

955,475.

B. RENTZ.
FOUNTAIN PEN.
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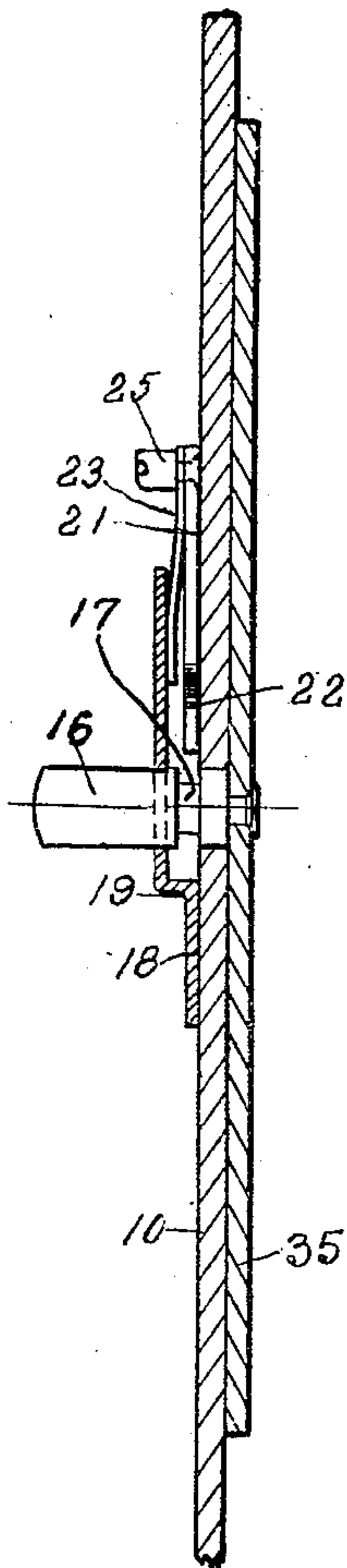


Fig. 4

