

[54] **EYE-LINER DEVICE**

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[51] Int. Cl.**A46b 11/04**

[58] Field of Search.....401/153, 206, 270, 278,
258-260, 401/198, 199, 205

[56] **References Cited**

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[57] **ABSTRACT**

The front barrel of an eye-liner device is tightly fit to an end portion of an outer barrel. A central bore is formed at the center of the front barrel, into which bore a core or brush-type core is inserted. The core is engaged by an end of a spring positioned within the front barrel. Another end of the spring is engaged with a valve member on a knock bar. The valve member engages in a cylindrical valve seat fixed to an inside portion of the front barrel. An ink tank having bellows is connected with the back end portion of the front barrel. The outer surface of the front barrel is fixed to an inside surface of an end portion of an outside cylindrical barrel having an opening through which extends a knocking pin. Fluid ink is fed to the core by pushing the knocking pin.

8 Claims, 4 Drawing Figures

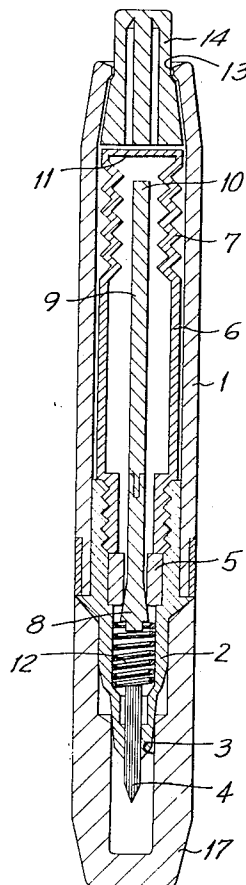


FIG. 1

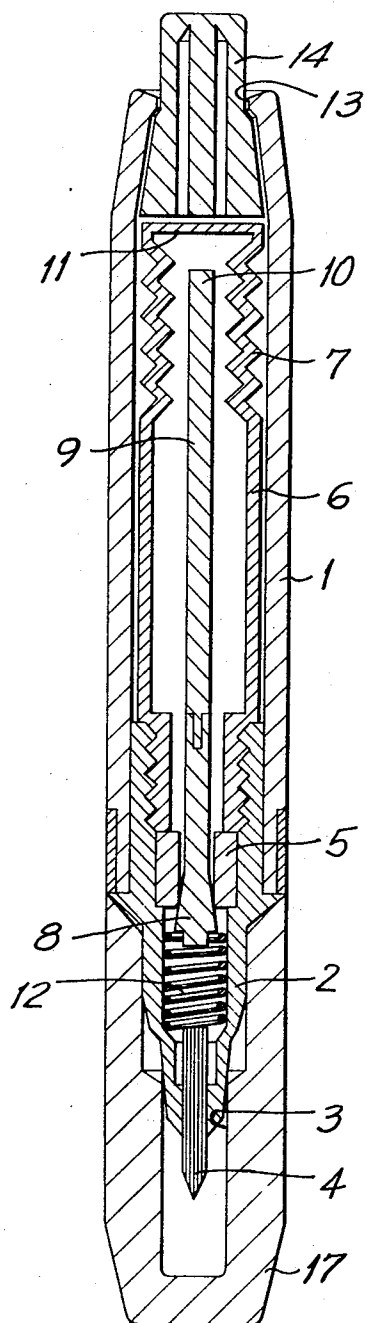
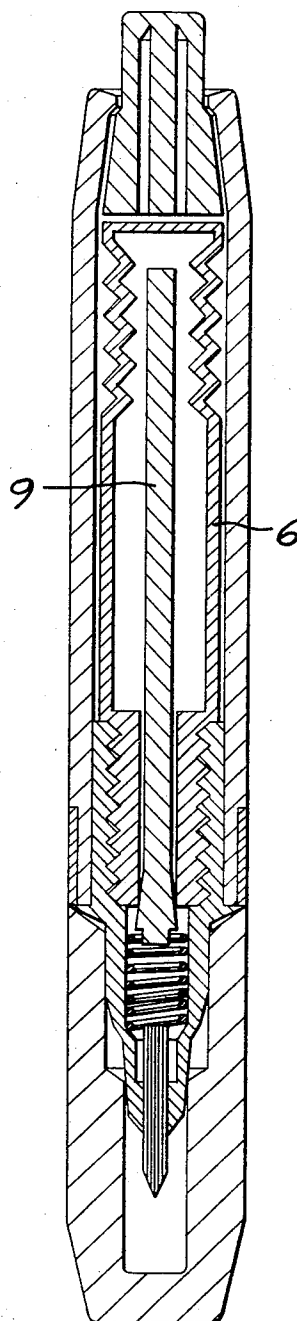


