April 12, 1932. O. F. NILSSON ET AL 1,853,316

DEVICE FOR FACILITATING THE FILLING OF FOUNTAIN PENS

Filed Dec. 30, 1927

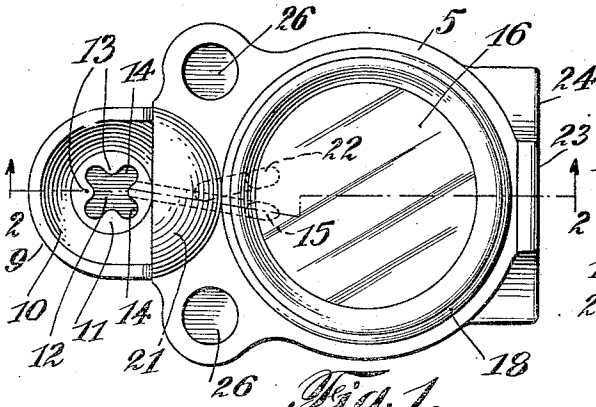

Fig. 1.

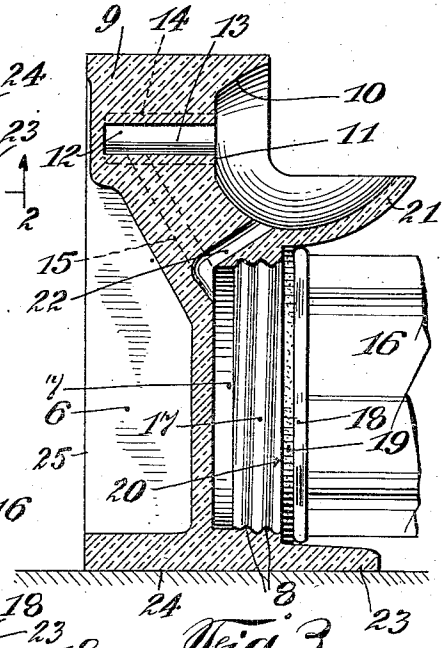

Fig. 3.

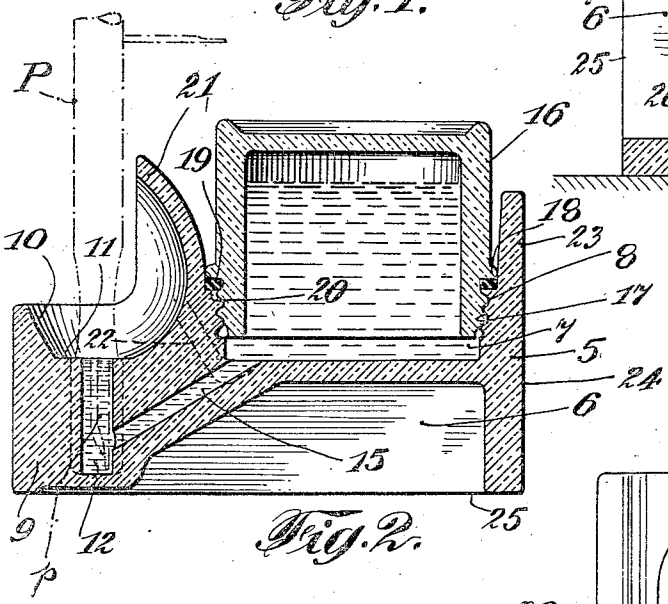

Fig. 2.

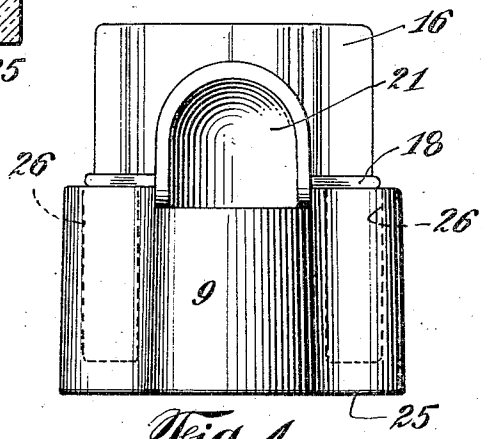

Fig. 4.

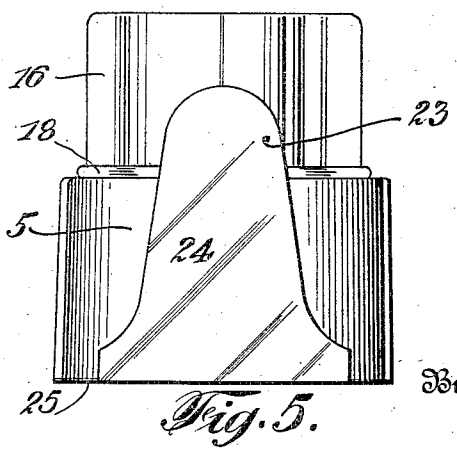

Fig. 5.

