(No Model )

# M. T. HORN.

## FOUNTAIN PEN.

No. 582,921. Patented May 18, 1897.

FIG. 1.

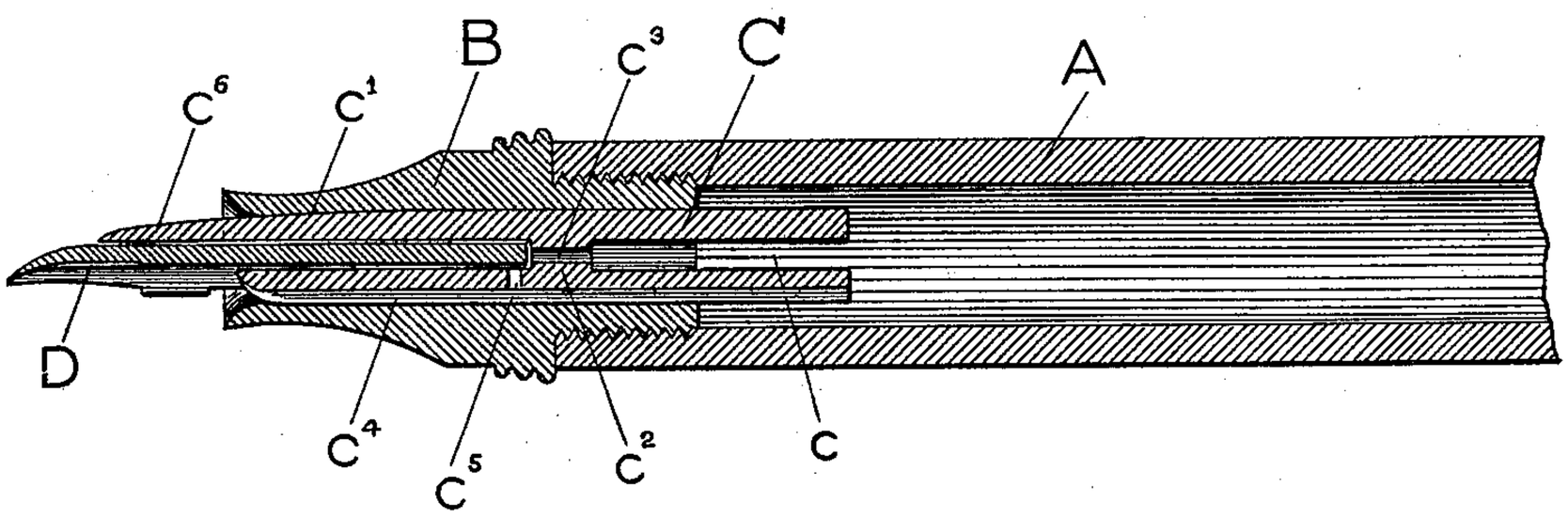



FIG. 2.

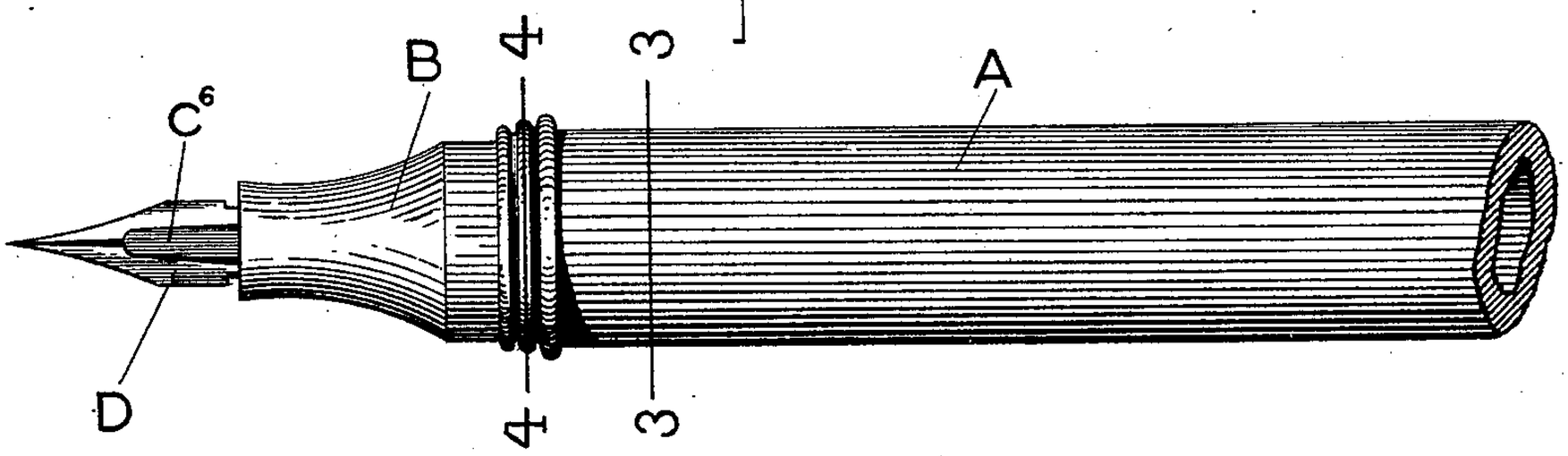



FIG. 3.

