PATENT SPECIFICATION

Application Date: Jan. 7, 1932. No. 511/32. **390,585**

Complete Left: Jan. 4, 1933.

Complete Accepted: April 13, 1933.

PROVISIONAL SPECIFICATION.

Improvements in, or relating to, Fountain Pens.

We, EDWARD STEPHEN SEARS, of 111, Norbury Avenue, Thornton Heath, Surrey, a British Subject, and MABIE TODD & COMPANY, LIMITED, a Company incorporated under the laws of Great Britain and Northern Ireland, of Swan

Fig. 1 is a sectional elevation of one form of fountain pen with the sac inflated, made in accordance with this invention;

Fig. 2 is a side view showing the sac deflated;

Figs. 3 and 4 are sectional plans on

ERRATUM.

SPECIFICATION No. 390,585.

Page 2, line 79, *for* "pressed" "presser" *read*

PATENT OFFICE,

October 9th, 1933.

the opposite direction when the nib is immersed in ink the sac becomes filled with ink.

Referring to the drawings filed herewith:

Dated this 7th day of January, 1932.

MEWBURN, ELLIS & Co.,
70—72, Chancery Lane, London, W.C. 2,
Chartered Patent Agents.

COMPLETE SPECIFICATION.

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We, EDWARD STEPHEN SEARS, of 111, Norbury Avenue, Thornton Heath, Surrey, a British Subject, and MABIE TODD & COMPANY, LIMITED, a Company incorporated under the laws of Great Britain and Northern Ireland, of Swan Works, Barratt's Green Road, Harlesden, London, N.W., 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, and has for its object to provide improved means for filling such pens.

A self-filling fountain pen made according to the present invention comprises a barrel portion, a writing point, and an ink sac located within the barrel and adapted to be compressed by means of a presser bar, characterised in that the presser bar is constituted by a simple rigid bar mounted at one end only for rotation about the longitudinal axis of the barrel.

The invention also consists in a fountain pen comprising a barrel portion, a writing point, and an ink sac located within the barrel, and adapted to be compressed by means of a presser bar, char-

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This invention relates to self-filling fountain pens.

The object of this invention is to provide improved means for filling a fountain pen.

A fountain pen made in accordance with this invention comprises a barrel, a sac, a nib section, a feed bar, nib and cap, all of ordinary construction, and is characterised in that the end of the barrel remote from the nib section is provided with a rotatable plug or plate to which is attached the blade, shaped and disposed so that on the plug being rotated in one direction the blade presses against and compresses the sac, whereby deflation takes place, and on rotating the plug in the opposite direction when the nib is immersed in ink the sac becomes filled with ink.

Referring to the drawings filed herewith:

Fig. 1 is a sectional elevation of one form of fountain pen with the sac inflated, made in accordance with this invention;

Fig. 2 is a side view showing the sac deflated;

Figs. 3 and 4 are sectional plans on lines 3—3, and 4—4,

Figs. 5 and 6 are views at right angles to one another showing one form of blade suitably shaped to carry out this invention.

a is the barrel, *b* the sac, *c* the nib section, *d* the nib, *e* the cap, *f* the rotatable plug. The plug *f* is threaded at *g* to engage with the thread on the barrel *a*. The blade *h* is provided with a flange h^1 which is attached to the plug *f* by a left-handed threaded screw *j*. The blade is eccentrically disposed with respect to the axis of the barrel and is twisted at *k*.

In use, assuming the sac *b* to be inflated as shown in Fig. 1, and that it is desired to deflate the sac, the plug *f* is rotated so that the blade *h* presses the sac against the side of the barrel *a* and flattens it. If the nib is now immersed in ink and the plug *f* is rotated in the reverse direction, the sac *b* expands and ink is drawn in.

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This invention relates to self-filling fountain pens, and has for its object to provide improved means for filling such pens.

A self-filling fountain pen made according to the present invention comprises a barrel portion, a writing point, and an ink sac located within the barrel and adapted to be compressed by means of a presser bar, characterised in that the presser bar is constituted by a simple rigid bar mounted at one end only for rotation about the longitudinal axis of the barrel.

The invention also consists in a fountain pen comprising a barrel portion, a writing point, and an ink sac located within the barrel, and adapted to be compressed by means of a presser bar, char-

acterised in that the presser bar is constituted by a simple rigid bar mounted for rotation about the longitudinal axis of the barrel, and so shaped and inclined to the axis of the barrel that the said presser bar is adapted, upon rotation about its pivot, to first impress the closed end of the sac along a longitudinal medial line at the commencement of the deflating operation, the remainder of the sac being progressively impressed and deflated by the bar as rotation of the bar about its pivot proceeds.

