

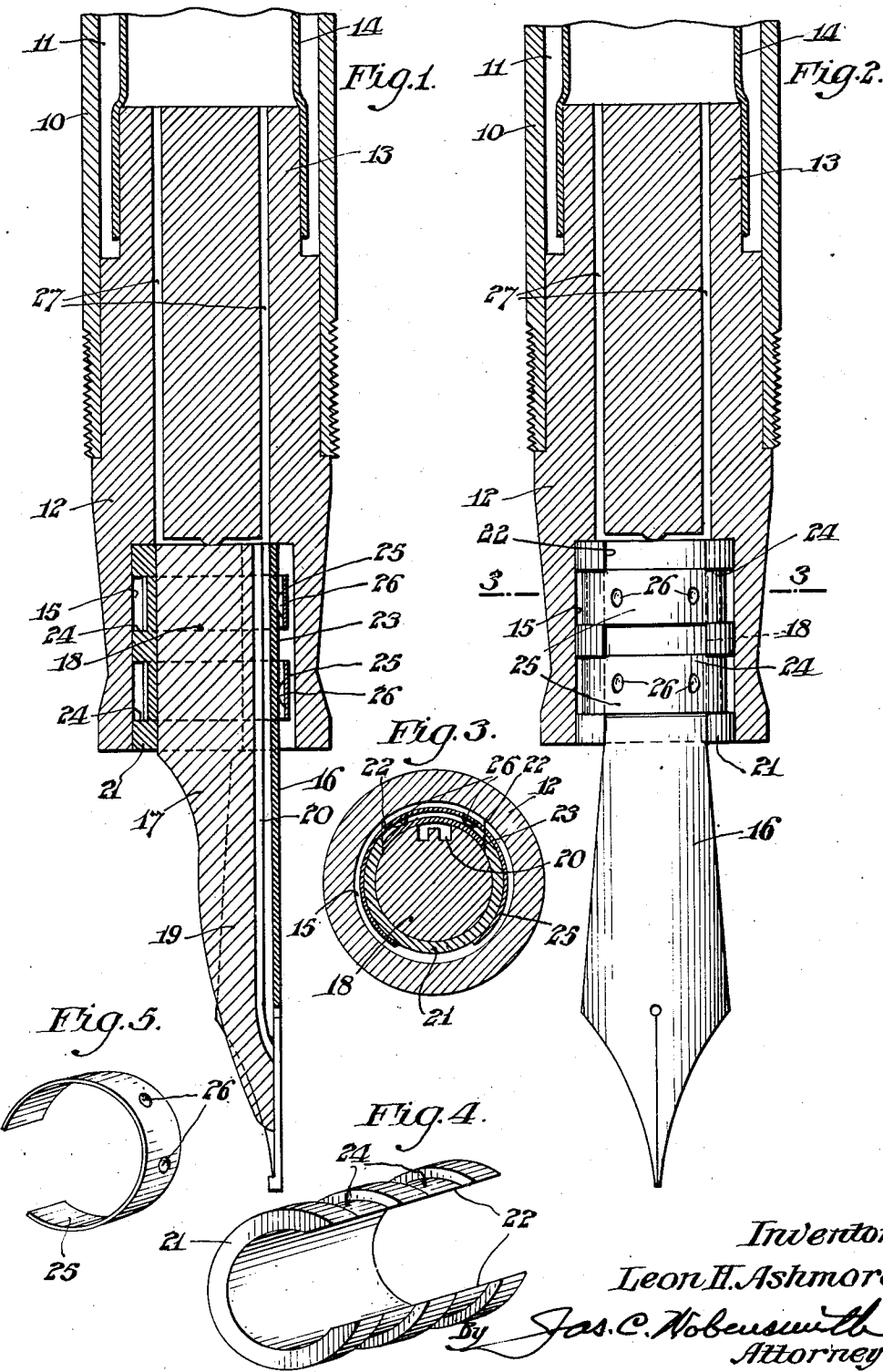
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WRITING PEN

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WRITING PEN

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This invention relates to writing pens and it relates more particularly to improved means for replaceably holding a writing pen point or nib in a suitable holder, such for example, as the nipple of a fountain pen; although it should be understood that the invention is equally applicable to ordinary dip pen holders, as well as to that type of pen in which a sufficient quantity of ink is taken up, with each dip of the pen, to last for a considerable period of time.