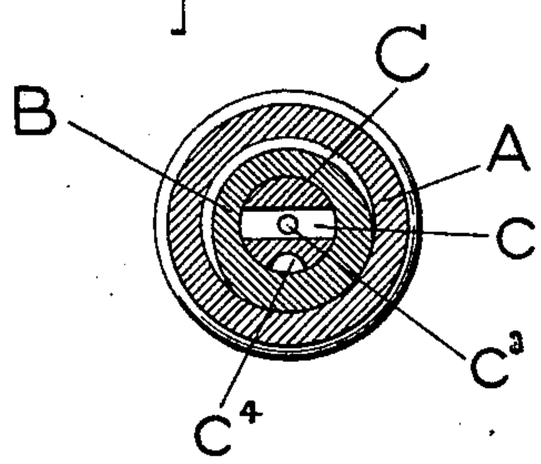
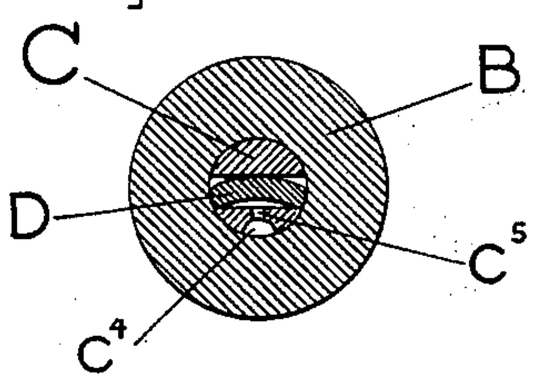



FIG. 4.

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# UNITED STATES PATENT OFFICE.

MAY THOMAS HORN, OF NEW YORK, N. Y.

## FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 582,921, dated May 18, 1897.

Application filed February 18, 1897. Serial No. 623,965. (No model.)

*To all whom it may concern:*

Be it known that I, MAY THOMAS HORN, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fountain-Pens; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in fountain-pens; and its object is to provide a self-feeding pen of simple and efficient construction wherein the even and proper supply of ink to the pen will be assured and air supplied to the reservoir as fast as ink is withdrawn.

The invention therefore consists in the novel construction of the pen-holding and ink and air feeding plug, as will be fully understood from the accompanying drawings and the following description, and summarized in the claims.

In said drawings, Figure 1 is an enlarged longitudinal vertical section through the pen-holding portion of the pen and part of reservoir. Fig. 2 is a top plan view thereof. Fig. 3 is an enlarged transverse section on line 3 3, Fig. 2; and Fig. 4 is an enlarged transverse section on line 4 4, Fig. 2.

Referring to said drawings, A designates the handle-reservoir of a fountain-pen, and B the hollow plug-holding tip, screwed into the end of the reservoir, both of ordinary or any approved construction.

Into the bore of tip B is slipped a cylindrical plug C, forming the subject-matter of this invention, and said plug has a cylindrical portion which fits closely in the tip, so as to be retained therein, and it has a transverse longitudinal slit *c* in its rear end extending to near the center of the plug, and in its front end is a similar slot *c'*, extending nearly to the inner end of slit *c*, the said slots being separated by a narrow web $c^2$, but communicating through the web by a minute passage $c^3$, bored longitudinally and axially of the plug, thereby forming part of the channel leading to the tip of pen.

In the lower edge of the plug and extending its entire length is a longitudinal groove $c^4$, which communicates with slot *c'* by a small opening $c^5$ just in front of web $c^3$. The plug has an ink-feed tongue $c^6$, projecting from its upper side and front end, as shown, and overlying the pen D, which is inserted into the slot *c*, as shown, so that it lies over the opening $c^5$, as shown.

The longitudinal groove $c^4$ is prevented from leaking because the pressure of air exterior is sufficient to keep the ink in reservoir back, and at the same time by passing through groove $c^4$ and hole $c^5$ to heel of pen it exerts enough pressure on ink in reservoir to maintain a steady flow.

It will be observed that I enlarge the front end of groove $c^4$ for the purpose of presenting a larger surface to the air which is held in check, as the groove is diminished in size as it enters the reservoir.

The pen affects the air-feed in the following manner: The constant vibration during the act of using the pen is conveyed to the feed, and the inner end of pen lying over opening $c^5$ tends to break the air-pressure and disperses it into the reservoir by means of the vibration referred to, thereby shutting off the supply of air to a great extent and doing away with the leaking and blotting common to the pens now in use.

In using my pen the movement or vibration of pen admits the air through the opening $c^5$ to and around the pen D. The latter, however, does not control the ink-feed, but only as a medium whereby the ink is permitted to flow.

As is evident, the feed may be beneath the pen and as good results obtained as if above—that is, the feed-tongue $c^6$ may be placed under the pen D, thereby reversing the parts. The transverse slit *c*, in connection with the opening $c^5$, increases the capillary attraction and thereby insures regularity of flow and an even distribution of the atmospheric pressure at all points back of pen.

Should the groove $c^4$ become closed by any obstruction that may arise therein, it can be readily cleaned on account of it being made sufficiently large at its front end for the purpose explained.

The simplicity with which the several parts can be both readily adjusted and cleansed, with the increased regularity of action whereby leaking is prevented, constitute the points of superiority of my pen over those now in use.

Having thus described my invention, what

I therefore claim as new, and desire to secure by Letters Patent, is—

1. In a fountain-pen, the combination of the handle-reservoir, and tip, with the plug fitted into the tip having a front pen-receiving slot and a rear ink-feeding slot, separated by a narrow web but communicating through a small opening in the web, and having a longitudinal slot in its bottom extending from front to rear, said slot communicating with the rear end of the pen-receiving slot by a small hole, and also having an overlying feed-tongue on its front end, all substantially as and for the purpose set forth.

2. In a fountain-pen, the combination of the handle-reservoir and tip, with the plug C having front pen-holding slot $c'$, overlying feed-tongue $c^6$, rear feed-slot $c$, bottom air-feed groove $c^4$ communicating with rear end of slot $c'$ by an opening $c^5$; and a bore $c^3$ connecting slots $c$, $c'$, all substantially as and for the purpose described.

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

MAY THOMAS HORN.

In presence of—
JOHN P. MCGRATH,
S. R. HALSEY.