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(54) Dispensing apparatus.

(57) Dispensing apparatus (10) comprising an elongate support member (14) of semi-circular channel section with a bar (16) of complementary circular section pivotally mounted within the member (14) adjacent the lower ends of the member (14) and bar (16). The bar (16) may be pivoted away from the member (14) to permit a tube of material to be placed therebetween such that when the bar (16) is moved back towards the member (14) the tube is squeezed dispensing material therefrom. A support (20) is pivotally mounted on the bar (16) to maintain the bar in a required position relative to the member (14).

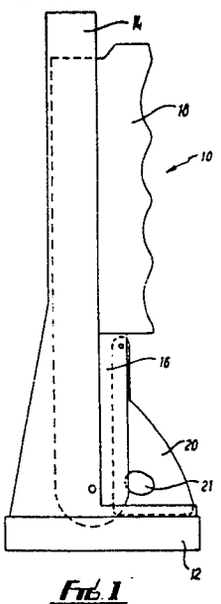

Fig. 1

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Dispensing Apparatus

This invention relates to dispensing apparatus and particularly but not exclusively to apparatus for dispensing products from tubes.

Many materials are provided in tubes, such as toothpaste, cosmetics, medication, and D.I.Y. and industrial products, for example glue or mastics. Tubes are often initially squeezed from other than at their closed ends and thus the material therein is often wasted in the closed end of the tube, or a considerable effort is required to obtain this material. Further, in the case of toothpaste tubes, these can often be messy and can clutter bathrooms.

According to the present invention there is provided dispensing apparatus comprising means for supporting an article from which material is to be dispensed, and elongate means movably mounted on the supporting means such that, when the elongate means is in a first position on the supporting means, the article can be placed in the apparatus, but movement of the elongate means to a second position squeezes the article, dispensing material therefrom.

Also according to the present invention there is provided dispensing apparatus comprising means for supporting an article from which material is to be dispensed, and elongate means movably mounted adjacent one end on the supporting means such that, when the other end of the elongate means is spaced from the supporting means, the article can be placed between the supporting means and the elongate means, and movement of the other end towards the supporting means squeezes the article, dispensing material therefrom.

The supporting means is preferably contoured to constrain the article during movement of the elongate means theretowards, and the latter is preferably of a substantially complementary configuration.

The supporting means preferably has a channel member shaped to occupy an upstanding position in use, with the elongate means being mounted towards the lower end such that material is upwardly dispensed.

The elongate means may be biased towards the supporting means and may be mounted thereon by means of a spring.

Preferably the channel member presents a substantially semi-circular section along a substantial part of its length into which the article fits. Alternatively the channel member may be of rectangular section. A grip may be provided on the elongate means.

Further, means may be provided for mounting the supporting means on a fixture.

In a further alternative embodiment handle means are respectively provided on the supporting means and on the elongate means and are pivotally movable relative to each other to effect the movement of the elongate means relative to the supporting means to squeeze the article dispensing material therefrom.

Also according to the present invention there is provided dispensing apparatus comprising two elongate members each movably mounted whereby the elongate members are movable between a first position in substantially parallel alignment and a second position in a diverging relation, such that an article from which material is to be dispensed can be placed between the elongate members when in the second position, and movement of the elongate members towards the first position squeezes the article, dispensing material therefrom.

Preferably one or each of the elongate members is contoured to constrain the article during movement of the members, and desirably the elongate members are channel shaped.

Preferably the elongate members are biased together. The elongate members are desirably mounted on the support member by means of springs.

The elongate members may be decoratively formed, and may be in the shape of an animal's ears.

Embodiments of the present invention will now be described by way of example only with reference to the accompanying drawings in which:-

Fig 1 is a side view of a first dispensing apparatus according to the invention;

Fig 2 is a perspective front view of the apparatus of Fig 1;

Fig 3 is a side view of a second dispensing apparatus according to the invention;

Fig 4 is an end view of a third dispensing apparatus according to the invention;

Fig 5 is a side view of the apparatus of fig 4;

Fig 6 is a side view of a fourth dispensing apparatus according to the invention; and

Fig. 7 is a front view of the apparatus of fig. 6.