FIG. 2



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FIG. 3

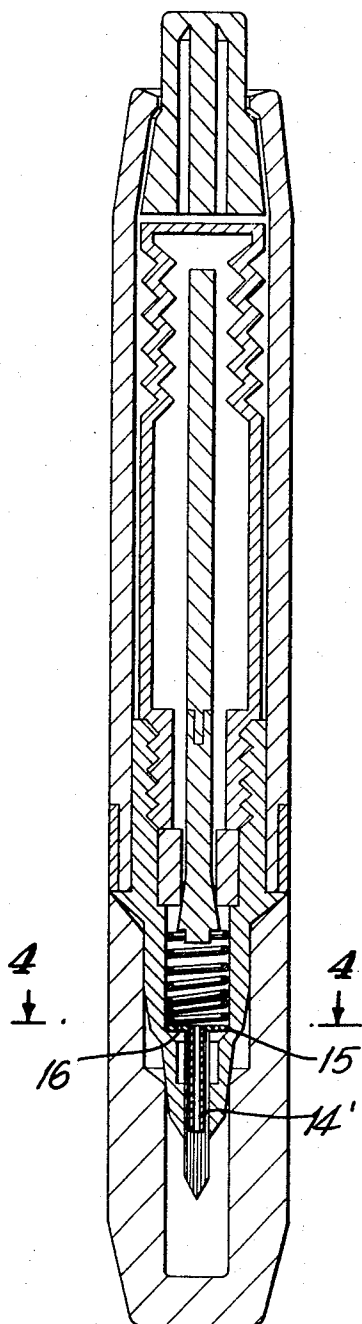
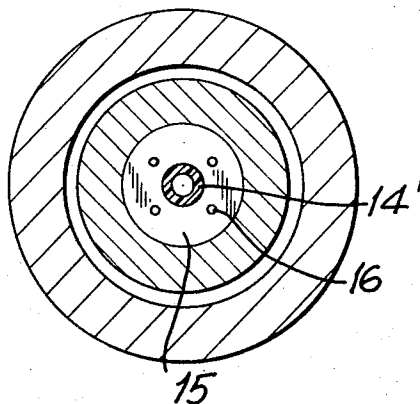


FIG. 4



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EYE-LINER DEVICE

BACKGROUND OF THE INVENTION

1. Field of Invention

This invention relates to a painting instrument, and in particular to a cosmetic painting instrument useful for make-up purposes and including a fluid ink within an ink tank such that a controlled amount of ink can be discharged by operating a control.

2. Prior Art

With respect to instruments of the type with which the invention is concerned, it is usual to form bellows on the top portion of the ink chamber. However, such construction has a number of disadvantages including poor control of ink amount, and ink skip or jump. These disadvantages result from the fact that it is possible to cause a flow of fluid ink merely by compressing the bellows.

SUMMARY OF THE INVENTION

An object of the invention is to provide an improved cosmetic painting instrument for purposes of make-up.

Another object of this invention is to provide such an instrument in which a selected amount of ink may be caused to flow by the pushing of a knocking pin a single time.

In accordance with the invention, a front barrel is fixed to the outer surface of an end portion of an outer barrel. A central bore is provided at an end portion of the front barrel to hold a writing core or core brush. In the middle portion of the front barrel, a cylindrical valve is fitted and an end portion of a tank for make-up ink is located. Bellows are formed at the bottom or other end of the front barrel. A valve is pushed toward the cylindrical valve by a spring. A top portion of a knock bar is integrally fixed with the valve and is positioned adjacent a top portion of the ink tank.

A knock pin is mounted on the ink tank having the bellows. It projects from an opening at the top portion to the outer portion.

According to the invention, a selected amount of ink is discharged and caused to flow into the core portion by pushing the bellows by means of the knocking pin, which is freely mounted on the back end portion of the ink tank. Thereby, ink flooding and ink skipping or jumping is avoided.

The invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawing which shows, by way of example only, preferred embodiments of the invention.

BRIEF DESCRIPTION OF DRAWING

In the drawing:

FIG. 1 is a longitudinal cross-sectional view of an eye-liner device provided in accordance with one embodiment of the invention;

FIGS. 2 and 3 are similar views of other embodiments of the invention; and

FIG. 4 is an enlarged view of a cross-section taken along line 4—4 of FIG. 3.

