

- [54] **DENTAL FLOSS DISPENSER**
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- [22] Filed: **Jan. 5, 1972**
- [21] Appl. No.: **215,532**

**Related U.S. Application Data**

- [63] Continuation-in-part of Ser. No. 54,253, July 13, 1970, abandoned.
- [52] U.S. Cl. .... **132/91**
- [51] Int. Cl. .... **A61c 15/00**
- [58] Field of Search ..... 132/91, 92

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[57] **ABSTRACT**

This invention relates to a spool-type dental floss dispenser comprising a body portion containing a retaining cell for dental floss and an elongated finger portion from which the floss is dispensed. The floss is threaded through the dispenser and at one point exits to pass over braking means and serrated means and reenters into the finger portion to provide control of the floss during use. In other modifications thereof, the floss does not exit, and control during use is provided by braking means within the dispenser.

**2 Claims, 8 Drawing Figures**

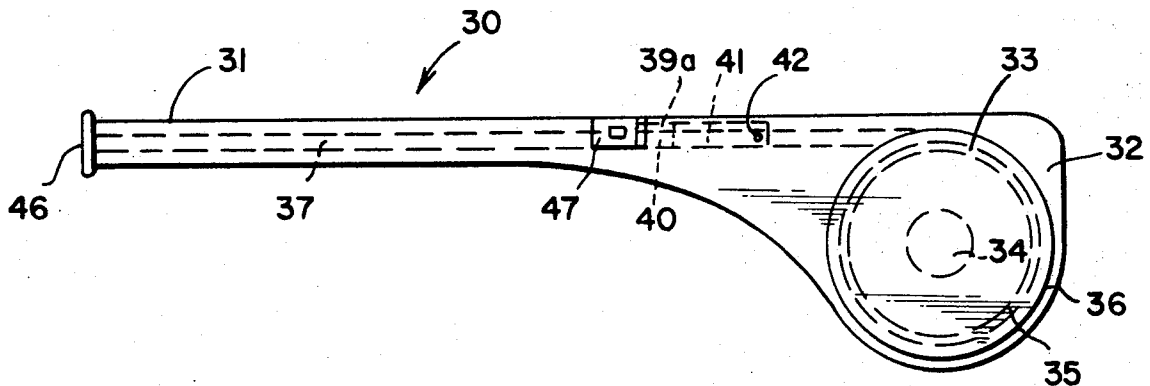


FIG. 3

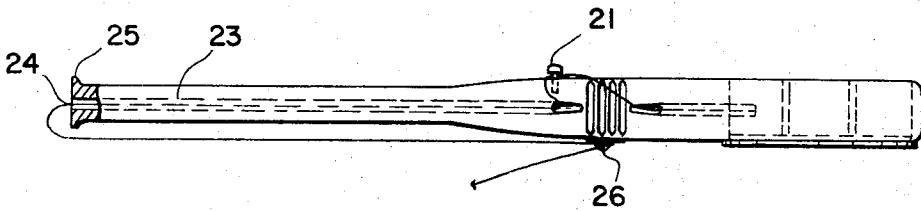


FIG. 2

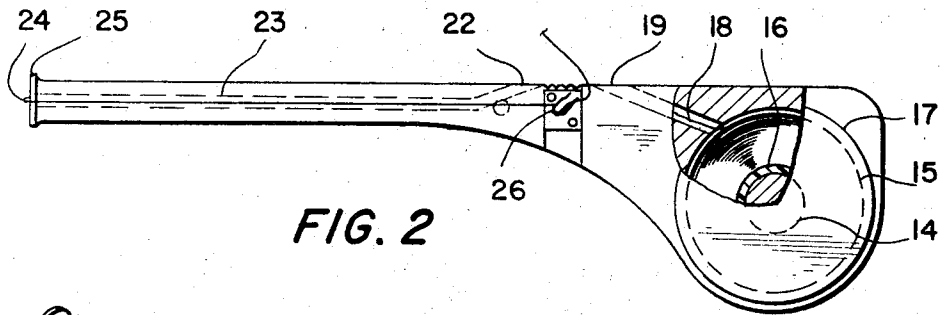
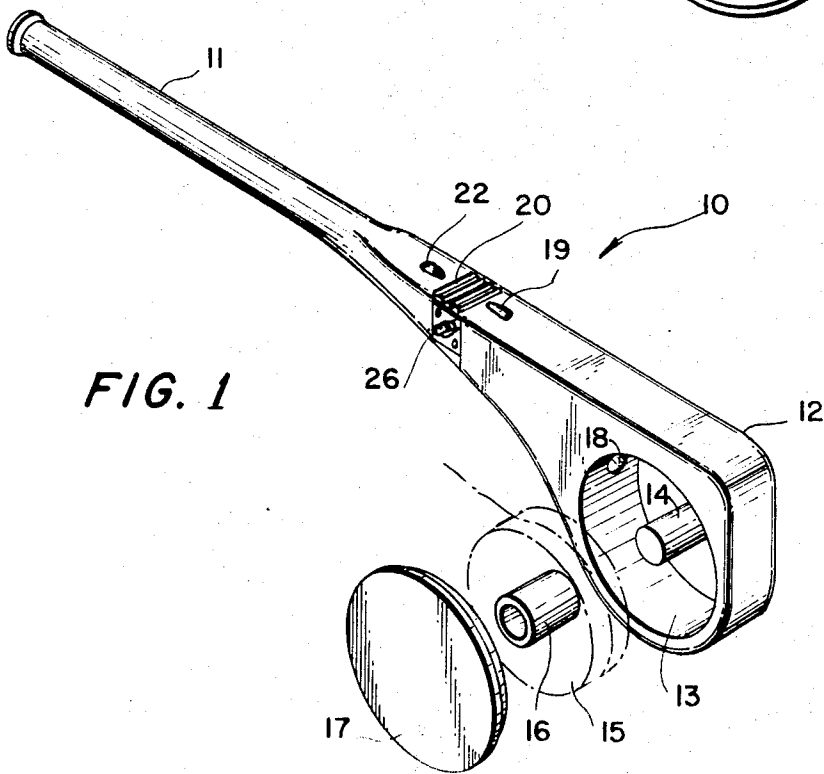


