June 28, 1927.

1,633,896

T. KOVACS

FOUNTAIN PEN

Filed June 16, 1924

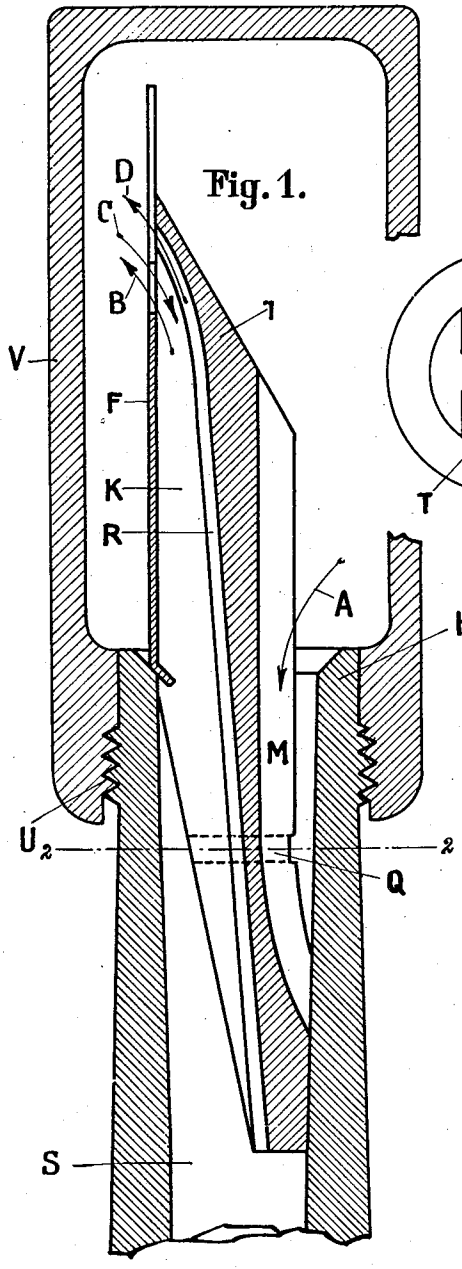

Fig. 1.

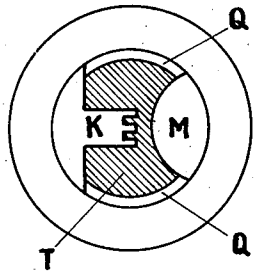

Fig. 2.

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UNITED STATES PATENT OFFICE.

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FOUNTAIN PEN.

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There exist already fountain pens which can be filled without unscrewing of the head, but a difficulty experienced with fountain pens of this kind resides in conducting away the air displaced by the ink when the reservoir of the fountain pen is being filled. The air-discharge channel must be sufficiently wide in order to permit the air-bubbles to pass therethrough. With most fountain-pens of that kind the air-discharge channel must be closed when the filling of the reservoir is finished, but this solution of the problem conditions a complicated construction of the fountain-pen.

It has also been proposed to leave the air-discharge channel open after the filling of the reservoir of the fountain-pen, but then that channel is arranged in the head of the fountain-pen, at the inner side of the writing pen proper, whereas the passage for supplying the latter with ink is arranged at the outer side of the pen proper. But as the outer orifice of the air-discharge channel lies remote from the point or tip of the pen proper and is not closed after the filling of the reservoir, it must be comparatively narrower in order to prevent an excessive entrance of air while the writing is going on. The narrow outer orifice of said channel is located in the height of the filling opening, and can, therefore, be closed easily by the ink when the filling takes place.

Now, according to my invention, the air-discharge channel is arranged opposite the lower side of the writing pen proper at the upper side of the ink feeding member together with the ink-supply passage or grooves, whereas the filling-channel is arranged at the lower side of the said member. Owing to this arrangement and configuration of said member which is inserted into the pen-end of the fountain-pen, the air-discharge channel can extend to the point or tip of the pen proper where it terminates with a comparatively wide orifice and is closed automatically by the excess of the ink present at that place while the fountain pen is being used. In the height of the filling channel the sectional area or width of the air-discharge channel is such that it cannot be closed by the ink entering into it.

My invention is illustrated by way of example in the accompanying drawing in which Fig. 1 shows an axial section through the upper part of the fountain-pen, and

Fig. 2 is a cross-section in line 2—2 of Fig. 1.

On the drawing, H is the hollow body or handle of the fountain-pen, F the writing-pen proper, and T the ink feeding member inserted into the body or handle H. The shape of this inserted member in longitudinal direction and in cross-section appears from the figures. On the pen-side the member T is provided with a longitudinal channel K which forms the air-discharge channel, and on the bottom of this latter are grooves R forming capillary furrows by which the ink is conducted to the pen F, as indicated by the arrow D. On the opposite or lower side the member T is so shaped as to form a channel M which is the filling channel, the communication with the reservoir S being established by two narrow grooves Q forming cross channels provided in the circumferential surfaces of said member. The sectional area of these circumferential grooves may be larger than that of axial grooves or passages without their permitting the entrance of air into the reservoir through them if filled with ink. The supplemental air finds access into the reservoir S while the writing solely through the channel K.

With a fountain-pen devised as shown and described it is possible to fill the reservoir S through the passage M provided exclusively for this purpose as indicated by the arrow A, whereas the displaced air escapes in the direction of the arrow B through the channel K also serving for the entrance of supplemental air into the reservoir S while writing as indicated by the arrow C.

Any amount of ink that may have found access into the closing cap V screwed on the body H by means of the thread U can be caused to flow back into the reservoir by the owner holding the fountain pen in upright position before the closing cap is unscrewed whereby increased security against soiling is afforded.

I claim:

A fountain pen, comprising, in combination, an ink receptacle and a feed immovably located therein and extending from the open end thereof to below the pen, said insert hav-

ing in its upper side an air-channel having capillary grooves in its bottom, and in its lower side an ink filling channel communicating constantly with said ink receptacle, this communication being at least partly so narrow as to be adapted to prevent the passage of air therethrough if closed by ink, the first mentioned air-channel being however, so wide that it is unable to retain ink when the fountain pen is in practically vertical position, substantially and for the purpose set forth.

In testimony whereof I have affixed my signature.

THEODOR KOVÁCS.