

[54] **DENTAL HYGIENE PRODUCT**
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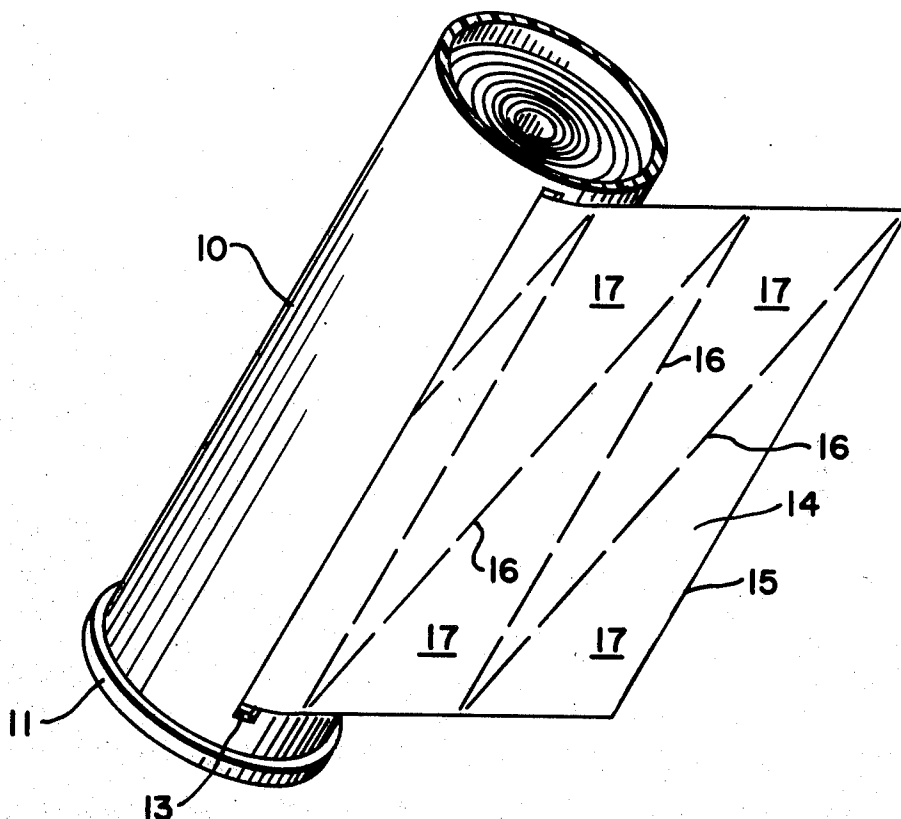
Primary Examiner—G. E. McNeill

