Oct. 8, 1957 A. KATZ 2,808,670

DEVICES HAVING TWO PORTIONS ONE OF WHICH IS A SLEEVE ADAPTED TO BE FIXED ON AND REMOVED FROM THE OTHER PORTION

Filed Nov. 6. 1953 2 Sheets-Sheet 1

Fig.1

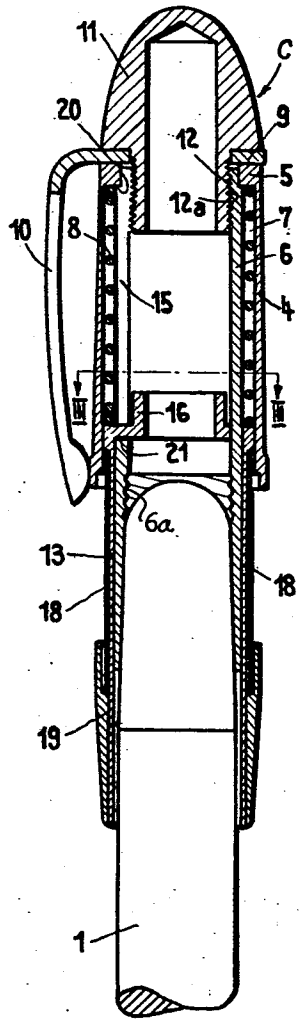

Fig.2

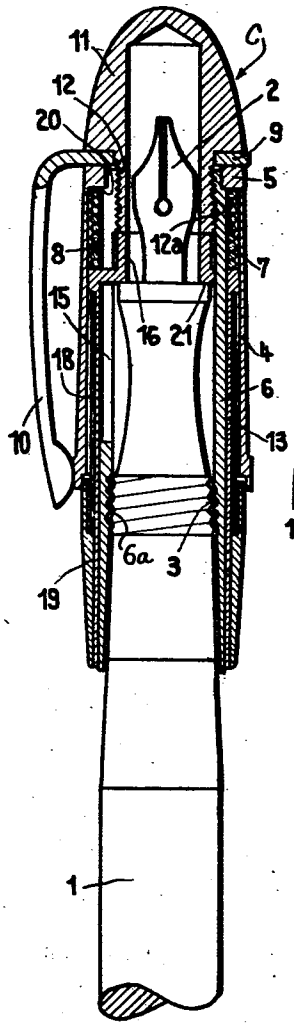

Fig.4

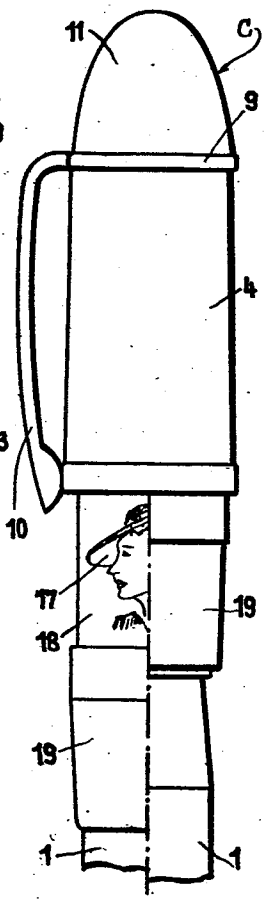

Fig.3

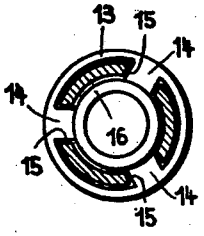

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Fig. 5

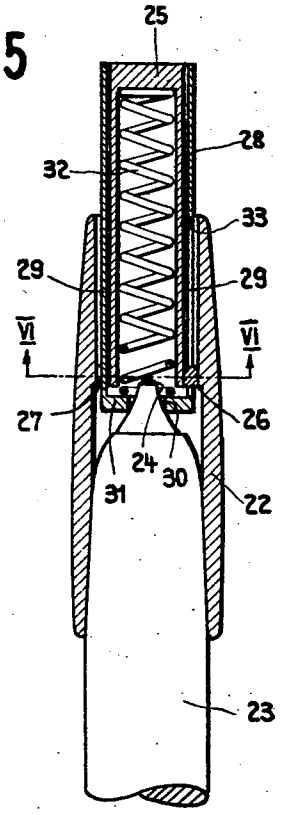
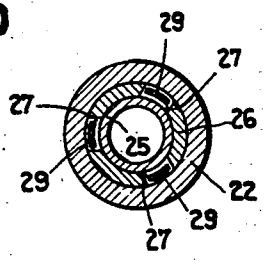


Fig. 6



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United States Patent Office 2,808,670 Patented Oct. 8, 1957

2,808,670

DEVICES HAVING TWO PORTIONS ONE OF WHICH IS A SLEEVE ADAPTED TO BE FIXED ON AND REMOVED FROM THE OTHER PORTION

Armin Katz, Amsterdam, Netherlands

Application November 6, 1953, Serial No. 390,674

5 Claims. (Cl. 40—62)

This invention relates to devices having two portions one of which is a cap adapted to be fixed on and removed from the other portion.

