

(No Model.)

C. E. BROWNING.
FOUNTAIN PEN.

No. 516,345.

Patented Mar. 13, 1894.

Fig. 1.

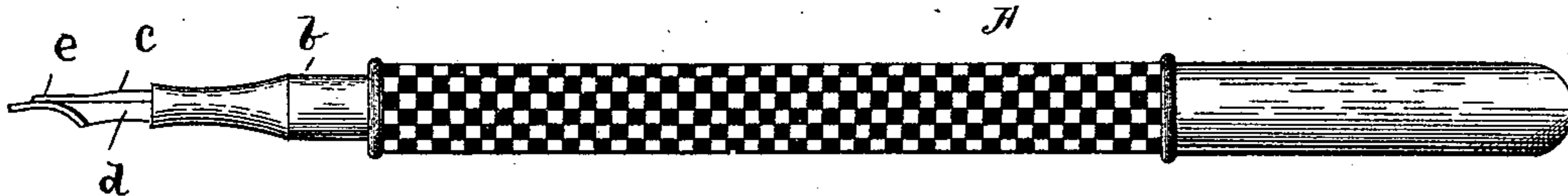


Fig. 2.

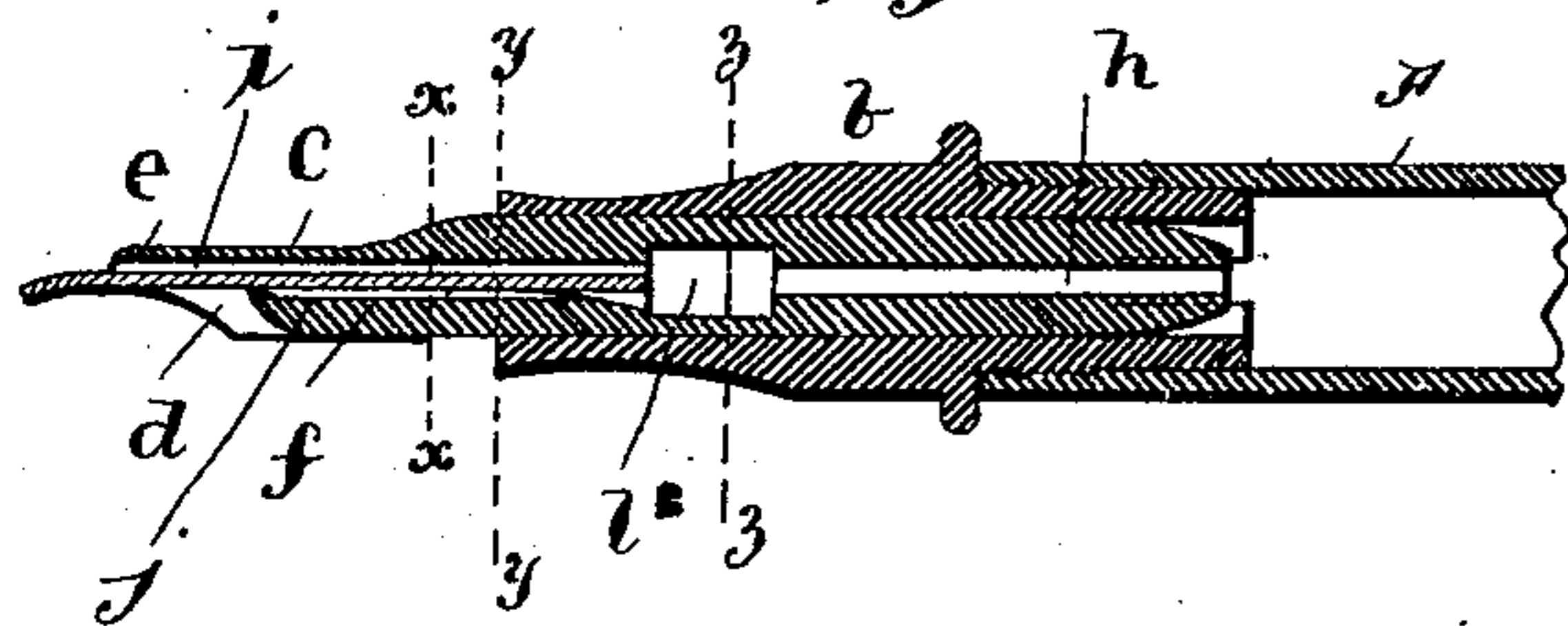


Fig. 3.