FIG. 1



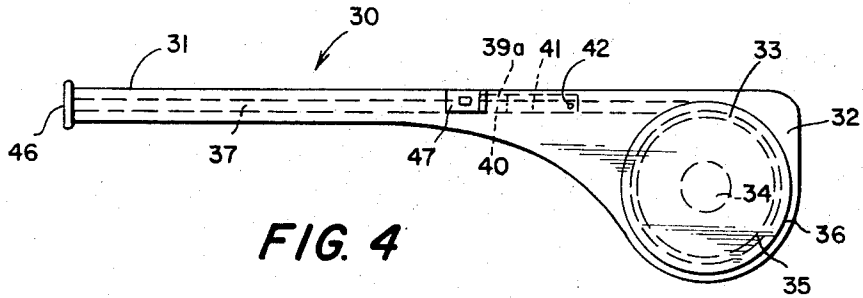


FIG. 4

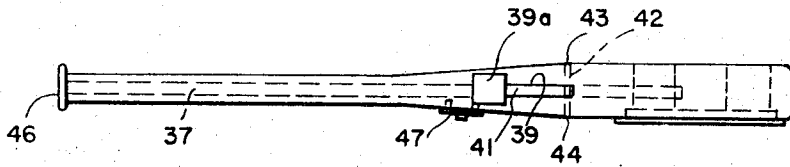


FIG. 5

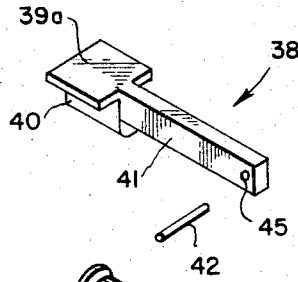


FIG. 6

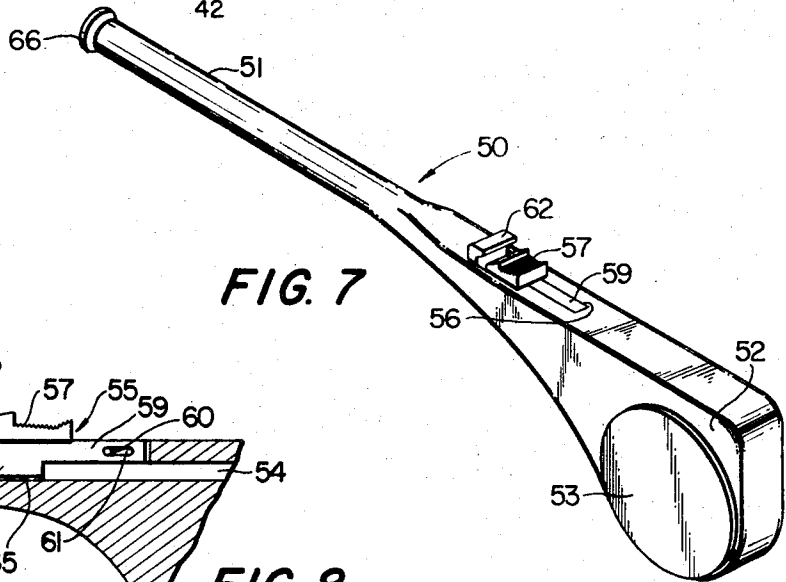


FIG. 7

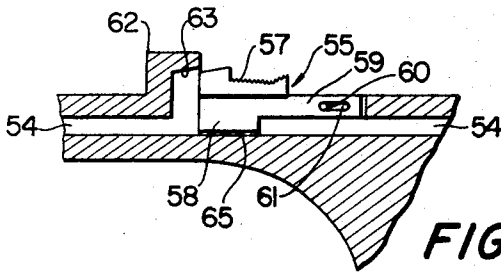


FIG. 8

## DENTAL FLOSS DISPENSER

This application is a continuation-in-part of copending application Ser. No. 54,253 filed July 13, 1970, now abandoned.

This invention relates to an improved dental floss holder and dispenser. More particularly, it relates to a spool-type dispenser having ease of handling and use and providing a simplified construction.

Various dispensers have been available for dental floss and the like. However, with the conventional types, it is difficult to hold the dental floss in tension during use, without comparatively complicated means which increase the cost of the dispenser.

An object of this invention is to provide a dental floss dispenser having ease of handling and use and a simplified construction.

Another object of this invention is to provide a dental floss dispenser having an extended finger which can be inserted into the mouth of the user and which can have dental floss dispensed therefrom without the need for inserting the hands into the mouth.

Another object of this invention is to provide a dental floss dispenser which has means for holding the dental floss under tension during use.

A further object of this invention is to provide a dental floss dispenser having a spool-type reservoir of dental floss having means for easy threading of the floss through the dispenser.

Another object of this invention is to provide a dental floss dispenser having accurate control of the amount of dental floss dispensed along with positive holding action of the floss during use thereof.

Other features and advantages of the invention will appear from the following detailed description of specific embodiments thereof taken in connection with the drawings wherein:

FIG. 1 is a perspective view of the dental floss dispenser of this invention;

FIG. 2 is a side elevational view of the dispenser;

FIG. 3 is a top view of the dispenser;

FIG. 4 is a side elevational view of one modification of the dispenser;

FIG. 5 is a top plan view of the modification shown in FIG. 4;

FIG. 6 is a detail showing the braking mechanism of the modified dispenser shown in FIG. 4;

FIG. 7 is a perspective view of a second modification of the dispenser; and

