March 17, 1964 TOZABURO NAKADA 3,125,071

BALL PEN ATTACHABLE TO USUAL PENHOLDER

Filed Sept. 3, 1959

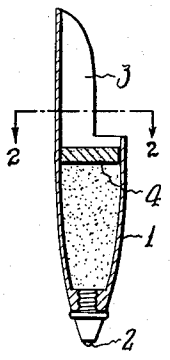

Fig 1

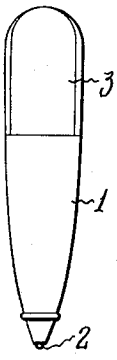

Fig 3

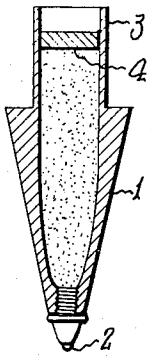

Fig 4

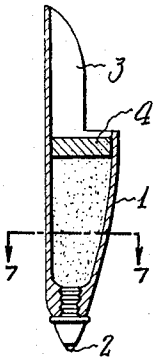

Fig 6

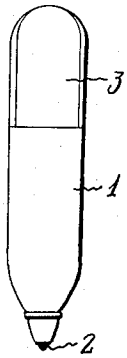

Fig 8

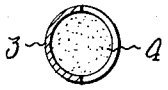

Fig 2

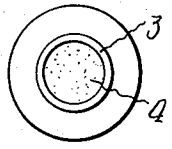

Fig 5

Fig 7

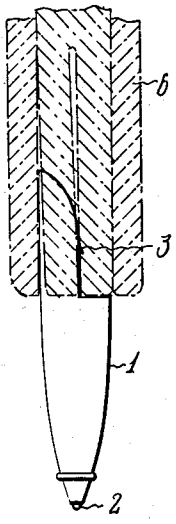

Fig 9

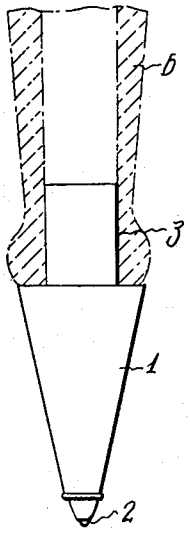

Fig 10

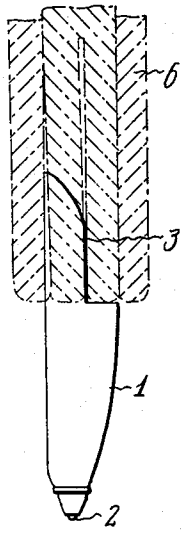

Fig 11

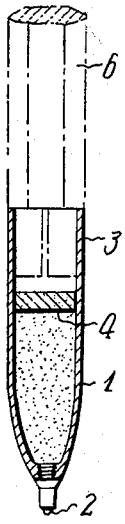

Fig 12

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BALL PEN ATTACHABLE TO USUAL PENHOLDER

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2 Claims. (Cl. 120—42.4)

The present invention relates to improvements in a ball pen, attachable to, and detachable from, a usual penholder, characterized by the fact that the ball is supported at the top of an ink reservoir of conical or pyramidal shape, the cross section of which is not always circular, an affixing portion of the ball pen to a usual penholder is provided at the foot of the reservoir, and moreover, a protection stratum against ink leakage is also provided at its upper position.

The invention will be explained with reference to the accompanying drawings.

FIG. 1 is a longitudinal sectional side-view of an example of the ball pen, according to the present invention. FIG. 2 is a sectional plan view taken along the line 2—2 of FIG. 1. FIG. 3 is a front view of FIG. 1. FIG. 4 is a longitudinally sectional view of another example of the ball pen according to the present invention. FIG. 5 is a plan view of FIG. 4. FIG. 6 is a longitudinally sectional side-view of another example of the ball pen, also according to the present invention. FIG. 7 is a sectional view of FIG. 6, taken along the line 7—7. FIG. 8 is a front view of FIG. 6. FIG. 9 is a side-view of the ball pen, as shown in FIG. 1, which is affixed to a usual penholder, instead of a common pen. FIG. 10 is a side-view, as shown in FIG. 4, which is affixed to a usual penholder. FIG. 11 is a side-view of the ball pen, as shown in FIG. 6, which is affixed to a usual penholder, its longitudinally sectional plane being shown in chain lines. FIG. 12 is a view showing another example, in which the shape of the penholder is like that of a pencil.

