(No Model.)

H. HORTON & E. G. PECK.

FOUNTAIN PEN.

No. 551,895. Patented Dec. 24, 1895.

Fig. 1.

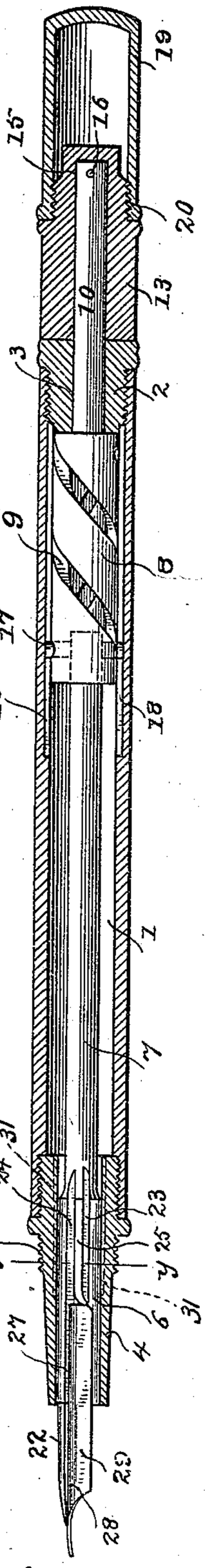

Fig. 4.

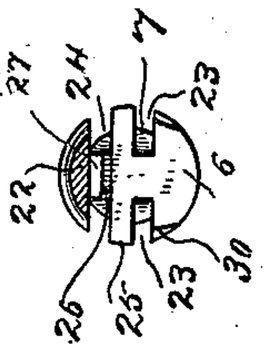

Fig. 6.

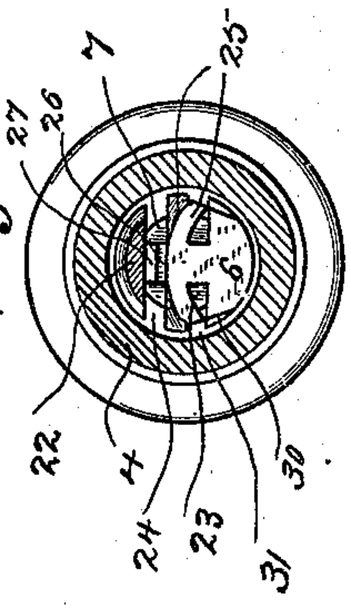

Fig. 2.

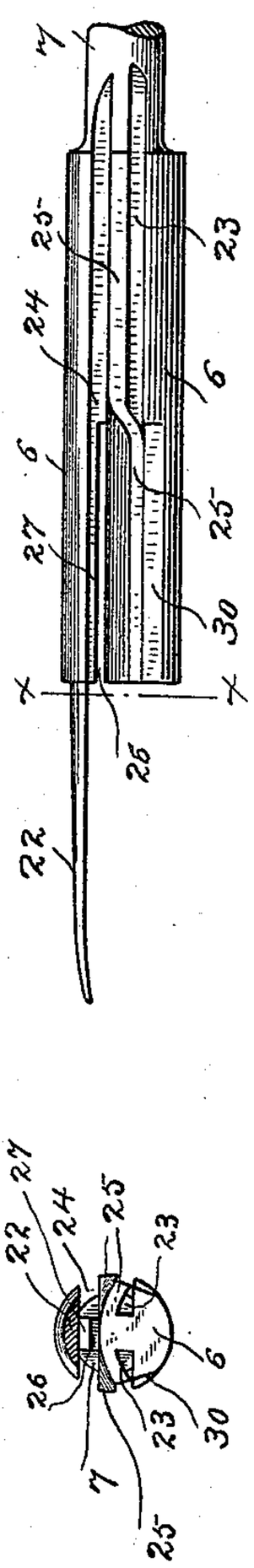

Fig. 3

Fig. 5.

WITNESSES

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FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 551,895, dated December 24, 1895.

Application filed April 1, 1895. Serial No. 543,928. (No model.)

To all whom it may concern:

Be it known that we, HENRY HORTON, residing at New Haven, and EDWARD G. PECK, residing at Seymour, in the county of New Haven and State of Connecticut, citizens of the United States, have invented certain new and useful Improvements in Fountain-Pens; and we 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 appertains to make and use the same.