Figs 1 and 2 of the drawings show a dispenser 10 suitable for dispensing material such as toothpaste from a tube. The dispenser 10 comprises an annular base 12. Upstanding from the base 12 is an elongate support member 14 of semi-circular channel section of a diameter substantially equal to the inner diameter of the base 12. The outside of a lower part of the member 14 steplessly increases in radius towards the base 12 connecting with the latter at the outer diameter thereof.

An elongate member in the form of a bar 16 of circular section is pivotally mounted adjacent a lower end on the member 14 adjacent the lower end thereof. The bar 16 is of a diameter to enable nesting in the channel of the member 14. A grip 18 is formed on an upper part of the bar 16, on the side thereof remote from the member 14.

A support 20 is pivotally mounted adjacent an upper end thereof on the bar 16 immediately below the grip 18. The support 20 comprises a strip of material of greater width towards its free end. A hole 21 is provided through the support 20 enabling it to be gripped during use. The support 20 can engage in a groove 22 provided in the base 12 extending away from the location of the member 14.

In use, the support 20 is pulled outwards from the groove 22 and the bar 16 pivoted away from the member 14. A tube of toothpaste is inserted nozzle upwards between the member 14 and the bar 16. The bar is then pushed towards the member 14 to rest against the tube, the support 20 engaging in the groove 22. When toothpaste is required the cap is removed from the tube and toothpaste is dispensed by applying pressure on the grip 18 to move the bar 16 against the tube. When it is required to remove a tube, the support 20 and bar 16 are again pulled away from the member 14 allowing the tube to be lifted out.

There is thus described a toothpaste dispenser with a number of advantageous features. The base 12 enables the dispenser to stand freely even when containing a full tube. The support 20 prevents the bar 16 from inadvertently falling away from the tube. The apparatus is of simple design and can thus be inexpensively and robustly manufatured. The pivotting action of the bar 16 and the shape of the member 14 causes a very high proportion of toothpaste in a tube to be emptied.

Various modifications may be made without departing from the scope of the invention. For example a wall mounted version of the dispenser could be provided. Such a dispenser could incorporate holes for holding toothbrushes. It is to be appreciated that the apparatus may be used with many products other than toothpaste and the size of the article can be designed for the respective tube size.

The elongate member may have a rectangular section or may take any of a number of other shapes, with the bar also taking a complementary shape. The dispenser may be made from plastics material or wood and may have decorative materials or advertising material applied to it. A different method other than the support could be provided to prevent the bar dropping away from the tube.

Fig 3 shows a dispenser in which the grip 18 is mounted on an end of a length of sprung strip 32. The other end of the strip 32 is coiled and rigidly mounted to the base 12. The strip 32 urges the grip 18 towards the member 14, thus in use holding a tube in position.

Figs 4 and 5 show a dispenser 40 comprising a base 42 formed from a length of channel section, the side walls of which uniformly decrease in height towards one end 44. A press member 46 is pivotally mounted within the channel of the base 42 adjacent the end 44. The member 46 comprises a planar member 48 providing a sliding fit within the base channel and an upstanding handle 50 formed of upwardly decreasing side wall channel section. A grip member 52 is provided with a first portion 54 pivotally mounted at one end across the base 42, extending part way towards the end 44. The portion 54 connects at an elbow 56, which is pivotally mounted within the channel of the handle 50, with a second longer portion 58 extending angularly upwardly and away from the end 44.

In use, a full tube of material is slid onto the base 42 such that its closed end is adjacent the end 44. To dispense material the handle 50 and member 52 are moved together and the press member 46 is moved towards the base 42 in a scissors action about the pivotal mounting of the elbow 56 on the handle 50, thereby squeezing the tube. If required, projections can be provided on the base 42 and/or member 48 to grip the tube and prevent it sliding, and a lip could be provided on the other end of the base 42 to engage the end of the tube.

Figs 6 and 7 show a further dispenser 60 in the shape of a rabbit which is particularly suited for dispensing toothpaste for children. Each of the rabbit's ears 62 and a respective integral portion of the head is formed to be separate from the rest of the body but is connected thereto by springs (not shown) which urge the ears 62 towards the rest of the body and together.

