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H. H. LADWIG

1,955,428

DENTAL FLOSS HOLDER

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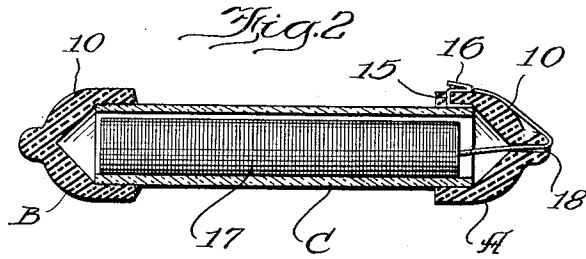
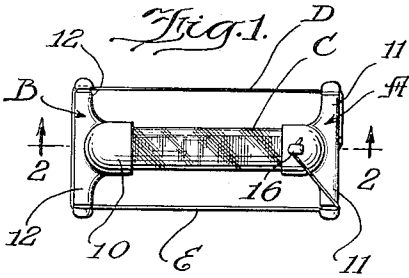


Fig. 11

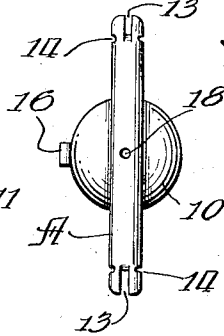


Fig. 3

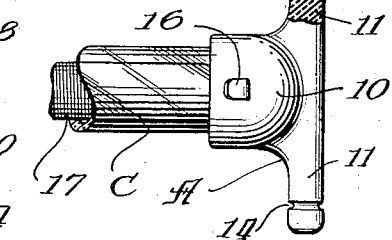


Fig. 5

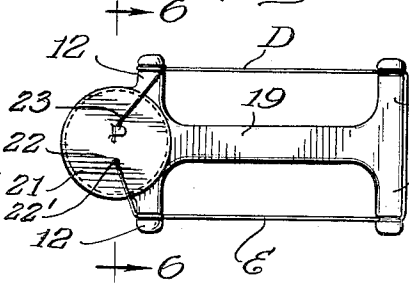


Fig. 6

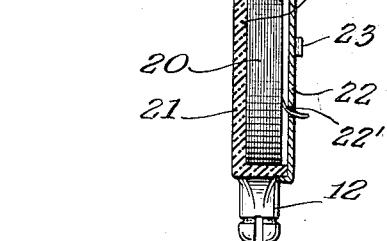


Fig. 11

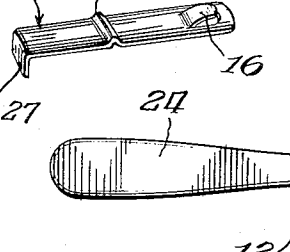


Fig. 7

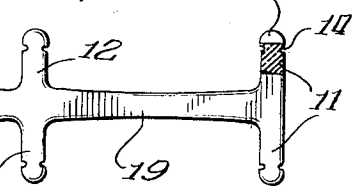


Fig. 10

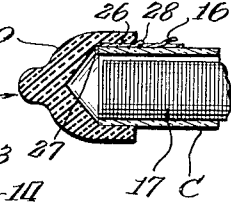


Fig. 9

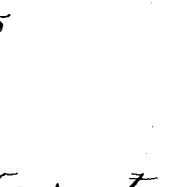
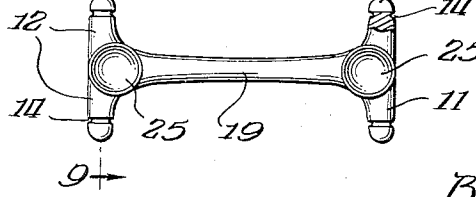


Fig. 8



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DENTAL FLOSS HOLDER

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My invention relates to dental floss holders.

Among its general objects the invention contemplates:

1. The supporting of a pair of spaced floss strand sections, preferably parallel, on a compact holder so that such strand sections simultaneously and effectively may be passed between the teeth of the upper and lower jaws by biting upon such strands.

