

[54] DISPOSABLE DENTAL CLEANING DEVICE

Primary Examiner—G. E. McNeill

[75] Inventor: John G. Peebles, Jr., New York, N.Y.

Attorney, Agent, or Firm—Blum, Mascovitz, Friedman & Kaplan

[73] Assignee: JKC Products, Inc., New York, N.Y.

[57] ABSTRACT

[22] Filed: July 17, 1974

A disposable dental floss cleaning unit is constructed from a blank comprising a panel having a score line therein defining substantially symmetrical side walls foldable about the score line into confronting relationship along the respective underside surfaces thereof. The confronting underside surfaces of the respective side walls may be fixedly connected, for instance, by application thereof of a suitable adhesive. An interior continuous score line within the body of the blank defines a removable area thereof substantially symmetrical about a plane passing through a score line. Across the removable area of the blank, at least one length of dental floss is tautly strung having its opposed ends fixedly connected to the blank. Upon removal of the removable area from the blank, the dental floss is accessible for use.

[21] Appl. No.: 489,339

[52] U.S. Cl. .... 132/91

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

[58] Field of Search..... 132/91, 89, 90

[56] References Cited

UNITED STATES PATENTS

2,771,085	11/1956	Fleming .....	132/89
3,783,883	1/1974	Alexander.....	132/91
3,802,445	4/1974	Wesley.....	132/89

