J. H. SHUNK, JR.

FOUNTAIN PEN.

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984,710.

Patented Feb. 21, 1911.

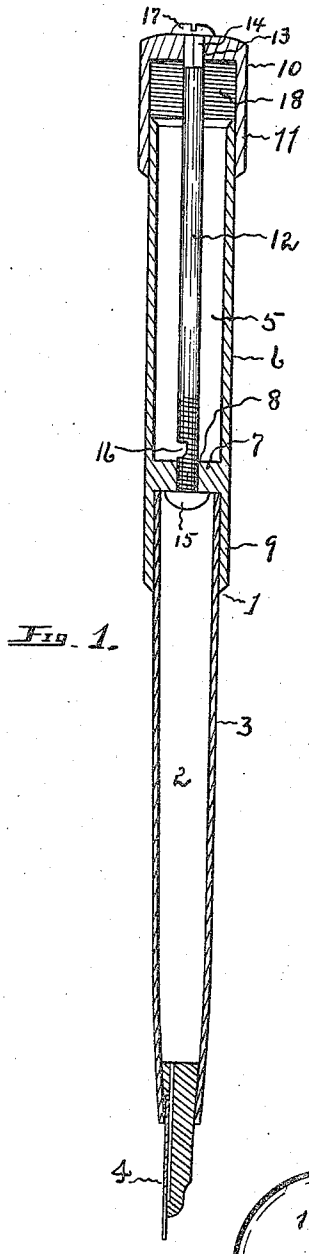

Fig. 1.

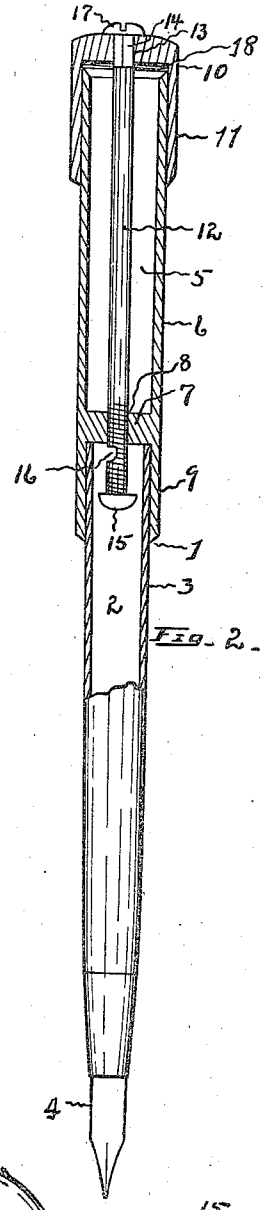

Fig. 2.

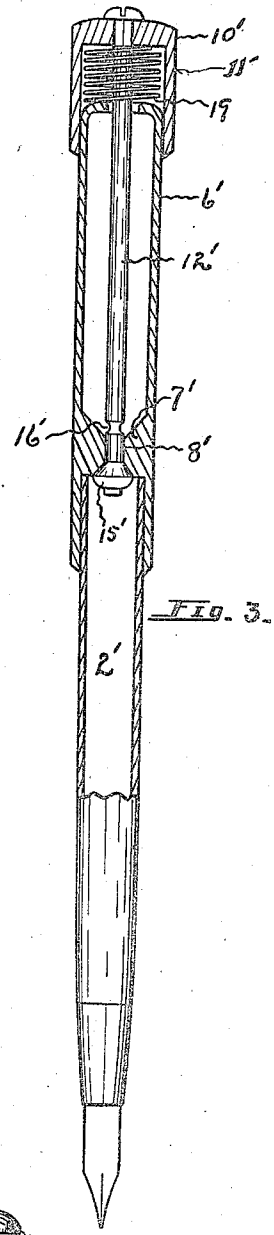

Fig. 3.

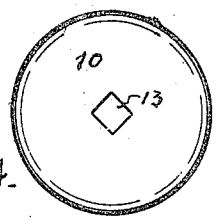

Fig. 4.

Fig. 5.

Fig. 6.

Witnesses

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FOUNTAIN-PEN.

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To all whom it may concern:

Be it known that I, JAMES H. SHUNK, Jr., a citizen of the United States, residing at Sharon, in the county of Walworth and State of Wisconsin, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to improvements in fountain pens, and has for its principal object to provide an article of this class, whereby the ink may be prepared within the storage portions of the pen, to the end, principally, that the usual inconvenience attending the operation of filling may be avoided.