Heretofore it has been proposed to provide fountain pens with renewable pen point units, which could be inexpensively made, and which permitted replacing worn and damaged pen points of fountain pens. The use of renewable pen point units also permits a variety of styles of pen points to be interchangeably mounted in the pen barrels, according to the desire of the user.

However, these replaceable pen point units have not proved entirely satisfactory in use and are more expensive than need be for the reason that, when it becomes desirable to replace a pen point, it is necessary to discard not only the pen point, but also the other parts of the unit which are irremovably attached thereto.

Also, in the use of ordinary steel pen points, as well as the stainless steel pen points such as are commonly used in the replaceable units above referred to, steel of the proper metal thickness is often not sufficiently flexible for proper writing purposes, hence, in order to secure the requisite flexibility, recourse was had to the use of thinner metal, resulting in the production of a less durable pen point and requiring more frequent replacement than was desirable.

The principal object, therefore, of the present invention is to provide a pen point mounting, particularly adaptable for use in fountain pens or other pen holders, by means of which the pen points may be readily and conveniently removed and replaced in the holder.

A further object of the invention is to provide a pen point mounting, of the character aforesaid, which may be inexpensively constructed, but which will be sufficiently durable for its intended purpose.

A further object of the invention is to provide a pen point mounting, of the character aforesaid, in which greater flexibility of the pen point is obtainable during the writing operation, without unduly reducing the thickness of the metal from which the pen point is made.

A further object of the invention is to provide a pen point mounting which, when used in

connection with a fountain pen, will permit the pen point to be easily replaceable by another, and this without interfering with the proper flow of the ink to the pen and with the admission of the venting air to the interior of the ink container.

A further object of the invention is to provide a pen point mounting which, when used in connection with a fountain pen, will permit the pen point to be readily removable for the purpose of cleaning accumulations of dried ink in the feed passages, whereby the fountain pen may be kept at all times in proper writing condition.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawing forming part hereof, in which:

Figure 1 is a vertical central section of the lower portion of a fountain pen, having pen point holding means mounted therein embodying the main features of the present invention;

Fig. 2 is a similar view, the section being taken transversely to that of Fig. 1, and certain parts being therein shown in elevation;

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2;

Fig. 4 is a perspective view of one of the novel elements of the present invention; and

Fig. 5 is a similar perspective view of a spring member employed in the device.

It should, of course, be understood that the description and drawing are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention, and particularly that the invention is adaptable not only to fountain pens as shown in the drawing, but also to various other types of pen holders in which removable and replaceable pen points are employed.

Referring to the drawing, the invention is there shown as applied to a familiar type of fountain pen provided with a pen point which is easily and conveniently removable for the purpose of replacement by a similar pen point when the original one becomes worn or damaged, or when it is desired to substitute therefor a pen point of a different style.

In the structure shown in the drawing, the barrel of the fountain pen providing an internal chamber within which the ink is contained. At the lower end of the barrel is mounted a nipple which is held in place by frictional engagement with the lower interior end of the barrel

by a tight fit. If desired, the nipple 12 may be threaded in the lower end of the barrel 10, although this is not ordinarily done in fountain pens of the self-filling type.

5 If desired, the inner upper end of the nipple 12 may be reduced in diameter as at 13, for the mounting, on said reduced portion, of the rubber sack 14, which is commonly employed in self-filling fountain pens. The nipple is also
10 provided with longitudinal ports or passageways 27 for the purpose of feeding the ink to the feed member, and to admit the venting air to the ink container.

The foregoing arrangement, however, forms
15 no part of the present invention as the internal construction of the fountain pen may be varied and, in fact, as herein pointed out, the present invention is equally applicable to other types of pen holders.

20 The lower end of the nipple 12 is provided with a central bore 15 extending longitudinally, but only part way into the nipple member 12, for the reception of the pen point 16, and the members hereinafter described which are employed
25 for holding the pen point 16 therein, and for feeding the ink thereto.

The feed member 17 has a shank portion 18, of cylindrical form, the diameter of which is less than that of the bore 15 in the lower end of the
30 nipple 12, and the feed member 17 also has an extension 19 suitably shaped and extending along the inner surface of the pen point 16. A feed groove 20 of the usual conformation extends from end to end of the feed member 17 along the
35 medial line of the pen point 16 for the purpose of carrying the ink to the pen point 16 and delivering the same adjacent the writing tip thereof.

Partly surrounding the shank 18 of the feed
40 member 17 is a bushing 21 having a longitudinal slot 22 of a width corresponding to that of the shank 23 of the pen point 16, and preferably extending the full length of the bushing 21.