In use the ears 62 are pulled apart and a tube with its opening pointing upwardly is inserted therebetween. The springs restrain the tube in this position and material can be dispensed from the tube by squeezing the ears 62 together.

The front paws 64 of the rabbit extend outwardly so as to form a loop in which a toothbrush can be supported. The rabbits tail 66 forms a handle of a drawer 68 within the rabbit in which, for example, a child's tooth may be stored immediately after it has fallen out. If required the inside faces of the ears 62 may be curved to retain the tube therebetween. Also the ears may be differently mounted on the rest of the body.

Claims

1. Dispensing apparatus (10) comprising means (14) for supporting an article from which material is to be dispensed, characterised in that the apparatus also comprises elongate means (16) movably mounted on the supporting means (14) such that, when the elongate means (16) is in a first position on the supporting means (14), the article can be placed in the apparatus (10), but movement of the elongate means (16) to a second position squeezes the article, dispensing material therefrom.

2. Dispensing apparatus (10) comprising means (14) for supporting an article from which material is to be dispensed, characterised in that the apparatus also comprises elongate means (16) movably mounted adjacent one end on the supporting means (14) such that, when the other end of the elongate means (16) is spaced from the supporting means (14), the article can be placed between the supporting means (14) and the elongate means (16), and movement of the other end towards the supporting means (14) squeezes the article, dispensing material therefrom.

3. Apparatus according to claim 2, characterised in that the supporting means (14) is contoured to constrain the article during movement of the elongate means (16) theretowards.

4. Apparatus according to claim 3, characterised in that the elongate means (16) is of a substantially complementary configuration to the supporting means (14).

5. Apparatus according to claim 3 or claim 4, characterised in that the supporting means (14) has a channel member shaped to occupy an upstanding position in use, with the elongate means (16) being mounted towards the lower end such that material is upwardly dispensed.

6. Apparatus according to any of the preceding claims, characterised in that the elongate means (16) is biased towards the supporting means (14).

7. Apparatus according to claim 6, characterised in that the elongate means (16) is mounted on the supporting means (14) by means of a spring.

8. Apparatus according to any of the preceding claims, characterised in that handle means (50,52) are respectively provided on the supporting means (42) and the elongate means (46) and are pivotally movable relative to each other to effect the movement of the elongate means (46) relative to the supporting means (42) to squeeze the article dispensing material therefrom.

9. Dispensing apparatus, characterised by two elongate members (62) each movably mounted whereby the elongate members (62) are movable between a first position in substantially parallel alignment and a second position in a diverging relation, such that an article from which material is to be dispensed can be placed between the elongate members (62) when in the second position, and movement of the elongate members (62) towards the first position squeezes the article, dispensing material therefrom.

