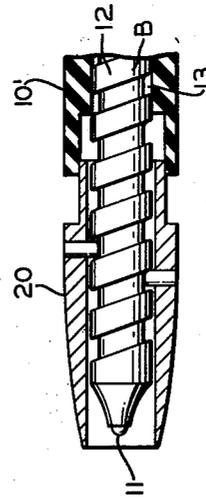
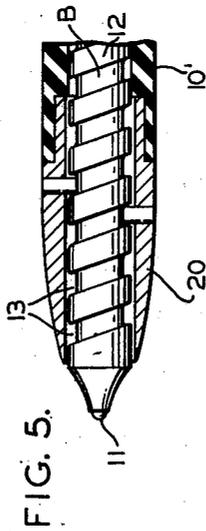
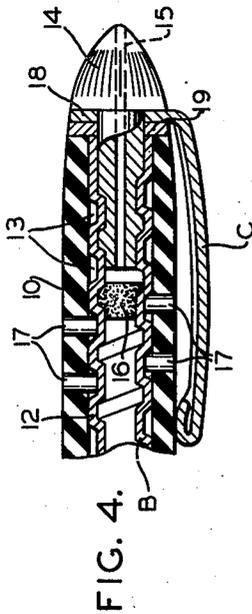
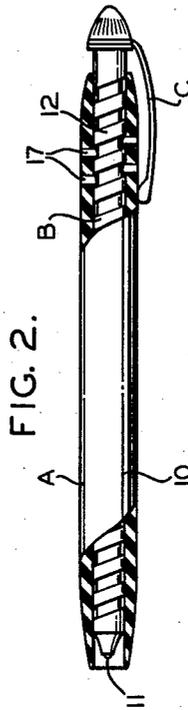
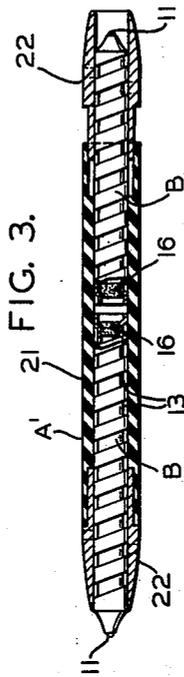
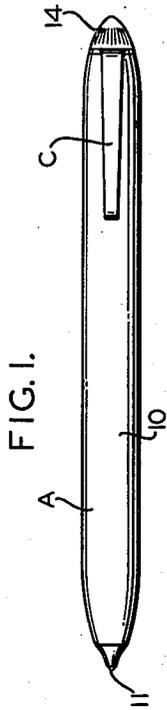


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H. L. FISCHER
WRITING INSTRUMENT
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UNITED STATES PATENT OFFICE

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WRITING INSTRUMENT

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1

My invention relates to a writing instrument wherein a ball point is used for writing.

The feature resides in providing an extremely simple writing instrument, made up primarily of a threaded hollow tube, in the forward end of which a ball bearing is mounted, adapted to rotate freely to carry the ink from the reservoir to the surface to be written upon.

The ink reservoir is a unit entirely contained or complete in itself, and constitutes a ball bearing in the writing end, a hollow threaded tube forming the chamber for the writing ink, and an opening to the outer atmosphere, ordinarily at the rear of the reservoir, together with a porous plug at the rear end, which acts as a buffer to the ink and yet permits air to pass freely into the ink chamber.

It is also a feature to provide a casing for this writing instrument which covers the ink reservoir unit. The forward end of the casing may be moved by being threaded onto the threads of the ink reservoir unit, and thus the forward end of the casing may be moved to cover the writing ball when the instrument is not in writing use, or the forward end may be retracted to expose the writing ball for use.

A further feature resides in extending the ink reservoir unit entirely through the casing and mounting a pocket clip on the rear end of the writing unit, and then by means of the threads on the writing unit, the casing may act as a sheath, so that when the writing unit is turned by engaging the rear end and pocket clip, the writing point may be retracted into the sheath casing to cover the same, when not in use.

Still a further feature of my invention resides in providing a writing instrument with a pair of separate ink units mounted in each end of the casing and having a portion of the casing threaded onto the respective units, so that either end of the writing instrument may be covered, that is the ball, when it is not in use, thus, in this form of the writing instrument, a different color of ink may be used in each reservoir unit, such as red and blue or any other combination of colors.

The objects and features of my writing instrument will be more fully and clearly defined hereinafter throughout the specification and claims.

In the drawings forming part of this specification:

Figure 1 is a side view of my writing instrument, with the writing ball exposed.

Figure 2 is a side view of the writing instrument, part of which is in section and showing

2

the ink unit retracted in the casing, to cause the casing to cover the writing ball.

Figure 3 illustrates a longitudinal section through another form of my writing instrument where two ink reservoir units, each having a writing ball, are illustrated, one of the writing balls on one of the units being exposed, while the other is covered by the moveable portion of the casing.

