

A. EBERSTEIN.
FOUNTAIN PEN.

APPLICATION FILED FEB. 12, 1901.

NO MODEL.

Fig. 1.

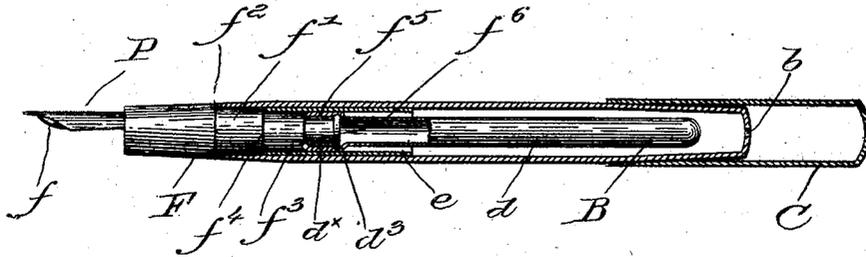


Fig. 2.

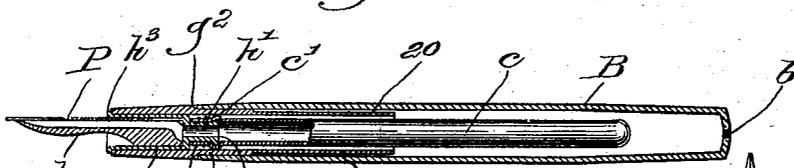


Fig. 3.

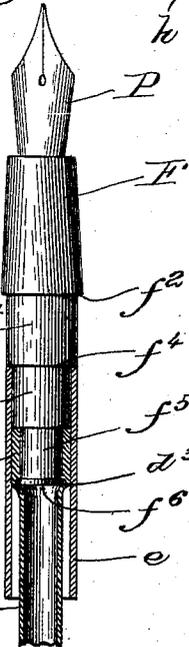


Fig. 5.

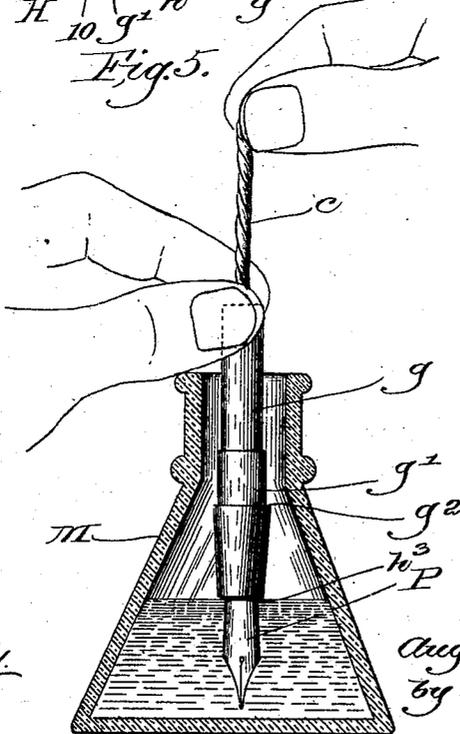
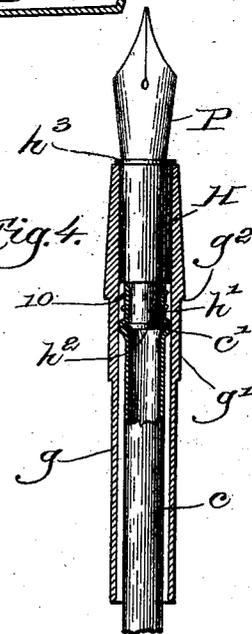


Fig. 4.



Witnesses:
Thomas J. Drummond
Adolph H. Kain.

Inventor:
August Eberstein
by Crosby & Gregory
att

UNITED STATES PATENT OFFICE.

AUGUST EBERSTEIN, OF BOSTON, MASSACHUSETTS.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 721,549, dated February 24, 1903.

