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J. S. FLEMING

3,153,418

SERRATED PAPER DENTAL CLEANER

Filed Dec. 5, 1962

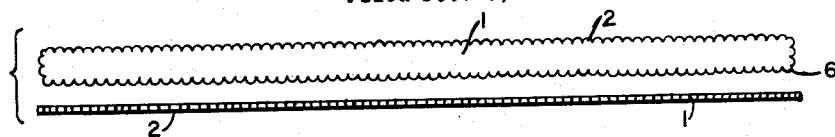


FIG. 1.

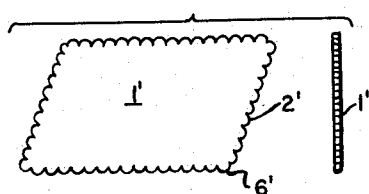


FIG. 2.

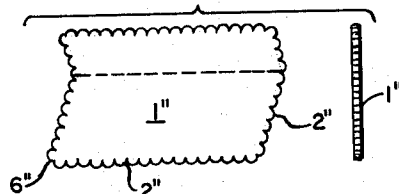


FIG. 3.

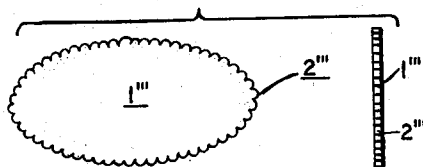


FIG. 4.

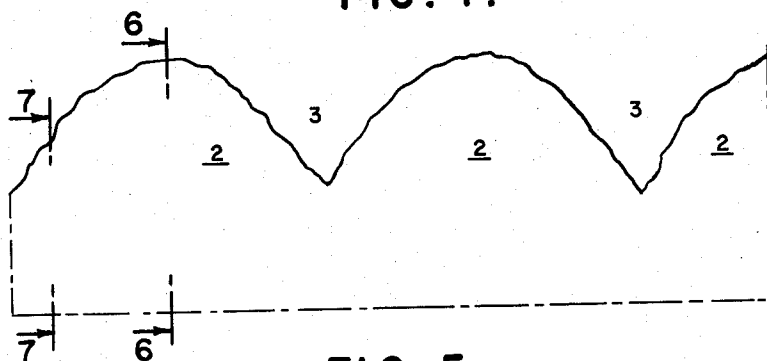


FIG. 5.

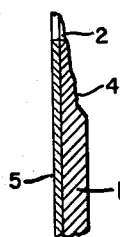


FIG. 6.

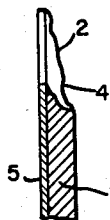


FIG. 7.

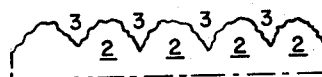


FIG. 8.

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3,153,418

SERRATED PAPER DENTAL CLEANER

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1 Claim. (Cl. 132-93)

The invention relates to dental cleaners for removing food particles from between adjacent teeth, this application being related to the Fleming patent dated October 21, 1958, No. 2,856,939. The dental cleaner of this application is the product of the Punch and Die for Tearing Paper, application for patent for which was filed November 1, 1962, and is now Patent No. 3,130,885.

An object of the invention is to provide a dental cleaner for removing food particles from between adjacent teeth consisting of a strip of this flexible sized wet strength paper having a soft cushioned edge extending along it as a border and consisting of a continuous series of uniform brush serrations beveled and having the pulp of the paper exposed upon one side thereof and having a thin superficial coating of water-repellant material upon its non-beveled side adapted to support said brush serrations against undue vertical yielding during its use, said soft edge being adapted to have a uniform brushing and cleaning action.

Other objects and advantages will appear hereinafter or will be obvious.

The invention consists in the novel construction and combinations of parts hereinafter set forth in the claims.

In the accompanying drawings:

FIGURE 1 shows plan and edge views of a narrow elongated ribbon form strip of said paper having the serrated soft edge.

FIGURE 2 shows plan and edge views of a rhomboid strip of said paper having said serrated soft edge, this being a second embodiment.

FIGURE 3 shows plan and edge views of two rhomboid strips of said paper joined together integrally thereof, foldable at the joint and having said serrated soft edge.

FIGURE 4 shows plan and edge views of an oval strip of said paper having said serrated soft edge.