Referring to the drawings filed herewith:—

Fig. 1 is a sectional elevation of one form of fountain pen with the sac inflated, made in accordance with this invention;

Fig. 2 is a sectional view of the pen showing the sac deflated;

Figs. 3 and 4 are transverse sections on lines 3—3 and 4—4 of figs. 1 and 2 respectively;

Figs. 5 to 7 are views showing one form of presser bar suitably shaped to carry out this invention.

In the drawings, the pen comprises a barrel portion *a*, a sac *b*, a writing point section *c*, a writing point *d*, a cap *e*, and a rotatable plug *f*. The plug *f* is threaded at *g* to engage with a corresponding thread on the barrel *a*. One end of the presser bar *h* is provided with a flange h^1 which is attached to the plug *f* by a left-handed threaded screw *j*. The barrel *a* is drilled at *l* to equalise the air pressure within the barrel during the inflating and deflating operation.

The presser bar is eccentrically disposed with respect to the axis of the barrel of the pen being twisted at *k*, the thickened and rounded or leading edge *m* of the presser bar being nearer to its axis of rotation than the thinner trailing edge *n*. The leading edge *m* of the presser bar is inclined to the axis of rotation about one to one-and-a-half degrees when viewed from the front of the bar, and from one-and-a-half to two degrees when viewed from the edge of the bar (see Figs. 5 and 6). The lower end of the trailing edge *n* is inclined at an angle of about 2° to the upper edge (see Fig. 7) to prevent the edge of the bar fouling the barrel during rotation, and also to allow the sac to act at its maximum capacity by preventing undue pressure thereon.

By rotating the knob *f* the thicker or leading edge *m* of the presser bar *h* first impresses the sac *b* at its closed end and on a longitudinal and medial line thereof, the continued rotation of the knob causing a progressively larger surface of the presser bar to engage the sac, with the result that the sac gradually enfolds the presser bar to an increasing extent as deflation proceeds. It should be noted that the presser bar does not make contact either with the barrel or the outer wall of the sac adjacent the barrel, the edge *m* only of the presser bar touching the sac before completing deflation by reason of its inclination to the longitudinal axis of the barrel. It will be realised therefore, that any longitudinal line on the presser bar forms the generator of a cone having its apex towards the actuating knob when the latter is rotated. One face only of the pressed bar remains adjacent the barrel throughout the complete deflating movement. If the writing point is now immersed in ink and the plug *f* is rotated in the reverse direction, the sac *b* expands and ink is drawn in.

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 comprising a barrel, a writing point, an ink sac located within the barrel and adapted to be compressed by means of a presser bar, characterised in that the presser bar is constituted by a simple rigid bar mounted at one end only for rotation about the longitudinal axis of the barrel.

2. A self-filling fountain pen comprising a barrel portion, a writing point, an ink sac located within the barrel, and adapted to be compressed by means of a presser bar, characterised in that the presser bar is constituted by a simple rigid bar mounted for rotation about the longitudinal axis of the barrel, and so shaped and inclined to the axis of the barrel as to be adapted, upon rotation about its pivot, to first impress the closed end of the sac about a longitudinal medial line at the commencement of the deflating operation, the remainder of the sac being progressively impressed and deflated by the presser bar as rotation of the bar about its pivot proceeds.

3. A self-filling fountain pen according to claims 1 or 2, characterised in that the leading or active edge of the presser bar is positioned nearer to its axis of rotation than the trailing edge, and that the leading edge of the presser bar is inclined to its axis of rotation.

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

Dated this 4th day of January, 1933.

MEWBURN, ELLIS & Co.,
70—72, Chancery Lane, London, W.C. 2,
Chartered Patent Agents.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1933

[This Drawing is a reproduction of the Original on a reduced scale.]

FIG. 1.

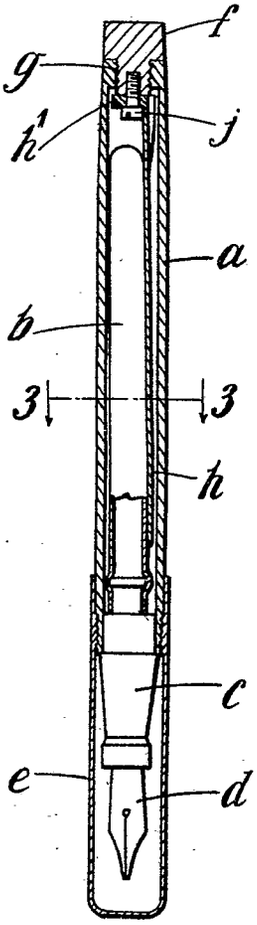


FIG. 2

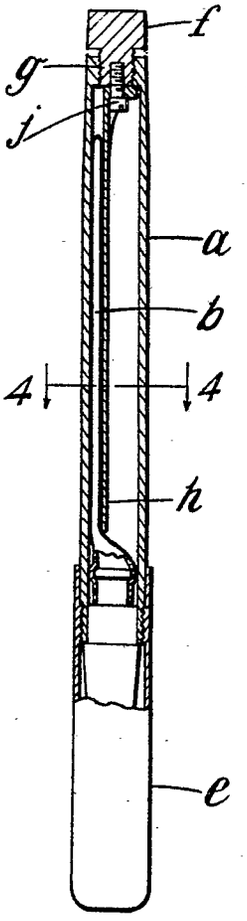


FIG. 5. FIG. 6.

