J. A. KRAKER.

LEVER FILLER FOUNTAIN PEN.

APPLICATION FILED FEB. 27, 1914.

1,124,750.

Patented Jan. 12, 1915.

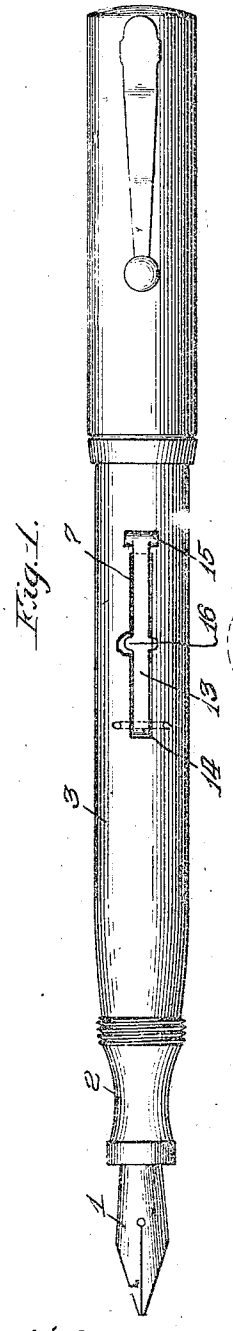

Fig. 1.

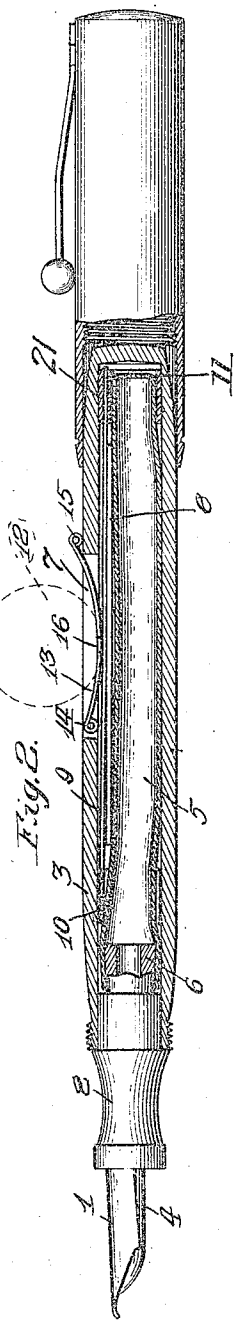

Fig. 2.

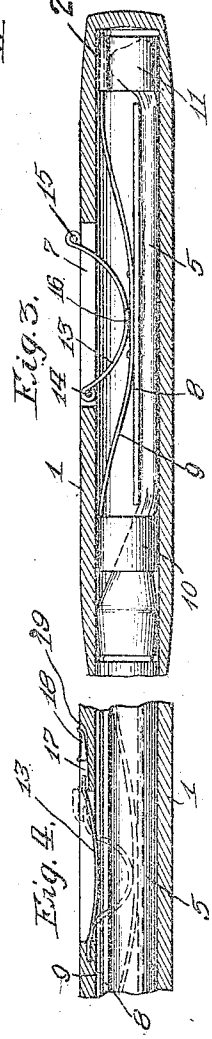

Fig. 3.

Fig. 4.

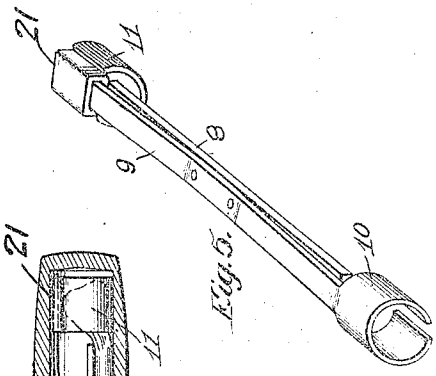

Fig. 5.

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UNITED STATES PATENT OFFICE.

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LEVER-FILLER FOUNTAIN-PEN.