Application filed February 12, 1901. Serial No. 46,973. (No model.)

To all whom it may concern:

Be it known that I, AUGUST EBERSTEIN, a subject of the Emperor of Germany, and a resident of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Fountain-Pens, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

My invention relates more particularly to that type of fountain-pen wherein the ink is contained in an elastic sack or reservoir in connection with the feed-section; and it has for its objects the production of novel means for more readily manipulating the reservoir when filling the same and the attachment of the reservoir to the feed-section.

The various novel features of my invention will be hereinafter described, and particularly pointed out in the following claims.

Figure 1 is a view, partly in longitudinal section, of a fountain-pen embodying one form of my invention, the ink-reservoir being broken out. Fig. 2 is a similar view of a modification to be described. Fig. 3 is an enlarged detail of the feed-section and a part of the reservoir shown in Fig. 1. Fig. 4 is an enlarged detail of the corresponding portion of Fig. 2, and Fig. 5 shows the mode of filling the reservoir with my novel construction.

The barrel B, preferably made of hard rubber and constituting the handle of the pen, and the cap C (see Fig. 1) may be of usual construction, the barrel having an air-vent *b*.

Referring to Figs. 1 and 3, the feed-section F, made, preferably, of hard rubber, has a feed-bar *f* to deliver ink to the pen P, substantially as shown in Fig. 2, the exterior of the feed-section being slightly tapered to receive the cap when the pen is not in use. The section is reduced in diameter at *f'* to leave an annular shoulder *f''*, against which the end of the barrel abuts when the section is seated therein, held in place by friction, and a still smaller portion *f'''* leaves a shoulder *f''''*, while from the inner end of the feed-section a tubular boss *f''''''* projects, having at its extremity an annular external flange *f''''''''*.

I make the ink-reservoir as an elongated, elastic, and flexible rubber sack or bulb *d*, closed at one end, and at its open end the

walls are thickened, as at *d''*, for a length substantially equal to the length of the boss *f''''*, exclusive of its flange, the internal diameter of the thickened portion being slightly less than the external diameter of the boss, so that the reservoir may be stretched thereover, to hug it tightly. The inner end of the thickened portion *d''* forms a shoulder which abuts against the flange and serves, with the contractile action of the rubber, to hold the reservoir on the boss.

To fill the reservoir with ink, it is "stripped"—that is, drawn through the fingers, or, as shown in Fig. 5, twisted, to expel the air—and the nib of the pen and the feed-bar *f* are dipped into the ink-supply, the ink being sucked into the reservoir when it is released by the fingers. At such time the feed-section and attached reservoir are removed from the barrel, as usual, and the feed-section is held by the fingers of one hand while the reservoir is stripped.

If the ink-supply is contained in a large-mouthed vessel and there is plenty of ink, the filling is easy; but if the ink is in a bottle having an elongated or contracted neck or the ink is low it is impossible to fill the reservoir, because the fingers grasping the feed-section prevent the entrance thereof far enough into the bottle. I have overcome this difficulty by providing a long tubular and substantially inelastic extension for the feed-section, mounted thereon and extended beyond its inner end, surrounding the reservoir for a part of its length. This extension *e*, Figs. 1 and 3, is preferably made of hard rubber, and it fits lightly on the reduced part *f'''* of the feed-section, its end abutting against the shoulder *f''''*, and it forms a handpiece when filling long enough to enable the operation to be performed satisfactorily with any ordinary ink-bottle or inkstand. The diameter of the flange *f''''''* is such that when the extension *e* is in place the portion of the reservoir between the said flange and the inner wall of said extension will be firmly pinched, as at *d''''*, to form an additional means for preventing separation of the reservoir from the feed-section.

