April 17, 1928. 1,666,186

W. TONG

DEVICE FOR CLEANING FOUNTAIN PENS

Filed Aug. 8, 1927

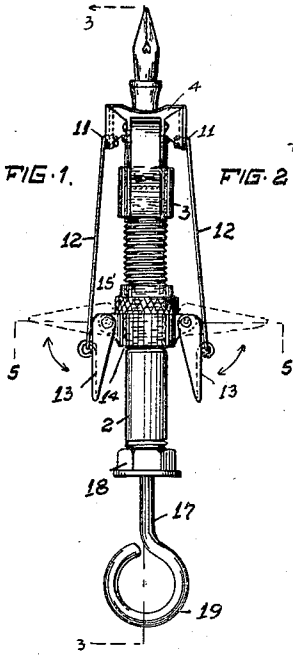


FIG. 1.

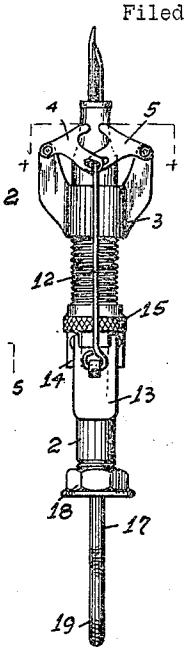


FIG. 2.

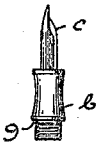


FIG. 6



FIG. 7



FIG. 8



FIG. 10

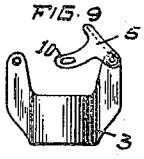


FIG. 9



FIG. 11.



FIG. 12

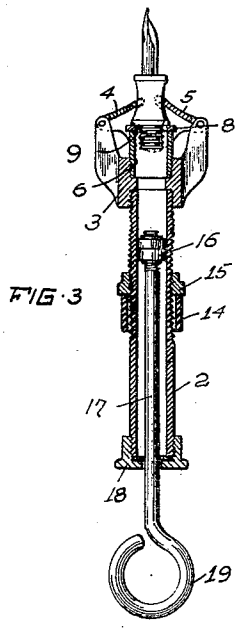


FIG. 3

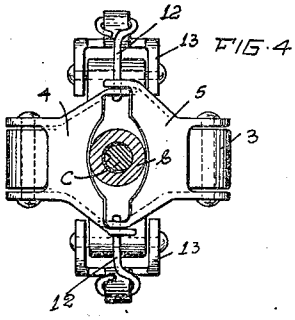


FIG. 4

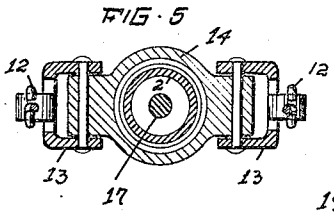


FIG. 5

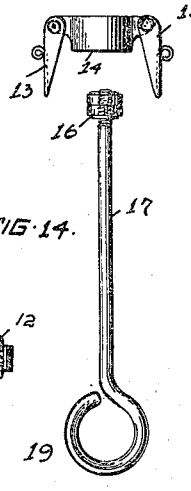


FIG. 13

FIG. 14.

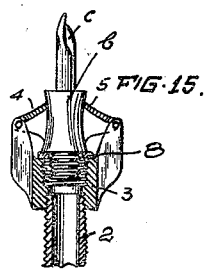


FIG. 15.

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UNITED STATES PATENT OFFICE.

WOO TONG, OF CLEVELAND, OHIO.

DEVICE FOR CLEANING FOUNTAIN PENS.

Application filed August 8, 1927. Serial No. 211,373.

This invention relates to a device for cleaning fountain pens, and the present device is particularly constructed to grip and hold the detachable section containing the pen in a fountain pen and to pump or force a liquid through the same to clean it and the pen as occasion requires. The present device is also particularly designed to clean different sized fountain pens, and these and other objects of the invention are set forth more fully in the following description.

In the accompanying drawings, Fig. 1 is a side view of the device showing the pen section of a fountain pen clamped therein, and Fig. 2 is a side view of the parts shown in Fig. 1. Fig. 3 is a sectional view through the device on line 3—3 of Fig. 1. Fig. 4 is a sectional view and end elevation on line 4—4 of Fig. 2, but on a larger scale, and Fig. 5 is an enlarged cross section on line 5—5 of Fig. 1. Fig. 6 is a separate view of a pen section of a fountain pen. Fig. 7 is a sectional view of the sealing washer, and Fig. 8 is a side view of the exchangeable extension for seating the washer and the pen section. Fig. 9 is a side view of the clamping head separated from the pump body, and Fig. 10 shows one of the clamping members removed from the head. Fig. 11 is a side view of one of the operating links. Fig. 12 is a side elevation of the pump cylinder or barrel. Fig. 13 is a side elevation of the adjustable screw-collar and its cam levers for operating the links. Fig. 14 is a side view of the pump piston or plunger, and Fig. 15 is a sectional view of the clamping head, showing a pen section therein larger than the one shown in Fig. 6.

