

Sept. 9, 1930.

C. J. KORNDORFER ET AL

1,775,350

REFILLABLE PEN

Filed Dec. 6, 1928

Fig. 1.

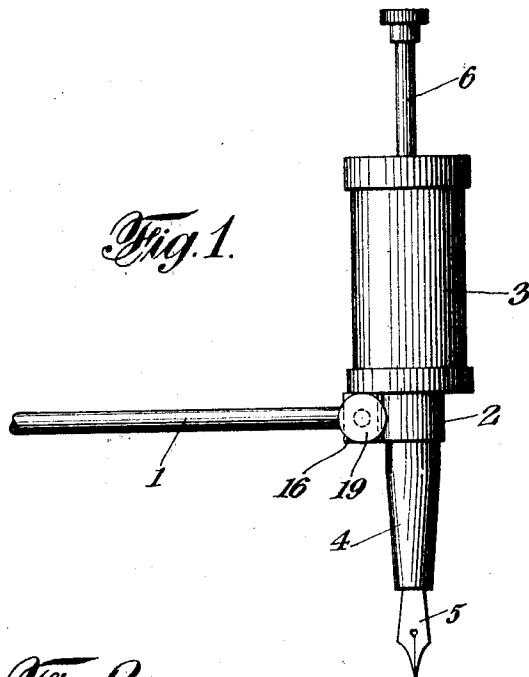


Fig. 2.

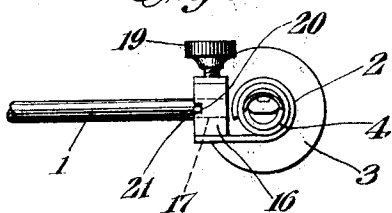


Fig. 3.

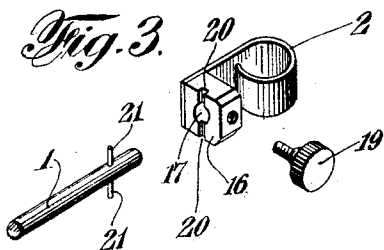
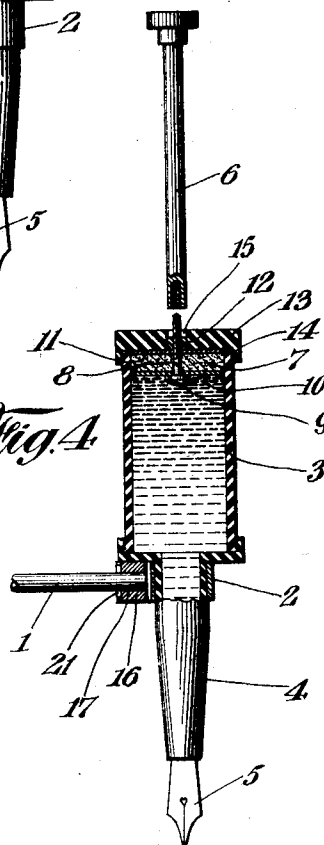


Fig. 4.



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REFILLABLE PEN

Application filed December 6, 1928. Serial No. 324,197.

This invention relates to refillable pens for use with recording instruments, such as stock ticking machines and the like, and the present improvements are directed to a pen having a hollow cylindrical body portion to serve as an ink reservoir, said body portion being provided with a plunger for filling the reservoir under the influence of suction, and said plunger having a detachable stem for its operation.

A further feature of invention consists in certain novel means whereby the plunger may be extended radially to compensate for wear, and a still further feature of invention consists in the novel means employed for detachably connecting the pen to its operating shaft.

Other features and advantages of the invention will hereinafter appear.

In the drawing:

Figure 1 is an elevation of the improved pen, shown attached to the shaft of a recording instrument;

Fig. 2 is a bottom plan view thereof;

Fig. 3 is an exploded view of the pen attaching parts, and

Fig. 4 is a vertical sectional view showing the reservoir filled and the operating stem removed.