10. Apparatus according to claim 9, characterised in that the elongate members (62) are biased together.

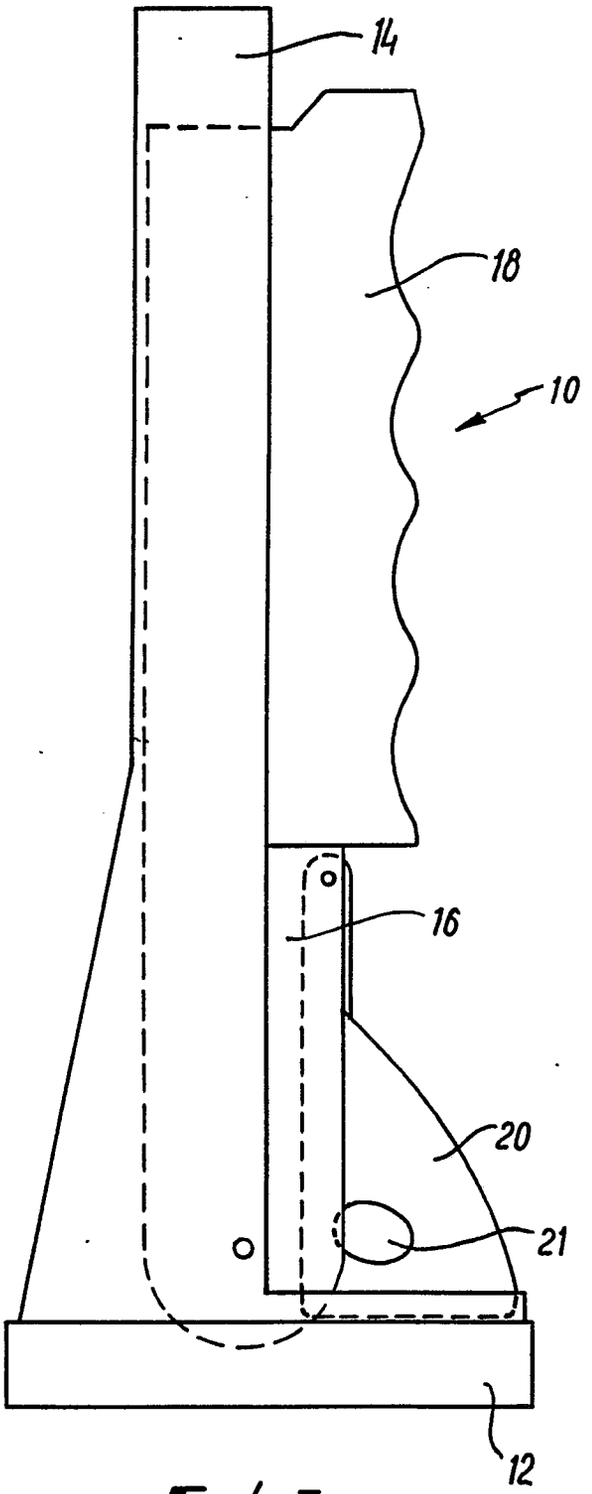

FIG. 1

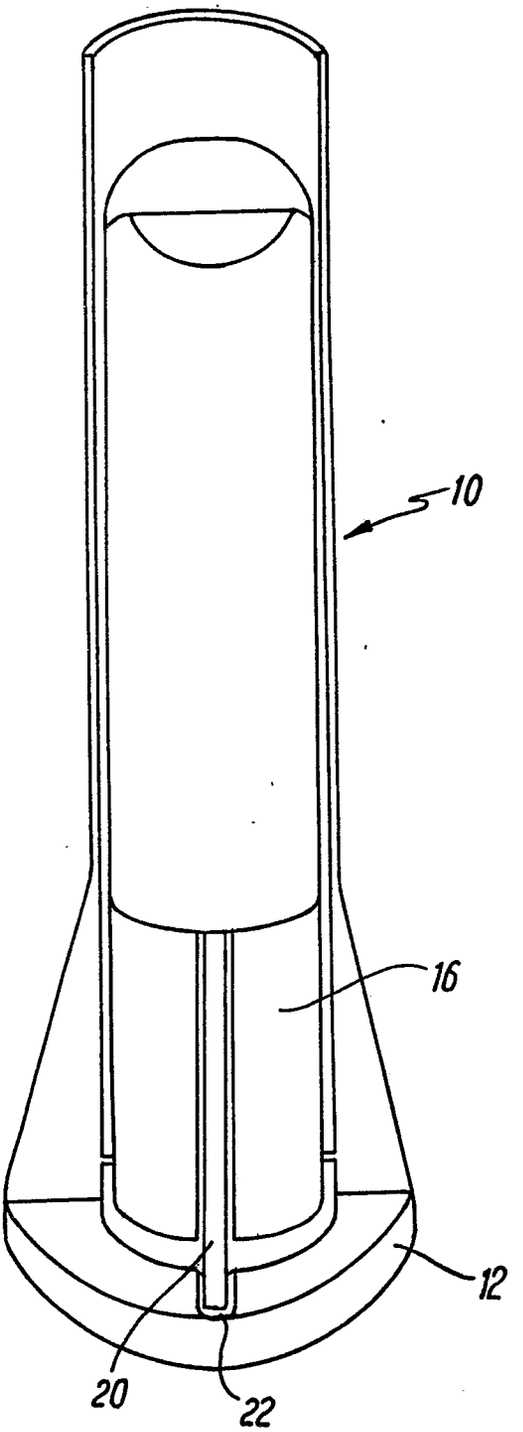

FIG. 2

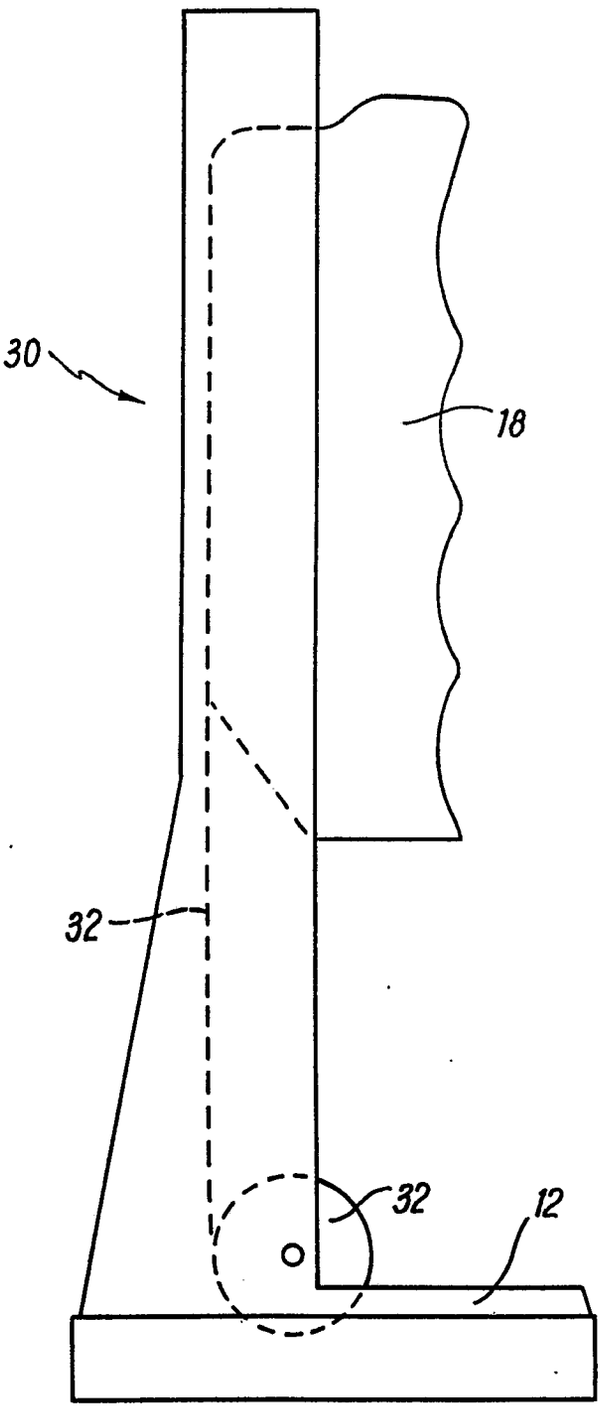