The ordinary fountain pen comprises a barrel having a tubular pen holding part or section —*b*— screw-connected with one end of said body or barrel, and a detachable cap adapted to have a slip or screw-connection with section —*b*— or the barrel. A feed bar —*c*— or corresponding element is usually secured within section —*b*— and in some instances element —*c*— is provided with a narrow slot or chamfer for feeding the ink from the barrel or from a collipsible ink tube (not shown) but usually attached to detachable section —*b*—. This tubular section —*b*— containing feed bar —*c*— is frequently clogged with dry ink, or substances drawn in from the ink well or bottle in filling the fountain pen. Cleaning of the pen section is difficult on account of the small ink passage therein and can only be successfully accomplished from the inner end of the pen section and by dissolving the ink. The present device or instrument is designed to force a stream of water or other liquid under pressure through the pen section while this section is clamped or held tightly in sealed union with one end of a pump cylinder so that a thorough cleaning of the pen may be accomplished without soiling the hands or clothes.

As shown, the device comprises a hollow pump cylinder or barrel 2 which is screw-threaded externally at its middle and also at its ends. A head 3 carrying a pair of pivoted fingers or clamping members 4 and 5 is affixed to one end of barrel 2, and a tubular part 6 is removably screwed or connected to head 3. The outer end edge 7 of part 6 is smoothly finished to seat a sealing washer or gasket 8, and the pen section —*b*— which is to be cleaned is inserted into the open end of part 6 until the annular shoulder 9 on the pen section engages the sealing washer 8, see Fig. 3. Pen section —*b*— is clamped and held tightly in that position by means of clamping members 5 and 4, respectively, each of which have downwardly extending arms 10 slotted at their extremities to receive the hook ends 11 of a pair of operating links 12. Each link 12 is connected to a cam lever 13 pivotally mounted upon a loose sleeve 14 opposite an adjustable screw collar 15 on barrel 2. The clamping members are open when the levers are turned upwardly and outwardly as shown in dotted lines in Fig. 1, and locked and clamped upon pen section —*b*— when the levers are turned downwardly as shown in full lines in the same figure. In clamping the pen section it is drawn downwardly so that the shoulder 9 is pressed tightly against the sealing washer which is pressed in turn against the end edge 7 of the tubular receiving part 6.

Cylinder or barrel 2 contains a reciprocable plunger or piston carrying leather packing 16, and a piston rod 17 extends through a screw cap or guide member 18 at the outer end of the cylinder or barrel and terminates in a handle 19 to permit convenient reciprocable operation of the piston. Thus in using the instrument the pen section —*b*— of a fountain pen is detached from its ink reservoir or tube and inserted into the tubular part or adapter member 6

and seated against the sealing washer as shown in Fig. 3. Collar 15 is adjusted on barrel 2 to permit a good clamping connection to be made with the particular type or kind of pen section —*b*— to be cleaned, and then the cam levers 13 are pressed downwardly until the clamping fingers or members 4 and 5 grip the pen section and press it downwardly against sealing washer 8. This is preferably done by holding the device in one hand and using the fingers of the same hand to press the levers, while the other hand is used to grip handle 19 and reciprocate piston rod 17. In this operation the pen section —*b*— is submerged in water or any other cleaning fluid or liquid, and the water is drawn into the pump cylinder upon the outward stroke of the piston and expelled upon the reverse stroke thereof, the operation being repeated as often as desired until the pen and pen section is thoroughly clean. As constructed the device is usable for different sized fountain pens, the removable tubular part 6 being exchangeable and replaceable to accommodate pen sections of different sizes and kinds as illustrated in Fig. 15.

What I claim, is:

1. A device for cleaning the detachable pen section of a fountain pen, comprising a cylinder, a piston within said cylinder, and means supported by said cylinder for holding and drawing said pen section axially against said cylinder.

2. A device for cleaning the detachable pen section of a fountain pen, comprising means for drawing and forcing a liquid through said pen section, means supported by said first means for axial holding and drawing said pen section tightly against said first means, said holding means including a sealing washer placed between said first and second means.

3. A device for cleaning the detachable pen section of a fountain pen, comprising a pump cylinder, a piston reciprocable in said cylinder, clamping members mounted upon one end of said cylinder, and operating means for said clamping members supported upon said cylinder.

4. A device for cleaning the detachable pen section of a fountain pen, comprising a pump, clamping means for said pen section mounted upon said pump, and cam levers for operating said clamping means.

5. A device for cleaning the detachable pen section of a fountain pen, comprising a cylinder, a piston reciprocable in said cylinder, clamping means mounted upon one end of said cylinder, operating levers adjustably mounted upon said cylinder, and operating connections between said clamping means and operating levers.

6. A device for cleaning the detachable pen section of a fountain pen, comprising a cylinder, a piston reciprocable in said cylinder, a clamping head mounted upon said cylinder, clamping levers pivotally connected with said clamping head, a sleeve adjustably mounted upon said cylinder, operating levers pivotally connected with said sleeve, and connecting rods between said clamping levers and said operating levers.

7. A device for cleaning the detachable pen section of a fountain pen, comprising a pump, a clamping head mounted on said pump, and a separate extension tube removably fixed within said head and extending outwardly therefrom adapted to receive and seat said pen section.

8. A device for cleaning the detachable pen section of a fountain pen, comprising a cylinder, a piston reciprocable in said cylinder, a clamping head mounted upon said cylinder having a tubular extension removably seated therein, clamping levers pivotally connected with said clamping head, operating levers connected with said levers, and means for positioning said levers comprising a collar adjustably secured to said cylinder.

In testimony whereof I affix my signature.

WOO TONG.