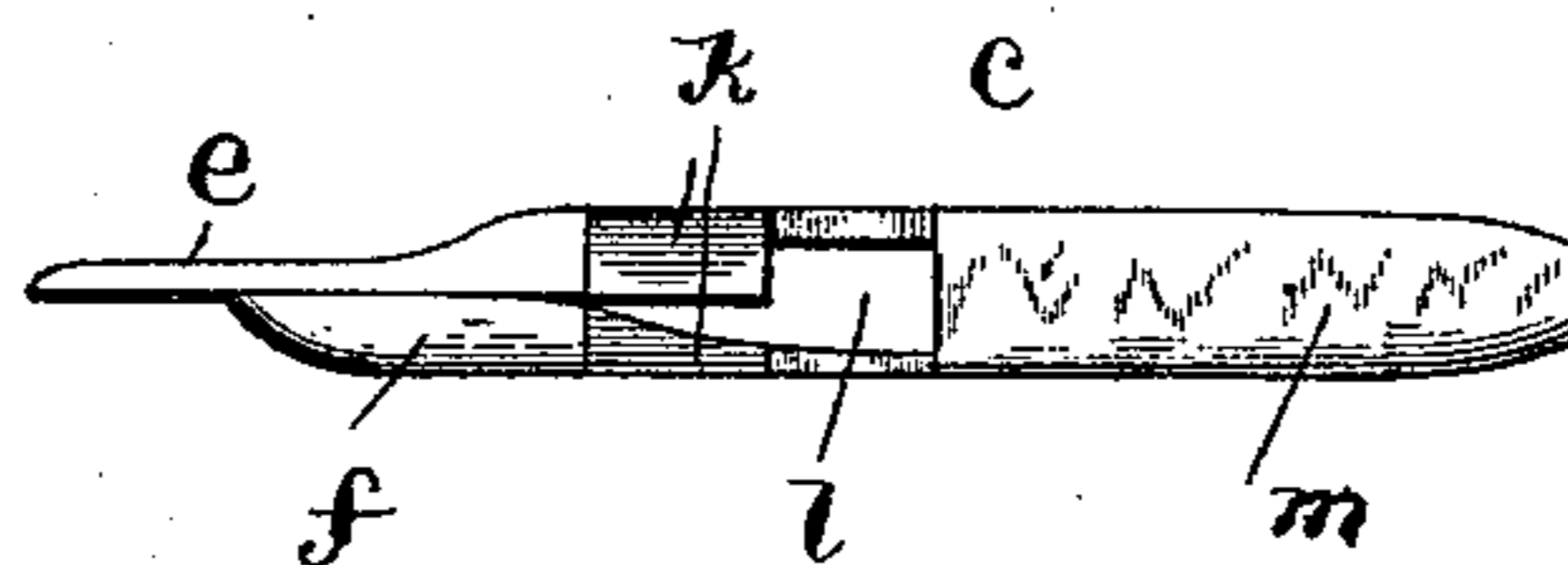


Fig. 4.