FIG. 8 is a partial sectional view showing the details of the braking mechanism of the modified dispenser shown in FIG. 7.

The dental floss dispenser 10 of FIGS. 1-3 is a unitary body comprising an extended finger section 11 and a spool section 12. The dispenser can be made from an injection moldable plastic material as a throwaway model or from a metal such as stainless steel as a more permanent type model for use by dentists, etc.

The spool section 12 comprises a retaining cell 13 and a rod 14 over which a spool of dental floss 15 contained on a reel 16 can be fitted. A cap 17 fits into the side of the cell 13 to retain the floss therein.

The dental floss passes from the retaining cell through a bore hole 18 in the body of the dispenser and exits at 19, passes over serrations 20, down around a braking pin 21 (FIG. 3), then back through the entrance 22 of another bore hole 23 which passes through

the length of finger 11. The floss exits from the opening 24 of the finger 11. The end of the finger 11 comprises an annular smooth flange 25. A cutter 26 is provided on the dispenser near the serrations on the opposite side from the braking pin.

The dispenser is used by pulling a length of the floss (about 2 inches) from the hole 24, while at the same time releasing pressure of the thumb over the serrations 20 to permit the floss to be withdrawn. The braking pin 21 acts as a braking device during withdrawal. When the desired amount of floss is withdrawn, the thumb is again depressed over the serrations to hold the floss taut during use. The finger 11 is inserted with one hand into the mouth and the end of the floss is gripped with the fingers of the other hand, thereby enabling the floss to be worked between the teeth without putting the fingers into the mouth. As the floss is used, the teeth will have a tendency to shred the floss. When this occurs, the thumb is again released and the floss pulled gently again to withdrawn an additional length of floss. The used floss may be cut by bringing the floss under the cutter 26 and pulling sharply upward.

Although it is contemplated that the throwaway type dispenser will not require replacement of a spool of floss, in the permanent type dispenser, the empty spool may easily be replaced. This is done by removing the retaining cap 17, which may be of the screw type or press fit type. The used spool can then be removed and a full spool of floss be inserted and threaded through the dispenser.

