

No. 671,026.

Patented Apr. 2, 1901.

S. J. MEYERPETER.
FOUNTAIN PEN.

(Application filed Oct. 30, 1899.)

(No Model.)

Fig. 1.

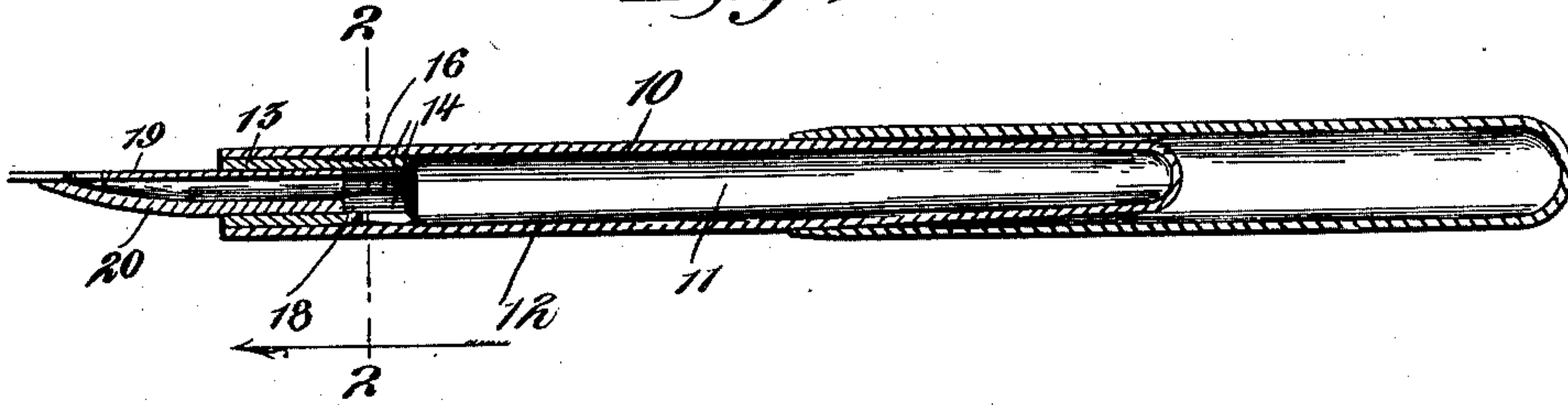


Fig. 2.

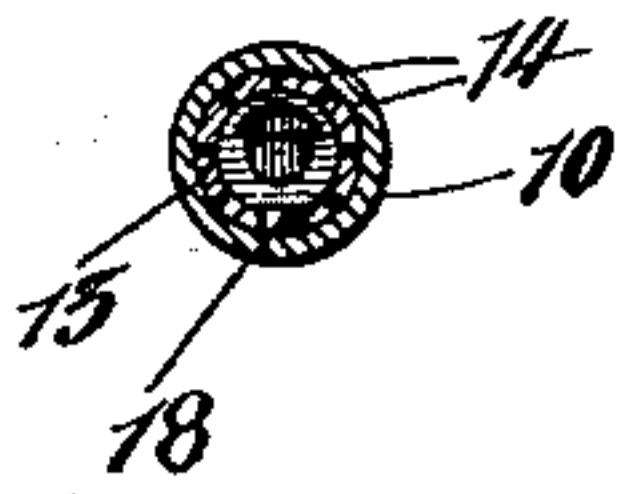


Fig. 3.

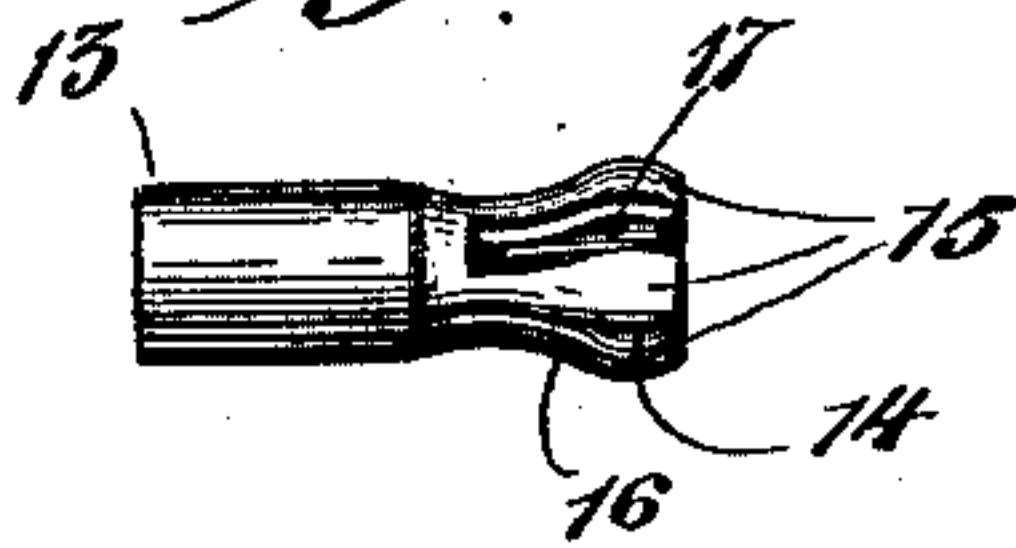


Fig. 4.