FIG. 3

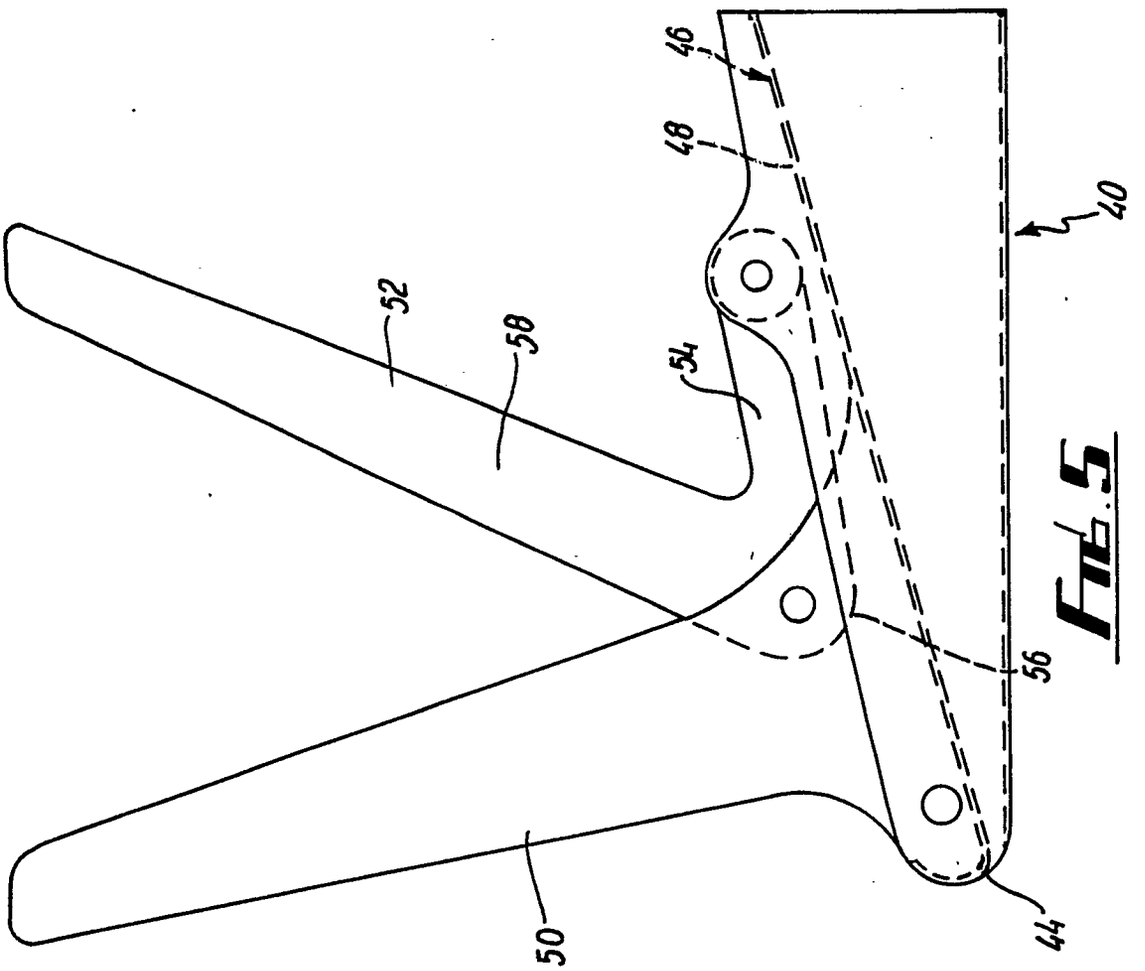

FIG. 5

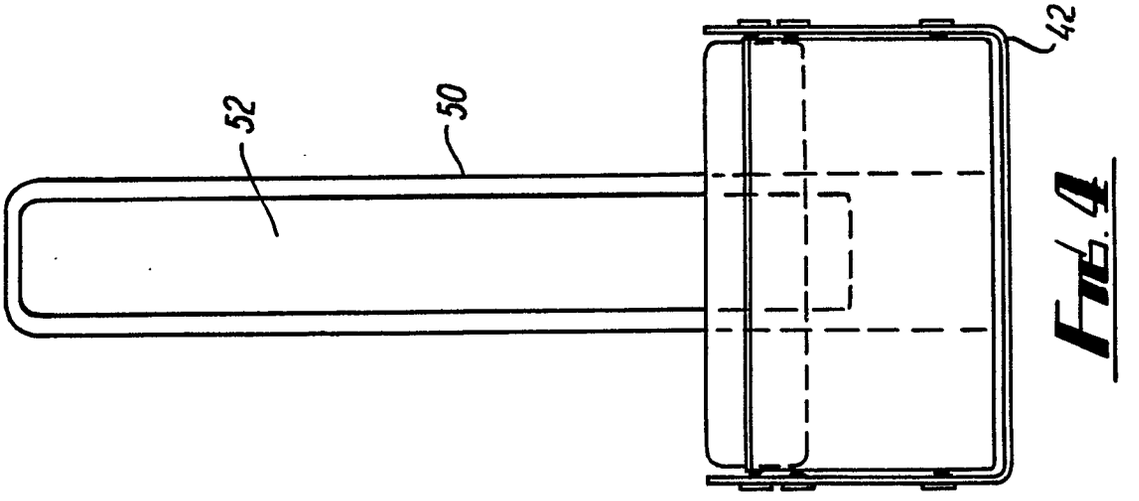