As shown upon FIGS. 1, 2 and 3, the attachment comprises a unitary ink reservoir and extension generally identified at 1, the lower end of which may be in the form of an inverted cone having a writing element, including a ball 2, secured to its lower end, as by screw threads. This writing element includes an upward extension 3 shown as semi-circular in cross section, and is of the same size and shape as the extension of an ordinary pen nib, so that it may be attached to and detached from a conventional penholder in the same way as an ordinary steel nib. A layer 4 of paraffin, sponge-like elastic plate, porous synthetic resin or sintered metallic powder, fits within the reservoir over the surface of the writing substance therein.

FIG. 9 shows an establishment of the ball pen which is affixed to a penholder 6. As shown in FIG. 4, FIG. 5, and FIG. 10, the ball pen of the present invention is provided with an affixing portion to the penholder 6, and the shape of this affixing portion is made circular, showing itself to be a modification of the present invention. As shown in FIG. 6, FIG. 7, FIG. 8, FIG. 11, and FIG. 12, the ball pen of the present invention has an ink reservoir 1, the shape of which is transformed to conical, showing itself to be a modification of the original one.

According to the above mentioned explanation, the construction of the ball pen must be fully understood. Namely, the shape of the ink reservoir 1 is conical or pyramidal, supporting the ball 2 at its lower end, having the affixing portion 3 at its top, which is affixed to the penholder 6, and also the protection stratum 4 for ink leakage at the upper position of the ink reservoir 1. By this means, the ball pen can be freely attached to, and/or detached from, the usual penholder or fountain pen 6 as easily as in the case of usual penholders. On the other hand, quite different from usual penholders, ink is preserved in the ink reservoir, according to the present invention, and hence, it offers much convenience to the user of this ball pen.

The object of the present invention is to introduce a ball pen which can be as freely attached to, or detached from, a usual penholder or fountain pen, as in the case of usual penholders. Therefore, the length or diameter of the ball pen, according to the present invention, need not be very different from the usual penholder.

According to the present invention, the ball pen can be attached to, or detached from, the usual penholder, with as much the same easiness as is the case with usual penholders heretofore. The ball pen of the present invention is of such a construction that ink can be preserved in the ball pen itself. Namely, the ball is supported at the top of the ink reservoir of conical or pyramidal shape, the cross section of which is not always circular, and the affixing portion of the ball pen to the penholder is provided at the foot of the reservoir, and the protection stratum for ink leakage is provided at the upper position of the ink reservoir.

I claim:

1. A writing instrument for replacing the usual steel nib in a penholder, comprising a tubular thin-walled ink reservoir, a writing element including a ball point, said element being secured to the lower end of said reservoir in communication therewith, said reservoir including an integral upwardly-extending, thin-walled extension arcuate in transverse cross section, for insertion into the nib-holding means of a conventional penholder.

2. A writing attachment for replacement of the conventional steel nib in a penholder, comprising, a thin-walled tubular ink reservoir having a longitudinal axis of symmetry and tapering inwardly and downwardly to a reduced open lower end coaxial of said axis, a writing element including a ball point, said element being fixed in said lower end of said reservoir in liquid-tight relation therewith to receive ink therefrom, a plug of air-pervious material fixedly positioned within and closing the upper end of said reservoir to confine ink therewithin, the wall of said reservoir having an integral upward extension being arcuate in cross section in a plane normal to said axis, and constructed and arranged to fit in and be held by a conventional penholder in replacement of the steel nib conventionally used therein.

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