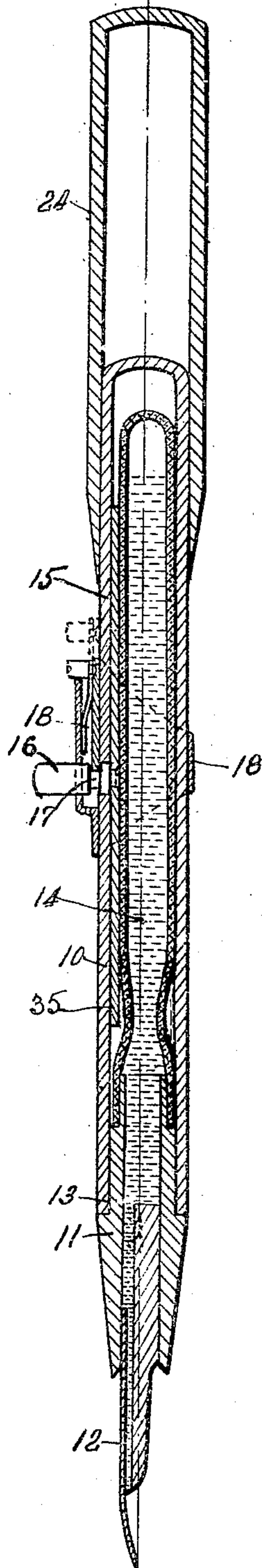


Fig. 1

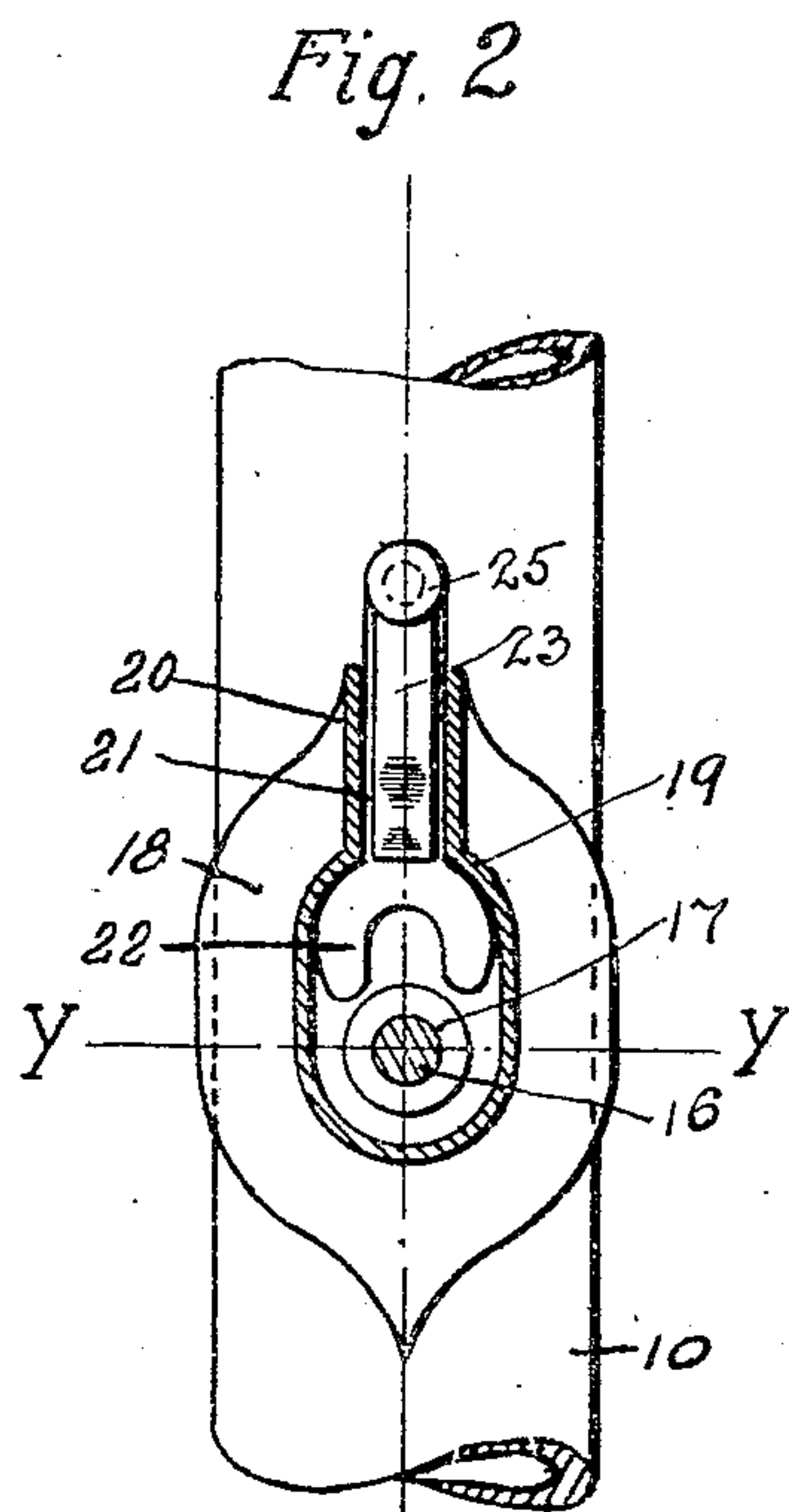
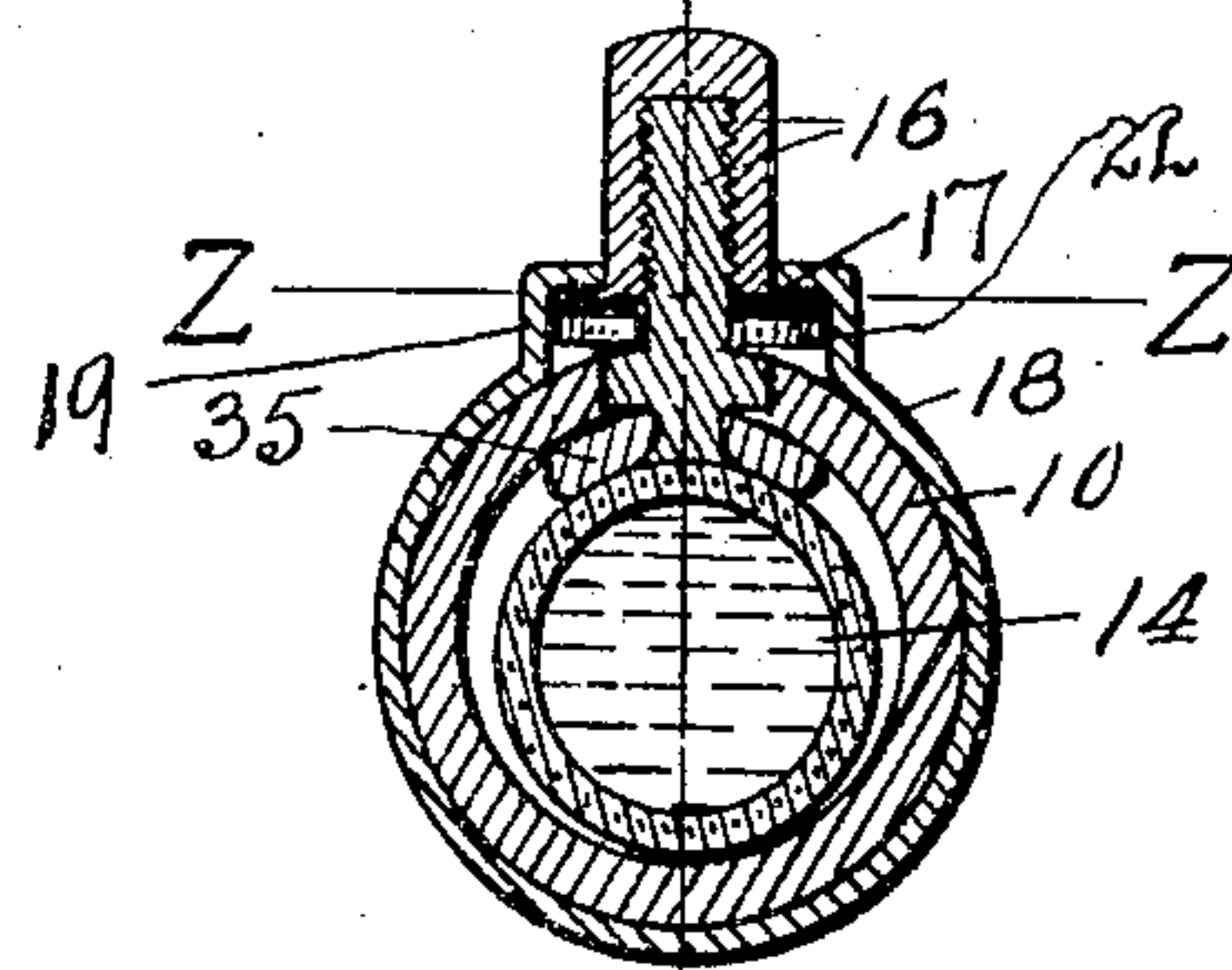