FIG. 4

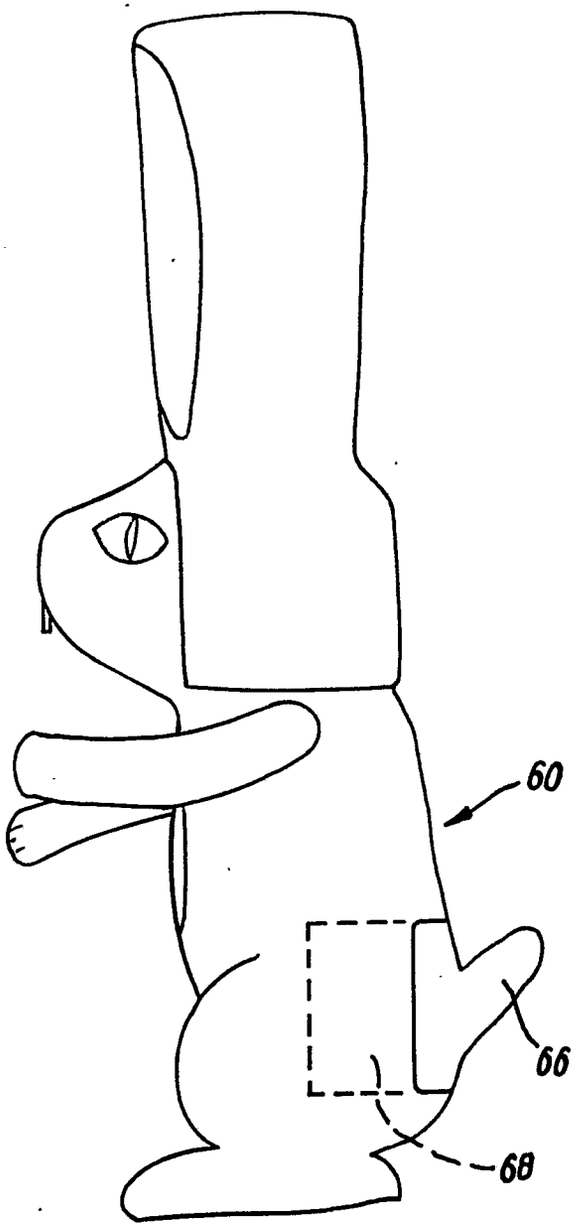

FIG. 6

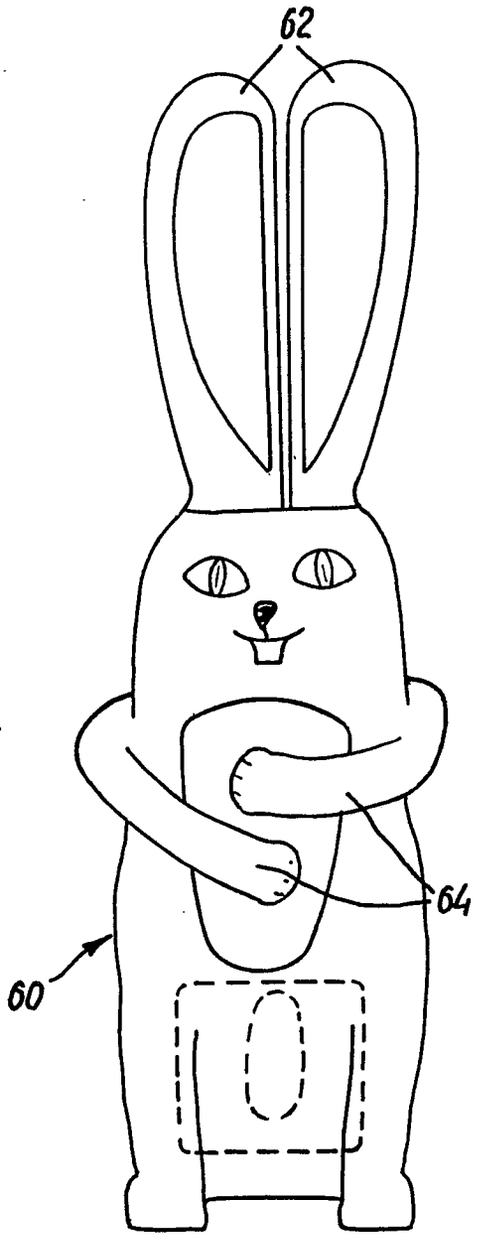

FIG. 7