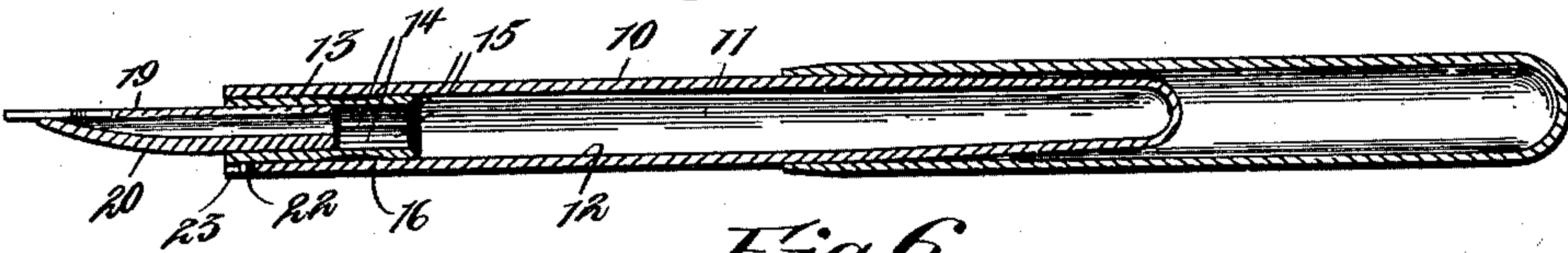


Fig. 6.

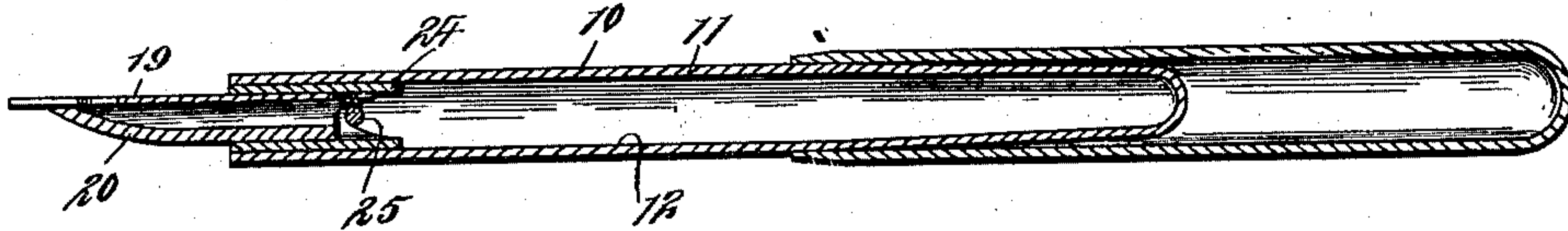


Fig. 5.

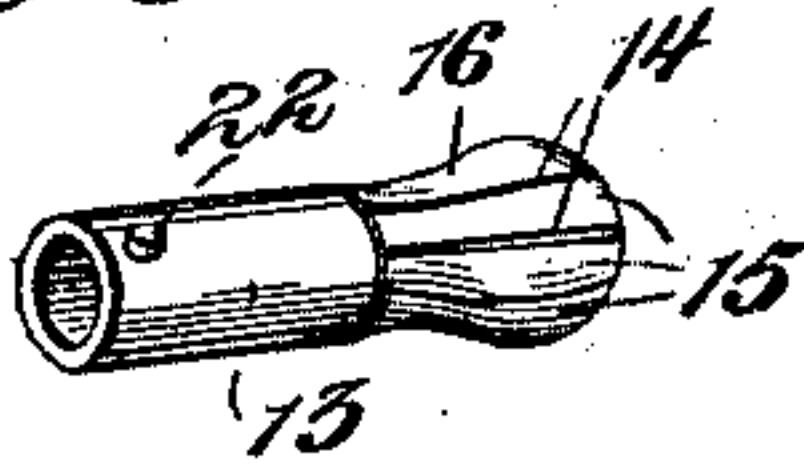


Fig. 5^a.