It is an object of this invention to provide at least one sign, for instance a picture, a text, a single word or any design and a movable part on one of these portions, this part being controllable by the other portion of the device for causing appearance and disappearance of the sign on the said one portion. The movable part may have the form of an axially movable hollow cylinder being held in one position by spring load when the cap is taken off the other portion of the device or affixed to a first end of the other portion, but is controlled when the cap is affixed to a second end of the said other portion and displaced to another position, the sign being visible for one position of the movable cylinder and invisible for the other position of the same. The sign may either be brought onto the movable part, in which case the movable part will be controlled by the other portion of the device to appear from and disappear under a covering member or the movable part may be controlled to cover and uncover another part on which the sign is arranged. The sign might be of the illuminated type, which is only visible when illuminated for instance from the interior of a body having transparent walls, in which case the movable part might be an electric contact closing and opening the circuit for an electric illumination. Preferably the movable part is a sleeve or hollow cylinder axially movable but it might also be a turnable member.

Typical embodiments of the device according to this invention are shown by way of example in the accompanying drawings of which

Fig. 1 is an axial section of a fountain pen with a cap mounted on the rear portion of its shaft,

Fig. 2 is an axial section of the same fountain pen with the cap mounted on the other end of the shaft,

Fig. 3 is a section on the line III—III in Fig. 1,

Fig. 4 is an elevation of the fountain pen, a sign appearing in the left and being covered in the right portion of Fig. 4.

Fig. 5 is an axial section of a modified embodiment for a ball pointed pen and

Fig. 6 is a section on the line VI—VI of Fig. 5.

In Figure 2 the pen **2** of the fountain pen is fixed in the shaft **1** of the same. The shaft **1** has a threaded portion **3** near its end carrying the pen **2** onto which the sleeve or cap C is screwed in the position of Fig. 2. In the position of Fig. 1 the cap is mounted on the rear end of the shaft **1**. The cap has an outer cylinder **4** with an inner flange **5**. An inner cylinder **6** is inserted into the outer cylinder **4**. The cylinders **4** and **6** enclose a ring-shaped space **7** for accommodation of a compression spring **8**. A ring **9** of the clip **10** is inserted between the inner flange **5** and a part **11** which is threaded into the cylinder **6** at **12** and **12***a* respectively. The parts **4**, **6** and **9** are held together by means of the part **11**. A portion of a part **13** in the form of a hollow cylinder is mounted in the space **7** for axial movement with respect

to the other parts of the cap. The hollow cylinder **13** has at its upper end three bridges **14** extending through openings **15** of the inner cylinder **6** into the interior of the hollow cylinder **13** where they are interconnected by a ring **16**. The spring **8** bears against the flange **5** with one end and against the upper face of the hollow cylinder **13** with its other end thereby urging the hollow cylinder into the position shown in Fig. 1. A hollow cylinder **18** with a picture **17** is exchangeably mounted on the hollow cylinder **13** and is held thereon by the ring **19** removably mounted on the hollow cylinder **13**. The cylinder **18** may be made of paper, card board, artificial material, metal or another suitable material. The picture may be painted, printed, engraved or produced by any other method on the hollow cylinder. The cylinder **18** might be dispensed with and the picture might appear directly on the hollow cylinder **13**. Instead of one or more pictures any other sign asked for by the buyer, for instance a text or a single word might be provided on the cylinder.

The parts of the cap are assembled in the following manner: First the hollow cylinder **13** is brought onto the inner cylinder **6** from top in Fig. 1 whereby the bridges **14** are inserted into the openings **15** of the cylinder **6**. Thereafter the spring **8** is put in place, and the outer cylinder **4** is slid over the same until its inner flange **5** seats on the shoulder **20** of the cylinder **6**. Now the ring **9** of the clip **10** is put onto the flange **5** and the part **11** is threaded into the cylinder **6**.

