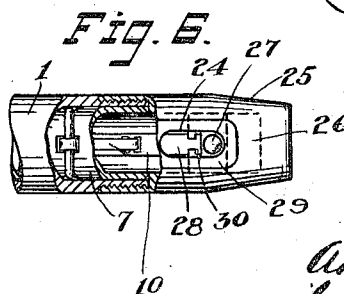
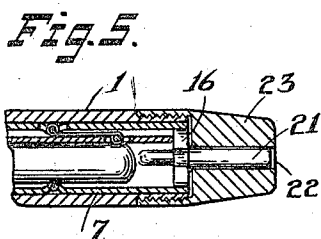
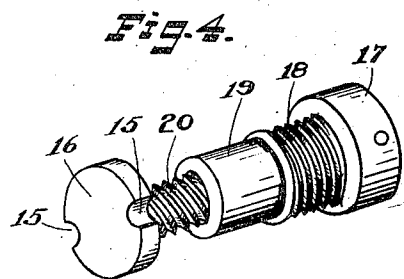
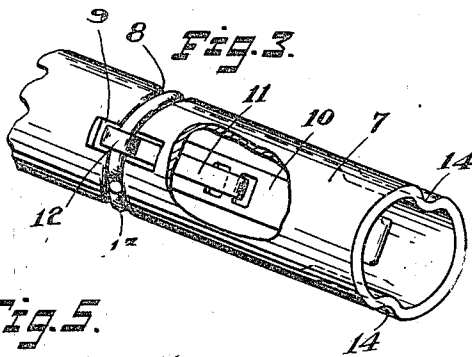
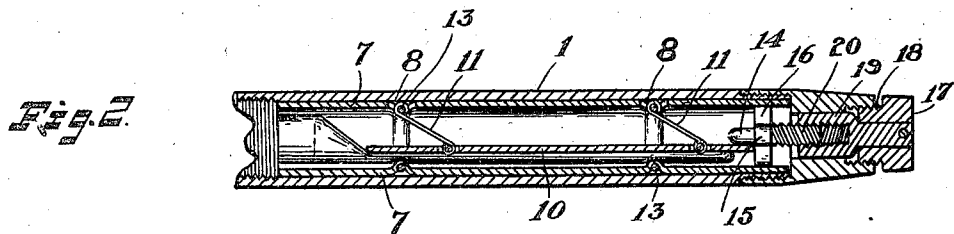
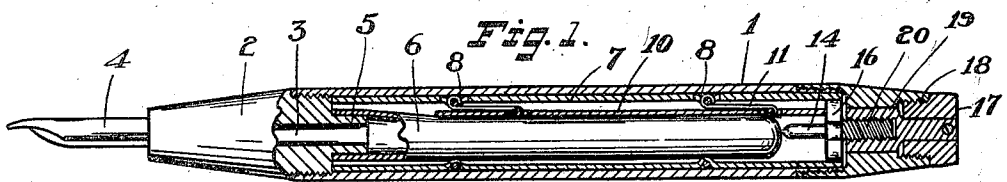


A. MUEHLMATT.
SELF FILLING FOUNTAIN PEN.
APPLICATION FILED APR. 5, 1912.

1,064,759.

Patented June 17, 1913.



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ADOLPH MUEHLMATT, OF NEWPORT, KENTUCKY.

SELF-FILLING FOUNTAIN-PEN.

1,064,759.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed April 5, 1912. Serial No. 688,668.

To all whom it may concern:

Be it known that I, ADOLPH MUEHLMATT, a citizen of the United States, and a resident of the city of Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Self-Filling Fountain-Pens, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to fountain pens which fill through the ink feeding channel and especially to such pens as employ a rubber sac for an ink reservoir and fill by deflating the rubber sac.

Ordinarily the employment of this means of filling pens has been accompanied by the use of complicated devices for deflating the sac, which require several movements in their operation, and are an annoyance to the user, as well as troublesome to the manufacturer.

To simplify and render more efficient the deflating device is the special object of my invention, and this I accomplish by that certain novel construction and arrangement of parts to be hereinafter pointed out and specified, whereby I deflate the rubber sac by means of a long and narrow plate actuated by turning a screw in the end of the barrel of the pen.

