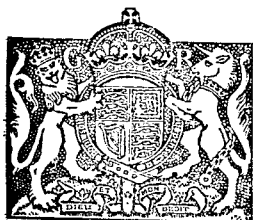


PATENT SPECIFICATION



Convention Date (United States): Dec. 9, 1931.

397,736

Application Date (in United Kingdom): Dec. 9, 1932. No. 35,024/32.

Complete Accepted: Aug. 31, 1933.

COMPLETE SPECIFICATION.

Improvements in and relating to Twin Fountain Pens.

We, MIRKO CHELAZZI, of 2, Piazza Verdi, Genoa, Italy, and DINO FRULLI, formerly of 2, Piazza Verdi, now of 8A, Via della Libertà, both in Genoa, Italy, 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 twin fountain pens and particularly to twin fountain pens in which a pair of fountain pens are reciprocated in opposite directions in a cylindrical shell provided with internal helical grooves of opposite turning direction, crossing one another.

According to the invention the pens are driven in opposite directions by providing on the pen carriers segments of helical threads of opposite turning direction engaging the helical grooves of the shell and being oppositely shifted by rotating the pen carriers with regard to the shell.

In the accompanying drawings two embodiments of the invention are shown.

Figure 1 is an axial section through a first embodiment of twin pen with one of the fountain pens in operative position;

Figure 2 is an axial section through the upper part of the shell of the pen shown in Figure 1, showing multiple helical grooves crossing one another;

Figure 3 shows the helical thread segments fitted on one of the sheaths to be attached to a pen carrier on the flexible ink reservoir of the pen;

Figure 4 is a section through a second embodiment of twin fountain pen;

Figure 5 is an axial section on line V—V of Figure 4;

Figure 6 is an axial section through part of the shell of the pen shown in Figure 4, diagrammatically showing the helical grooves; and

Figure 7 is a partially broken view of the driving member of the twin pen shown in Figure 4.

According to the embodiment shown in Figures 1 to 3, the shell comprises a part A with mouthpiece and a rear part B with bottom button H. Both the shell parts A and B are made with internal, preferably

[Price 1/-]

multiple, right- and left-hand threads crossing one another, as shown in Figure 2. 55

Each pen unit comprises the usual pen carrier C, C¹ with ink sac D—D¹, each of which is housed within a rigid sheath E, E¹ rigidly attached to the respective pen holder C, C¹. The helical thread segments providing for the positive engagement of the pen units with the shell, are fitted preferably on said sheaths. At either end of each sheath E, E¹ a helical thread segment (single or multiple) is fitted, the helical threads F, G and G¹—F¹ on each sheath having opposite turning directions. Further the threads of each pair of sheaths are matched in opposite direction, i.e. while at the rear end of E¹ the right-hand thread G¹ is fitted, the thread F at the rear end of E is a left-hand one. 60 65 70

The pen is assembled by first inserting one of the pen units with its sheath E in the position shown in Figure 1, i.e. with the helical threads G in engagement with the beginning of the helical grooves of the shell part A and the other sheath E¹ is inserted in the shell part B with the threads G¹ in engagement with the end of the corresponding helical grooves. Then the parts thus assembled are brought together in axial direction and the shell parts A and B are rotated in opposite directions, so as to cause the helical threads F and F¹ to engage the grooves of B and A respectively. As the turning direction of F and F¹ is the same, by the opposite rotation of the parts A and B the sheaths E and E¹ will be driven in opposite directions within the shell A—B until the end of the stroke, when the position of the pen units will be the reverse of that shown in Figure 1. In this embodiment each of the sheaths E, E¹ urges by its axial movement either of the parts A, B against the other, thus causing same to adhere firmly together. 75 80 85 90 95

A further simplification of this system is shown in Figures 4 to 7. Here the shell is constituted by a single tubular piece B¹¹ having internal right- and left-hand helical grooves crossing themselves along the whole internal surface of the 100 105

- shell (Figure 6). In this shell the two sheaths E, E¹ are inserted, each provided with helical threads of different hand corresponding to those of the mate sheath.
- 5 The cross section of each of the sheaths is little less than the inner half circular section of the shell B¹¹ and between the opposite plane surface of the sheaths a blade-like actuating member J with turn-
- 10 button H is inserted for rotating both the pen units. Owing to the different hand of the threads of the two mate sheaths, their relative shifting on the plane of J will take place in opposite directions.
- 15 The turn-button H has a smooth collar portion M and a threaded portion L adapted to engage the threads K at the rear end of the shell B¹¹. The collar M has such a diameter as to slide freely on
- 20 threads K and its height is substantially equal to that of this threaded portion K. In this manner a simple and efficient engagement between the driving member and the shell is provided, permitting of
- 25 an idle rotation of the former.
- 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
- 30 claim is:—
1. A twin fountain pen in which the tubular shell enclosing the pen units is formed with internal right- and left-hand helical grooves crossing one another,
- 35 while the pen units are fitted with corresponding helical threads of opposite turning direction, the whole being so arranged as to cause, by rotating the pens, their shifting in opposite directions.
2. A twin fountain pen according to Claim 1 in which the pen carriers are each provided with a flexible ink container or satchel enclosed in a substantially semi-cylindrical rigid sheath on which the helical thread segments are fitted.
3. A twin fountain pen according to Claim 1 or 2 in which the tubular shell is constituted by two parts and each rigid sheath attached to the pen carrier has thread segments at each end, that are of opposite turning direction with regard both to those at the end of the same sheath and to those at the corresponding end of their mating sheath.
4. A twin fountain pen according to Claim 1 or 2, in which the tubular shell is formed of a single piece, while each sheath on either of the pen carriers has screw threads of opposite turning direction with regard to those of the mating sheath, a blade-like operating member being inserted between the sheaths of each pen pair for rotating same together within the tubular shell and determining their shifting in opposite direction.
5. The twin fountain pen substantially as described and shown in the accompanying drawings.
- Dated this 8th day of December, 1932.
MARKS & CLERK.

