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Navrat

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[54] **DENTAL FLOSS HOLDER**

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[52] **U.S. Cl.** ..... **132/92 R**

[51] **Int. Cl.** **A61c 15/00**

[58] **Field of Search** ..... 132/92 R, 91, 93

[56] **References Cited**

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[57] **ABSTRACT**

An improved dental floss holder having an elongated body provided with a pair of opposed, spaced legs at one end thereof to present a span of dental floss to be used for cleaning the regions between adjacent pairs of teeth. The legs extend laterally from the body and are substantially perpendicular to the longitudinal axis. The dental floss is wound on a spool carrier by the body and extends therethrough to the legs. An improved lock is provided on the body to prevent movement of the floss from the spool toward the legs. Means is provided to hold the outer end of the floss when the span extends across the legs.

3 Claims, 6 Drawing Figures

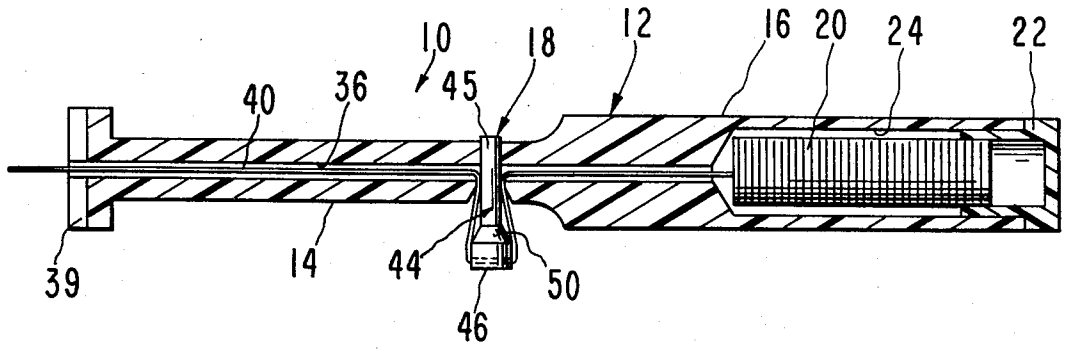
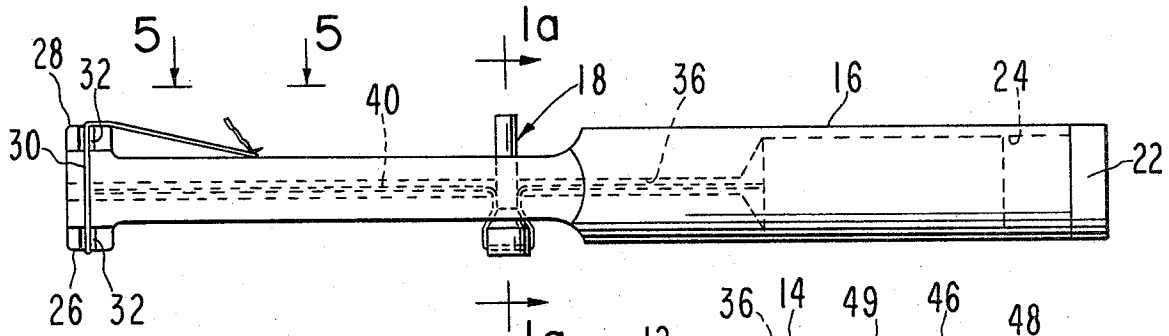