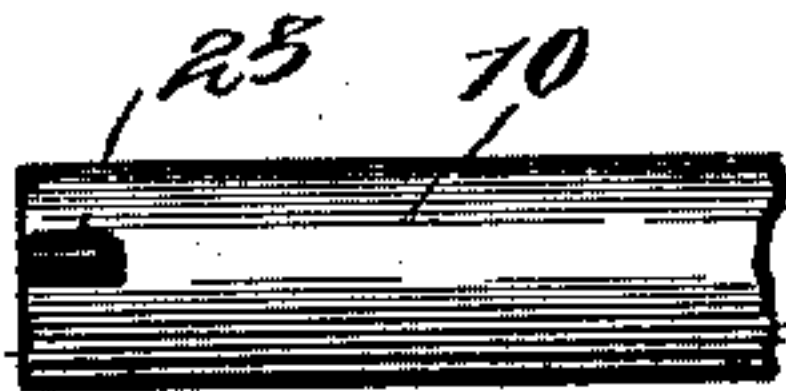


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

STEPHEN JOSEPH MEYERPETER, OF WEST SOMERVILLE, MASSACHUSETTS.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 671,026, dated April 2, 1901.

Application filed October 30, 1899. Serial No. 735,283. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN JOSEPH MEYERPETER, a citizen of the United States, residing at West Somerville, in the county of Suffolk and State of Massachusetts, have invented a new and useful Fountain-Pen, of which the following is a specification.

My invention relates to improvements in fountain-pens of that class which employ a non-threaded and smooth nozzle adapted for connection with an open end of a barrel or staff, said nozzle serving as the support for the pen and the feeder.

The object that I have in view is to improve the construction of pens of the class described in a manner to retain the initial strength of the staff or barrel and also secure the full cross-sectional area of the ink-space within the staff at the point where the nozzle terminates and to hold the nozzle in place by frictional engagement sufficient to insure the retention of the pen and the feeder, but permitting withdrawal of said nozzle on the application of an outward pulling force sufficient to overcome said frictional engagement, said nozzle held from inward movement and axial turning movement within the barrel by positive locking devices, which, however, permit the free outward movement of the nozzle in a path parallel to the axis of the barrel.

With these ends in view the invention consists in the novel construction, arrangement, and adaptation of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a longitudinal sectional elevation of one form of my invention embodied in a fountain-pen. Fig. 2 is a cross-section in the plane of the line 2 2 of Fig. 1. Fig. 3 is a side elevation of the nozzle removed from the open end of the barrel or staff. Fig. 4 is a sectional elevation similar to Fig. 1 containing another form of nozzle, and Fig. 5 is a detail perspective view of the nozzle employed in the pen-staff represented by Fig. 4. Fig. 6 is a sectional elevation similar to Figs. 1 and 4, containing a nozzle of still another form embodying my invention; and Fig. 7 is a detail perspective view of the nozzle shown by Fig. 6.

The same numerals of reference are used

to indicate like and corresponding parts in each of the several figures of the drawings.

The barrel or staff 10 of the improved fountain-pen is made in any of the usual ways with a cylindrical bore which forms an internal chamber or reservoir 11, adapted to receive and contain the supply of ink which is to be fed to the pen, and the annular internal wall 12 of this reservoir is of uniform diameter and smooth or unbroken from the open end of the staff to a point beyond the position occupied by the nozzle and the feeder, whereby the internal surface of the wall is free from depressions, grooves, or projections of any kind. The barrel or staff thus constructed may be of uniform thickness, so as to preserve the initial strength and provide an ink reservoir or chamber which does not furnish obstructions of any kind whatever to the flow or to the lodgment or accumulation of sediment.

The nozzle 13 in my improved fountain-pen is peculiarly constructed to hold itself in position within the internally smooth end of the barrel or staff solely by frictional engagement therewith, thus entirely obviating the employment of a threaded joint or coupling between the barrel and the nozzle, which is common in many styles of fountain-pens; but to more securely retain the nozzle in place I have combined therewith means for positively locking the nozzle against axial turning and endwise movement into the barrel, such locking means arranged for the nozzle to be withdrawn in an outward direction by a pulling force applied to the nozzle sufficient to overcome its frictional engagement with the barrel. In the manufacture of the nozzle it is my practice to make the nozzle of an external diameter which exceeds the internal diameter of the barrel or staff. This nozzle is turned down or reduced externally at the pen-receiving end to make it accurately fit quite snugly within the open end of the barrel, whereby the other end of the nozzle is left intact and of a diameter which exceeds that of the smooth-walled ink-reservoir within the staff. I now proceed to form one or a series of longitudinal slits 14 in the enlarged inner end of the nozzle, thus dividing said inner end into two or more yieldable or compressible fingers 15, each having a curved frictional surface 16, adapted to bind against the inner cylindrical wall 12 of the staff or barrel. In

