June 18, 1963 F. W. KRUPP 3,094,209

DENTAL FLOSS PACKAGE

Filed June 8, 1962

FIG. 1.

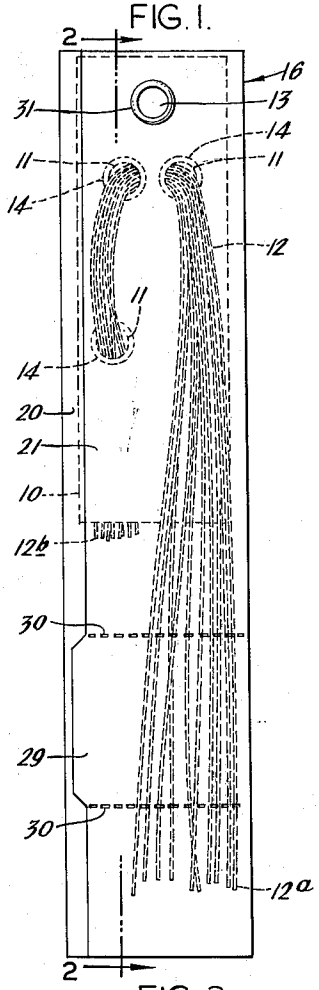


FIG. 2.

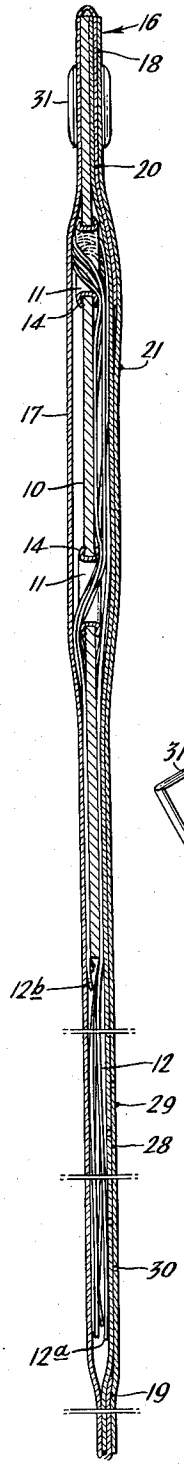


FIG. 4.

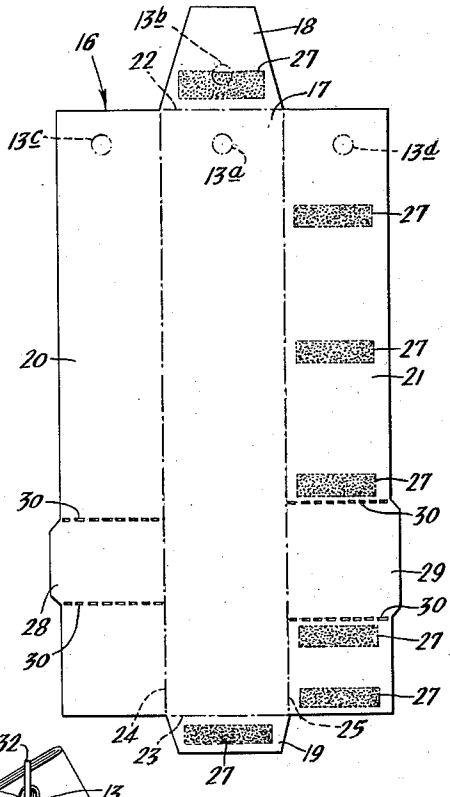


FIG. 3.

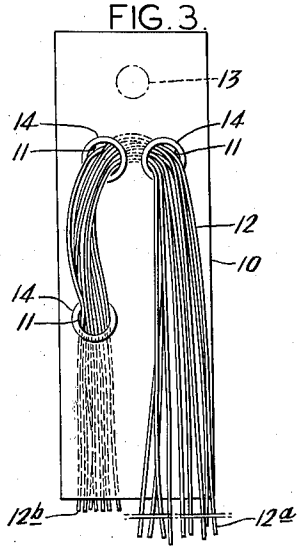
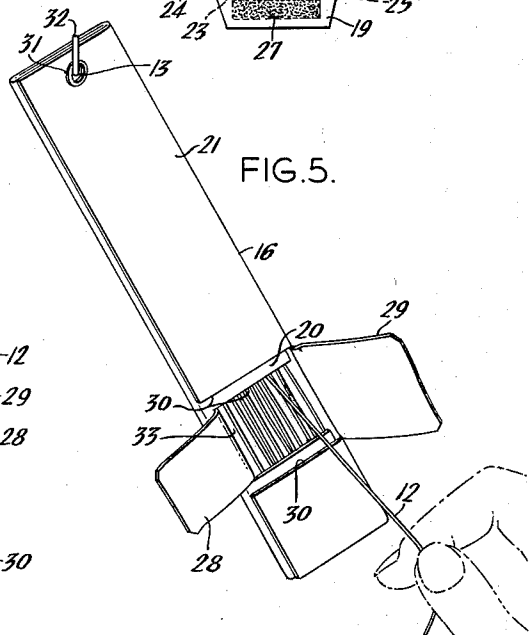


FIG. 5.



