion of the cap 9 rests when the ink bottle is in operative association with the base. The boss 10 preferably terminates in slightly spaced relation to the bottom of the recessed portion 14 of the base, although it may extend downwardly to engage said bottom, if desired. A cover 26 may be provided for closing the upper end of the housing 7, said cover being preferably detachably connected to the housing in any convenient manner such as illustrated.

In the described inkstand construction, ink is fed directly from the ink bottle 8 through the passageway 20 to the pen point. The passage 20 may be so arranged that it communicates, at least in part, with the usual hole and split in the pen point, such hole being indicated at 27 in Fig. 5.

Capillary action between the inside surface of the

pen point and the feed bar 23 serves to cause ink to enter the ink retaining slots of the feed bar to thereby provide the pen capacity for extended writing without frequently replenishing the ink supply to the pen point. In the practical operation of the structure, it is found that ink will ultimately seep downwardly between the pen point and the arcuate wall 19 of the boss 10, and into the recess 14. However, the pen point continues to receive its supply of ink directly from the ink bottle and thus, at all times, is in contact with a supply of fresh, free-flowing ink which aids the pen in the proper performance of its writing function.

It may be observed that although the discharge end of the ink duct 20 is located above the surface 28 of the bottom wall 13 of the base, ink does not ordinarily flow over said bottom wall 13. This appears to be due to the fact that the duct 20 is of a sufficiently small diameter to provide enough resistance to the flow of ink therethrough. The pen point itself tends to attract ink from the discharge end of the duct 20, and to that extent assists the flow of ink therethrough, but the assistance thus provided is not sufficient to cause a free flow of ink. Only the ink demanded by the pen point and its feed bar will flow out, especially after the recess 14 has been substantially filled with ink to thereby eliminate the capillary effect of the lower end portion of the pen point and the portion of the wall 19 of the boss 10 engaged thereby.

It will also be observed that the surface of the pen point extending across the discharge end of the ink duct 20 tends to close the same. Although the closure of the duct by the pen point is not a perfect seal, it is, nevertheless, usually tight enough to add materially to the resistance of the ink duct 20 to prevent the free flow of ink through said duct. Movement of the pen into and out of the socket 16 serves, of course, to more or less agitate the ink at the discharge end of the duct and to thereby cause a small amount of ink to flow out of the duct.

It has been found, however, that over a long period of use, ink does not overflow the recessed chamber 14 except under atmospheric or temperature conditions which result in sufficient air pressure within the ink bottle 8 to force out an excess amount of ink, which then overflows the surface 28 of the bottom wall 13 which then acts as the bottom of an overflow chamber.

It has also been found over a considerable period of experience with a device constructed as herein described and illustrated, that when atmospheric and temperature conditions become normal, any ink in the overflow chamber will be returned to the ink bottle 8 by reverse action. Such return of the ink may perhaps be explained by the suction action resulting from a reduction in the air pressure within the ink bottle relative to the air pressure outside thereof, and by the fact that the pen point normally maintains a film of ink across the discharge end of the duct 20 so that air does not normally have access to the duct 20. Hence, ink and not air will enter the inkwell when atmospheric conditions causing flooding of the overflow chamber are restored to normal.

To prevent ink from flowing upwardly on the outer surface of the pen point from the discharge end 29 of the duct, the concave recessed surface 19 is additionally recessed, as indicated at 30 to provide such space between the surface of the pen point above the discharge end of the duct and the adjacent side surface of the depending projection 75

10, that there will be no capillary flow of ink upwardly at that point.

Changes may be made in the structure described without departing from the invention.

I claim:

1. In an inkstand of the class described, the combination of a base having an upwardly extending side wall portion and a bottom wall portion co-operating with said side wall portion to form a receptacle, an ink bottle disposed in said receptacle and having a depending projection adjacent one side of the bottle, said depending projection being provided with an ink duct communicating at one end with the interior of said ink bottle, and having its other or discharge end communicating with a side surface portion of said depending projection, and means for supporting a pen in upwardly extending position with its pen point extending across and substantially closing the discharge end of said ink duct, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said supporting means.

2. In an inkstand of the class described, the combination of a base having an upwardly extending side wall portion and a bottom wall portion co-operating with said side wall portion to form a receptacle, an ink bottle disposed in said receptacle and having a depending projection adjacent one side of the bottle, said depending projection being provided with an ink duct communicating at one end with the interior of said ink bottle, and having its other or discharge end communicating with a side surface portion of said depending projection, and means for supporting a pen in upwardly extending position with its pen point extending across and substantially closing the discharge end of said ink duct, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said supporting means, the bottom wall of said receptacle having a recess therein for receiving a portion of said depending projection so as to provide a well for holding ink which may be discharged through said ink duct in excess of the amount of ink taken up by said pen point.