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To all whom it may concern:

Be it known that I, JOSEPH A. KRAKER, citizen of the United States, residing at Warren, in the county of Jo Daviess and State of Illinois, have invented certain new and useful Improvements in Lever-Filler Fountain-Pens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to fountain pens, and more particularly to a simple and effective mechanism for compressing the collapsible ink sack or reservoir as commonly used in so-called self-filling fountain pens. In pens of this class it has heretofore been difficult to insure an effective filling of the collapsible ink sack owing to the difficulty of compressing the said sack to such an extent as to exclude practically all of the air therefrom without twisting the sack or otherwise subjecting it to strains which would considerably reduce the effective life of any sack made of a material of sufficient resiliency to readily expand after a relaxing of the strains compressing the same.

One object of my invention is to equip the barrel of a fountain pen housing a collapsible ink sack, with simple and manually operable means for effecting a compression of the sack substantially throughout the length thereof.

Another object is to provide means for rapidly returning the said sack-compressing mechanism to its normal position so that no resistance will be encountered by the sack while the normal resiliency thereof shall expand the sack to draw ink into the same.

A further object is to equip a manually operable sack-compressing mechanism with means for affording an effective finger-hold, which means will normally be retracted so as not to be accidentally engaged by the fingers or clothing of the party using the pen.

Further objects will appear from the following specification and from the accompanying drawings, in which:

Figure —1— is a plan view of a fountain pen equipped with my invention. Fig. —2— is a fragmentary longitudinal section through the same. Fig. —3— is a similar fragmentary section showing the sack-compressing mechanism in the act of compressing the ink sack. Fig. —4— is a fragmentary section showing the manual operating mechanism as equipped with a retractable finger hold. Fig. —5— is a perspective view of a part of the sack-compressing mechanism of Figs. —2— and —3—.

In the drawings, my invention is shown as applied to a fountain pen comprising a pen point 1 supported by a holder 2 fitted to a barrel 3, the said holder being equipped with a feeder tube 4 for supplying ink to the pen point 1 from the interior of a sack 5 made of soft rubber or other suitable material, the open end of which sack is fitted to the inner end 6 of the holder 2. The barrel 3 is equipped upon one side with a slot 7 disposed longitudinally thereof and through which slot access may be had to the sack-compressing or pressure-distributing mechanism interposed between the sack 5 and the said slotted side of the barrel. To effect the desired distribution of the sack-compressing action throughout substantially the entire length of the sack, I interpose a substantially rigid or inflexible bar 8 between the sack and the said slotted side of the barrel, the said bar 8 being somewhat shorter than the compressible ink sack 5. The bar 8 is secured near its center to a flexible member 9 equipped at its opposite ends with annular supports 10 and 11, the former of which is preferably integral with the member 9 and both of which are preferably normally somewhat larger in outside diameter than the bore of the barrel. The annular support 11 preferably is formed to provide a substantially rectangular tube 21 at one end in which the adjacent end of the flexible member 9 may slide to and fro when the said member is flexed and straightened. In assembling the pen, both formations 10 and 11 are contracted to enable them to enter the bore of the barrel and the entire structure as shown in Fig. —5— is slid into the barrel, whereupon the resiliency of the said end formations will cause the same to expand outwardly into frictional engagement with the walls of the barrel, thereby anchoring the same in the latter. When thus in position, the annular formation 10 will hold the adjacent end of the flexible member 9 immovable with respect to the barrel, while the sliding engagement between the portion 21 of the formation 11 and the other end of the flexible