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DENTAL FLOSS PACKAGE

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This invention relates to a dental floss package and has for an object the provision of improvements in this art.

Dental floss is at present sold in packages containing continuous lengths of material, some with and some without cutting devices for severing desired lengths as needed.

When cutting devices are not provided with the packages it is often difficult to obtain a length wanted because cutting tools may not be available and the material is difficult to sever otherwise.

When cutting devices are provided with the packages they are often unsatisfactory initially or become clogged with wax or otherwise get out of order in use. The fact that such packaging and cutting practices are not very satisfactory is indicated by the fact that a great number and variety of such packages have appeared on the market.

In addition to the inherent objections to such packages in use, is the fact that the provision of cutting devices adds considerably to the cost of the package and, besides, the various forms of cutting devices may require some education or skill on the part of the user.

According to the present invention, a package is provided for dispensing dental floss thread in pre-cut lengths convenient for use.

It is an object of the invention to provide a package containing a number of strands or lengths of dental floss.

Another object is to provide such a package which will permit the removal of one strand or length only without pulling out or tangling the remaining lengths.

Another object is to provide a neat and sanitary package which is easy to carry and which can be reclosed after a length of material has been withdrawn.

Another object is to provide such a package which is simple and inexpensive to manufacture and prepare for market.

Another object is to provide such a package which includes means for hanging it up in a convenient place, as on a hook or nail in a bathroom.

Another object is to provide such a package with closure means which is easy to open and which will stay closed between uses without requiring any auxiliary fastening or securing means.

The above and other objects of the invention, as well as various novel features and advantages, will be apparent from the following description of an exemplary embodiment, reference being made to the accompanying drawings thereof, wherein:

FIG. 1 is a front elevation of a finished package as it would be sold, parts inside being shown in broken or phantom lines;

FIG. 2 is an enlarged longitudinal section taken on the line 2—2 of FIG. 1;

FIG. 3 is a front elevation of an enclosure card or core carrying a bunch or bundle of lengths of dental floss as the card would appear if removed from the complete package assembly;

FIG. 4 is a front elevation of the cover or envelope as it would appear if removed from the complete assembly or package; and

FIG. 5 is an isometric front view showing the manner of removing a length of floss when the package is supported on a hook or nail.

The invention can more easily be understood by first referring to FIG. 3 which shows a relatively stiff card **10** provided with at least one and preferably a plurality of

holes **11** through which a bundle or bunch of separate lengths **12** of dental floss is threaded. Another hole **13** is shown at the top of the card but this hole is preferably made by punching through the finished package, whereas the holes **11** are punched in the card initially to permit the lengths of dental floss in a bundle to be threaded through them in packaging.

The bundle is threaded through the hole or holes **11** so as to have long ends **12***a* and short ends **12***b*. The advantage of using two laterally spaced holes is that the bundle is spread out laterally to make a thinner package than if one hole were used and the ends were disposed one behind the other behind and in front of the card. The advantage of having one end longer than the other is that the long end can be made accessible for pulling strands out of an opening in the package while the short end remains concealed and inaccessible.

Herein a third hole **11** is shown in the card, this third hole being located below the bend, bight, loop, or fold of the bundle and having the short end threaded through it. Threading the strands through several holes puts additional tension on the strand being pulled out and aids in preventing other strands from being entrained and pulled out or tangled.

If desired, eyelets **14** with round edges may be secured in the holes **11** to minimize binding of the thread and also to minimize scraping off the wax and other substances carried by the floss. It may be desirable to provide substances on the floss which are beneficial to the teeth, for example fluorides and the like.

When two upper holes are present at the bend, loop, or bight of the strands and one is present therebelow, as shown, the short end of the bundle is threaded through the lower hole to the back of the card to conceal it further and make it more inaccessible to being pulled out. The long end is on the front of the card where the strands will be accessible.

The package also comprises a cover or envelope **16** for the card, the envelope in open form including a back panel **17**, top end tab **18**, bottom end tab **19**, inner front tab or panel **20**, and outer front tab or panel **21**. The top end tab **18** has a fold line **22** with the back panel; the bottom end tab **19** has a fold line **23**; the inner front tab **20** has a fold line **24**; and the outer front tab **21** has a fold line **25**.

Glue areas **27** are provided on the top, bottom and outer front panels at suitable places and at some appropriate time during assembly.

An inner closure flap **28** is provided on the inner front tab **20** and an outer closure flap **29** is provided on the outer front tab **21**, each being a part of the tab body or sheet and delineated by weakened scored or serrated lines **30**. The outer flap **29** is made wider vertically than the inner flap **28** so as to cover and conceal it and avoid direct lines of opening to the interior when the flaps are closed.