DETAILED DESCRIPTION

In the drawing, element 1 is an outside barrel, to which a front barrel 2 is fitted and fixed at an end por-

tion of the outside barrel 1. A central bore 3 is provided at an end portion of the front barrel 2.

A replaceable plastic writing core or brush core 4 is fit into and held in the central opening 3. The core has a point and is adapted for the passage of the ink therethrough. A cylindrical valve member 5 is fitted into and fixed in the middle portion of the front barrel 2. Element 6 is an ink tank. An outside wall at one end of the tank is threadably engaged with an inside wall of the other end of the front barrel 2. Element 7 is a bellows provided at the other end portion of the tank 6. As shown, bellows 7 and tank 6 have a collective length with bellows 7 being less than half of this length.

Valve member 8 has a larger diameter than the inside diameter of the cylindrical valve member 5. Member 8 is connected to the knocking bar or rod 9 which can be used to push member 8 forward against the back end of the spring 12. Member 8 is then returned when the knocking bar is released. Positioned above and spaced from the upper portion 10 of the knocking bar 9 is the top portion 11 of the bellows 7. Except when the knocking bar 9 is pushed toward the spring 12, the valve 8 is pushed in the direction of the top portion 11 by the spring 12.

To close the bore of the cylindrical valve member 5, the valve member 8 is urged against the same in the direction of the top portion of the ink tank.

An opening 13 is provided at the top end of the outside barrel 1. A knocking push-button pin 14 projects to the outside via the opening 13. The knocking pin 14 is adapted to engage top portion 11 of the ink tank 6.

If the knocking pin 14 is pushed inwardly, the bellows 7 are elastically compressed by a substantially fixed amount. The knocking bar 9 is displaced and only a substantially fixed amount of ink is pushed out. The ink is discharged from the opening of the cylindrical valve member 5 and passes to the painting core.

When the knocking pin 14 is released, the bellows will be returned to its initial position due to the elasticity thereof. By means of the valve member 8, the opening of the valve member 5 will be closed. It is, therefore, possible to discharge ink to the core portion only by pushing knocking pin 14 and this makes it possible to avoid completely ink flooding and ink jumping or skipping.

With reference to the writing or painting core to be employed with this invention, as shown in FIG. 3, it is possible to increase the rate of ink flow by inserting into the core a vinyl tube or pipe 14'. It is also possible to substitute a soft brush in order to obtain a soft and smooth feeling when the device is used on the skin. It is further possible to remove and replace with elastic material the bellows at the top portion of the ink tank. Still further, it is possible to enlarge the lower end portion of the ink tank 6 as shown in FIG. 2 to avoid the need for valve member 5.

As shown in FIGS. 3 and 4, a perforated washer 15 having a plurality of holes 16 can be positioned at one end of the spring 12 within the front barrel, fluid ink being fed to the core through the plurality of holes. A cap 17 may be employed to cover the point of core 4.

In the above apparatus, an air vent hole may be provided in the ink tank if necessary.

What is claimed is:

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1. A device comprising a tank including a fluid cosmetic ink, compressible means on said tank and having expanded and compressed states to apply pressure selectively to the ink in said tank, said tank having a discharge opening, a valve means to control the flow of ink through said opening and including a rod extending into said tank to be engaged and displaced by said compressible means for displacement of said valve means, an ink passing core, and barrel means supporting said tank and said core in spaced relationship, said core being fixed relative to said rod and such that the rod moves relative to said core.

2. A device as claimed in claim 1 comprising a pin extending displaceably through said barrel means for the engagement and compression of said compressible means, said rod being axially spaced from said compressible means in the expanded state of the latter.

3. A device as claimed in claim 2 wherein said compressible means is a bellows extending from said tank and having collective length therewith, said bellows

being less than half of said collective length.

4. A device as claimed in claim 3 wherein said barrel means includes a first barrel encircling said tank and bellows and a front barrel mounted on the first barrel and supporting said tank in the latter, and a spring in the front barrel to yieldingly resist displacement of said valve means.

5. A device as claimed in claim 4 wherein said valve means enables the flow of ink from said tank to said core when said compressible means is compressed and said rod displaced towards said core.

6. A device as claimed in claim 4 comprising perforated washer in said front barrel to limit the passage of ink to said core.

7. A device as claimed in claim 4 wherein said tank and front barrel are threadably engaged.

8. A device as claimed in claim 1 comprising a tube extending into said core to accommodate an unimpeded flow of ink into the latter.

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