FIG.1



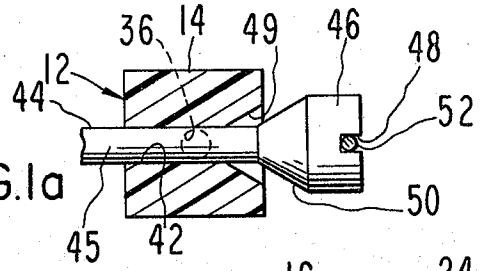


FIG.1a

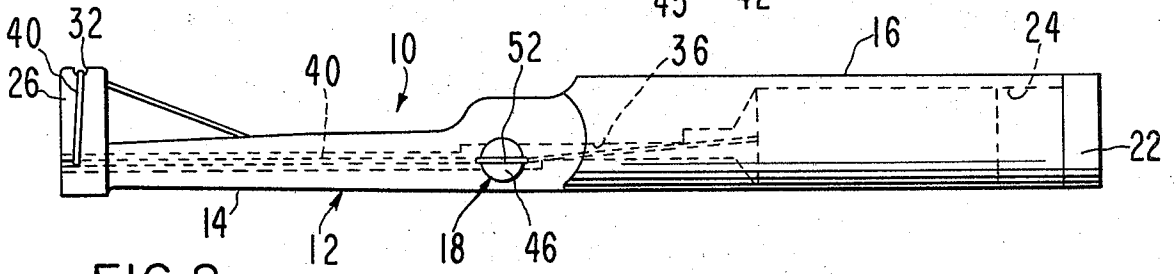


FIG. 2

FIG.3

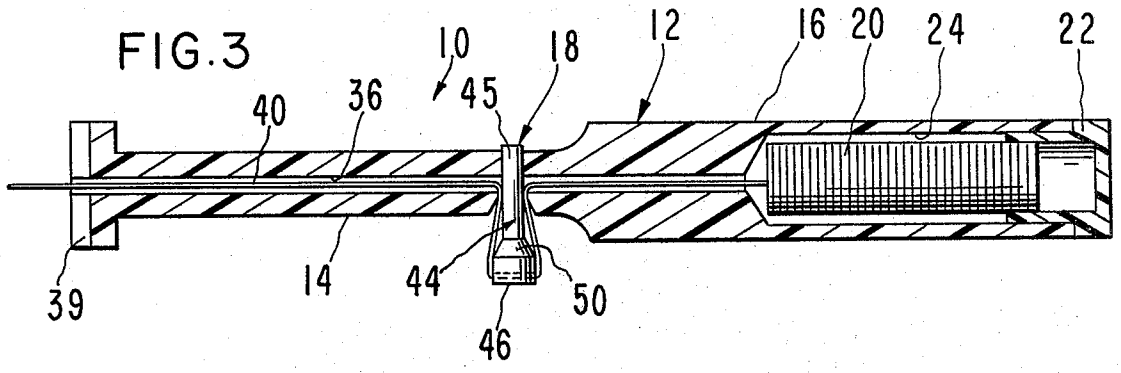


FIG.4

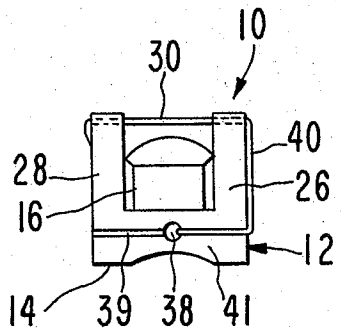
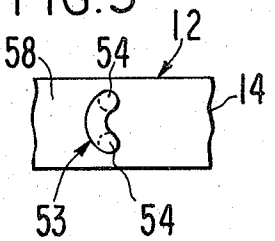


FIG.5



DENTAL FLOSS HOLDER

This invention relates to improvements in the cleaning of teeth with dental floss and, more particularly, to an improved self-contained dental floss holder for use in cleaning the teeth.

BACKGROUND OF THE INVENTION

In conventional dental floss holders, a stretch of dental floss extends across a pair of fingers or legs which project outwardly from a body at an acute angle. While this construction may be satisfactory, it has a design defect in that the body must be manipulated in a complicated manner to permit the stretch to fully penetrate the regions between adjacent pairs of teeth. This oftentimes requires the mouth to be almost fully open, placing a strain on the jaws yet the body, due to its shape, cannot be readily moved to permit up and down and back and forth movement of the dental floss stretch to clean the surfaces of the teeth as the stretch is disposed within the region between a pair of adjacent teeth.

Another disadvantage of conventional dental floss holders is that the stretch of dental floss can oftentimes slip and be pulled off the spool of floss provided with the holder itself. The reason for this is that the floss is not adequately locked in place when in use. This is due again to poor design. Typically, the outer end of the floss is merely wound around a pin and, as such, is not positively locked against movement relative to the body when the dental floss stretch is forced in the regions between the teeth.

SUMMARY OF THE INVENTION

The present invention is directed to an improved dental floss holder which overcomes the disadvantages described above with respect to conventional holders. To this end, the present invention utilizes means for presenting a span of dental floss so that it can be readily inserted into and removed from the spaces of the teeth yet the holder can be used without requiring the mouth to be wide open and the holder can be easily maneuvered within the mouth to move the span from one region to another.