8 Claims, 10 Drawing Figures

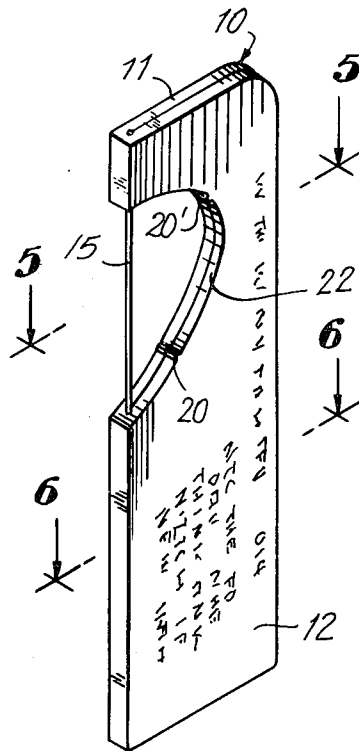


FIG. 1

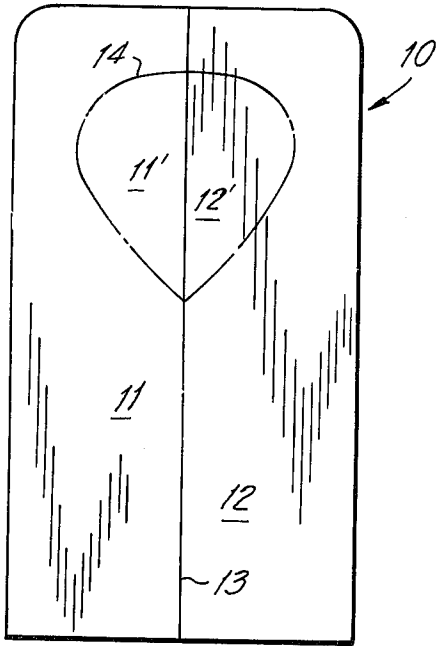


FIG. 2

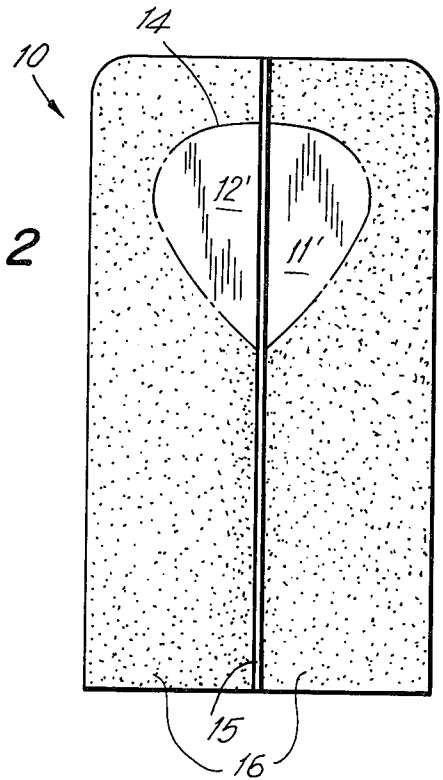


FIG. 3

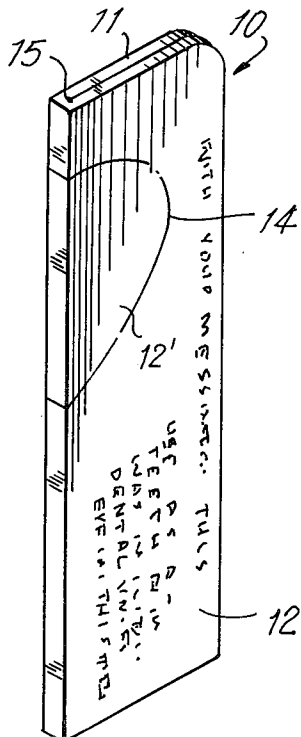


FIG. 5

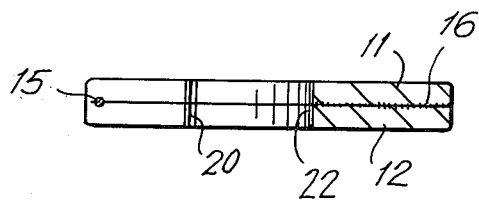


FIG. 6

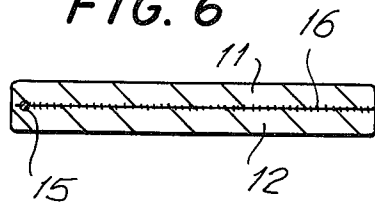


FIG. 4

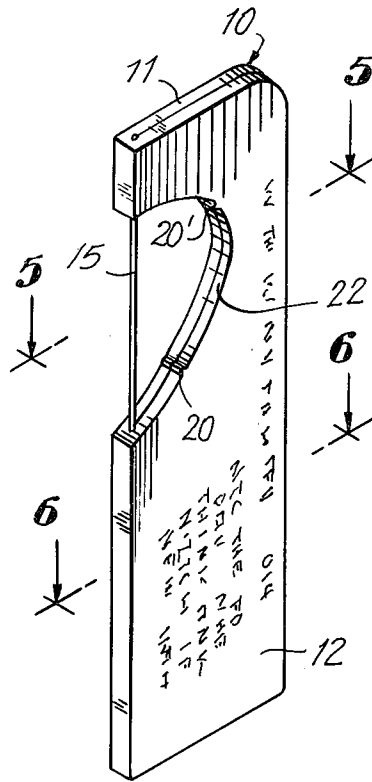


FIG. 4A

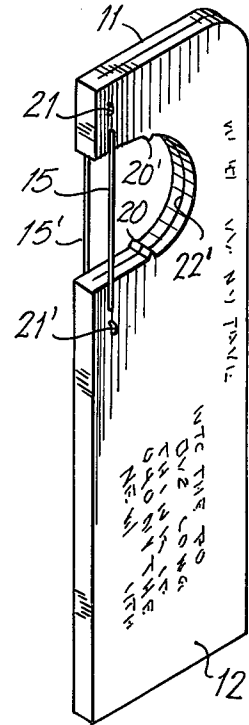


FIG. 7

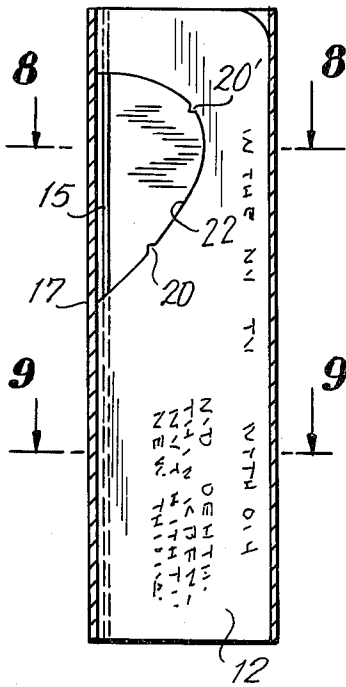


FIG. 8

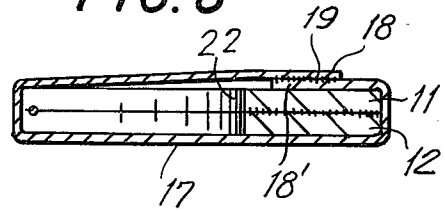
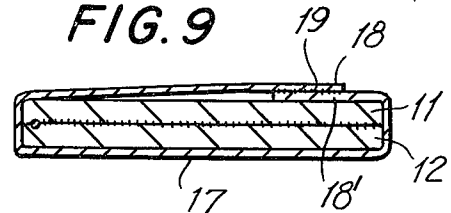


FIG. 9



## DISPOSABLE DENTAL CLEANING DEVICE

## BACKGROUND OF THE INVENTION

This invention relates to a disposable dental cleaning device and more particularly, to a disposable dental floss unit for cleaning between the teeth.