Fig. 2



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UNITED STATES PATENT OFFICE.

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FOUNTAIN-PEN.

955,475.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BERT RENTZ, a citizen of the United States, residing at Wells, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to fountain pens, of the class known as "self-filling" fountain pens, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

The improved device comprises in general a barrel or casing, preferably of hard rubber, with the pen point supporting element at one end and with a flexible ink receptacle within the barrel and connected at one end to the pen point supporting head, a push pin operating through one side of the barrel and engaging against the flexible ink receptacle, a sleeve upon the barrel and through which the push pin extends, the push pin having an annular channel intermediate its ends, and a locking device slidable within the sleeve and engaging in the annular channel of the push pin. By this means the push pin is locked in its outward position when not in use, and when the receptacle is to be filled with ink the push pin is released so it may be compressed to exclude the air from the receptacle to enable a fresh supply of ink to be drawn into the receptacle, as hereafter more fully described.

The invention consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claims, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a central longitudinal sectional view of a fountain pen showing my invention applied thereto. Fig. 2 is a sectional view taken on line Z—Z of Fig. 3, and showing a fragmentary plan view of a pen containing my attachment, parts being broken away. Fig. 3 is a transverse sectional view taken on line Y—Y of Fig. 2. Fig. 4 is a view similar to and of parts shown in Fig. 1, the parts being illustrated on an enlarged scale.

The improved device comprises a barrel or casing 10 of the usual form, and prefer-

ably of hard rubber and with the "head" member 11 at one end to support the pen point 12. The inner end of the member 11 is reduced at 13, and fitting over this reduced portion is the open end of a flexible ink receptacle 14, the latter preferably formed of relatively soft rubber which may be easily compressed. The ink receptacle is in the form of an elongated bag closed at one end, as shown in Fig. 1. The member 11 is provided with a longitudinal bore through which the ink finds its way to the pen point, as shown. Bearing upon the flexible receptacle 14 within the barrel 10 is a longitudinal compression plate 35, and intermediate its ends is a push pin 16, the push pin being provided with an annular groove 17 intermediate its ends and also projects outwardly through the side of the barrel, as shown. By this means pressure applied to the push pin will be communicated to the plate 15 and thus compress the flexible receptacle 14 for substantially its whole length, as will be obvious.

Fitting over the barrel 10 is a sleeve 18, having an upwardly directed portion 19 with an aperture therein through which the push pin 16 projects and with a longitudinal guideway 20 leading from the upwardly directed portion 19. Slidably arranged within the guideway 20 is a lock bar 21 having a forked inner terminal 22 engaging in the annular channel 17 of the pin 16 when the bar is in its inward position, and with a thumb lug 25 at its outer end beyond the guideway 20. Attached to the bar 21 is a spring 23 extending into the guideway 20, and exerting its force to hold the bar 21 in any position to which it may be adjusted. The spring thus serves to render the movement sluggish, so that it will remain in any position in which it may be placed.