In the use of ordinary fountain pens, filling the ink reservoir is generally inconvenient, and the ink often becomes thickened unless the pen is frequently used.

One of the objects of the invention is to provide a pen of this class so constructed that water may be contained in the ink reservoir, the ink being conveniently and readily prepared therein at any time when desired, the handling of liquid ink, therefore, being dispensed with, the usefulness of the several parts of the pen not being impaired by periods of disuse, and necessity of frequently cleaning the parts of the pen being obviated.

The invention consists, broadly, of the employment of a tubular liquid container provided with a pen point, a chamber for storage of an ink-powder, and means to deliver to the liquid container a measured quantity of the powder.

With the above mentioned objects in view the invention presents a novel construction, combination and arrangement of parts as described herein and claimed, and as illustrated in the drawing, it being understood that changes in form, size, proportion and minor details may be made within the scope of the claims without departing from the spirit of the invention or sacrificing any of its advantages.

In the accompanying drawing Figure 1 is a longitudinal sectional view of a fountain pen illustrating one embodiment of my invention. Fig. 2 is a broken away view of the same device shown in Fig. 1, parts thereof being in section, the hood being in a lowered position, the recess of the plunger being within the liquid receptacle. Fig. 3 illustrates a modified form of the invention, the compression means being a spring instead of a screw, for causing a reliable seating or bearing of the plunger head upon the partition. Fig. 4 is a plan view of the cap or hood for clearly showing its angular aperture. Fig. 5 is a plan or end view of the plunger, and Fig. 6 is a view of its keeper.

Referring now to the drawing for a more particular description, numeral 1 indicates a fountain pen, consisting in part of a liquid reservoir 2, the same being formed by the tubular casing 3 and provided with the pen point 4; and any suitable feeding device may be employed and connected with the pen point so that the contents of reservoir 2 may reach the pen.

At 5 is indicated an ink-powder chamber or reservoir. The powder used is composed of very fine granules. It is not expensive, comparatively, and is prepared ready for use in a dry condition. A quantity equal in volume to a small hazel nut is sufficient for preparing a pint of writing fluid of any desired or usual color. It dissolves almost instantly when placed in water.

Chamber 5 is provided by employing the tubular casing 6, said casing having, between its ends, a partition 7 with an aperture 8, thereby providing an annular flange 9 as a holder for casing 3 slidably mounted therein and removable therefrom.

At 10 is indicated a hood or cap adapted to overhang the open, outer terminal of casing 6, the rim 11 of said hood circumscribing said casing. It will be understood that the ink-powder is contained within chamber 5, and any suitable means may be employed for discharging a small or measured quantity of the powder from chamber 5 to chamber 2, and at that time preventing the liquid within chamber 2 from entering chamber 5, the means illustrated by Figs. 1 and 2 being a plunger 12 removably mounted within the angular aperture 13 (Fig. 4), the plunger preferably having facets 14 formed at its upper end to register with the corresponding walls of said aperture, said plunger having a contact-head 15 for a bearing upon partition 7 and a recess 16 adjacent to said head.

When the parts are assembled, the plunger may be passed through the aperture of the partition. A supply of ink-powder is at this time deposited in chamber 5. The

outer end of the plunger is then seated in opening 13 of the cap, and by means of set-screw 17 it may be secured.

In operation, chamber 2 is filled with water, and after it has been seated within flange 9, the plunger may be lowered from the position shown in Fig. 1 to that shown in Fig. 2, and as is apparent, the contents of recess 16 will thereby be conveyed to chamber 2. The lower part of the plunger, preferably, has a threaded connection with partition 7 as shown in the drawing. It will be noted that partition 7 has a thickness greater than the length of recess 16, and the threads of the plunger are therefore in engagement with the threads of the partition while the recessed part of the plunger is passing within chamber 2, and this feature tends to prevent the passage of liquid within chamber 5. However, if chamber 2 is not completely filled, this threaded connection may be dispensed with.

The cap or hood 10 has a threaded connection with the upper end of casing 6, the interior threads of the hood being indicated at 18, and by manually rotating the hood, plunger 12 may be elevated so that head 15 will have a bearing upon the partition, as shown in Fig. 1, to the end that the powder within chamber 5 may be kept in a dry condition.

The principal object for providing the angular opening in the cap, and the corresponding angularly formed walls for the upper terminal of the plunger, is to provide a reliable holding means for the plunger at the time the hood is rotated.