The relative diameters of the shank 18 of the
45 feed member, the bushing 21, and the bore 15 in the lower end of the nipple 12, are such that when the feed member and the bushing are assembled in the nipple 12, a relatively tight fit is provided whereby the feed member 17 and the
50 bushing 21 will be held fixedly in the lower end of the nipple 12, yet the same may be removed by the application of sufficient force, should it be necessary to do so for the purpose of repair.

If desired the feed member 17 and the bushing
55 member 21 may be made of a single integral piece, although it is preferable to make the same of two parts as above described.

The bushing 21 also has two circumferential
60 grooves 24 in each of which is mounted an arcuate spring 25 shown in detached perspective in Fig. 5 of the drawing. Each of said springs 25 is provided with two inwardly extending spaced
65 projections 26 which, when the pen point 16 is mounted in place, bear against the shank 23 of the pen point, as shown in Fig. 3 of the drawing.

Each of the springs 25 is of a width substantially equal to that of the groove 24 in which it is mounted, thereby preventing longitudinal
70 movement of said springs when the pen point 16 is inserted or removed.

The free ends of each spring 25 bear against
the bottom surface of the groove 24 in which it is mounted at points opposite the bearing of the projections 26 on the shank 23 of the pen
75 point 16. The thickness of each spring 25 is

less than the depth of the groove 24 in which it is mounted, thereby permitting relative movement of the pen with respect to the holder proper, and affording the proper degree of flexibility
5 in the writing operation notwithstanding the pen point may be made of material sufficiently thick as to render the pen point 16 substantially rigid. The pen point 16 and the springs 25 are preferably made of the same material, or at least material having the same electrolytic
10 reaction with the ink, whereby corrosion of these metal parts will be reduced to a minimum.

I claim:

1. In a writing pen having a removable and replaceable pen point, a nipple having an internal
15 bore, a member mounted in said bore having a longitudinal slot in which the shank of the pen point is inserted and also having a circumferential groove and an arcuate spring mounted in said groove having portions bearing against the
20 shank of the pen point.

2. In a writing pen having a removable and replaceable pen point, a nipple having an internal
bore, a member mounted in said bore having a longitudinal slot in which the shank of the pen
25 point is inserted and also having a plurality of circumferential grooves, and arcuate springs mounted in said grooves having portions bearing against the shank of the pen point, said springs serving to hold said pen point in the nipple.

3. In a writing pen having a removable and replaceable pen point, a nipple having an internal
bore, a member mounted in said bore having a longitudinal slot in which the shank of the pen
30 point is inserted and also having a plurality of circumferential grooves, and arcuate springs mounted in said grooves having spaced projections bearing against the shank of the pen point, said springs serving to hold said pen point in the
35 nipple yet permitting relative movement of said pen point with respect to the nipple in a direction transverse to the longitudinal axis of the structure.

4. In a writing pen having a removable and replaceable pen point, a nipple having an internal
45 bore, a cylindrical member within said bore, a bushing interposed between said cylindrical member and the internal surface of said bore, said bushing having a longitudinal slot in which the shank of the pen point is inserted and also having a plurality of circumferential grooves, and arcuate springs mounted in said grooves having
50 portions bearing against the shank of the pen point, said springs serving to hold said pen point in the nipple.

5. In a writing pen having a removable and replaceable pen point, a nipple having an internal
bore, a cylindrical member within said bore, a bushing interposed between said cylindrical
55 member and the internal surface of said bore, said bushing having a longitudinal slot in which the shank of the pen point is inserted and also having a plurality of circumferential grooves, and arcuate springs mounted in said grooves having portions bearing against the shank of the pen point, said springs serving to hold said pen point in the nipple yet permitting relative movement of said pen point with respect to the nipple
60 in a direction transverse to the longitudinal axis of the structure.

6. In a writing pen having a removable and replaceable pen point, a nipple having an internal
bore, a cylindrical member within said bore, a bushing interposed between said cylindrical
65 member and the internal surface of said bore,

said bushing having a longitudinal slot in which the shank of the pen point is inserted and also having a plurality of circumferential grooves, and arcuate springs mounted in said grooves
5 having spaced projections bearing against the shank of the pen point, said springs serving to

hold said pen point in the nipple yet permitting relative movement of said pen point with respect to the nipple in a direction transverse to the longitudinal axis of the structure.

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