Figure 4 is an enlarged section of the rear end of my writing instrument, as shown in Figure 1.

Figure 5 is an enlarged section of the forward end of an alternative form of my writing instrument.

Figure 6 is a similar section to Figure 5, showing the forward end of the casing moved outwardly to cover the writing ball.

My writing instrument A includes the outer casing 10, which may be made of plastic or any suitable material, for the ink unit B, which provides a reservoir for the ink.

My writing instrument is designed to use a viscous paste-like ink, which flows by capillary attraction to the writing ball 11, which is mounted in the forward end of the ink unit B and adapted to rotate freely to carry the ink from the reservoir B onto the surface to be written upon.

Thus the writing instrument A constitutes two main parts, namely the casing 10 and the ink reservoir B.

The ink reservoir B consists of a hollow tube 12, which is threaded virtually throughout its length with heavy threads 13. The threads 13 act to retard the backward flow of the ink in the reservoir B when the instrument is lying in a horizontal position.

A pocket clip C may be attached to the rear end of the unit B by the plug 14, which is threaded into the rear end of the tube 12. A small longitudinal air hole 15 extends through the plug 14 and is adapted to admit air to the ink reservoir B. This passageway 15 effects an equalization of air pressure in the ink reservoir B at all times.

I provide a porous felt plug 16 to be positioned in the rear end of the ink reservoir B, as illustrated in Figures 3 and 4. This plug 16 may be of any suitable porous material and is adapted to admit air through the same, and act as a buffer to the viscous ink within the ink reservoir B.

In the writing instrument A illustrated in Figures 1 and 2, the casing 10 may be made in one integral part, and may be threaded by the

3

lug 17 to the ink unit B. Threads may be formed in the inner surface of the casing 10 in place of the lug 17, however, in either case the effect desired is to thread the unit B to the casing 10, so that when the clip C and plug 14 are engaged, the ink unit B may be moved in the casing 10 to retract the ball 11 into the same, or to project it out into writing position.

In securing the clip C to the end of the reservoir B, the clip is formed with an integral washer-like end 18, through which the plug 14 extends, and by means of a gasket 19, the clip C is firmly anchored to the end of the unit B. The gasket 19 acts as a washer or a spring means to supply sufficient friction to hold the clip rigidly anchored to the end of the reservoir B and to permit the unit B to be turned back into the position illustrated in Figure 2 concealing the ball 11.

In another form of my casing 10', the forward end 20 thereof may be threaded to the thread 13 of the tube 12 of the ink reservoir unit B, as illustrated in Figures 5 and 6. In this form of the casing 10', the writing end 20 moves to cover the ball 11, when the ball is not desired for writing.

My writing instrument may be made in the form illustrated in Figure 3, such as A'. In this form, the casing 21 is provided with each end 22 moveable like the end 20, as shown in Figures 5 and 6. This writing instrument A' is provided with two separate ink reservoir units B, each of which are held against rotation in the center portion of the casing 21, while the ends 22 are free to rotate and thread themselves on the writing ends of the units B. The unit B, as illustrated in Figures 5 and 6, is also held in the casing portion 10 under friction to permit rotation, while the ends 20 rotate on the unit B.

In using two ink reservoir units B, illustrated in Figure 3, different colored ink may be used in each unit and thus a double duty writing instrument A' may be provided. The ink units B used in my writing instrument are replaceable as a whole, including the ball 11. The unit B is hollow and carries a large quantity of ink, which is of a non-drying nature and will write a large number of words or figures. Thus the ball 11 may wear the socket in which it is mounted, particularly if the ball is used to write on certain surfaces which may pick up abrasives in the act of writing. I have found it desirable to replace the entire unit with the ball when the ink has become exhausted in the unit B.

The simplicity of this writing instrument is

4

apparent. There are only a small number of parts and thus the instrument may be made economically and a new ink unit B may be readily inserted in the casing of the instrument to replace an old unit.

I claim:

1. An ink reservoir for writing instruments including a unit composed of a hollow internally and externally threaded tube, a porous plug in the rear of said tube through which air may pass, a writing ball mounted on the forward end of said tube adapted to carry a viscous ink contained in said tube to a surface on which said unit is adapted to write, a casing in which said unit is adapted to frictionally fit to hold the same against turning, and a forward end formed on said casing adapted to be threaded on said unit to permit it to be moved outwardly to cover said writing ball when it is not in use.

2. A writing instrument comprising an ink reservoir unit including a hollow tube, a thread formed through the wall of said tube throughout its length, a writing ball mounted in the forward end of said tube, a passageway to the atmosphere in the rear end of said tube, a casing in which said unit is adapted to be frictionally supported to hold the same against rotation, and a rotatable collar casing portion threaded on said tube and adapted to move longitudinally to cover, or expose said writing ball on the end of said unit.

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