In Figs. 2 and 4 a modification is shown, the feed-section H having the usual feed-bar *h*, and at its inner end the section is reduced to form a tubular boss *h'*, provided at its ex-

trömity with an external annular flange h^2 , the open end of the elastic ink-reservoir c being sprung over the boss; but in this construction the reservoir-walls are not thickened, as before described, and I secure the reservoir upon the boss by tightly wrapping silk cord or fine wire, as 10, around the exterior of the rubber between the flange h^2 and the adjacent end of the feed-section. The relatively inelastic tubular extension to form the handpiece when filling is in this construction shown as a tube g , conveniently made of hard rubber and receiving the feed-section with a tight frictional fit, the outer end of the tube abutting against an annular bead or flange h^2 on the feed-section. I prefer to so construct the parts that in this arrangement the rubber of the reservoir will be pinched between the flange h^2 and the interior of the extension g , as at c' , to afford a securing means independent of the wrapping cord or wire 10. The extension g is externally reduced at g' to receive the open end of the barrel B, the latter abutting against the shoulder g^2 , and, as shown in Fig. 2, the remaining portion of the extension beyond the part g' is of still smaller diameter, leaving a clearance 20 between it and the barrel.

In Fig. 5 the operation of filling the reservoir is illustrated, the structure shown in Figs. 2 and 4 being depicted, and it will be observed that with even a small quantity of ink in a deep bottle, as M, having a narrow mouth no trouble will be experienced in filling.

So far as the length of the tubular extension is concerned, it can be made relatively longer than shown herein, provided a sufficient portion of the reservoir is left exposed to be grasped when twisting it prior to filling.

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

1. In a fountain-pen, a tubular barrel open at one end, a detachable feed-section to close the open end of the barrel and having a permanently-attached elastic ink-reservoir, the latter being inclosed and protected by the barrel when the feed-section is in place therein, and a long, relatively inelastic tube mounted on, and extended rearwardly beyond the inner end of the feed-section, and detachably connected thereto, surrounding the reservoir and constituting a long and firm handpiece for the feed-section when the latter is removed from the barrel for the purpose of filling the reservoir.

2. A fountain-pen, comprising a detachable feed-section provided with three shoulders of successively smaller diameter, an elastic ink-reservoir, and means for attaching the same to the smallest of said shoulders, a relatively

inelastic elongated tube fitting over the next larger of said shoulders, and surrounding the ink-reservoir for a portion of its length to constitute a long and firm handpiece for the feed-section when the latter is removed from the barrel for the purpose of filling the reservoir, and a tubular barrel having an open end adapted to fit over the third and largest of said shoulders.

3. In a fountain-pen, a feed-section having its inner end reduced in diameter and provided with an annular flange, an elastic ink-reservoir into the open end of which the flanged portion of the feed-section is inserted, and a relatively inelastic tubular extension mounted on the feed-section and frictionally engaging the same between its outer end and the reduced portion thereof and rearwardly extended beyond the annular flange to surround the reservoir, the wall of the latter being tightly pinched between the flange and the inner surface of the extension.

4. In a fountain-pen, a feed-section having at its inner end a tubular boss provided with an external annular flange, an elastic reservoir closed at one end and at its opposite open end drawn over the flanged boss, a relatively inelastic tubular extension mounted on, and extended beyond the inner end of the feed-section to surround the reservoir for a portion of its length, the walls of the reservoir being tightly pinched between the flange and the adjacent part of the tubular extension, and the barrel having an open end, in which open end the feed-section is normally seated, with the tubular extension interposed between the reservoir and the inner wall of the barrel.

5. In a fountain-pen, a feed-section having at its inner end a tubular boss provided with an external annular flange, an elastic reservoir closed at one end and having its wall thickened at its open, opposite end, to tightly hug the boss between the feed-section and flange, and a relatively inelastic, tubular extension mounted on and frictionally engaging the feed-section and extended beyond its inner end surrounding the reservoir, the walls of the extension compressing the thickened portion of the reservoir upon the boss between the flange and the base of the feed-section, to prevent accidental separation of the reservoir and feed-section.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUST EBERSTEIN.

Witnesses:

JOHN C. EDWARDS,
AUGUSTA E. DEAN.