In the drawings, Figure 1 is a vertical section of the pen with the rubber reservoir in normal position. Fig. 2 is a similar section, with the reservoir deflated. Fig. 3 is a perspective view of one end of the inner tube. Fig. 4 is the operating screw and disk. Figs. 5 and 6 are views partly in section of modifications of that part shown in Fig. 4.

1 is the barrel of the pen made of suitable material, such as vulcanized rubber, into which is screwthreaded at one end a tapered portion 2, containing the ink-feeding tube 3, and into which is inserted the pen point 4. The portion 2 is extended at the base to form an end 5 on which is slipped the long rubber sac 6.

Of a size to fit closely within the barrel 1, is the tube 7, Fig. 3, with annular grooves 8, 8 about its circumference, and transverse these grooves the slots 9. A long narrow plate 10 is provided, with links 11, of equal length, hinged at one end to the plate. The other end of each link is placed through the slots 9 and bent over at 12 to engage rings

13 which are inserted in the grooves 8 and drawn through the bent ends 12. The one end of the tube 7 is grooved at 14, 14, so that ridges are formed on its inner surface to engage notches 15, 15, in a disk 16. This disk 16 is adapted to fit into the grooved end of the tube 7, and when forced into the tube, to press on the plate 10.

The rear end of the barrel is threaded to receive the end portion shown in Fig. 4, which is formed with the cap 17, the screw 18 and the sleeve 19. The inner side of this sleeve is threaded at a pitch preferably four times greater than the end of the barrel but in the same direction, and into it is fitted the screw 20, the head of which screw is the plate 16 above referred to.

The assembling of the parts and the operation of the pen are as follows: The tube 7 with the plate 10 attached to it as described is fixed rigidly within the barrel and the sac 6 inserted in the barrel, raising the plate so that it rests on the sac. The disk 16 with its screw 20 is inserted in the tube 7 and the end piece screwed into place in the barrel. Inasmuch as the ridges in the tube prevent the disk from rotating, when the operator unscrews the head 17 of the end piece and thus rotates the sleeve 19, the screw 20 turns within the sleeve and is forced out of the sleeve a distance four times as great as the head 17 is moved. The disk is by this means pushed into the tube and forces down the plate 10. This deflates the ink sac, and when the head is turned back into place, the sac will suck up ink through the feeding tube.

The modification shown in Fig. 5 consists in the elimination of the four to one screw, and the attachment of the disk 16 to a pin 21 which is adapted to slide back and forth in an opening 22 in the head 23 which screws into the end of the pen barrel. When it is desired to operate the deflating plate, the user may push in the pin, thereby bringing the disk 16 into contact with the plate and forcing the plate down onto the rubber sac. The action of the sac in filling itself with ink raises the plate and forces the disk and pin back into normal position ready for another operation.

In the modification shown in Fig. 6, the head 25 is cored out as shown by the dotted lines at 26, and a plunger 29 is inserted, adapted to move back and forth in this cored out portion. A slot 24 is cut in the side of the head 25 and the plunger 29 is provided

with a pin 27 which projects through the slot. The end of the deflating plate 10 is extended at 28 and attached to the plunger 29 by a loose connection 30, like a mortise and tenon joint. In operating the deflating plate in this construction, the user presses forward the pin 27, thereby pressing down the deflating plate. He then pushes it back again, allowing the rubber sac to fill itself.

10 Besides providing a simple mechanical means for actuating my deflating plate, I also provide in my plate an efficient means for deflating the sac. The plate, being hung on a plurality of hinges of equal length, 15 swings in a plane constantly parallel to the axis of the ink sac, thereby pressing out the sac smoothly and completely.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a self-filling fountain pen, a flexible sac ink reservoir, a hinged plate for deflat-

ing the sac, a screw with a nonrotatable disk mounted thereon, the disk adapted to slide back and forth to swing the plate on its hinges to deflate the sac, and an inside and outside screwthreaded sleeve with the disk screw mounted therein whereby the rotation of the sleeve will advance and withdraw the disk. 25

2. In a self-filling fountain pen, a flexible sac ink reservoir, an inner tube in the pen barrel flush with the inner surface thereof, a plate for deflating the sac, annular grooves in the inner tube, with transverse slots therein, a plurality of links between the plate and the tube, with the ends of the links projecting into said slots, and rings in the grooves to engage the links and provide a hinge connection between the tube and the plate. 30

ADOLPH MUEHLMATT.

Attest:

FRANK W. KUNKEL,
ANNA F. DIENST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."