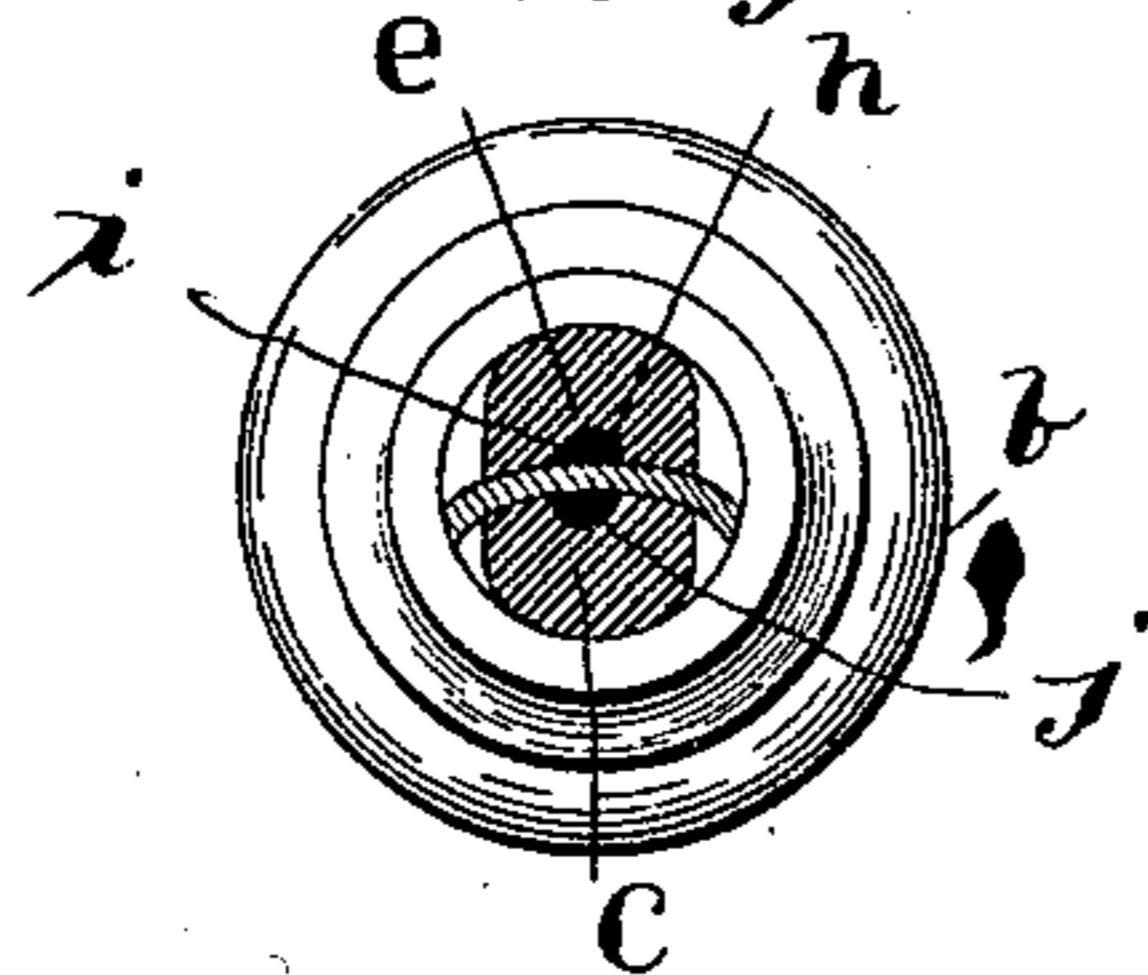


Fig. 5.