Fig. 2 of the drawings I have shown the enlarged inner end of the nozzle provided with a number of slits or divisions to form a series of the compressible fingers; but it is evident that the number of fingers employed is not material. It is evident that previous to the insertion of the nozzle the divided or split end thereof must be compressed sufficiently for the fingers to enter the open end of the barrel, and this having been effected the nozzle may be forced to its proper position by shoving it into place. It is evident that the release of the yieldable fingers causes them to press outward, so as to frictionally engage with the barrel and to exert sufficient pressure thereon to hold the nozzle against displacement except upon the application of sufficient force to overcome the frictional engagement. I also provide a positive locking device which limits the inward movement of the nozzle into the barrel and restrains the nozzle against axial turning movement, and in one embodiment of this interlocking device a slot 17 is cut in the enlarged inner end of the nozzle and a stud or pin 18 on the barrel. In adjusting the nozzle within the reservoir it is necessary to hold the parts in such relation as to make the stud enter the slot, and thus the pin or stud lies within the limits of the nozzle and engages therewith, so as to arrest its inward movement and any axial turning movement, but permits the nozzle to be withdrawn in an outward direction. The nozzle supports a pen 19, of any preferred style, and it also carries a feeder 20 in active relation to the pen, the heel of said feeder terminating within the inner end of the nozzle, whereby the feeder is limited to the performance of its primary function of feeding the ink to the pen, and it is not available as a means for locking the nozzle in place.

The slot and the stud in the construction shown in Figs. 1, 2, and 3 may be reversed, as shown by Figs. 4 and 5, in which the stud 22 is made fast with the nozzle at its reduced cylindrical end, while a notch 23 is produced in the end of the barrel. The nozzle employed in this embodiment is essentially the same as the nozzle of the preceding figures, but, as explained, the number of slits in the divided end of the nozzle may be varied.

The nozzle shown by Figs. 6 and 7 embodies the essential features of construction of the devices in Figs. 1 to 4, inclusive, but I have modified the form of the slits or divisions in the enlarged inner end of the nozzle. The divisions or notches 24 are of inclined form, with their wide ends at the heel of the nozzle, and these divisions are formed in diametrically opposite sides, so as to receive a cross-pin 25, which is fixed in the barrel. Of course the divisions in the enlarged end of the nozzle provide the yieldable and compressible fingers, arranged to frictionally engage with the barrel, and the pin serves the functions heretofore ascribed to the studs.

My invention thus requires the employment of a nozzle of peculiar construction, which engages frictionally with a smooth inner surface of the barrel, one portion of the nozzle being compressed by contact with the barrel and the remaining portion of said nozzle having a snug fit therein. The construction invented by me not only dispenses with a threaded joint, but it retains the full strength of the barrel itself and provides for the unobstructed flow of the ink to the nozzle and feeder. The nozzle is not liable to work out of place, and it can be quickly removed by a simple endwise pull thereon.

Having thus described the invention, what I claim is—

1. A fountain-pen consisting of a barrel or staff with an open end having an internal smooth surface, a tubular nozzle removably mounted in the said staff or barrel end and having the front portion rigid and provided with an externally smooth surface unbroken by grooves or indentations and its opposite end divided or split to form diametrically opposed yielding bearing-fingers having frictional engagement with diametrically opposite points of the interior of the said open end of the barrel or staff, the front rigid portion of the nozzle bearing directly against the internal smooth surface of the open end of the barrel or staff to produce a liquid-tight joint therewith, and a projection on one of said devices to enter a slot in the other by a longitudinal movement of one in relation to the other for restraining the nozzle against inward and axial turning movement while in the barrel or staff end.

2. A fountain-pen consisting of a barrel or staff with an open end having an internal smooth surface, a tubular nozzle removably mounted in the said barrel or staff end and having the front portion rigid and provided with an externally smooth surface unbroken by grooves or indentations and its opposite end longitudinally divided or split to form a plurality of yielding bearing-fingers having frictional engagement with diametrically opposite points of the interior of the said open end of the barrel or staff, the front rigid portion of the nozzle bearing directly against the internal smooth surface of the open end of the barrel or staff to produce a liquid-tight joint therewith, and a projection extending radially inward from the said internal smooth surface of the barrel or staff end to fit into any one of the longitudinal openings which form the bearing-fingers to restrain the nozzle against inward and axial turning movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

STEPHEN JOSEPH MEYERPETER.

Witnesses:

WILLIAM W. FISH,
EUGENE BABBITT.