PATENT SPECIFICATION

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Complete Specification Accepted: Feb. 4, 1941.

PROVISIONAL SPECIFICATION

Improvements in Self-filling Fountain Pens

We, MENTMORE MANUFACTURING CO. LIMITED, a Company registered under the laws of Great Britain, of Tudor Grove, Well Street, Hackney, London, E.9, and ALBERT JOHN GOOD, a Subject of the King of Great Britain, of 414, Valance Avenue, Chadwell Heath, Dagenham, Essex, do hereby declare the nature of this invention to be as follows:—

This invention relates to self-filling fountain pens of the type in which a stud is mounted for axial reciprocation at the free end of the barrel for the purpose of alternately compressing and releasing the ink sac.

In such pens the stud has heretofore been a hollow metal thimble having an out-turned flange at its open end, the thimble being longitudinally slotted from this end to enable it to be compressed for introduction into the open end of the barrel. Subsequent release of the thimble allows it to re-assume its normal shape under its own resilience when the flange prevents its withdrawal. A difficulty experienced with such a construction is that the removal of the stud for repair or other purposes must be effected with the aid of pliers or the like and the stud is thereby frequently damaged.

The object of the present invention is the provision of an improved form of stud and method of attaching the same whereby this difficulty shall be overcome.

According to the invention, in a self-filling fountain pen of the type referred to, the inner end of the shank of the stud is formed with a screw-threaded portion and the remainder of the shank is of a diameter equal to or slightly less than the core-diameter of the thread so that the stud may be screwed into the pen barrel until the threaded portion has passed completely into the latter whereupon the stud may then be freely reciprocated.

In one example, the pen barrel is formed at its free end (i.e. the end remote from the nib and feed) with an axial screw-threaded bore of smaller maximum diameter than the interior of the barrel. A stud of vulcanite, synthetic resin or other plastic material is produced with a shank diameter slightly less than the minimum diameter of the said bore and has its inner end provided for a short distance with a screw-thread adapted to fit that of the bore. The outer end of the stud may have a projecting flange or head.

The stud is introduced by screwing the inner end thereof through the bore in the pen barrel until the threaded end is clear of the threaded bore. The plain shank of the stud may then be moved freely through the bore in the required manner but the stud will not become accidentally detached under the conditions of ordinary use. The stud may be bored axially from its inner end to accommodate the end of a flexible spring strip located within the barrel and adapted, in the usual way, to compress the ink sac when bowed by pressure applied to its ends.

It will be seen that the stud may at any time be removed by pulling it outwardly and then unscrewing it. It may be formed by moulding or turning operations from readily available and relatively inexpensive materials such as ebonite, celluloid or synthetic resins with a consequent saving in metal in the construction of the pens.

The studs heretofore known could not be produced from such materials since there was always danger of a fracture occurring at the points where the longitudinal slots were cut.

Dated this 28th day of September, 1939.

For the Applicants,
RAWORTH, MOSS & COOK,
75, Victoria Street, London, S.W.1,
Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements in Self-filling Fountain Pens

We, MENTMORE MANUFACTURING CO. LIMITED, a Company registered under the laws of Great Britain, of Tudor Grove, Well Street, Hackney, London, E.9, and

ALBERT JOHN GOOD, a Subject of the King of Great Britain, of 414, Valance Avenue, Chadwell Heath, Dagenham, Essex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to self-filling fountain pens of the type in which a stud is mounted for axial reciprocation at the free end of the barrel for the purpose of alternately compressing and releasing the ink sac.

In such pens the stud has heretofore been a hollow metal thimble having an out-turned flange at its open end, the thimble being longitudinally slotted from this end to enable it to be compressed for introduction into the open end of the barrel. Subsequent release of the thimble allows it to reassume its normal shape under its own resilience when the flange prevents its withdrawal. A difficulty experienced with such a construction is that the removal of the stud for repair or other purposes must be effected with the aid of pliers or the like and the stud is thereby frequently damaged.

The object of the present invention is the provision of an improved form of stud and method of attaching the same whereby this difficulty shall be overcome.

A fountain pen having a collapsible bulb which is compressed in a longitudinal direction by means of a plunger has been proposed in which the bulb has an integral finger secured within the plunger and a movable cap is carried by a stem which is threaded at each end so that it can be connected to the plunger at its inner end to operate the latter or at its outer end to hold the stem and plunger in the inoperative position. In this construction the stem is connected to the plunger when the latter is to be moved.

According to the invention, in a self-filling fountain pen of the type referred to the free end of the pen barrel is formed with a screw-threaded bore and the shank of the stud is provided at its inner end with a projection or the like, for example a screw-thread, adapted to screw into the said bore, the remainder of the shank being of a diameter equal to or slightly less than the core diameter of the threaded bore so that the stud may be screwed into the pen barrel until the projection or threaded portion has passed completely into the latter whereupon the stud may then be freely reciprocated.

An example of the way in which the invention may be carried into effect is illustrated in the accompanying drawings, wherein:—

Fig. 1 is a sectional elevation of the upper part of a self-filling fountain pen, and

Fig. 2 is a fragmentary sectional view showing the stud partially withdrawn.