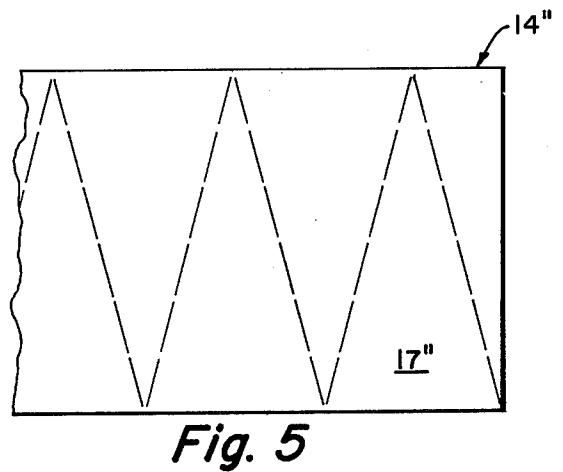
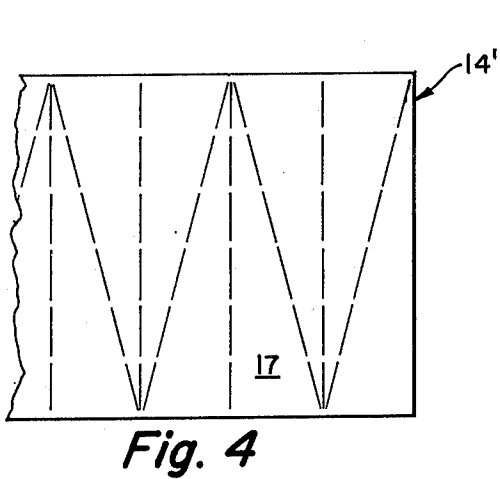
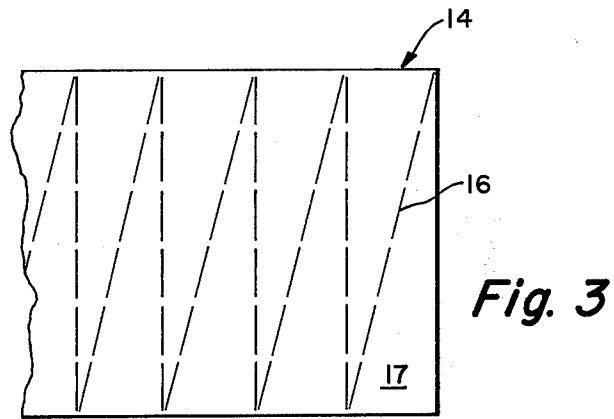
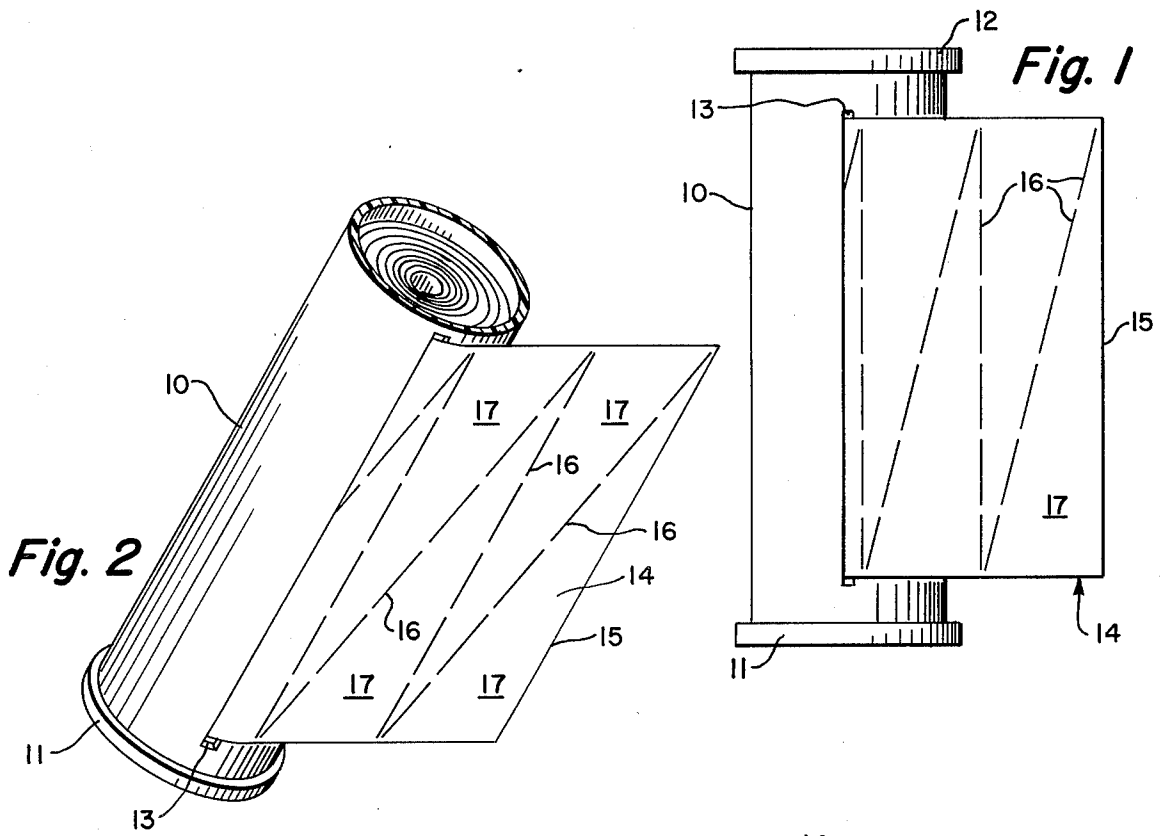
[52] U.S. Cl. **132/89; 206/409**
 [51] Int. Cl.² **A61C 15/00**
 [58] Field of Search 132/89; 206/390, 409, 59

[57] **ABSTRACT**
 This invention relates to a ribbon of flat material, preferably stiff paper, which is pre-weakened or partially pre-cut along tear lines which define easily separable triangles of the ribbon. The ribbon is rolled within a tubular container for facile removal and separation of one of the separable triangles for a single use as a cleaning device to remove foreign particles which are lodged between human teeth.

[56] **References Cited**
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9 Claims, 5 Drawing Figures





DENTAL HYGIENE PRODUCT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a dental hygiene product for use in removing foreign particles which are lodged between human teeth.

2. Description of the Prior Art

At the present time toothpicks and dental floss are available as materials which can be used to remove foreign particles which become lodged between human teeth. When toothpicks or dental floss are not available, it is customary to employ a torn corner of a magazine page or a torn corner of a paper card in a saw-like motion to dislodge foreign particles from between teeth. One shortcoming of the torn paper corner is the possibility that it may be unsanitary. The available torn corner may be too thick to slide freely between the teeth. The available torn paper corner may be too flimsy to serve as a tool. The available torn paper corner may be filled or coated and hence may soften rapidly when moistened.

SUMMARY OF THE INVENTION

A convenient container is provided in which a ribbon of flat, stiff material, preferably stiff paper, is rolled. The ribbon is formed into easily separable triangles which can be withdrawn from the container, separated from the ribbon and one-by-one used to dislodge foreign particles from the user's teeth. Preferably the paper is parchment paper, free of filler materials and having a caliper thickness from 2 to 8 mils and having a weight from 20 to 80 pounds per ream.