Interdental cleaning with floss has been a recommended dental health care procedure. Heretofore, however, public places such as restaurants and the like, have offered picks to their customers for the purpose of relieving distress caused by food particles lodged between the teeth. Picks of the type offered are generally considered unsatisfactory, because they carry sharp points which may pierce the gum and may otherwise snap and become lodged between the teeth during the cleaning procedure.

Since disposable dental cleaning devices are usually offered as a service in restaurants and the like, picks have generally been offered rather than dental floss devices, because of the reduced cost thereof. Accordingly, a low cost, compact, sterile dental floss unit would satisfy customer demand for such devices and would permit restaurants and the like to offer these devices as a service from which they would obtain greater customer satisfaction.

## SUMMARY OF THE INVENTION

Generally speaking, in accordance with the invention, a disposable dental floss cleaning unit is constructed from a blank comprising a panel having a score line therein defining substantially symmetrical side walls foldable about the score line into confronting relationship along the respective underside surfaces thereof. The confronting underside surfaces of the respective side walls may be fixedly connected, for instance, by application thereto of a suitable adhesive.

An interior continuous score line within the body of the blank defines a removable area thereof substantially symmetrical about a plane passing through the score line. Across the removable area of the blank, at least one length of dental floss is tautly strung having its opposed ends fixedly connected to the blank. Upon removal of the removable area from the blank, the dental floss is accessible for use.

In one embodiment of the invention, the length of the dental floss underlies the blank and is adhesively connected thereto in substantial alignment with at least a portion of the score line. In another embodiment of the invention, a length of dental floss respectively overlies each side wall of the blank and opposed ends thereof are respectively connected thereto. Each length of dental floss is proximate and substantially parallel to the fold line of the blank.

The device may be overwrapped with a removable sterile wrapper until use thereof. Preferably, the device is slidable from the wrapper for use. After the device is used for its intended purpose, it may be disposed of.

It is, therefore, an object of the invention to provide a disposable, low cost, compact, sterile dental floss unit for relieving distress caused by food particles lodged between the teeth.

It is another object of the invention to provide a mass distributable disposable dental floss unit.

A further object of the invention is to provide a novel blank from which a disposable dental floss unit may be fabricated.

Still other objects and advantages of the invention will, in part, be obvious and will, in part, be apparent from the specification.

The invention accordingly comprises the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the constructions hereinafter set forth, and the scope of the invention will be indicated in the claims.

## BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the invention, reference is had to the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a top plan view of a blank constructed in accordance with the invention;

FIG. 2 is a bottom plan view of the blank shown in FIG. 1;

FIG. 3 is a perspective view of the blank illustrated in FIG. 1 showing the side walls thereof folded into confronting relationship;

FIG. 4 is a perspective view of the folded embodiment shown in FIG. 3, wherein the removable area of the blank is removed for access to the dental floss;

FIG. 4a is a perspective view of another embodiment constructed in accordance with the invention;

FIG. 5 is a cross sectional view taken along line 5—5 of FIG. 4;

FIG. 6 is a cross sectional view taken along line 6—6 of FIG. 4;

FIG. 7 is a front elevational view of the folded embodiment illustrated in FIG. 3 having a sterile wrapper casing;

FIG. 8 is a cross sectional view taken along line 8—8 of FIG. 7; and

FIG. 9 is a cross sectional view taken along line 9—9 of FIG. 7.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, a panel 10 is longitudinally scored along a line 13 to define a pair of substantially symmetrical side walls 11 and 12 therein. As best seen in FIG. 3, side walls 11 and 12 are respectively foldable about score line 13 into confronting relationship along the respective underside surfaces thereof. Respective underside surfaces of side walls 11 and 12 are coated with an adhesive 16 as best seen in FIG. 2, for fixedly connecting the confronted surfaces.

The depth of the scoring along line 13 is somewhat less than the width of panel 10 for thereby providing a hinged connection between side walls 11 and 12. The depth of the scoring along line 13 is, however, substantially uniform and in the folded condition of the panel, best seen in FIG. 3, the hinged connection is substantially planar. Referring again to FIG. 3, the planar hinged connection is substantially perpendicular to respective planes of side walls 11 and 12.

An interior continuous score line 14 within the body of panel 10 extends fully through the width thereof and defines a removable contiguous area 11', 12' of respective side walls 11 and 12. Removable area 11', 12' is substantially symmetrical about a plane passing through score line 13. As best seen in FIGS. 4 and 7, respective sections 11', 12' of the removable area are provided with respective pairs of spaced recesses along the respective peripheries thereof. Each recess is alignable with a nub extension 20, 20' defined in the contin-

uous interior edge 22 defined in respective side walls 11 and 12 by score line 14. Therefore, area 11', 12' is selectively removable from panel 10 by application thereto of an outward pressure for releasing the recesses thereof from interfitting, respective, nub extensions 20, 20' provided in continuous edge 22.