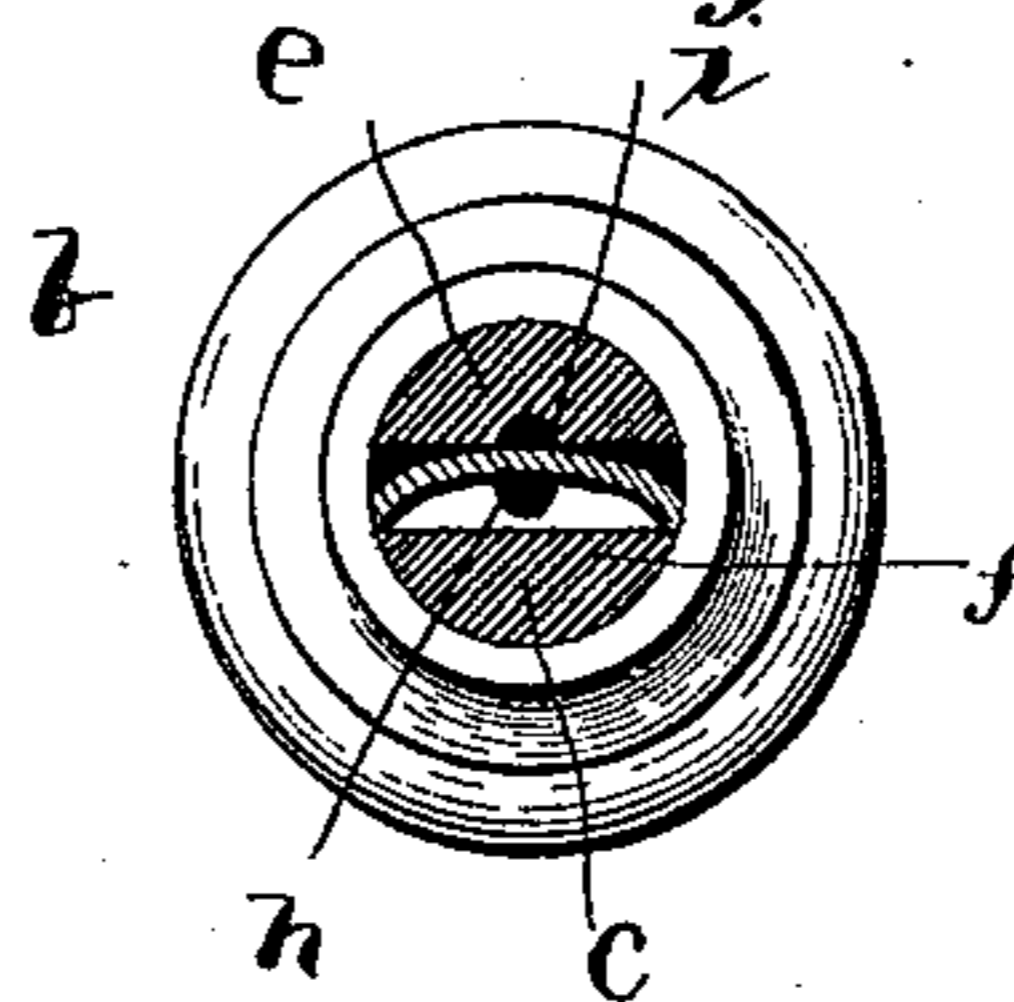


Fig. 6.