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UNITED STATES PATENT OFFICE

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DEVICE FOR FACILITATING THE FILLING OF FOUNTAIN PENS

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This invention relates to devices for facilitating the filling of fountain pens, and has for its primary object to provide a simply constructed ink receptacle which is provided with certain structural features whereby the user may safely fill the pen without soiling it and be visually cognizant of the fact that the ink sack or chamber of the pen has been filled with ink, and also so designed that it can quickly be refilled with ink directly from any ordinary ink bottle.

In one practical embodiment of our present improvements, the device consists of a main ink receiving chamber or reservoir and a well positioned at a lower level and in communication with said reservoir, together with means at the top of the well which will permit of the insertion of pen points of any of the various sizes in general use into the well but limits such insertion of the pen point so that the outer surfaces of the barrel of the pen will not be immersed in the ink.

It is also another object of the invention to provide an ink receptacle for the above purpose having a basin or cup into which the ink is adapted to be poured and an additional duct or passage opening into said cup and into the main ink receiving chamber or reservoir and to provide the body of the receptacle with surfaces extending at right angles to each other, said duct serving as an air inlet passage when the receptacle is arranged in position for use with one of said surfaces constituting the base, and said duct constituting a feed inlet passage, when the other of said surfaces constitutes the base and through which ink poured into said cup is supplied to the main chamber or reservoir.

It is a further object of our invention to provide a device for the above purpose having a body which may be readily molded or fashioned from hard rubber, bakelite, or other similar material and a detachable bottle or reservoir for the ink of transparent glass, together with means for tightly sealing the connection between said bottle and the body of the device and whereby, the entrance of air through said duct produces visible bubbles in the liquid contained in the bottle so that the user is thereby apprised of the fact that the ink has entered the pen.

It is also a further general object of our present improvements to provide a device for facilitating the filling of fountain pens which may be readily manufactured in various ornamental forms or shapes and which, while providing an ink reservoir or chamber of large capacity will occupy a relatively small area of desk space.

With the above and other objects in view, the invention consists in the improved device for facilitating the filling of fountain pens, and in the form, construction, and relative arrangement of its several parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawings, wherein we have selected for purposes of illustration, one simple and satisfactory embodiment of our invention, and in which similar reference characters designate corresponding parts throughout the several views,—

Figure 1 is a top plan view of the device;

Fig. 2 is a vertical sectional view showing the device arranged in its normal position for use;

Fig. 3 is a similar section, the device being illustrated in a position at right angles to the position in Fig. 2 for the purpose of filling the ink chamber or reservoir;

Fig. 4 is a front elevation, and

Fig. 5 is a rear end elevation.

Referring in detail to the drawings, the base or body 5 of the device may be readily molded into the desired shape or form from hard rubber, bakelite or other suitable composition material, and preferably has a lower hollow portion 6 and above said hollow portion is formed with a chamber or cavity 7 of relatively large diameter opening upon the upper surface of said body, the vertical wall of this chamber being formed with a coarse thread indicated at 8.

The body structure 5 also includes a forwardly projecting part or extension 9 of reduced width having at its upper end a cup shaped wall or flange 10 rising from the hori-

zontal surface indicated at 11. This part 9 of the body 5 is formed with a well 12 of comparatively small capacity which opens upon the surface 11, and the wall of this well is formed with the vertically extending ribs 13, preferably four in number arranged in diametrically opposed relation to each other. The provision of these ribs produces between the adjacent ribs the grooves or channels 14 which are adapted to receive the point or nib *p* of the fountain pen P. The distance between the central points of the opposed grooves 14, is sufficient to receive pen points of the larger sizes, whereas the reduction of the area of the well between these grooves resulting from the inwardly projecting ribs 13, prevents the entrance of the end of the barrel of the pen into the well, the end face of the barrel resting upon the surface 11 as clearly shown in Fig. 2 of the drawings.

The lower end of the well 12 is connected with the cavity or chamber 7 by the inclined duct or passage 15. An ink receiving bottle or reservoir 16, preferably of transparent glass has an externally threaded end 17 adapted to be engaged with the threads 8 on the wall of the chamber 7, said bottle being also provided at the inner end of the thread 17 with an external circumferential bead 18. This bead is adapted to engage with a packing ring or gasket 19 of compressible material and compress the same tightly upon the annular seating surface 20 surrounding the upper open side of the chamber 7, thus producing an air and fluid tight connection between the bottle and the wall of said chamber.

At the rear side of the extension or projection 9, the body 5 is formed with a concavo-convex wall 21 projecting upwardly above the flange 10, and constituting a basin. An additional inclined duct or passage 22 opens at one of its ends upon the concave wall of this basin above the upper open end of the well 12, while the other end of said duct 22 opens upon the bottom wall of the chamber 7. It is desirable that the ducts 15 and 22 start from the extreme edge of well 7 nearest toward well 12 and basin 21. Otherwise the bottle 16 will not be completely filled, as the air cannot escape above outlets of the ducts. If for example, the ducts enter the well 7 at the center, the bottle 16 can only be half filled.