With the parts of the cap in the position shown in Fig. 1 the spring **8** presses the bridges **14** of the hollow cylinder **13** against the lower edge **21** of the openings **15** in the cylinder **6**. The cylinder **18** with the picture **17** extends from the other parts of the cap so that the picture is visible (left half of Fig. 4). The cap C is mounted onto the rear end of the shaft **1** and the other end of shaft **1** carrying the pen **2** is uncovered. The fountain pen is ready for writing. If the cap C is taken off the rear end of shaft **1** and is slid over the other end of the shaft **1** for protection of the pen **2** the shoulder **21** of the shaft first touches the bridges **14** and then, on further relative movement of the shaft and the sleeve in the same direction the ring **16** together with the cylinder **13** and the picture **17** is moved towards the part **11** until it abuts against the lower edge of the part **11**. During this movement the spring **8** has been compressed. Thus the shaft **1** controls the cylinder **13** which is axially movable with respect to the other parts of the cap. The cap or the shaft **1** is now rotated in order to engage the threaded portion **6***a* of the cap with the threaded portion **3** of the shaft **1**. The cap and the shaft **1** are now in the relative position shown in Fig. 2 and the ring **16** tightly engages the shoulder **21** and the lower face of the part **11** so that no ink may leak to the outer portions of the sleeve. The picture **17** has now moved to the ring space **7** where it is hidden under the cylinder **4** (right half of Fig. 4). If the fountain pen is to be transformed from the position shown in Fig. 2 into the position shown in Fig. 1 the cap is screwed off the shaft **1** and in removing the cap from the shaft **1** the latter controls the cylinder **13** so that the latter is pushed downwards together with the cylinder **18** and the picture **17** under the action of the spring **8**, whereby the picture again becomes visible. By the appearance of the picture which is always visible during writing, the writer will be inspired. The cap might, instead of being threaded onto the shaft **1** simply be slipped onto the same. Of course more or less than three bridges **14** might be provided.

Figures 5 and 6 illustrate a ball pointed pen. As seen in Fig. 5 the cap of this modified device has a sleeve **22** slipped onto the ball pointed end of the shaft **23** of the pen and covers and protects the ball **24**. The sleeve **22**

might be screwed onto the shaft 23. A cylindrical part 25 closed at its upper end has an outer flange 26 with slots 27. The flange 26 is fixed to the part 22 of the sleeve by screwing, welding, soldering or pressing. The part 25 is enclosed by a hollow cylinder 28 split at its lower end to form three extensions 29. These extensions extend through the slots 27 into the sleeve 22 of the cap. A disk 31 with a central opening 30 is fixed to the lower end of the extensions 29 for instance by screwing, welding or soldering. A compression spring 32 housed within the part 25 of the cap is held between the bottom of the part 25 and the disk 31 and tends to push the hollow cylinder 28 downwards in Fig. 5. The sign, for instance a picture, a text, a word or anything else is provided on the outer face of the cylinder 25. As described above for the pen shown in Figures 1 to 4 the sign might be brought directly onto the part 25 or onto a sleeve which would exchangeably be mounted on the part 25. In the position of Fig. 5, that is when the cap is fixed on the shaft 23, the tip of the shaft carrying the ball 24 projects through the opening 30 bearing against the lower edge of the opening 30 thereby lifting the cylinder 28 in spite of the action of the spring 32. In this position the cylinder 28 hides the sign on the outer surface of the part 25. If, however, the cap is taken off the shaft 23 the latter is freed from the cylinder 28 so that the disk 31 and consequently the cylinder 28 is moved by the spring 32 downwards until the shoulder 33 formed between extensions 29 of the cylinder 28 abuts against the flange 26. By this movement the cylinder 28 has uncovered the sign which is also visible if the cap is slipped onto the rear end of the shaft 23. If the cap is again brought onto the ball pointed end of the shaft 23 the cylinder 28 forming a part which is axially movable with respect to the other parts of the cap, is controlled by the shaft 23 and is urged into the position shown in Fig. 5 wherein it again hides the sign on the part 25 of the cap.

In both embodiments the sign appears when the cap is being removed from the end of the shaft carrying the pen or the ball and remains visible during the use of the writing ingredient that is when the cap is slipped onto the rear end of the shaft. The sign and/or different parts of the cap might, however, be so arranged that the sign appears whenever the cap is taken off the rear end of the shaft and is fixed to the other end (carrying the pen or the ball) of the shaft.

In the first embodiment (Figs. 1 to 4) the sign appears at the lower end, in the second embodiment (Figs. 5 and 6) at the upper end of the cap. The sign might, however, appear on any other portion of the cap. It might, for instance only be visible through a window. A magnifying glass might be provided for magnifying the sign.

In still another embodiment of this invention the part of the cap which is movable with respect to the other parts of the cap and which makes the sign or picture appear and disappear may be turnably mounted in the cap.

Instead of a writing implement a lip-stick or any other device having a removable cap might be designed according to this invention.

The sign might be in the form of light signals. In this case the relatively movable part may be an electric contact.

The parts of the device may be made of any suitable material.

Instead of providing the relatively movable part and the sign on the cap these might be arranged on the shaft of the device.