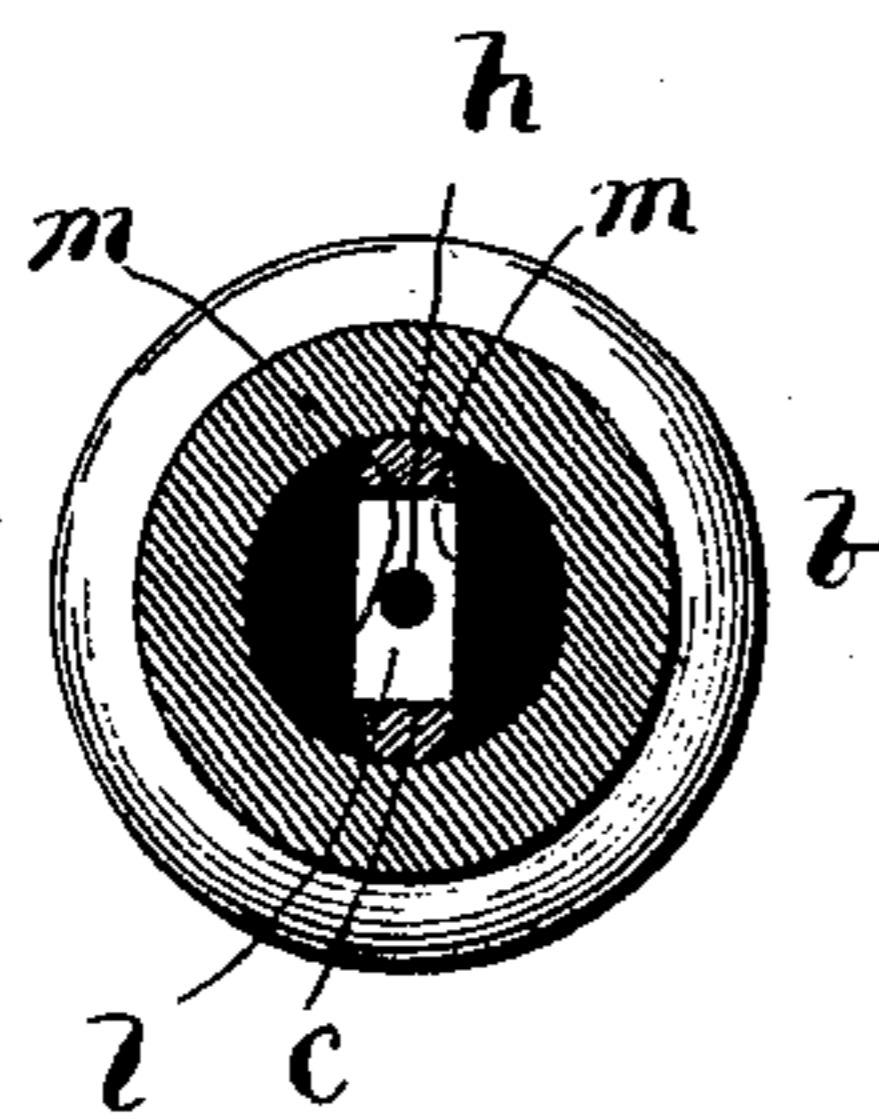


Fig. 7.

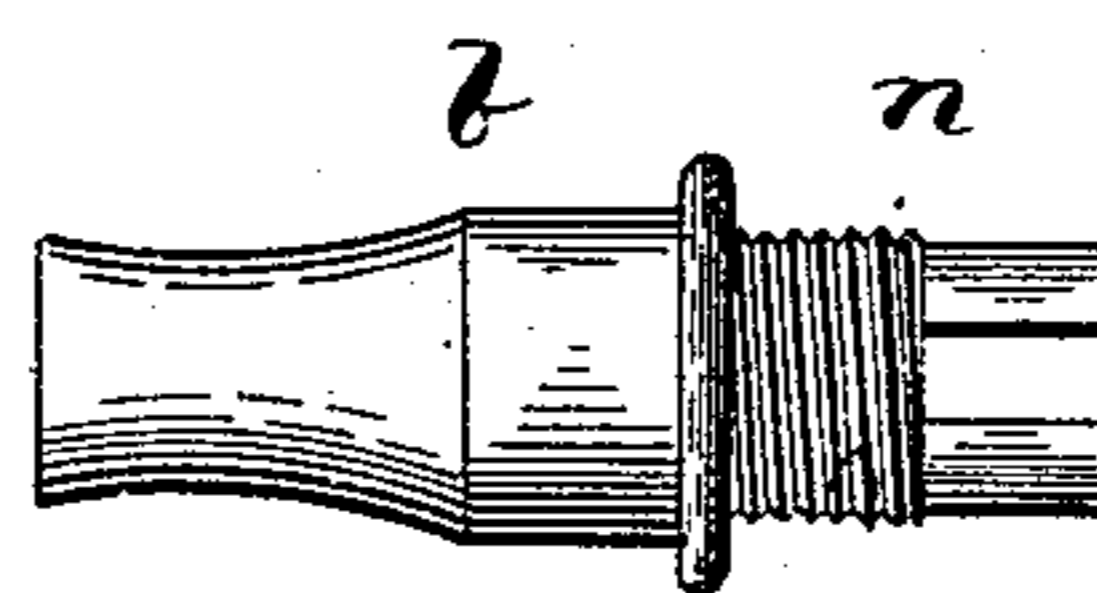
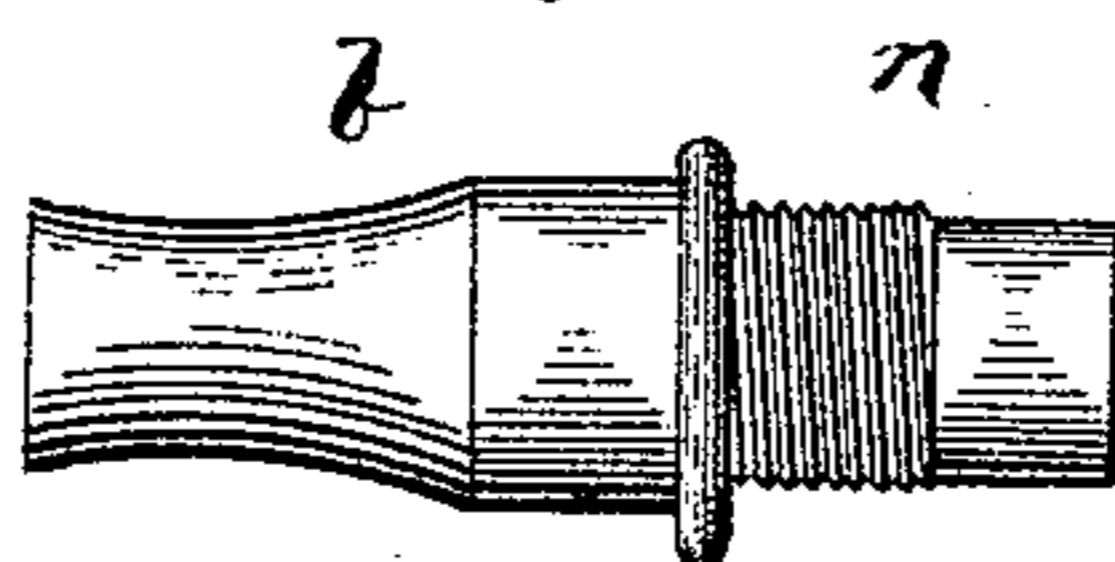


