No. 763,205. PATENTED JUNE 21, 1904.

G. R. PYNE.

DRAWING PEN.

APPLICATION FILED NOV. 21, 1902.

NO MODEL.

Fig. 1.

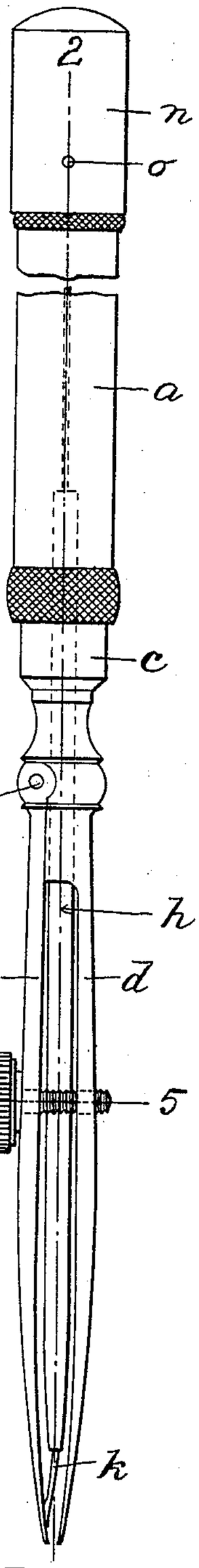


Fig. 2.

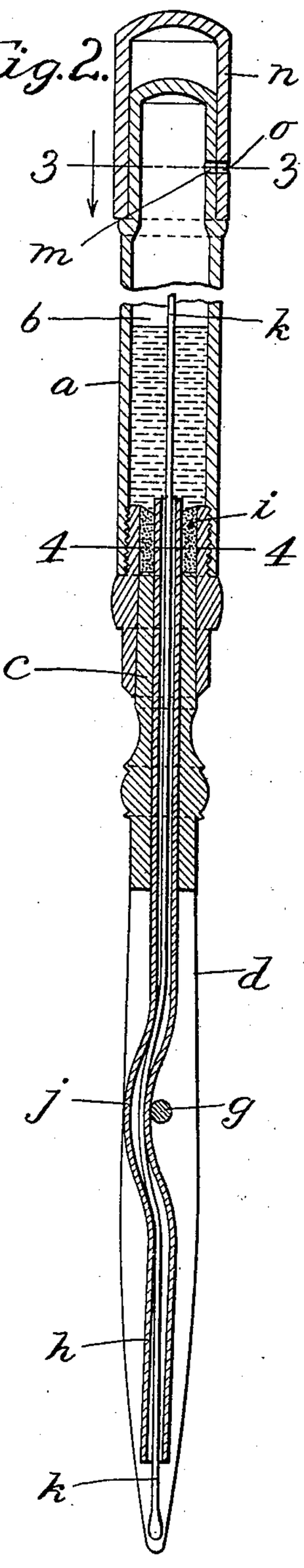


Fig. 3.

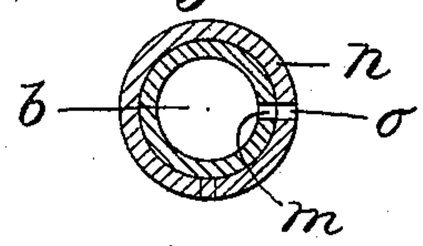


Fig. 4.

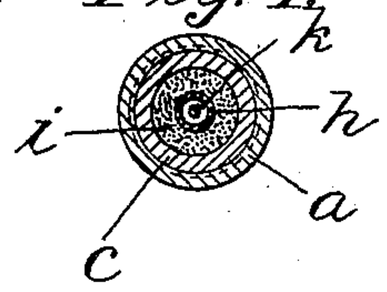


Fig. 5.

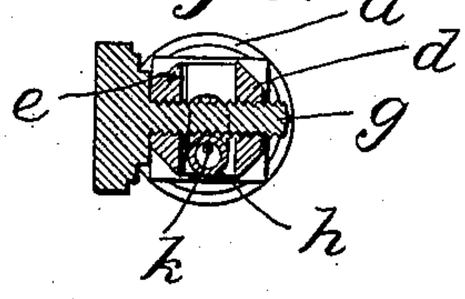
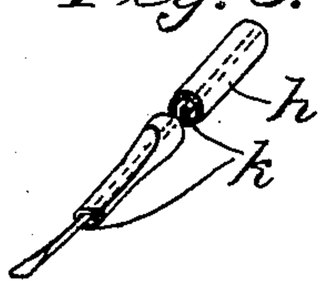


Fig. 6.



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No. 763,205. Patented June 21, 1904.

UNITED STATES PATENT OFFICE.

GEORGE R. PYNE, OF SPRINGFIELD, MASSACHUSETTS.

DRAWING-PEN.

SPECIFICATION forming part of Letters Patent No. 763,205, dated June 21, 1904.

Application filed November 21, 1902. Serial No. 132,261. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. PYNE, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Drawing-Pens, of which the following is a specification.

This invention relates to the construction of drawing-pens; and it has for its object the production of a pen of this type which shall be self-feeding.