Paper is generally measured in caliper thickness. The density of paper is measured in pounds per ream where the ream is defined as 500 sheets of paper, each sheet of which measures 17 inches by 22 inches. Parchment paper is a term for identifying fibrous paper which is free of fillers and opacifiers and glazes.

In addition to paper as a material for forming the ribbon, a number of plastic substances may be employed, for example, celluloid, cellulose acetate, acrylates, polyethylene terephthalate, polyvinyl chloride, polyvinyl fluoride, nylon, polypropylene, polybutadiene, polyurethane elastomers, polyethylene, polycarbonates, ethylene-vinyl acetate copolymers, polystyrene, polysulfone, polyvinyl alcohol, acrylonitrile-butadiene-styrene copolymers, and the like. The selected material should have tear-resistance, slight rigidity and the ability to be spooled.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side-elevation view of a preferred embodiment of the present invention;

FIG. 2 is an exploded perspective view of the preferred embodiment of the invention;

FIGS. 3, 4 and 5 are alternative embodiments showing useful perforation patterns for the triangular tabs of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

In FIG. 1 a cylindrical tube 10 has end closures 11, 12 and a longitudinal slot 13. A ribbon 14 of flat material, preferably stiff paper, has a free end 15 extending through the slot 13. As better seen in FIG. 2, the other end of the ribbon 14 is coiled within the tube 10. The free end 15 can be withdrawn through the slot 13 or

can be retracted to maintain the unused ribbon 14 clean and sanitary within the tube 10. It will be observed that the ribbon 14 has perforations 16 which define triangular tabs 17 on the ribbon 14. Each individual triangular tab 17 is intended to be a single use dental hygiene device.

A preferred ribbon 14 is formed from unglazed, unfilled parchment paper. Very good results have been obtained with parchment having a caliper thickness of 6 mils and a weight of 44 pounds per ream. While the paper preferably is formed from wood fibers, other fibers may be employed such as cotton and synthetic fibers. The ribbon width is preferably about 1 to 3 inches. The ribbon length is sufficient to provide from about 25 to about 200 triangular tabs within the tube 10.

The perforations 16 which define the triangular tabs 17 in FIGS. 1 and 2 preferably are aligned dots or slits spaced so as to constitute a tear-line of weakened tensile strength. The tear-lines also may be formed by applying sharp indentations in the ribbon to introduce localized weakened tensile strength.

The triangular tabs 17 of FIGS. 1 and 2 are illustrated in FIG. 3 as right triangles wherein one major leg of the right triangle corresponds to the width of the ribbon 14. The apex angle of the triangles 17 is acute, preferably from about 15 to 30 angular degrees.

Alternative triangle patterns are illustrated in the ribbon fragments of FIGS. 4 and 5. The triangular tabs 17' of FIG. 4 are also right triangles having a major leg corresponding to the width of the ribbon 14'. The triangular tabs 17' also have an acute apex angle, preferably from 15 to 30 angular degrees. The triangular tabs 17' are congruent with the triangular tabs 17 of FIG. 3.

In FIG. 5, the triangular tabs 17'' are isosceles triangles having an acute apex angle and an apex-to-base dimension corresponding to the width of the ribbon 14''. The preferred apex angle is 15 to 30 angular degrees. In a preferred embodiment of the tabs 17'', the ribbon 14'' had a width of 1½ inches and each isosceles triangle had a base of 1 inch.

The slot 13 appearing in FIGS. 1 and 2 is shown as terminating between the ends of the cylindrical tube 10. For convenience the slot may extend entirely along the length of the tube 10 or, alternatively, the slot may be open at one end to facilitate introduction of the ribbon 14.

The ribbon 14 and the container may be sterilized before or after assembly or both. Suitable sterilization procedures include ultraviolet radiation, X-ray exposure, vapor sterilization with familiar sterilizing gases.

I claim:

1. A singly-ply ribbon rolled into a spool and having transverse tear-lines of weakened tensile strength defining triangular tabs of the said ribbon, each of the said tabs having an apex-to-base dimension corresponding to the ribbon width.

2. The ribbon of claim 1 wherein the ribbon is formed from paper having a caliper thickness of 2 to 8 mils and a weight from 20 to 80 pounds.

3. The ribbon of claim 2 wherein the ribbon is formed from parchment paper.

4. A portable dental hygiene device comprising a tube, closed at both ends and having a longitudinal slot in one of its side walls; a spool of the ribbon of claim 1 confined within the said tube and having a free end extending through the said longitudinal slot.

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5. The portable dental hygiene device of claim 4 wherein the said tube has a removable cap forming an end wall which engages the side walls of the said tube.

6. The portable dental hygiene device of claim 4 wherein the said tube is cylindrical.

7. The portable dental hygiene device of claim 4 wherein the said spool of ribbon is sterilized.

8. The ribbon of claim 1 wherein the said triangular tabs are isosceles triangles having an acute apex angle.

9. The paper ribbon of claim 1 wherein the said triangular tabs are right angle triangles having a major leg corresponding to the width of the said ribbon.

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