Our invention has for its general object to simplify and cheapen the construction of fountain-pens and to greatly improve their operation in use.

With these ends in view we have devised the simple and novel construction which we will now proceed to describe and then specifically point out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal section of our novel fountain-pen complete; Fig. 2, an enlarged detail view of the head, the pen proper being removed; Fig. 3, a front elevation of the head, the finger being in section on the line *x x* in Fig. 2; Fig. 4, a view similar to Fig. 3, illustrating an intermediate stage in the formation of the completed head; Fig. 5, a section of the pen detached; and Fig. 6 is a section of the head and nozzle, on an enlarged scale, illustrating a form in which a recess is provided at each end of the nozzle, the line of the section being indicated by *y y* in Fig. 1.

1 denotes the reservoir, the base of which is closed by a plug 2 threaded to engage the reservoir and having an opening 3 through it. At the other end of the reservoir is a nozzle 4 which is likewise threaded to engage the reservoir.

7 denotes the pen-carrying rod which is provided with a head 6.

8 denotes a barrel within the reservoir which is provided with spiral slots 9 and with a rod 10 which passes through opening 3 in the plug.

13 denotes a base-piece having a central socket 15 to receive rod 10. The base-piece is rigidly secured to rod 10 in any suitable manner, as by a pin 16, which passes through the base-piece and rod, so that rotation of the base-piece will rotate rod 10 and the barrel, the forward end of the base-piece lying closely in contact with the plug. The rear end of the base-piece is threaded, as at 20, and the forward end of the nozzle is provided with a similar thread 21. Either of these threads is adapted to be engaged by a cap 19, which may be screwed onto the rear end of the base-piece when the pen is in use, or may be screwed onto the nozzle to cover the pen proper when it is not in use, as will be more fully explained. At the inner end of rod 7 is a pin 17 which passes through the spiral slots in the barrel and the ends of which engage longitudinal grooves 18 in the inner side of the reservoir, so that rod 7, the head and the pen are normally held against rotation; but when the base-piece and barrel are rotated pin 17 is caused through its engagement with the spiral slots in the barrel to travel longitudinally in grooves 18 in the reservoir, thereby moving the pen into operative position or retracting it, depending upon the way the base-piece is turned, as is fully set forth in patent to Peck and O'Meara, No. 523,234, dated July 17, 1894. At the forward end of the head is a finger 22 which conducts the ink down toward the point of the pen. Upon the opposite sides of the head we form corresponding grooves 23 23 and 24 24. These grooves extend from the forward end of the head down into the rod, as clearly shown in the drawings, the upper and lower grooves on each side of the head being separated by a wall 25.

26 denotes a slot extending back from the forward end of the head on the horizontal plane of slots 24, said slot 26 being adapted to receive the pen. It will be seen from the drawings that the forward ends of slots 24 are connected by slot 26. The width of slots 24, however, is greater than the width of slot 26, so that a rib 27 is left between the slots 24, said rib extending backward from the base of the finger to the base of slot 26 and acting under all circumstances to prevent the flow of ink to the pen from being cut off no matter how hard the writer may press upon the paper, as will be more fully explained.

After the slots have been formed, as al-

ready described, walls 25 are curved downward, as clearly shown in Fig. 3, to correspond with the curvature of the pen. In use slots 23 serve as air-ducts and slots 24 both as air-ducts and ink-ducts, the interchange of air and ink taking place where the slots run out in the reservoir, by which we mean that slots 23 serve as air-ducts alone, no ink running through them, and that all the ink supplied to the pen passes through slots 24, and furthermore that more or less air passes into the reservoir through slots 24. The finger serves to convey the ink forward upon the top of the pen, and in order to prevent the possibility of the flow of ink to the pen being cut off should the writer press hard upon the paper we provide the rib 27, which rests upon the top of the pen and separates slots 24, rendering it impossible that said slots shall be closed. The rear end of the head may or may not fit closely in the nozzle.

In Fig. 6 we have shown a form in which the diameter of the inner end of the nozzle is increased to form a recess 31. The position of this recess is also indicated by dotted lines in Fig. 1. In pens provided with this recess the recess is of course filled with ink when the pen is in use, and the flow of ink to the pen is facilitated owing to the fact that the grooves 23 and 24 are shorter and the interchange of air and ink by which the flow of ink to the pen is produced takes place nearer the pen proper than in the other form.