FIGURE 5 is a fragmentary plan view on a much enlarged scale of the serrated soft edge.

FIGURE 6 is a section on the line 6-6, FIGURE 5.

FIGURE 7 is a section on the line 7-7, FIGURE 5.

FIGURE 8 is a view similar to FIGURE 5 on a less enlarged scale.

In the drawings, the numeral 1 designates the dental cleaner, composed of a strip of thin flexible sized wet strength paper having a soft cushioned edge extending along it as a border, said soft edge consisting of a continuous series of uniform intersecting outwardly tapered brush serrations 2, of less thickness than that of the body of the paper and having notches 3 therebetween for the reception and removal of food particles from between adjacent teeth and for brushing between said teeth following said removal during said movement, the free edge portion of each serration being of uniform thinness, the thickness of each serration gradually increasing from said free edge portion towards the body of the paper as shown in FIGS. 6 and 7. Said serrated soft edge is beveled and has the pulp of the paper exposed upon one side 4 thereof, and has a thin superficial coating of water-repellant reinforcing material 5 upon its non-beveled side adapted to support said soft edge against undue yielding during movement of said strip between adjacent teeth with its soft edge pressed vertically against the gums, the pressure

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load being distributed between said soft edge and said coating, said soft edge having said coating being adapted to have a brushing action during said movement.

The reinforcing material 5 may consist of any suitable water-repellant reinforcing material having good adhesiveness, such for example as a silicone or a wax, and it may be thinned by a suitable solvent to the requisite thinness, so that it does not add greatly to the thickness of the paper. The reinforcing material 5 upon the non-beveled side of said serrated soft edge is such as not to interfere with the flexibility of said strip nor with the soft cushioned nature of said serrated edge. The reinforcing material has substantially no penetration in the paper, such penetration being only sufficient to bond it to the paper. It may be applied to the paper in any suitable manner.

The serrated soft edge beveled and having the pulp of the paper exposed upon one side thereof tends to lose its strength and becomes disintegrated upon being moistened by the saliva, to avoid which tendency the paper is of high wet strength. This is important because of the weakness of the serrated soft edge, which needs all its strength.

The flexible paper may be sized to close its pores, it may be calendered by calender rollers to make it smooth and compact, and it may be of long fiber to increase its tensile strength. Said paper must be thick enough to provide an adequate soft edge.

Said strip may be of any suitable form. For example, it may be of narrow ribbon form as shown in FIGURE 1, one or both of its longitudinal edges being a serrated soft edge. It may be of rhomboid form as shown in FIGURE 2, its longitudinal and transverse serrated soft edges intersecting in points 6. It may be of oval form as shown in FIGURE 4, or it may be of the form shown in FIGURE 3, wherein two rhomboid strips are joined together integrally thereof and foldable at the joint. The coating 5 may serve as a base or carrying agent for anti-septic or antibiotic preparation.

The forms of the paper strip shown in FIGURES 2, 3 and 4 have the same reference characters applied thereto as that of FIGURE 1, but distinguished therefrom by the exponent ', in the form of FIGURE 2, by the exponent '' in the form of FIGURE 3 and by the exponent ''' in the form of FIGURE 4.

The right is reserved to modifications coming within the scope of the claims and to any other uses for which the invention is adapted, such for example as cleaning between an edge of the finger nail and the adjacent cuticle and cleaning under the eyelids.

I claim:

A paper dental cleaner comprising a strip of thin flexible sized wet strength paper having a soft cushioned edge extending along it as a border, said soft edge being beveled and having the pulp of the paper exposed upon one side thereof and having a thin superficial coating of water-repellant reinforcing material upon its non-beveled side adapted to support said soft edge against undue vertical yielding during edgewise movement of said strip between adjacent teeth with said soft edge pressed vertically against the gums, the pressure load being distributed between said soft edge and said coating; characterized in that said soft edge consists of a continuous series of uniform intersecting outwardly tapered brush serrations of less thickness than that of the body of the paper and having notches therebetween for the reception and removal of food particles from between adjacent teeth and for brushing between said teeth following said removal during said movement, the free edge portion of each serra-

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tion being of uniform thinness, the thickness of each serration gradually increasing from its free edge portion towards the body of the paper.

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