member will permit the latter to move longitudinally of the barrel with respect to the annular part 11 so as to allow of the flexing of the member 9. This flexing of the shank of the flexible member may be effected by means of any operating member of a suitable size for insertion through the slot 7, as for example by a coin 12, as shown in dotted lines in Fig. —2—. However, I preferably equip the pen of my invention with an auxiliary flexible member 13 made of resilient material and secured at one end to a pivot 14 extending transversely of the slot 7 adjacent to one end of the latter, the other end of said operating member 13 being shaped into a handle portion 15 affording a suitable finger hold. I also preferably equip the auxiliary flexible member 13 with prongs 16 extending within the barrel at opposite sides of the said slot 7 approximately at the middle thereof, which prongs will normally engage the inner walls of the barrel adjacent to the said slot when the resiliency of the member 13 tends to restore the latter to its normal or substantially rectilinear shape, thereby forcing the handle end 15 of the said member 13 against the exterior of the barrel. By pressing against the said handle 15 and moving the same longitudinally of the barrel toward the tip 1 of the pen, the member 13 will engage the outer surface of the shank 9 of the main flexible member so as to flex the said shank inwardly of the barrel. It will be evident from Fig. —3—, that the said flexing of the shank 9 will cause the bar 8 to be moved toward the side of the barrel opposite to the slot 7, thereby effectively compressing the ink sack throughout a length corresponding substantially to the length of the said inflexible pressure-distributing bar 8.

To fill the fountain pen of my invention, the pen end thereof is dipped into a supply of ink when the sack-compressing mechanism is disposed as in Fig. —3—, that is to say, with the sack in its collapsed condition. Then upon releasing the pressure of the finger upon the handle end 15 of the flexible actuating member 13, the resiliency of the latter will quickly return the same to the position of Fig. —2—, whereupon the resiliency of the shank of the flexible member 9 will likewise return the latter from the flexed position to its normal substantially rectilinear position, (as shown in Fig. —2—) thereby also carrying the bar 8 into its normal position as shown in Fig. —2—. By making the members 13 and 9 of spring metal, it is an easy matter to insure their return to their normal positions at a speed considerably greater than the rate at which the sack 5 is expanded by its normal resiliency when drawing ink into the same. Consequently, the sack will not encounter any external resistance during its expansion, but will gradually expand until it reaches its distention to normal its size, as in Fig. —2—, in which normal state it bears only very lightly against the compression bar 8.

Instead of equipping the actuating member 13 with a handle portion normally projecting beyond the surface of the barrel 3 and readily grasped with the fingers outwardly of the said barrel, the said member may be equipped with a retractable or substantially disappearing finger-hold tip, as in Fig. —4—. The latter shows the member 13 as equipped with an end 17 having a curved tip 18 hinged thereto, the jointed members 17 and 18 being normally housed by a recess 19 formed upon the surface of the barrel 3 adjacent to one end of the slot 7, the curved tip 18 being normally slightly separated from the rear end of the said recess. By slipping a finger-nail, or the edge of the cap of the fountain pen under the free end of the tip 18, the latter may readily be swung about its hinged connection and lapped over the exterior of the member 17, whereupon the combined thickness of the said overlapped members will afford a ready finger-hold for permitting the member 13 to be flexed as shown in dotted lines in Fig. —4— to afford the desired movement of the compression members of my pen construction.

While I have shown and described the sack-compressing mechanism of my fountain pen as operated by a flexible member adapted to be arched inwardly into engagement with a portion of the said compressing mechanism, I do not wish to be limited to this particular arrangement nor to other details of the construction herein described, it being evident that the same might be modified in many ways without departing from the spirit of my invention.

I claim as my invention:

1. A fountain pen including a compressible ink sack, a barrel housing the same; and a compression member interposed therebetween and comprising a relatively rigid bar, a pair of annular members frictionally engaging the bore of the barrel near the opposite ends thereof, and a flexible bar jointly carried by said annular members and slidable with respect to one thereof and secured to said relatively rigid bar.

2. A fountain pen including a barrel, a compressible ink sack housed thereby, a relatively inflexible pressure bar interposed therebetween; a spring bar carrying said pressure bar and supported at one end by an annular spring rigid therewith and engaging the bore of the barrel, and means frictionally engaging the bore of the barrel and slidably supporting the other end of said spring bar.

2. A fountain pen including a barrel, a compressible ink-sack and a pressure bar

both housed thereby, a spring bar supporting the pressure bar, a substantially rigid support for one end of the spring bar; and a support for the other end of the spring bar comprising a tube slidably housing said last named end of the spring bar and means for supporting said tube within said barrel.

In testimony whereof I have signed my name in presence of two subscribing witnesses.

JOSEPH A. KRAKER.

Witnesses:
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