I am aware that it is not broadly new to provide an ink-reservoir for ruling-pens, but such pens are in almost constant use, and it is not as difficult, therefore, to adapt a feeding device thereto. With drafting-pens the case is otherwise, for their use is not constant and the inks usually employed therewith are quick-drying, relatively non-limpid, and these facts greatly affect the question of feed and affect it adversely.

My invention consists in constructing an ink-reservoir in the handle of an ordinary drafting-pen and in providing a feed-tube whose eduction end is located near the nibs of the pen, the reservoir being provided with a vent in the upper end thereof, which may be opened to allow ink to fill the space between the end of the feed-tube and the nibs, the vent being then closed to prevent further excessive feed. If, therefore, a pen be laid aside, the ink between the nibs may dry up; but the pen may be opened and cleaned, as with ordinary pens of this type, and another supply of ink permitted to flow to the point thereof. When the pen is in use, the vent may be opened more or less to permit the supply to the point of the pen to be renewed as needed.

In the drawings forming part of this application, Figure 1 is a side elevation of a pen embodying my invention, considerably enlarged. Fig. 2 is a similar view in section. Fig. 3 is a cross-section on line 3 3, Fig. 2. Fig. 4 is a similar section on line 4 4, Fig. 2. Fig. 5 is a cross-section on line 5, Fig. 1; and Fig. 6 is a perspective view of the delivery end of the feed-tube and feed-wire therein.

Referring to the drawings, *a* is the handle of the pen, which is hollowed out to constitute a reservoir *b* for the ink. This handle has one closed end, and its opposite end is threaded and screwed onto the metal shank *c* of the pen, as shown in Fig. 2. To this shank one of the legs, *d*, of the pen is rigidly secured, the other leg, *e*, being hinged to the shank at *f*. An adjusting-screw *g* for these legs is applied thereto in the usual manner, whereby the points of the pen may be adjusted, these points being adapted to be brought together under the spring resistance of one or both of said legs, as usual.

The shank *c* has a hole drilled through it axially to receive the feed-tube *h*, the inner end of which is substantially flush with the threaded end of the shank, onto which the handle of the pen is screwed, and the end of the tube is sealed therein in any desirable way, as by the packing *i*. This tube *h*, emerging from the shank, passes down between the two legs of the pen and has a curve *j* formed in it to allow it to pass around the adjusting-screw without interfering with the functions of the latter, and the end of the tube is flattened, as shown in Figs. 1 and 6, to permit the two points of the legs to be adjusted toward one another without contacting with the tube. The end of the feed-tube *h* is located at some distance above the points of the pen, and the space between these points and the end of the tube constitutes the ink-space. The feed-wire *k* is located in the tube *h* and extends from the point of the pen somewhat beyond the inner end of the feed-tube and into the ink-reservoir *b*, and that end of the wire lying between the pen-points is flattened, as shown in Figs. 2 and 6, and is bent slightly to one side to bring its flattened point against the point of the movable or pivotal leg. As the wire fits loosely in the feed-tube, the adjustment of the pivotal leg will move the wire more or less within the delivery end of the tube, thus keeping clear this end, which is somewhat restricted in area by being flattened, and thus insures a freer delivery of ink. The wire *k*, being forced into the feed-tube after the latter is bent around the screw *g*, is held in any position relative to the pen-points by reason of the bend formed therein, as it is passed through the bend in the tube, wherefore this frictional engagement is sufficient to

hold the feed-wire against endwise displacement without the aid of additional fastening means, thereby simplifying the device.

To permit the free flow of ink to the pen-points through the feed-tube *h* when it is desired to fill the pen for use, means are provided for admitting air into the upper closed end of the reservoir *b* above the level of the ink, which consist in boring a small hole *m* through the wall of the reservoir and fitting thereover a cap *n*, the upper end of the reservoir being turned down to receive this cap without enlarging the diameter of the reservoir. Through the wall of the cap *n* another small hole *o* is drilled adapted to be brought into registration with the hole *m* to vent the upper end of the ink-reservoir.

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

1. A device of the character described, comprising a reservoir-handle, spaced pen-legs carried thereby, a supply-tube leading from the reservoir longitudinally between the legs and provided with a bend, and a feed-wire within the tube, with its outer end projected beyond the tube and against one of the legs, and having a frictional engagement with the bend of the tube to prevent endwise displacement of the wire.

2. A device of the character described, comprising a reservoir-handle, spaced pen-legs carried thereby, an adjusting-screw piercing one leg and engaging the other, a supply-tube leading from the reservoir longitudinally between the legs and having an intermediate bend to pass the screw, and a feed-wire within the tube, with its outer end projected beyond the tube and against one of the legs, and having a frictional engagement with the bend of the tube to prevent endwise displacement of the wire.

3. A drafting-pen consisting of legs, an adjusting-screw therefor, and a handle for the pen having an ink-reservoir therein whose upper end is hermetically sealed, there being a vent-hole leading into the said upper end of the reservoir; a tube extending from the reservoir axially through the shank downwardly between the legs of the pen to near the point of the latter, said tube having a bend therein which partially encircles said screw; a feed-wire in the tube projecting beyond the lower end thereof to the point of the pen and having a frictional engagement with the bend of the tube to prevent endwise displacement thereof, the extremity of the wire and the extremity of the tube being flattened, that part of the flat end of the wire outside of the tube being bent to one side against one of the legs of the pen.

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