The cover or envelope is made of relatively thin material and, if desired, may be transparent. One non-transparent material which has given satisfaction is paper having a metal foil lamina adhered to the outside. This holds its shape well and when the closure flaps are closed they tend to stay closed.

Holes **13***a*, **13***b*, **13***c* and **13***d* are shown in the back panel **17** and tabs **18**, **20** and **21** respectively, these holes registering with the top support hole **13** of the card and preferably all being made by a single punching operation after the package has been folded up. If desired, an eyelet **31** may be secured in the aligned holes to take a support nail or hook. The adhesive area **27** on the top end tab holds the top of the card in position but the eyelet **31** makes the attachment stronger and more secure by uniting all thicknesses of material at the top end.

In the finished package the ends of the longer portions of the bent strands preferably extend down below the lower edges of the closure flaps **28** and **29** so that when a front opening is made by pulling the flaps back along the lines of weakening **30** the strand ends will not come out unless pulled out. This keeps the package neat and allows the flaps to be closed back over the opening and to remain closed better.

FIG. 5 shows how a strand **12** is pulled out when the front closure flaps **28** and **29** are opened, the package here being supported on a hook **32** through the hole **13** etc. and its eyelet **31**.

In manufacture, assuming that the enclosure card **10** with holes **11** and the envelope **16** with all portions except the holes **13***a* etc. are provided and with the envelope in unfolded condition as shown in FIG. 4, the bundle of floss thread lengths **12** is threaded through the holes **11** in the card in the manner shown in FIG. 3.

The card is then laid down on the top of the back panel **17** of the envelope with its top edge at the fold line **23**. The inner front tab **20** is folded down over the top of the card.

Next, in order, the top tab **18**, the bottom tab **19**, and the outer front tab **21** are folded over and glued in place.

Alternatively, the top and bottom tabs **18** and **19** can be folded over before the inner front tab **20** is folded over and in this case the top of the card is adhesively held by the top tab **18**.

The manner of applying the glue can be varied to suit manufacturing conditions. Glue spots which require moistening can be pre-applied; or glue can be applied as needed; or naturally adhesive spots can be pre-applied. Moreover, the glue areas shown are merely suggestive and may be varied. For example, for complete sealing the entire flap areas may be glued.

The package is now complete except that if the top support hole **13** etc. is wanted, it is punched through the assembly; and if the eyelet **31** is wanted, it is applied.

In use, the outer flap **29** is torn back along its scored lines and the inner flap **28** is torn back along its scored lines to provide a front lower opening **33**, as shown in FIG. 5. Then a strand **12** can be pulled out in the manner illustrated, the bottom end first being pulled out and then the threaded upper portion pulled out.

The floss used in the package is treated with wax and the wax finish helps to keep the strands from tangling as they are pulled out.

With the wax or in addition to the wax, the floss strands preferably are treated with materials which reduce tooth decay. Fluorides in almost any compatible form and in any acceptable dosage may be used. Some substances which can be used are stannous fluoride, sodium fluoride, and the like. Hexachlorophene also may be incorporated for its benefit to the gums, and this with or without the inclusion of fluorides.

Since some wax remains between the teeth after the use of dental floss it is a distinct advantage to obtain beneficial treatment along with the wax.

Although the wax used may be pure beeswax, there are other types of animal, vegetable or mineral waxes that can be used. A few examples are paraffines, bleached montan, carnauba and bayberry.

It is found that strands can thus be pulled out one by one until the complete supply is exhausted without entanglement.

The invention is thus seen to provide a simple, convenient and inexpensive package of dental floss in lengths (which can be varied) for convenient use without waste; also a package which is quite thin and convenient to carry; also a package which is easy and inexpensive to manufacture; and a package which is sanitary, neat, easy to open and close, and easy in obtaining a strand of floss.

While one embodiment of the invention has been described for purposes of illustration, it is to be understood that there may be various embodiments and modifications within the general scope of the invention.

I claim:

1. A dental floss package comprising an elongated, sheet-like card, means defining a plurality of openings in said card, at least two of said openings being laterally spaced and at least one opening spaced lengthwise from said laterally spaced openings, a bundle of strands threaded through said openings to provide first segments of the strands disposed on one side of the card and second segments of the strands disposed on the opposite side of the card and laterally spaced from said first segments, an envelope completely enclosing said card and said strand bundle, means securing said card in a predetermined fixed position in said envelope, said envelope including confronting overlying panels forming one side thereof, and means defining an access opening at an end of the envelope opposite the end thereof to which the card is fixed, said access opening exposing only the segments of strands on one side of said card at a portion spaced from their free ends.

2. A dental floss package as set forth in claim 1, wherein said envelope on one side includes oppositely directed overlapping pivotally mounted tabs, each having an edge-scored tear flap constituting overlapping closure elements for the opening made when the flaps are torn back.

3. A dental floss package as set forth in claim 2, wherein the outer closure flap is wider than the inner flap so as to cover the inner flap and stagger the tear lines to avoid a direct edge opening when the closure flaps are reclosed.

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