With particular reference to the embodiment shown in FIGS. 1-4, a single length of dental floss 15 is tautly strung across removable area 11', 12' of panel 10. The strand of floss underlies panel 10 and the removable area thereof. Adhesive 16 coated on the underside of panel 10 fixedly connects dental floss 15 thereto. The strand of floss is aligned with the score line 13 and adhesively connected to the underside of panel 10 substantially contiguously with the hinged connection defined therein. It is a critical aspect of the construction of the dental floss cleaning unit that adhesive is not applied to the underside of removable area 11', 12'. In the folded condition of the blank as best seen in FIG. 3, dental floss 15 is adhesively secured between side walls 11 and 12 and a usable portion thereof is overfitted by removable area 11', 12'. Upon disengagement of area 11', 12' from panel 10, a usable portion of dental floss 15 is visible and the removal space defined thereby provides an access space whereby the floss portion may be suitably inserted between teeth of a user thereof. The distance between floss 10 and the vertex of the access space as defined by continuous edge 22 in panel 10 is suitably determined to exceed the length of a user's teeth to facilitate the use of the device.

Referring now to FIG. 4a which shows an alternate embodiment of a device constructed in accordance with the invention, like numerals designate like members as used in connection with the embodiment heretofore described. The general construction of the blank is substantially identical with that of the prior embodiment, except that the removable area thereof has a somewhat different shape and continuous edge 22' as seen upon the removal thereof defines a substantially U-shaped access space. According to the construction of this embodiment, two strands of dental floss 15 and 15' are employed. Each of the strands of floss overlies a respective side wall 11, 12 of the panel and opposed ends thereof 21, 21' are respectively fixedly connected to the side wall as by stitching. Each strand 15, 15' is arranged proximate the hinged connection between side walls 11 and 12 and substantially parallel thereto. As seen in FIG. 4a, the device is in condition for use. Prior to use, a removable area is releasably connected in the access space between respective strands 15, 15'. In all other details of construction, this embodiment of the device is identical with the embodiment heretofore described above.

The device in its unused folded condition, as best seen in FIG. 3, may be overwrapped with a sterile wrapper as best seen with reference to FIGS. 7-9. The wrapper may have open ends for sliding the device there-through and may comprise a sheath for overfitting the device. Respective ends 18 and 18' of the sheath may be secured in overlying-underlying relationship by application thereto of a suitable adhesive 19.

In practice, the device may be removed from the sheath and the removable area thereof may be releasably connected for use of the visible portion of the dental floss. The access space provided by releasing the connection of the removable area allows convenient use of the device. After the device is used, it may be

disposed of. While the blank may be fabricated of a large number of suitable materials, it is preferably fabricated of a paperboard. Any suitable adhesive may be employed for confronting side walls of the panel, provided it is non-toxic to a user.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above constructions without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

What is claimed is:

1. A disposable dental floss cleaning unit comprising a panel having a score line therein, a pair of substantially symmetrical side walls defined by said score line, said side walls being foldable about said score line into confronting relationship along respective underside surfaces thereof, said confronting underside surfaces of said respective side walls being fixedly connected, one to the other, a removable area of said panel defined by a continuous score line within the body of said panel, means for releasably connecting said removable area of said panel to the body of said panel, and at least one length of dental floss having opposed ends fixedly connected to said panel, at least a portion of said dental floss being strung across said removable area of said panel.

2. The unit as claimed in claim 1, wherein said at least one length of dental floss underlies said panel and is adhesively connected thereto in substantial alignment with at least a portion of said score line.

3. The unit as claimed in claim 1, including two discrete lengths of dental floss, each discrete length thereof overlying a respective side wall of said panel, opposed ends of each discrete length of dental floss being connected to a respective side wall, each length of dental floss being proximate and substantially parallel to said score line provided in said panel.

4. The unit as claimed in claim 1, including a hinged connection between respective side walls of said panel, said hinged connection being defined by a substantially uniform depth of said score line.

5. The unit as claimed in claim 1, wherein said means for releasably connecting said removable area of said panel to the body of said panel comprises a plurality of recesses provided in the periphery of said removable area, and a corresponding plurality of nub extensions provided in a continuous interior edge of said panel, each recess being alignable and engageable with a corresponding nub extension.

6. The unit as claimed in claim 1, including a sheath overfitting said unit, said unit being slidable from said sheath for use thereof.

7. The unit as claimed in claim 4, wherein said hinged connection is substantially planar and substantially perpendicular to respective planes of said side walls.

8. The unit as claimed in claim 1, wherein said removable area of said panel overlies at least a portion of said at least one length of dental floss.

\* \* \* \* \*