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

Fig. 1

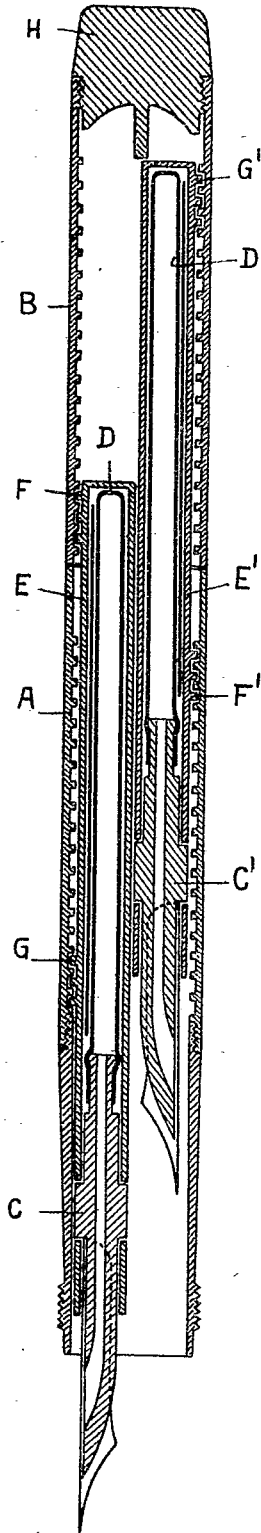


Fig. 2

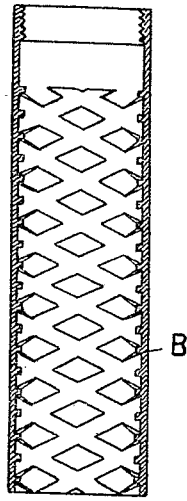


Fig. 4

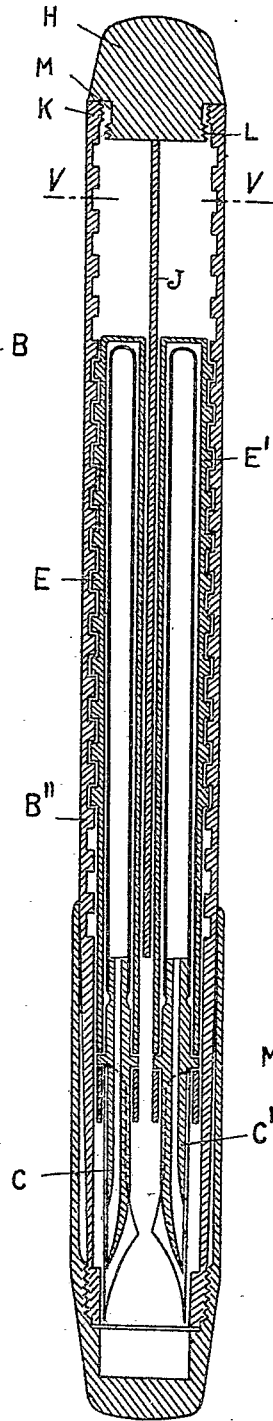


Fig. 5

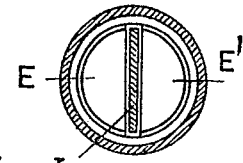


Fig. 6

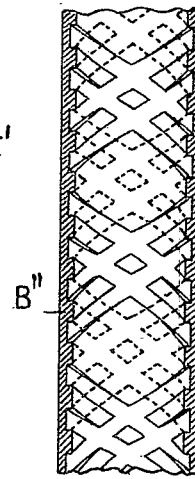


Fig. 3

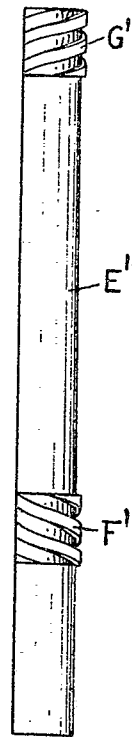


Fig. 7