The other or rear end of the body 5 of the device is formed with an enlargement which includes a vertical extension 23 projecting above the cavity or chamber 7, said enlargement being formed with a flat or plane surface indicated at 24 which extends in substantially parallel relation with the wall of the bottle 16 and at right angles to the lower face 25 of the body 5.

If desired, the body 5 of the device may also be formed at the front portion thereof and at opposite sides of the extension 9 with recesses or sockets indicated at 26 in which pens may be supported.

Assuming that the bottle or reservoir 16 is filled with ink and the device is arranged with the body 5 disposed in the horizontal position shown in Fig. 2 of the drawings, the point of the fountain pen is inserted downwardly into the well 12 until the barrel thereof rests upon the surface 11 as indicated in dotted lines, it being understood that ink enters said well from the bottle or reservoir through the passage 15 and completely fills the well. Thus, it is certain that the pen will be immersed in the ink to the required depth above the suction inlet passage through the pen point. Therefore, when the filling lever or other member of the pen is operated, a full charge of ink will be drawn into the sack or reservoir of the pen from the well 12. As this ink is replaced from the chamber 7, air enters the chamber through the duct or passage 22 and rises upwardly through the body of ink in the bottle 16. As the wall of this bottle is transparent, the user may observe the air bubbles rising through the ink, which affords visual assurance of the fact that the pen is in proper operating condition and that ink has entered the ink chamber or reservoir thereof. In ink receptacles heretofore used in the filling of fountain pens, no means was provided as a gauge which determined the necessary extent of immersion of the pen into the ink in order that the ink would be drawn into the sack or ink chamber of the pen and frequently, it would happen that after such an operation the user would find that the pen had not been filled. It will be apparent that our present invention entirely overcomes this uncertainty, as not only does our improvements provide a positive gauge means which insures the proper immersion of the pen into the ink and without, on the other hand, covering the surface of the pen barrel with ink, but also provides a visual indication of the fact that the ink chamber of the pen has been filled.

In order to replenish the bottle or reservoir 16 with ink, the device is positioned at right angles to the position as seen in Fig. 2 and with the end surface 24 of the body 5 constituting the base in contact with the surface of the desk. Such ink as remains will flow from the well 12 downwardly through the passage 15 and into the bottle 16 as will be clearly seen from reference to Fig. 3 of the drawings. The ink is then poured from a bottle or other container into the basin 21 and flows through the inclined duct or passage 22 into the bottle 16 until the latter is completely filled. It will of course, be understood that the displaced air readily finds an outlet through the passage 15 and the well 12. When the device is returned to its normal horizontal position of Fig. 2, the ink flows through the passage 15, while air enters

through the passage or duct 22 until the well 12 is completely filled with ink. The bottle or reservoir 16 may be of any desired size or capacity so that it will be necessary to refill the same only after long intervals of continued use. When however, it becomes necessary to clean the ink chambers or passages, this bottle 16 can be readily unthreaded from the body 5 and said bottle as well as the walls of the ink chamber 7 and the several ink passages or ducts of the body 5 can be easily and thoroughly cleaned.

From the foregoing description considered in connection with the accompanying drawings, it will be seen that we have devised a simply constructed device whereby the filling of fountain pens of the self filling type may be greatly facilitated, and this operation accomplished very quickly without waste of ink and with the definite assurance that the pen has been filled, without being soiled with ink on the barrel. The structural form in which we have illustrated our several improvements is thought to be most desirable from the standpoint of economy in manufacture and for the production of the device in ornamental form and of such size and shape that it will occupy a relatively small area of desk space and yet afford a maximum capacity of the ink supply chamber or reservoir. However, it will be understood that the essential features of our novel construction might also be embodied in various other alternative structural forms of the body 5 and the reservoir or bottle 16, and accordingly, we do not regard our invention as necessarily limited to the particular form and construction of these parts as illustrated in the drawings, but reserve the privilege of resorting to all such legitimate modifications thereof as may be fairly embodied within the spirit and scope of the invention as claimed.

We claim:

1. A device for facilitating the filling of self-filling fountain pens comprising a relatively large chamber and a relatively small capacity well horizontally spaced apart, a duct leading from a point adjacent the bottom of said chamber to a point adjacent the bottom of said well, and a filling and air inlet passage leading from a point adjacent the bottom of said chamber to a point between said chamber and said well.

2. A device for facilitating the filling of self-filling fountain pens comprising a body having thereon a relatively large chamber, means forming two passages extending laterally from said chamber, and one terminating at a point nearer the chamber than the other, whereby the one furthest from the chamber may be used as a pen-filling well and the other as a filling and air inlet passage substantially as described.

3. A device for facilitating the filling of self-filling fountain pens comprising a body having thereon a relatively large chamber, and means forming two passages extending laterally from said chamber, the ends of said passages being spaced apart horizontally when the device is in use and being spaced apart vertically when the device is turned at right angles to its normal horizontal position for filling.

In testimony that we claim the foregoing as our invention we have signed our names hereto.

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