

A. EBERSTEIN.
FOUNTAIN PEN.

APPLICATION FILED FEB. 12, 1901.

NO MODEL.

Fig. 1.

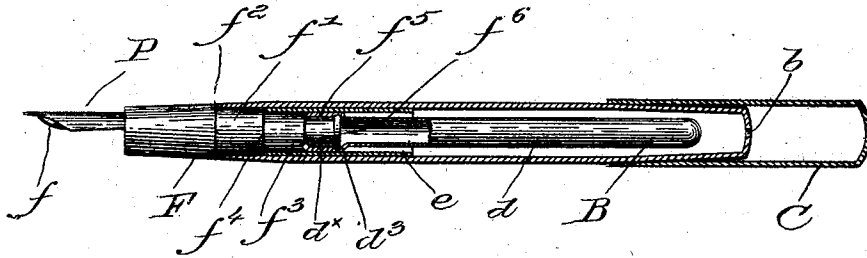


Fig. 2.

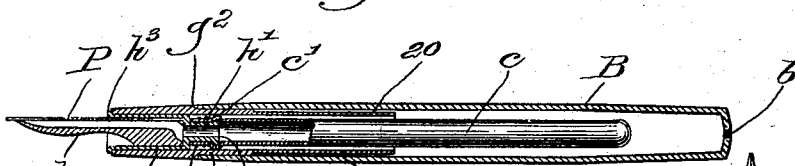


Fig. 3.

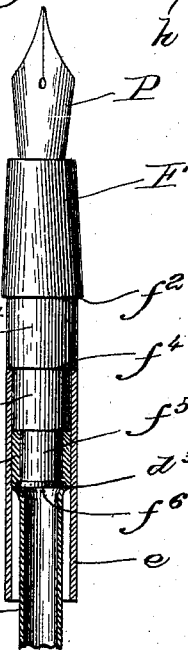


Fig. 5.

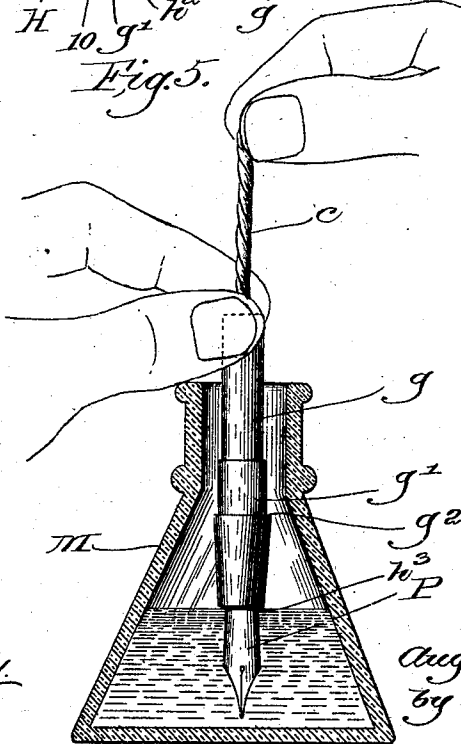
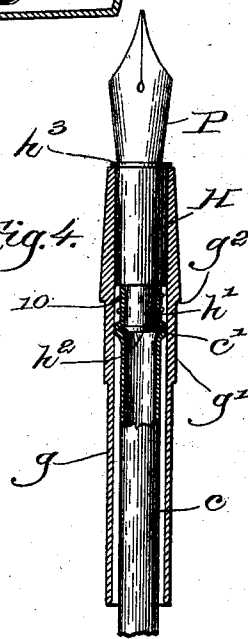


Fig. 4.



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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-

tremity with an external annular flange h^2 ,
 the open end of the elastic ink-reservoir c be-
 ing sprung over the boss; but in this con-
 5 struction the reservoir-walls are not thick-
 ened, as before described, and I secure the
 reservoir upon the boss by tightly wrapping
 silk cord or fine wire, as 10, around the exter-
 10 rior 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 construc-
 tion shown as a tube g , conveniently made of
 hard rubber and receiving the feed-section
 15 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
 20 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 lat-
 25 ter 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 reser-
 30 voir 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.

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

40 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
 45 the open end of the barrel and having a per-
 manently-attached elastic ink-reservoir, the
 latter being inclosed and protected by the
 barrel when the feed-section is in place there-
 in, and a long, relatively inelastic tube mount-
 50 ed 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
 55 from the barrel for the purpose of filling the
 reservoir.

2. A fountain-pen, comprising a detachable
 feed-section provided with three shoulders of
 60 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 con-
 65 stitute 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. 70

3. In a fountain-pen, a feed-section having
 its inner end reduced in diameter and pro-
 vided with an annular flange, an elastic ink-
 reservoir into the open end of which the
 flanged portion of the feed-section is inserted,
 75 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 sur-
 80 round the reservoir, the wall of the latter be-
 ing 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
 85 an external annular flange, an elastic reser-
 voir 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-
 90 section to surround the reservoir for a por-
 tion 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
 95 open end the feed-section is normally seated,
 with the tubular extension interposed be-
 tween the reservoir and the inner wall of the
 barrel.

5. In a fountain-pen, a feed-section having
 100 at its inner end a tubular boss provided with
 an external annular flange, an elastic reser-
 voir closed at one end and having its wall
 thickened at its open, opposite end, to tightly
 hug the boss between the feed-section and
 105 flange, and a relatively inelastic, tubular ex-
 tension mounted on and frictionally engag-
 ing the feed-section and extended beyond its
 inner end surrounding the reservoir, the walls
 of the extension compressing the thickened
 110 portion of the reservoir upon the boss be-
 tween the flange and the base of the feed-sec-
 tion, to prevent accidental separation of the
 reservoir and feed-section.

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

AUGUST EBERSTEIN.

Witnesses:

JOHN C. EDWARDS,
AUGUSTA E. DEAN.