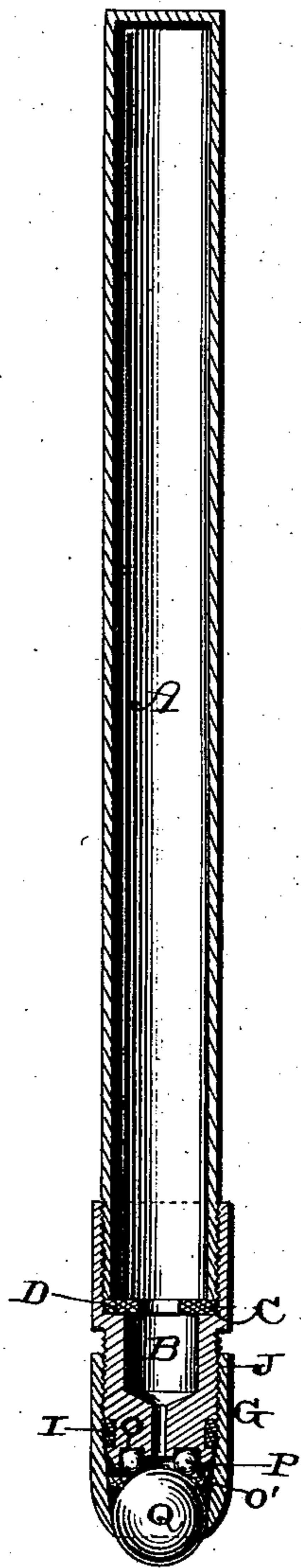


(No Model.)

C. D. MARSH.
FOUNTAIN MARKING PEN.

No. 576,596.

Patented Feb. 9, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

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FOUNTAIN MARKING-PEN.

SPECIFICATION forming part of Letters Patent No. 576,596, dated February 9, 1897.

Application filed October 27, 1896. Serial No. 610,226. (No model.)

To all whom it may concern:

Be it known that I, CALVIN D. MARSH, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Fountain Marking-Pens; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters of reference marked thereon.

My invention relates to an improvement in marking-pens; and it consists in a tubular handle which forms a reservoir for the ink, a perforated nipple which is screwed upon the end of the handle and grooved in its outer end to receive ball-bearings, and a ball journaled upon the ball-bearings combined with a cap which is screwed upon the nipple and suitable packings which are applied to the parts so as to prevent any possibility of leaking, all of which will be more fully described hereinafter.

The object of my invention is to provide a marking-pen which is to be used upon rough surfaces where ordinary pens cannot be used and so pack the parts that no leakage can possibly take place.

In the accompanying drawing a pen embodying my invention is shown in longitudinal vertical section.

A represents the tubular handle, which forms a reservoir for the ink and which is provided with screw-threads upon its inner end to receive the nipple B, which is screwed directly upon it. This handle A is tightly closed at its outer end, so that no air can be admitted at that point. To fill this reservoir, it must be removed entirely from the nipple and filled through its inner end.

The nipple B is provided with an internal thread at its inner end where it screws over the inner end of the handle, and at the bottom of this screw-thread is formed a seat C, upon which the perforated packing D is placed. The end of the handle A compresses this packing D against its seat sufficiently to form a tight joint between the end of the handle and the nipple, so that no leakage can

possibly take place even if the thread upon the handle should become slightly worn.

The great trouble with pens of this kind has been heretofore that the handle was filled through its outer end, which had to be provided with a cap or a valve which would soon leak air, and thus ruin the efficiency of the pen. If the outer end of the handle is closed, as here shown, and no provision is made for a packing, the wearing of the thread is liable to cause leakage at its junction with the nipple, and hence the usefulness of the pen is greatly impaired, if not entirely destroyed.

The outer end of the nipple is screw-threaded, so as to receive the cap G, and in this threaded portion is formed a groove in which the packing I is placed. The cap G fits snugly upon the outer end of the nipple B, and this packing forms a tight joint to prevent the ink from rising along the screw-thread J and leaking out at the top of the cap. Should the thread J become worn upon either part, by adjusting the cap this packing I will prevent leakage.

The outer end of the nipple B is provided with a circular groove O, in which are placed a number of small balls P, which form a bearing for the large ball Q, with which the marking is done. The cap G has its outer end tapered, as shown, and its inner bore is slightly contracted, so as to prevent the ball Q from falling through, and at the same time form a bearing for the ball in connection with the one which is formed by the small balls P. The contraction of the bore of the cap also forms a bearing for the rubber packing O', which is applied to the end of the nipple and effectually prevents any leakage when the flow of ink is to be shut off.

The opening through the nipple B is contracted so as to form but a very small opening through its outer end and through which the ink is fed to the ball Q. This ink escapes in between the balls P, down over the top of the ball Q, and then between the inner edges of the cap G and the outer sides of the ball, and as the ball revolves its marking-surface is kept constantly covered with ink. By tightening or loosening the cap G the amount of ink upon the ball Q is regulated at the will

of the operator. By screwing the cap inward, so that its outer end fits tightly against the ball, the supply of ink is shut off entirely.

There are many advantages in a marking-
 5 pen constructed in accordance with my invention, especially in having the pen closed at its upper end, over one provided with a cap at its upper end, from the fact that when a cap is screwed or fastened on its upper end
 10 there is a certain amount of air that will enter between the fluid and the cap, which will form a pressure when the cap is screwed down thereby forcing the fluid out at the lower end of the pen as well as through the
 15 screw-joints of the cap, causing leakage at both ends. These several objections are entirely removed by having the pen closed at the top and constructing it in three sections and inserting a nipple between the marking-
 20 ball and the tube, thus enabling the nipple to be removed and the tube filled from its lower end instead of at its upper end, as heretofore.

A further advantage in constructing a marking-
 25 ing-pen with the nipple between the tube and the lower cap which holds the marking-ball in position is that the nipple can be removed entirely from the tube without displacing the marking-ball, and when the nipple is replaced
 30 on the tube by screwing the lower cap one or more turns the air is allowed to pass out through the hole in the center of the nipple and out through the lower cap.

An additional advantage in the employment of a removable nipple is that marking-
 35 balls of different diameters for making a heavy or light mark may be used by the employment of different-sized nipples which may be used on the same tube, whereas this class
 40 of marking-pens have been confined to a single diameter of marking-ball, and owing to

their construction different-sized marking-balls could not be used in the same pen.

The cap at the lower end may be loosened while the tube is filled with fluid, which will
 45 allow the marking-ball to revolve, but when tightened it closes tightly on the ball and effectually closes the pen, thereby preventing leakage.

It will thus be seen that a pen constructed
 50 as hereinbefore described includes advantages not found in any of the pens provided with a marking-ball and possesses durability as well as effectiveness and also simplicity in construction.

Having thus described my invention, I claim— 55

1. A marking-pen, consisting of a hollow handle which is closed at its outer end, a nipple having an opening extending through it,
 60 an adjustable cap, and the ball Q, all combined substantially as shown and described.

2. In a marking-pen, the handle A closed at its outer end, the nipple B, provided with an internal screw at its inner end so as to fit
 65 upon the inner end of the handle, and an external thread at its outer end and provided with the groove O; balls P placed in said groove; and the large ball Q, combined with the internally-screw-threaded cap which
 70 screws upon the nipple; the nipple being provided with a groove to receive the packing-I, which is placed therein, substantially as described.

In testimony that I claim the above I have
 75 hereunto subscribed my name in the presence of two witnesses.

CALVIN D. MARSH.

Witnesses:

H. RUSSELL HILL,
 J. CLINTON HILL.