The parts shown in Fig. 3 are substantially the same as already described, the means for operating the plunger 12′, however, being more rapid. A spring 19 is employed, the same being seated between the hood 10′ and the upper end of casing 6′, the operation of said spring normally holding head 15′, preferably of rubber, in contact with partition 7′, the wall 11′ of the hood being slidably seated upon the wall of casing 6′.

When the hood is manually depressed the spring will contract, head 15′ leaving its seating and passing within chamber 2′, recess 16′ of the plunger passing through aperture 8′ and discharging a small measured quantity of the powder within chamber 2′. In the use of this modified form of the device, container 2′ should not be completely filled with water, and the powder should be conveyed or discharged while the device is in a vertical position, but the bearing of head 15′ upon the partition effectually prevents liquid from entering within chamber 5′ after spring 19 has been released.

I may, and preferably shall in some instances employ a concentrated ink in semi-fluid or liquid form in lieu of the ink-powder mentioned, but the operation of the parts as shown will remain the same as already described.

The device provides a very convenient article for general use. Concentrated material may be carried within the storage reservoir sufficient for months or years of use without replenishing; and a fresh, economical supply of ink may always be available by use of water, and settling or thickening of the ink may be avoided.

Having described my invention, what I claim and desire to secure by Letters Patent is,—

1. A fountain pen comprising an ink-powder reservoir, a tubular water-container removably mounted upon the reservoir and provided with a pen point, and devices for discharging a portion of the ink-powder from said reservoir to the tubular water-container.

2. A fountain pen comprising a tubular liquid-container provided with a pen point, an ink reservoir having a passageway communicating with the liquid container; means to make a closure of said passageway, and means to discharge a portion of the ink from said reservoir to the tubular liquid-container.

3. A device for the purpose described, comprising a first elongated casing having an apertured partition and providing an ink chamber; a second elongated casing having an open end and providing an ink container with a pen point, said casings being disposed end-to-end and removably connected, the open end of the second casing opening upon the aperture of the partition of the first casing; a plunger member within the ink chamber of the first casing traversing the aperture of said partition, and provided between its terminals with a recess and with a terminal contact head; means to reciprocate the plunger member longitudinally, one of its movements disposing its recess within the container of the second elongated casing, its opposite movement disposing its recess within the ink chamber of the first elongated casing with its head bearing upon the wall of said partition.

4. A device for the purpose described, comprising a first elongated container having a partition with a transversely formed aperture; a second elongated container having an open terminal, its opposite terminal being provided with a pen point; said containers being disposed end-to-end and removably connected, the open end of the second container opening upon the aperture of the partition of the first container; an elongated plunger within the first container traversing the aperture of said partition, said plunger having a terminal contact-

head and formed between its terminals with a recess extending longitudinally of the plunger and having a less length than the transversely formed aperture of said partition; means to reciprocate the plunger longitudinally, one of its movements disposing its recess within the second container, its opposite movement disposing its recess within the first elongated container with its head bearing upon the wall of and outwardly of said partition.

5. In combination, a first elongated container provided with an apertured partition and formed with a terminal sleeve; a second elongated container having an open terminal, its opposite terminal being provided with a pen point, said second container adapted to be seated slidably within said sleeve with its open terminal disposed adjacent to said apertured partition; a hood mounted upon said first container; an elongated plunger member disposed within the first container and traversing the aperture of said partition, said plunger being formed with a recess between its terminals and provided upon one of its terminals with a contact-head, its opposite terminal being removably secured upon said hood; means to move said hood longitudinally of the first container, the recessed part of the plunger moving from said first container to the second container; means to move said hood in an opposite direction, the recessed part of the plunger moving from the second to the first container, the head of the plunger having a bearing upon the wall of said partition.

6. In combination, a fountain pen comprising a cylindrical container having a terminal partition with an exit aperture, a hood mounted upon the opposite terminal and adapted to have a movement longitudinally of said container; a tubular handle provided with a pen point, said tubular handle being mounted upon said container and having an intake aperture in communication with said exit aperture; a plunger bar carried by said hood, said bar extending through said exit aperture and provided with a contact-head normally bearing upon the outer wall of said partition, and provided with a recessed portion normally disposed within said container; one of the movements of said hood causing the recessed portion of said plunger bar to move outwardly from said exit aperture, said contact-head being released from its bearing upon the wall of said partition.

In testimony whereof I have affixed my signature in presence of two witnesses.

JAMES H. SHUNK, JR.

Witnesses:

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BENJ. S. BAKER.