Fig. 8.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES EATON BROWNING, OF TOLEDO, OHIO.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 516,345, dated March 13, 1894.

Application filed September 15, 1892. Serial No. 446,002. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EATON BROWNING, of Toledo, Lucas county, Ohio, have invented certain new and useful Improvements in Fountain-Pens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to certain improvements in fountain pens.

The object of the invention is to provide an improved feed device for fountain pens exceedingly cheap, simple and durable in construction and composed of a minimum number of parts, and above all sure and reliable in action so that a plentiful supply of ink, but not sufficient to permit flooding or dropping, is constantly furnished the pen and so that the pen can be employed for very rapid writing without in any way exhausting the flow of ink while the barrel contains ink. The particular object being to provide a fountain pen that will instantly write without coaxing or shaking and that will not flood or drop ink even when the ink is nearly exhausted.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1, is a side elevation of the improved fountain pen complete. Fig. 2, is a central longitudinal section of the pen-nozzle, feed-shaft, and a portion of the ink barrel. Fig. 3, is a detail side elevation of the feed-shaft. Fig. 4, is a cross section on the line $x-x$ Fig. 2. Fig. 5 is a cross section on the line $y-y$ Fig. 2. Fig. 6, is a section on the line $z-z$, Fig. 2. Figs. 7 and 8 are detail elevations of the pen nozzle respectively showing different constructions thereof.

In the drawings the reference letter A, indicates the ink barrel or reservoir closed permanently at one end and open and internally threaded at the other end to receive the pen nozzle b . The pen nozzle is formed to screw into said open end and is externally formed so as to be readily grasped and held between the

fingers, and is longitudinally hollow throughout its length to receive the feed shaft c , and the pen d . This feed shaft is held in the pen nozzle by frictional engagement with the sides of the interior thereof. This shaft is also longitudinally split at its outer end and suitably reduced to form the upper feed tongue or finger e , arranged to rest on the upper face of the pen and extend almost to the point thereof and the lower finger or tongue f , preferably, not quite so long as the upper tongue and engaging the under side of the pen d . The feed shaft is split back a suitable distance to properly receive the pen which is held firmly in place by engagement with the walls of the pen nozzle and by being clamped between the tongues of the feed. The feed shaft is provided with the longitudinal air passage h , extending from the inner end thereof through the outer end thereof and the upper tongue is preferably grooved, at i , longitudinally of its under side in continuation of said air passage. If desirable the under tongue can also be grooved correspondingly, at j . However I do not wish to limit myself to such grooves i or j . The portion k , of the feed shaft, at the bases of the feed tongues, is formed of a size to plug or fill the outer end of the pen nozzle, and within the pen nozzle just in rear of this portion k , the feed shaft is provided with a reservoir or ink pocket l , located at the heel of the pen and formed by cutting or otherwise forming a transverse chamber through the shaft open on two sides, and from this ink pocket the two opposite sides m, m , of the shaft are flattened as shown from the open sides of the pocket to the rear end of the shaft. The shaft is split from its front end to said pocket so that the heel or rear end of the pen rests in the split and extends through the plug portion into the pocket as clearly illustrated.