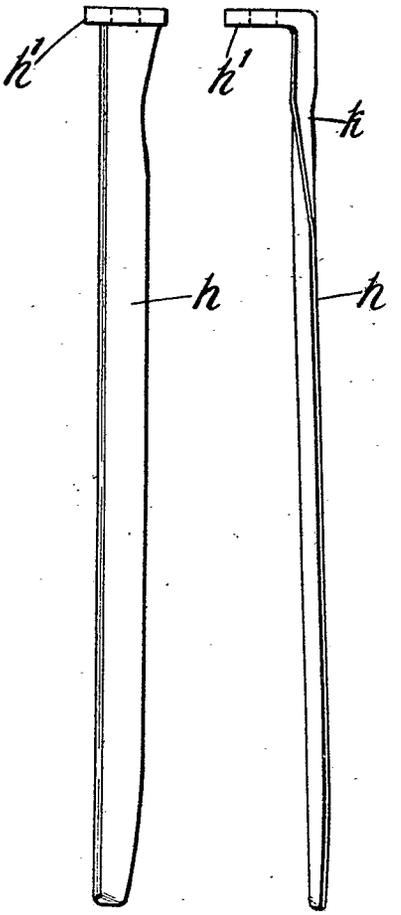


FIG. 3.

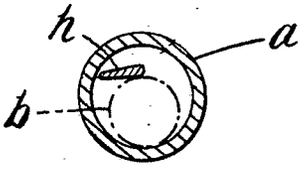
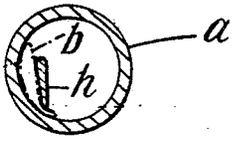


FIG. 4.



Malby & Sons, Photo-Litho.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig:1.

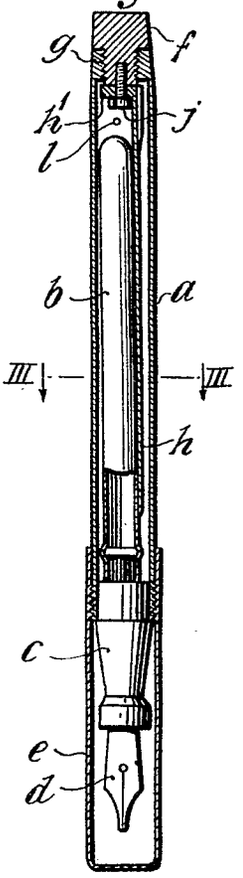


Fig:2.

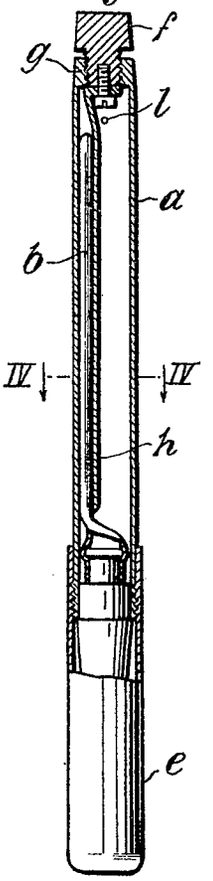


Fig:5.

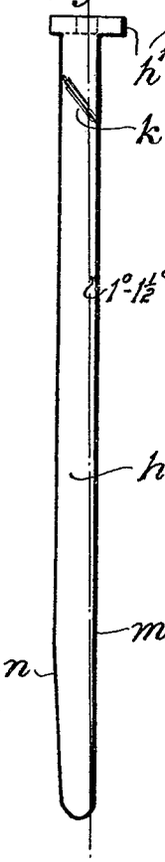


Fig:6.

Fig:7.

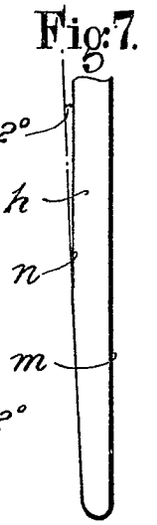


Fig:3.

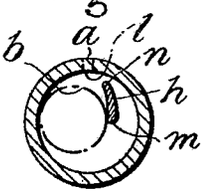
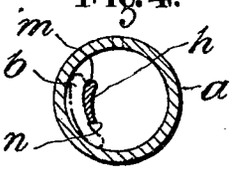


Fig:4.



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