The construction of the holder of the invention includes an elongated body having a pair of spaced legs at the front end thereof and a spool of dental floss at its rear end. The dental floss extends through the body from the spool to the front end thereof and is stretched across the outer ends of the two legs to present the span which is to be inserted into the regions between adjacent pairs of teeth.

The legs are substantially perpendicular to the longitudinal axis of the body itself, whereby the span is essentially out of the plane of the body and in a position requiring only a small pivotal movement of the body to cause the span to be inserted into or removed from the region between a pair of adjacent teeth. This, therefore, avoids the necessity of moving the body through a relatively long distance to move the span, thereby minimizing the effort and inconvenience associated with cleaning the teeth with dental floss.

The holder of the present invention also includes an improved lock for holding an intermediate portion of the dental floss against movement off the spool relative to the body when the holder is in use. The improved lock includes a pin receivable with a transverse bore adapted to wedge the floss against the body to prevent movement of the floss. The pin has a head provided

with a slot kerf which receives a portion of the dental floss for guiding the same yet such floss portion urges the pin toward the body as pressure is exerted on the span of floss extending between the outer ends of the two legs. This feature assures that the pin will be biased into greater locking relationship to the floss as the holder is used.

The primary object of this invention is to provide an improved, self-contained dental floss holder which is easily maneuverable within the mouth, releasably holds a working span of dental floss in a fixed position, and minimizes the effort required to clean the teeth with the floss span.

Another object of this invention is to provide an improved dental floss holder of the type described wherein the holder includes an elongated body having a pair of spaced legs perpendicular to the body at one end thereof for supporting the span of dental floss at the outer end of the legs so that the body can be more easily maneuvered within the mouth and need be shifted only through a relatively small distance to shift the span from a first region between a pair of teeth to an adjacent region.

Another object of this invention is to provide an improved dental floss holder of the aforesaid character wherein the holder has an improved lock for releasably holding a portion of the dental floss against movement relative to the holder when the same is in use to thereby assure against the collapse of the floss span between the arms to permit uninterrupted insertion and removal of the span in relation to the region between adjacent pairs of teeth.

Other objects of this invention will become apparent as the following specification progresses, reference being had to the accompanying drawings for an illustration of a preferred embodiment of the invention.

In the drawing:

FIG. **1** is a top plan view of the holder of this invention;

FIG. **1***a* is a cross-sectional view taken along line **1***a*-**1***a* of FIG. **1**;

FIG. **2** is a side elevational view of the holder;

FIG. **3** is a horizontal section through the holder;

FIG. **4** is a front elevational view of the holder; and

FIG. **5** is an enlarged, fragmentary, side elevational view of the holder looking in the direction of line **5**—**5** of FIG. **1**.

The dental floss holder of this invention is broadly denoted by the numeral **10** and includes an elongated body provided with a solid front section **14** and a hollow rear section **16**, sections **14** and **16** being integral with each other. Body **12** carries a releasable lock **18** near the junction between sections **14** and **16**. Section **16** is adpated to receive a spool **20** of dental floss. A rear cap **22** closes the open rear end of section **16** so that spool **20** can be removably confined within hollow chamber **24** of section **16**.

The front end of section **14** is provided with a pair of spaced, parallel arms **26** and **28** which project outwardly therefrom. Arms **26** and **28** are of substantially the same length and are rigid to opposed sides of section **14** so that they extend in the same direction and are disposed to present at their outer ends a span **30** of dental floss for use in cleaning the spaces between adjacent pairs of teeth. The length of each arm is a number of times less than the length of body **12**. Typically, the length of each arm is approximately 1 inch and the

length of body 12 is approximately 8 inches. Arms 26 and 28 are generally perpendicular to the longitudinal axis of body 12 as shown in FIGS. 2 and 4. Also, each arm has a floss-receiving notch 32 at its outer end.

Body 12 has a floss-receiving passage 36 which extends from chamber 24 forwardly through sections 14 and 16 and terminates at an open end 38 (FIG. 3) near a floss-receiving groove 39 in the front end face 41 of body 12. Passage 36 permits a stretch 40 of dental floss to be shiftable within body 12 and to extend from spool 20 forwardly through sections 14 and 16 to exit from section 14 through opening 38. Passage 36 thus forms a guide for the floss.