28 denotes the pen proper, the edges of which are bent to form wings 29, which incline toward each other, as clearly shown in Fig. 5. The forward end of the head is beveled on opposite sides, as at 30, to correspond with the incline of the wings, so that when the pen is forced into slot 26 the wings on the pen will engage bevels 30, thus making the pen self-locking in position and rendering it impossible for the pen to move about to the slightest extent.

When the cap is removed from the nozzle it may be turned onto the base-piece, as shown in Fig. 1, the cap thus forming part of the base-piece, and rotation of the cap and base-piece moving the pen outward into operative position, as shown in said figure. It will of course be apparent that in turning the base-piece to move the pen outward to the operative position the operator will naturally take hold of the cap. This will set the cup up against the end of the base-piece with sufficient firmness so that when the operator takes hold of the cap to remove it unless he holds the base-piece firmly rotation of the cap will also carry the base-piece and will move the pen inward to the retracted position, the cap remaining integral with the base-piece until the pen has been drawn inward to the full retracted position. As soon as the pen is drawn in if the operator continues to apply power to the cap the latter will turn upon the thread and may readily be removed from the base-piece. The operator then screws it upon the nozzle to close the pen in the usual manner. The advantage of this special construction is that it renders it impossible for the operator to remove the cap until he has drawn the pen in, it being a serious objection to the use of sliding caps with retracting pens that users in the haste of closing a pen frequently draw the cap off from the base and slip it over the nozzle before the pen has been drawn in, thereby frequently injuring the pen and many times spoiling it.

Having thus described our invention, we claim—

1. In a fountain pen the combination with a reservoir, a nozzle and a pen, of a rod having at its forward end a head in which the base of the pen is seated and which is provided with slots 23 under the pen through which air enters the reservoir and slots 24 over the pen through which ink is supplied.

2. The combination with a reservoir, a nozzle and a pen, of a rod having at its forward end a head in which the base of the pen is seated, a finger extending forward from said head which bears upon the pen, slots through which air is supplied to the reservoir and ink is supplied to the pen and a rib between the ink supplying slots which bears upon the top of the pen to prevent the ink supply from being cut off by pressure in use.

3. The combination with a reservoir, a nozzle and a pen, of a rod having at its forward end a head provided with grooves 23—23 and 24—24, a slot 26 in which the base of the pen is seated, a finger 22 extending forward from said rod for the purpose set forth and a rib 27 between slots 24 which bears upon the base of the pen to prevent said slots being closed in use.

4. In a fountain pen the combination with a head having a slot 26 to receive the base of a pen, slots 23 and 24 by which air is supplied to the reservoir and ink is supplied to the pen and bevels 30, of a pen having wings 29 adapted to engage the bevels so that the pen is held firmly in place in use.

5. The combination with a reservoir, a nozzle having at its forward end an ink recess 31 and a pen, of a rod having at its forward end a head which lies in the nozzle and is provided with a slot 26 to receive the pen, slots 24 under the pen, slots 23 over the pen and a rib 27 resting upon the pen between slots 24 as and for the purpose set forth.

6. In a fountain pen the combination with a head having bevels 30, of a pen having wings 29 adapted to engage the bevels whereby the pen is held firmly in place in use.

7. In a fountain pen the combination with a reservoir, a nozzle having a thread 21 and a rotatable base piece having a thread 20, of a head lying within the nozzle and adapted to carry a pen, suitable mechanism intermediate said base piece and said head whereby said head and the pen may be moved in or out by rotation of the base piece and a cap 19 threaded to engage threads 20 or 21 whereby

when the cap is in engagement with thread 20 rotation of the cap will rotate the base piece and retract the head and pen, the cap remaining in position until the pen is retracted so that the user is prevented from placing the cap over the nozzle while the pen is in operative position.

8. In a fountain pen a head 6 having a slot 26 and a depending rib 27 adapted to rest upon a pen in said slot to prevent the flow of ink from being cut off in use substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY HORTON.
EDWARD G. PECK.

Witnesses:
CHARLES C. FORD,
ELLEN A. ROWLANDS.