3. In an inkstand of the class described, the combination of a base having an upwardly extending side wall portion and a bottom wall portion co-operating with said side wall portion to form a receptacle, an ink bottle disposed in said receptacle and having a depending projection adjacent one side of the bottle, said depending projection being provided with an ink duct communicating at one end with the interior of said ink bottle, and having its other or discharge end communicating with a side surface portion of said depending projection, and means for supporting a pen in upwardly extending position with its pen point extending across and substantially closing the discharge end of said ink duct, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said

supporting means, said pen-holding means comprising a socket formed in said base, and having means for co-operating with a portion of the pen to automatically position the pen with the front face of its pen point in the aforesaid position relative to the discharge end of the ink-duct.

4. In an inkstand of the class described, the combination of a base having an upwardly extending side wall portion and a bottom wall portion co-operating with said side wall portion to form a receptacle, an ink bottle disposed in said receptacle and having a depending projection adjacent one side of the bottle, said depending projection being provided with an ink duct communicating at one end with the interior of said ink bottle, and having its other or discharge end communicating with a side surface portion of said depending projection, and means for supporting a pen in upwardly extending position with its pen point extending across and substantially closing the discharge end of said ink duct, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said supporting means, said depending projection having a transversely concave recess therein for receiving a portion of said pen point, said concave surface being the side surface portion with which the discharge end of said ink duct communicates.

5. In an inkstand of the class described, the combination of a base having an upstanding side wall portion and a bottom wall portion co-operating to form a recess, an inverted ink bottle having a closure cap removably secured to its lower end, a boss depending from the lowermost surface of said cap and provided with an ink duct extending downwardly and outwardly, and having its upper end in communication with the interior of said ink bottle, and its lower or discharge end communicating with the side surface portion of said boss, means in said receptacle for engaging the lower surface of said cap to support said bottle and cap with said lower surface in upwardly spaced relation to said bottom wall, and said bottom wall being provided with a recessed portion for receiving a lower end portion of said projection to form a well for holding a quantity of ink, the space beyond said recessed portion and between said bottom wall and said cap constituting an overflow chamber for said well, and means for supporting a pen in upwardly extending position, with its pen point in engagement with said side wall of the boss in overlying relation to the discharge end of said ink duct, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said supporting means.

6. In an inkstand of the class described, the combination of a base having an upstanding side wall portion and a bottom wall portion co-operating to form a recess, an inverted ink bottle having a closure cap removably secured to its lower end, a boss depending from the lowermost

surface of said cap and provided with an ink duct extending downwardly and outwardly, and having its upper end in communication with the interior of said ink bottle, and its lower or discharge end communicating with the side surface portion of said boss, means in said receptacle for engaging the lower surface of said cap to support said bottle and cap with said lower surface in upwardly spaced relation to said bottom wall, and said bottom wall being provided with a recessed portion for receiving a lower end portion of said projection to form a well for holding a quantity of ink, the space beyond said recessed portion and between said bottom wall and said cap constituting an overflow chamber for said well, and means for supporting a pen in upwardly extending position, with its pen point in engagement with said side wall of the boss in overlying relation to the discharge end of said ink duct, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said supporting means, said boss having a transversely concave side surface portion approximately conforming to the normal convex curvature of a conventional pen point, and with which concave surface portion said discharge end of the ink duct communicates.

7. In an inkstand of the class described, the combination of a base having an upstanding side wall portion and a bottom wall portion co-operating to form a recess, an inverted ink bottle having a closure cap removably secured to its lower end, a boss depending from the lowermost surface of said cap and provided with an ink duct extending downwardly and outwardly, and having its upper end in communication with the interior of said ink bottle, and its lower or discharge end communicating with the side surface portion of said boss, means in said receptacle for engaging the lower surface of said cap to support said bottle and cap with said lower surface in upwardly spaced relation to said bottom wall, and said bottom wall being provided with a recessed portion for receiving a lower end portion of said projection to form a well for holding a quantity of ink, the space beyond said recessed portion and between said bottom wall and said cap constituting an overflow chamber for said well, and means for supporting a pen in upwardly extending position, with its pen point in engagement with said side wall of the boss in overlying relation to the discharge end of said ink duct, said boss having a transversely concave side surface portion approximately conforming to the normal convex curvature of a conventional pen point, and with which concave surface portion said discharge end of the ink duct communicates, said duct being of such size as to normally resist the free flow of ink therethrough but permitting ink to be drawn therefrom and delivered to the pen point as an incident to capillary forces provided by said pen when placed in communication with said duct upon being positioned as aforesaid in said supporting means, and means for preventing the capillary flow of ink upwardly on the outer surface of the pen point from said discharge end of the duct.

GUSTAV J. SENGBUSCH,