As shown in the drawings, the pen barrel 1 is formed at its free end (i.e. the end remote from the nib and feed) with an axial screw-threaded bore 2 of smaller maximum diameter than the interior of the barrel. A stud 3 of vulcanite, synthetic resin or other plastic material is produced with a shank diameter slightly less than the minimum diameter of the bore 2 and has its inner end provided for a short distance with a screw-thread 4 adapted to fit that of the bore 2. The outer end of the stud 3 may have (as shown) a projecting flange or head 3*a*.

The stud 3 is introduced by screwing the inner end 4 thereof through the bore 2 in the pen barrel 1 until the threaded end is clear of the threaded bore within the barrel. The plain shank of the stud may then be moved freely through the bore 2 in the required manner but the stud will not become accidentally detached under the conditions of ordinary use. The stud may be bored axially from its inner end (as shown at 5) to accommodate the end of a flexible spring strip 6 located within the barrel 1 and adapted, in the usual way, to compress the ink sac 7 when bowed by pressure applied to its ends. This is a well-known construction of sac-collapsing mechanism and forms no part of this invention.

In place of the thread 4 the inner end of the stud 3 may be formed with one or more lugs, a thin out-turned flange or a like formation which will screw into the threaded bore 2.

It will be seen that the stud 3 may at any time be removed by pulling it outwardly and then unscrewing it (see Fig. 2). It may be formed by moulding or turning operations from readily available and relatively inexpensive materials such as ebonite celluloid or synthetic resins with a consequent saving in metal in the construction of the pens. The studs heretofore known could not be produced from such materials since there was always danger of a fracture occurring at the points where the longitudinal slots were cut.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A self-filling fountain pen of the type referred to, wherein the free end of the pen barrel is formed with a screw-

threaded bore and the shank of the stud is provided at its inner end with a projection or the like, for example a screw-thread, adapted to screw into the said bore, the remainder of the shank being of a diameter equal to or slightly less than the core diameter of the threaded bore so that the stud may be screwed into the pen barrel until the projection or threaded portion has passed completely into the latter whereupon the stud may then be freely reciprocated.

2. A self-filling fountain pen according to claim 1, wherein the outer end of the shank of the stud is formed with a projecting flange or head.

3. A self-filling fountain pen constructed, arranged and adapted to operate substantially as herein described with reference to the accompanying drawings.

Dated this 5th day of July, 1940.

For the Applicants,
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FIG. 1.

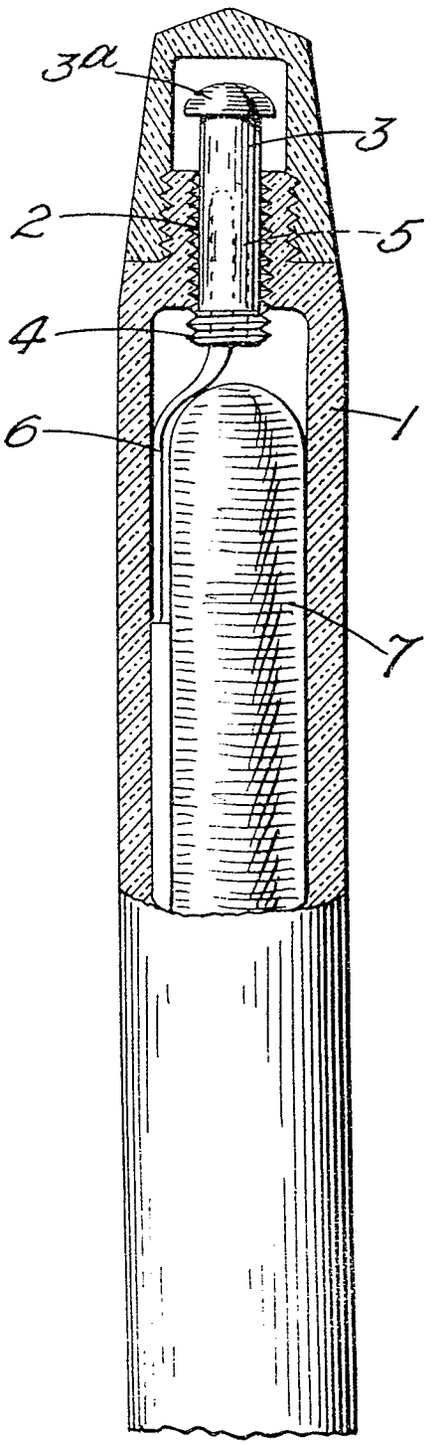
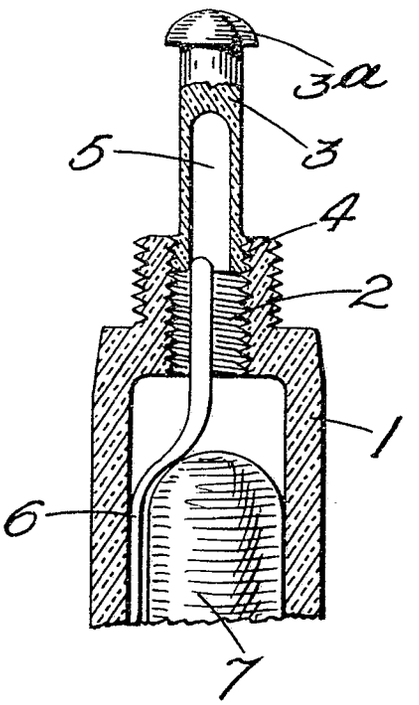


FIG. 2.



[This Drawing is a full size reproduction of the Original.]

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