It is contemplated that threaders are to be used to thread the floss through the dispenser. Thus a flexible wire containing hook means such as an eye hook can be inserted first through opening 19 and hole 18 to pull the floss through opening 19. Thereafter, the wire can be inserted through opening 24 into hole 23 and out opening 22 where the floss can be attached to the hook means and pulled through the hole 23 and out opening 24.

The modification shown in FIGS. 4-6 provides a different braking means. The dispenser 30 is similar to the one of FIGS. 1-3 in that it comprises an extended finger section 31 and a spool section 32. Similarly, a retaining cell 33 is provided with a rod 34 over which a spool of floss 35 can be fitted. A retaining cap 36 is also provided.

In this modification of the dispenser, a bore hole 37 extends completely through the finger to the retaining cell 33. A braking means 38 is provided to fit into the top of the dispenser in a slit 39 which extends into bore hole 37. Means 38 comprises a flat head portion 39a integral with a projection 40 which fits into the forward portion of slit 39. An integral member 41 also fits into slit 39. The braking means 38 is pivotally connected within the slit 39 by a pivot pin 42 fitted through holes 43 and 44 in the top of the dispenser and through hole 45 in member 38.

The floss is threaded through bore hole 37 from the spool in cell 33 and out the opening 46. The dispenser is used by pulling a desired length of floss out of the dispenser. The floss is held taut by depressing head 39a of the braking mechanism with the thumb of the user. In so doing, member 40 presses against the floss within the hole 37 thereby preventing any movement of the floss. A cutter 47 is also provided. The dispenser is then used in the same manner as previously described for the dispenser of FIGS. 1-3.

The second modification shown in FIGS. 6 and 7 provides another form of braking means. The dispenser 50 is similar to the one in FIGS. 4-6 in that it comprises an extended finger section 51 and a spool section 52. Similarly, the spool section comprises a retaining cell (not shown) with a rod (not shown) over which a spool of floss (not shown) can be fitted. A retaining cap 53 is also similarly provided.

In this modification of the dispenser, the bore hole 54 extends completely through the finger to the retaining cell similarly as in the one shown in FIGS. 4-6. A braking means 55 is provided to fit into the top of the dispenser in a slit 56 which extends into bore hole 54. Braking means 55 comprises a serrated head portion 57 integral with a projection 58 which fits into the forward portion of slit 56 and bore hole 54. An integral member 59 also fits into slit 56. The braking means 55 is slidably connected within slit 56 by a pin 60 fitted through elongated slot 61 of member 59. Pin 60 passes through the side walls of the dispenser as shown in the modification of FIG. 5.

At the forward end of slit 59 there is provided a stop member 62 integral with the top part of the dispenser. Stop 62 has an angled under portion 63. A mating angled upper part 64 of head portion 57 is adapted to be movable into engagement with portion 63 when braking means 55 is moved forwardly in slit 56. Such forward movement of braking means 55 forces the bottom portion 65 of projection 58 slightly downwardly against the bottom of bore hole 54.

The floss is threaded through bore hole 54 from the spool in the cell of the reel section 52 similarly as in the modification of FIGS. 4-6 and out the opening 66. The floss passes under projection 58 and is free to move thereunder when brake means 55 is not in engagement with stop 62. When a desired length of floss is pulled out from the dispenser, the floss is held taut by moving brake means 55 into engagement with stop 62 by pushing head portion 57 forwardly with the thumb of the user. In so doing, bottom 65 of projection 58 presses

downwardly on the floss and against the bottom of the bore hole, thereby preventing any movement of the floss.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A dental floss dispenser adapted to dispense a desired amount of dental floss comprising in combination, a finger section communicating with a spool section, a freely turnable spool of dental floss in said spool section and retaining cap means for retaining said spool in said spool section, a bore hole extending through said finger section and extending directly into said spool section through which said floss is threaded, longitudinal slit means in the top of said dispenser communicating with said bore hole, manually operable brake means disposed within said slit means adapted to frictionally engage said floss during use, said brake means comprising an elongated member having an elongated slot at one end which is pivotally connected within said slit means, whereby said brake means are manually slidable within said slit means and a head member at the opposite end of said brake means adapted to be depressed within said slit means to frictionally engage an underportion thereof with said floss within said bore hole, said head member comprising a first angled section, a stop member disposed on the top of the dispenser comprising a second angled section, whereby said first and second angled sections are adapted to slidably engage in mating relationship when said elongated member is slid forwardly to thereby depress said head member in said slit means, and whereby when said brake means are manually released a desired amount of floss can be freely pulled from the end of said finger section.

2. The dispenser of claim 1 wherein a dental floss cutter is disposed on the dispenser.

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