In said figures let 1 indicate a portion of the oscillatory shaft of a recording instrument, and 2 a clip for detachably connecting a pen to said shaft.

The pen is here represented as comprising a hollow, cylindrical body portion 3, constituting an ink reservoir, and a tubular extension 4 thereof which depends from said body portion and is smaller in diameter, said extension 4 having a nib or pen point 5 fitted in its lower end. The body portion is in the form of a cylinder in order that a plunger may operate therein to fill the reservoir with ink, a stem or handle 6 removably engaging said plunger to draw it outwardly, when the lower end of the pen is immersed in ink, to perform the filling operation by suction.

The plunger is composed of a disk of felt or the like 7, mounted on a screw 8 that is provided with a head 9. Metallic disks 10, 11 are placed respectively at opposite sides

of said felt disk, the metallic disk 10 lying between the screw head 9 and the felt disk, this disk 10 being in non-engaging relation with the thread of screw 8, but the metallic disk 11, at the opposite side of the felt disk, is threaded and engaged thereby upon screw 8.

The metallic disks 10, 11 are smaller in diameter than the felt disk in order that they may ride freely within the cylinder, but the felt disk 7 is of sufficient diameter to have frictional contact with the cylinder so that it may perform the function of a suction plunger. After considerable service, when the peripheral surface of the felt disk becomes worn and inefficient, its efficiency may be restored by turning the screw 8, to tighten the metallic disk 11 against the felt disk, thereby clamping the felt between the metallic disks and causing the felt disk to become radially enlarged. A threaded sleeve 12, screwed upon screw 8, against the outer surface of metallic disk 11, serves as a lock nut to secure the parts in their adjusted position.

The plunger operating stem or handle 6 is provided at its inner end with an internal thread which is adapted to engage the exposed end of screw 8, and when so engaged the plunger may be operated by said handle. The handle or stem 6 is used to draw the plunger outwardly in the pen filling operation, and when this duty is performed the handle or stem is to be removed, by unscrewing it from its engagement with screw 8. This is done in order that the weight of said handle or stem may not be added to that of the pen in service, nor form an unnecessary projection from the pen.

The closure cap 13 for the reservoir, here shown as provided with a threaded portion 14 to engage a thread at the upper end of the cylinder, is provided with a central orifice 15 to receive the stem 6, said orifice also serving as a guide in axially aligning said stem 6 with the screw 8, when these elements are to be engaged.

It will be understood that when the contents of the reservoir have been used and the refilling operation is to be performed, first the stem 6 is connected with screw 8,

then the plunger is pressed downwardly, and finally the plunger is drawn outwardly in the refilling act. The subsequent removal of the stem or handle leaves the pen in readiness for use.

5 The clip 2, which is adapted to embrace the pen extension 4 is carried by a block 16 that has an opening 17 in its side adapted to receive the end of shaft 1, a set screw 19, threaded through the top of block 16, impinging
10 upon the shaft to hold it in place. It being important that no relative movement be permitted between the shaft and pen the block is provided with grooves 20 which receive
15 pins 21 that project from opposite sides of shaft 1, to positively hold said shaft against rotation in block 16.

The relatively large size of the reservoir enables the pen to hold an ink supply far in excess of that carried by the pens now in
20 use with recording machines, while the simple refilling means employed permits the pen to be recharged expeditiously with a minimum amount of labor.

25 Variations within the spirit and scope of this invention are equally comprehended by the foregoing disclosure.

We claim:

A pen for recording instruments having an
30 oscillatory arm including a chambered body portion presenting a reservoir adapted to receive a supply of writing fluid, a bored extension depending from said body portion and adapted to support a nib, and means for
35 securing the pen to the oscillatory arm of an instrument, said means including a clip adapted to embrace said extension, an apertured block removably carrying said arm, said block provided with a groove and said
40 arm having a pin thereon to engage said groove.

Signed at New York, in the city, county, and State of New York, this 26th day of November, 1928.

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LESLIE T. HAND.

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