When the pen is to be filled the bar 21 is withdrawn by pressure applied to the lug 22 to release the push pin 16, and the latter compressed, which action causes the compressor member 15 to collapse the flexible receptacle 14 and exclude a portion of the air therefrom, and then when the pen point 12 is inserted into the supply of ink, in an ink-well or other suitable receptacle, and the pressure upon the push pin removed, the

partial vacuum which thereby exists in the receptacle 14 will cause the ink to flow up into the receptacle and will fill the same. After the receptacle is filled the bar 21 is moved inwardly by pressure applied to the lug 25 to cause the forked terminal 22 to engage in the annular channel 17 and lock the push pin in its outward position. The sleeve 18 fits closely upon the barrel 10, and is held from movement thereon by the presence of the push pin 16 which is riveted as shown to the compression plate 15.

As will be readily understood, the only portion of the barrel 10 that is affected by this structure, is that portion in which the perforation for the passage of the pin 16 is provided; the remaining portions of the mechanism (with the exception of the self-filling features) are all mounted externally of the barrel, being carried by the sleeve or band 18, the latter, of course, being positioned by the push pin 16 to prevent circumferential or longitudinal movement of the sleeve; the barrel is therefore not weakened excepting by the perforation referred to, and as the barrel at this point is reinforced by the sleeve or band, it will be readily understood that the strength of the barrel is not decreased by reason of the presence of this device. Furthermore, this external mounting of the locking features permits of the formation of a device which is of maximum strength, without unduly increasing the size of the parts radially, the bar 21, while relatively thin being of a sufficient width to provide the necessary rigidity. In addition, it should be noted, that when the push pin 16 is locked, the entire device is substantially closed against the entrance of dirt and dust, etc., the pin 25 entering the recess 30 in the casing 19 and thereby closing up the end of the channel formed by the relatively narrow elongated portion of said casing through which the bar 21 extends, as shown in Fig. 2.

The usual cap or hood 24 is provided which is located over the pen point when the pen is not in use, and located over the closed end of the barrel as shown when the pen is in use.

The barrel 10, the head portion 11 and the hood 24 are of the usual form and construction and the presence of the sleeve 18 and the push pin 16 do not detract from the appearance of the implement, or add materially to the weight or expense of construction.

What is claimed is:—

1. A fountain pen comprising a barrel, a flexible ink receptacle within said barrel, a push pin operating through said barrel and engaging said ink receptacle, said pin having an annular groove intermediate its ends,

an inclosed locking device located externally of and slidable upon said barrel and provided with forked terminal engaging in said annular groove and locking the pin in position when the locking device is located in one position, and a housing for said locking device.

2. A fountain pen comprising a barrel, a flexible ink receptacle within said barrel, a push pin operating through said barrel and engaging said ink receptacle, said pin having an annular groove intermediate its ends, a sleeve upon said barrel through which said push pin extends and by which it is positioned, said sleeve being provided with a longitudinal guideway, and a locking device located externally of the barrel and slidable in said guideway and engaging in said annular groove when in one position.

3. In a fountain pen, a self-filling mechanism having a reciprocating operating device extending radially through the pen barrel, a permanently-positioned band or sleeve on said barrel, said band having an opening approximately fitting said device and through which it passes, and a locking element carried by said band externally of the barrel, said locking element being movable longitudinally of the barrel, said element and device being complementally formed to prevent reciprocating movement of the device when in engagement one with the other, the longitudinal movement of the element in one direction disengaging the element and device and permitting the latter to be reciprocated.

4. In a fountain pen, a self-filling mechanism having a reciprocating operating device extending radially through the pen barrel, a permanently-positioned band or sleeve on said barrel, said band having an opening approximately fitting said device, and through which it passes, a locking element carried by said band externally of the barrel, said locking element being movable longitudinally of the barrel, said element and device being complementally formed to prevent reciprocating movement of the device when in engagement one with the other, the longitudinal movement of the element in one direction disengaging the element and device and permitting the latter to be reciprocated, and means frictionally engaging said element with the band, whereby the element will be retained in adjusted position.

5. In a fountain pen, a self-filling mechanism having a push pin operating through the barrel of the pen and having an annular groove intermediate its ends, a sleeve on said barrel through which said push pin extends and by which it is positioned, said sleeve inclosing said groove, said sleeve being provided with a guideway extending longitudi-

nally of the barrel, and a locking element located externally of the barrel and within said guide-way and movable longitudinally thereof, said element having forked terminal structures engageable with said groove to lock the pin in position when the locking device is located in one position.

In testimony whereof, I affix my signature, in presence of two witnesses.

BERT RENTZ.

Witnesses:

D. A. ODELL,
DAISY A. RUTLEDGE.