The operation is as follows: Air flows up through the grooves i , or j , or around the pen between the same and the feed tongues through said pocket into the longitudinal air passage into the main reservoir or ink barrel forcing the ink down the ink passages between the flattened sides of the shaft and the pen nozzle to the ink pocket thereby always keeping a plentiful supply of ink at the heel

of the pen from which the ink flows through the split in the plug portion along the feed tongues to the pen nibs. The amount of ink fed down is regulated by the quantity of air admitted, and this is regulated by the nibs of the pen. If the pen is writing very lightly the nibs separate but slightly and hence a small quantity of air can pass between the nibs into the groove *i*, or *j*, to the air passage, but if the pen is writing heavily the nibs are spread a greater distance and of course a greater flow of air is permitted and thus a greater downflow of ink is the result.

The ink pocket is a point of great advantage for by its use a plentiful supply of ink is always on hand for the pen, yet the parts are so constructed and arranged that the feed will not drop ink or flood when the barrel is nearly empty or at other times as the regulation of the air supply and the plug portion prevent too rapid flow of the ink to the pen.

The inner end of the feed shaft extends to the interior of the ink barrel, and the inner end of the pen nozzle is suitably extended inwardly beyond the screw threaded portion thereof to form a protector and support for the inner end of the feed shaft. This extension *n*, of the pen nozzle can be formed of separate sections or extensions separated by slits as shown in Fig. 7, or the pen nozzle can be extended as a cylinder as shown in Fig. 8. This extension is intended to protect the feed from the ink and completely inclose the feed in the pen nozzle.

It is evident that various changes and modifications might be made in the forms, constructions and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the constructions as here described and shown exactly, but consider myself entitled to all such variations as fall within the spirit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a fountain pen, the feed-shaft having the plug in the outer end of the nozzle, the ink pocket in the rear of said plug, the sides of the shaft in the rear of said plug being flattened, the feed tongues at the outer end of the shaft, and the longitudinal passage

through the shaft from the inner end to said plug and through said plug to the tongues.

2. In a fountain pen, a feed bar formed entirely in one piece with its outer end bifurcated forming the upper and lower feed tongues, the central longitudinal air duct continued along the inner faces of said tongues by grooves, as described, the plug at the bases of said tongues, the transverse ink pocket just in rear of said plug, the bifurcation extending through the plug to said pocket, and the flattened sides forming ink ways, substantially as shown and described.

3. In a fountain pen, a feed bar having the plug at its outer portion to fit the outer end of the pen nozzle, and the central transverse opening through the bar forming a pocket for the collection of ink at the inner end of said plug, said plug being split through to said pocket to receive the pen, as set forth, said bar being formed to permit inflow of air and to place the ink pocket in direct communication with the ink in the holder.

4. In a fountain pen, the feed bar having the plug near its outer end to close the nozzle, the central transverse opening forming the ink pocket immediately in rear of said plug, said plug split through to said pocket to receive the heel of the pen and permit ink to flow from the pocket through the split on to the upper and lower surfaces of the pen and to permit air to flow into said pocket, and independent air and ink passages from said pocket to the interior of the ink barrel, substantially as shown and described.

5. A fountain pen having the feed bar in one piece with the plug at its outer portion, the central transverse opening forming the ink pocket immediately in rear of said plug, the plug being split to permit outflow of ink from the pocket and inflow of air to the same, ink ducts extending from the ends of said pocket longitudinally of the bar to the inner end thereof, and an air duct from the inner end of the bar to the center of said pocket, substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES EATON BROWNING.

Witnesses:

PERCY H. BUMP,

HERBERT A. CHITTENDEN.