The cap might be so designed that it may be fixed on the shaft of devices which are already on the market or in general use.

What I claim is:

1. A writing instrument having a cap portion and a shaft portion adapted to be inserted into and removed from the said cap portion, the said cap portion having a fixed part comprising an inner sleeve adapted to take up the said shaft portion and an outer sleeve, a space of ring-shaped cross section being formed between the said inner and outer sleeve, the said sleeves being interconnected at one end thereof and the said space of ring-shaped cross section being closed at the connecting end of the sleeves and open at the other end of the sleeves, a cylindrical mantle axially displaceable in the said space of ring-shaped cross section, axially extending apertures in the said inner sleeve, bridges on the said mantle extending radially through the said apertures into the interior of the said inner sleeve, a ring connected to the inner ends of the said bridges, the said bridges being axially displaceable in the said apertures thereby allowing axial displacement of the said cylindrical mantle and of the said ring, spring means between the said fixed part and the said cylindrical mantle urging the said mantle into an outer end position for which an area carrying a sign of the mantle projects from the said space of ring-shaped cross section, and the said ring being adapted for operatively engaging the said shaft portion when the same is inserted into the said cap portion, the ring and the cylindrical mantle connected therewith being held in an inner end position by the shaft portion inserted into the cap portion, the said area carrying a sign being covered by the said outer sleeve when the said mantle is held in its inner end position.

2. A writing instrument having a cap portion and a shaft portion adapted to be inserted into and removed from the said cap portion, the said cap portion having a fixed part comprising an outer sleeve and an inner sleeve, one end of the said inner sleeve being connected to the outer sleeve by bridge portions and the other end of the inner sleeve projecting axially from the said outer sleeve, a space of ring-shaped cross section between the said outer and inner sleeve, a third sleeve having a cylindrical wall portion and a bottom portion, axially extending apertures in the said wall portion, the said third sleeve being axially displaceably inserted in the said space between the said outer and inner sleeve whereby the said bridge portions project through the said apertures, a bottom portion on the said inner sleeve at its end axially projecting from the said outer sleeve, and the said bottom portion of the said third sleeve situated in front of the open end of the said inner sleeve, a pressure spring inserted between the bottom portion of the said inner sleeve and the bottom portion of the said third sleeve, the said third sleeve being held in a first end position by the said pressure spring in which the said third sleeve uncovers an area carrying a sign of the said inner sleeve, and the bottom portion of the said third sleeve being adapted for operatively engaging the said shaft portion for keeping the said third sleeve in a second end position, when the said shaft portion is inserted into the said cap portion, the said third sleeve covering the said area carrying a sign of the said inner sleeve in its second end position.

3. A device having a cap portion and a shaft portion adapted to be inserted into and removed from the said cap portion, the said cap portion comprising an inner sleeve and an outer sleeve fixedly attached to each other, a space of ring-shaped cross section being formed between the said inner and outer sleeve, a third sleeve axially displaceable in the said space of ring-shaped cross-section, spring means urging the said third sleeve into a first axial end position and control means connected to the said third sleeve adapted for operatively engaging the said shaft portion when the same is inserted into the said cap portion, the said control means keeping the said third sleeve in a second axial end position when the said shaft portion is inserted into the said cap portion, an area carrying a sign on one of the said sleeves, the said area carrying a sign being covered and not visible for one of the said end positions of the said third sleeve and the said area carrying a sign being uncovered and visible for the other end position of the said third sleeve.

4. A device having a cap portion and a shaft portion adapted to be inserted into and removed from the said cap portion, one of the said portions having a surface carrying a sign, a displaceable part and a first control member operatively connected therewith, the said part being displaceable on the said one portion between a first and a second end position, means for keeping the said displaceable part and first control member in the said first end position, a second control member on the other of the said portions, the said first and second control members being adapted for operatively engaging each other when the said shaft portion is inserted into the said cap portion, the said first displaceable control member and the said displaceable part operatively connected together and being in the said second end position under control of the said second control member when the said shaft portion is fully inserted into the said cap portion, the said sign being visible for one of the said end positions of the displaceable part and the said sign being not visible for the other end position of the displaceable part.

5. A device having two portions adapted to be attached to and separated from each other, one of the said portions having a first part and a second part, an area carrying a sign on one of the said parts, first control means

operatively connected with one of the said first and second parts, second control means on the other of said portions, the said first and second control means operatively engaging each other when the said portions are attached to each other thereby keeping the said parts in a first relative position, and means in the said one portion for keeping the said parts in a second relative position when the portions are separated from each other, the said area carrying a sign on one of the said parts being visible for one of the said relative positions and the said area carrying a sign being covered by the other of the said parts for the other of the said relative positions.

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