As shown in FIGS. 1 and 1a, section 14 has a bore 42 therethrough which is transverse to and intersects passage 36 so as to communicate therewith. Bore 42 receives a pin 44 having a shank 45 and a head 46 provided with a floss-receiving kerf 48. Pin 44 defines lock 18. Bore 42 is provided with a countersunk entrance end to present a beveled, annular surface 49. Similarly, head 46 is provided with an annular, beleved face 50 at the junction of shank 45 and head 46, face 50 being complemental to surface 49. Kerf 48 is adapted to receive a portion 52 of dental floss in the manner shown in FIGS. 1 and 1a.

Body 12 can be formed from any suitable material, such as metal, plastic or the like. Similarly, lock pin 18 can be of any suitable construction. Typically, it will be of a suitable metal and will be sufficiently long so that it extends through bore 42.

Means for severing the outer end of the dental floss as it extends away from arms 26 and 28 includes a cutting member 53 having a pair of inclined projections 54 provided with outer knife-edged margins. Member 53 is secured to one side 58 of section 14. Projections 54 define wedge-shaped arms which receive and releasably hold the end of the dental floss. Thus, the floss is releasably held on opposite sides of span 30 by lock 18 and member 53, thereby assuring that span 30 will remain intact and will not collapse as the span is inserted into and removed from regions between adjacent pairs of teeth.

In use, spool 20 is first inserted into chamber 24 and dental floss from the spool is threaded into and through the portion of passage 36 in section 16, then into bore 42, out of the bore and about head 46, through the kerf 48, then back into bore 42, through passage 36 in section 14, and out of the latter through opening 38. Then, the floss extends along the outer side of either arm, such as arm 26 as shown in FIG. 4, then into its notch 32 and to and into notch 32 of the other arm to form span 30. Then the floss is extended toward and beneath projections 54 on a floss-severing member 53. With span 30 taut, holder 10 is placed in the mouth and span 30 is worked into and out of the regions between adjacent pairs of teeth. When a lateral force is exerted on the span, such as when it is urged into or out of a region between a pair of adjacent teeth, this causes pin 44 to be urged further into bore 42, thereby increasing the wedging force against the floss between surface 49 and face 50. Thus, the floss is held firmly by projections 54 and pin 44, thereby precluding its movement relative to arms 26 and 28. The floss span 30 can be used continually without becoming separated or loosened relative to arms 26 and 28.

The fact that arms 26 and 28 are perpendicular to body 12 assures that span 30 will more easily be moved into and out of the regions between adjacent pairs of teeth. This feature allows holder 10 to be more easily maneuvered since only a relatively small displacement of body 12 is needed to move the span. Conventional holders, on the other hand, have angled arms which require a relatively large displacement of the entire holder for moving a span of floss.

I claim:

1. A dental floss holder comprising: an elongated, generally longitudinal straight body having a pair of ends and means at one end thereof for holding a spool of dental floss, there being a passage extending longitudinally through the body for guiding a stretch of dental floss from a spool of floss at said one end to the opposite end of the body, said body further having a bore intermediate its ends, said bore extending transversely of said passage and being in communication therewith, said body having an annular, beveled surface surrounding the outer end of the bore, a pair of spaced arms rigid to the body at said opposite end and extending laterally therefrom, the outer ends of the arms adapted to position a span of dental floss for insertion into the mouth and into the region between a pair of adjacent teeth; and a pin shiftably mounted within the bore for longitudinal movement relative thereto and having a transverse dimension less than a corresponding transverse dimension of the bore to permit a doubled portion of said stretch of floss from said spool to extend laterally of the passage through the bore to a location exteriorly of the body, around the outer end of the pin, then back into and through the bore and into and through said passage to said opposite end, said pin having an annular, beveled face substantially complemental to said beveled surface of said body and movable longitudinally thereof for wedging the doubled portion of said floss stretch against the body when tension is applied to the span bridging the outer ends of the arms to thereby lock the span against any substantial movement relative to said body.

2. A dental floss holder as set forth in claim 1, wherein the pin has a head at its outer end, said head having an outer, floss-receiving kerf.

3. A dental floss holder as set forth in claim 1, wherein the pin extends through the body and projects laterally from opposed sides thereof.

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