2. The provision of a floss holder whereby cleaning of the spaces between all of the proximal surfaces of the teeth of the user may be accomplished in a fraction of the time heretofore required for cleaning the same spaces with floss strands howsoever supported or manipulated.

3. The provision of a floss holder which facilitates the cleaning of the spaces between the proximal surfaces of the teeth without subjecting the enamel of the teeth to the possibilities of those injuries which frequently result from sawing dental floss back and forth between the teeth in the usual way.

4. The utilization of the floss holder or a part thereof as a satisfactory floss magazine.

5. The construction of a dental floss holder which, in its several embodiments, is of simple construction, cheap to manufacture, sanitary and easy to use.

These and other features, objects and advantages of my invention will appear from the following detailed description, wherein reference is made to the accompanying drawing, in which

Fig. 1 is a side elevational view of an embodiment of my invention wherein the floss holder is conformed and adapted to afford a magazine for an elongated, cylindrical body of wound floss;

Fig. 2 is an enlarged longitudinal sectional view taken on the line 2-2 of Fig. 1 and looking in the direction indicated by the arrows;

Fig. 3 is an enlarged fragmentary side elevational view of one end of the floss holder exhibited by the preceding figures;

Fig. 4 is an end elevation of the device exhibited by the preceding figures;

Fig. 5 is a side elevational view of an embodiment of my invention wherein the floss holder is conformed to provide a magazine for a disc-like body of wound floss, the magazine portion of the holder also constituting a convenient finger grip;

Fig. 6 is a vertical section taken on the line 6-6 of Fig. 5, and looking in the direction indicated by the arrows;

Fig. 7 is a side elevational view of another embodiment of my invention, which is preferably formed from a single piece of molded material;

Fig. 8 is a side elevational view of a further embodiment of my invention which is conveniently formed from a single piece of molded material;

Fig. 9 is a vertical sectional view taken on the line 9-9 of Fig. 8 and looking in the direction indicated by the arrows;

Fig. 10 is a fragmentary sectional view of a floss holder essentially like the one depicted in Figs. 1 to 4, both inclusive, but provided with an improved form of floss-cutting clip which need not necessarily be molded into the holder end member with which it is associated; and

Fig. 11 is an isolated perspective view of the said floss-cutting clip.

Similar characters of reference refer to similar parts throughout the several views.

That embodiment of the invention which is exhibited in Figs. 1 to 4, both inclusive, comprises three principal parts, namely the T-shaped end members A and B, and the hollow cylindrical stem C, by which the said T-shaped end members are spaced and connected.

Each of the T-shaped end members A and B is preferably formed from a molded material such, for example, as any one of the well known phenolic condensation products. Each of these T-shaped members A and B comprises the receptacle 10, for one end of the stem C, and the arms 11-11 and 12-12, all of which occupy the same plane, i. e., a vertical plane when the device is in use.

Each of the arms 11-11 and 12-12 is provided with an end slot 13 and with an annular groove 14 spaced slightly from its extremity,—the purpose of said slots and grooves being to facilitate the stringing of the dental floss upon the arms of the holder, as illustrated, and in the manner presently to be described.

Molded into the material of the T-shaped end member A is a metal element 15 having an exposed tongue 16 which may be utilized to break or cut off used floss after the same has performed its intended function.

The hollow cylindrical stem C may be formed of a variety of materials, but is preferably formed of transparent or translucent glass so that the user of the device may at any time apprise himself as to the quantity of unused floss remaining in the magazine afforded by said cylindrical stem C. The ends of the cylindrical stem C are either permanently or detachably connected with and in the receptacle portions 10 of the T-shaped end members A and B. The connection of at least one of the receptacle portions 10 with the stem

C is removable when it is intended that the floss magazine afforded by the said stem shall be refillable. When it is desired that it shall not be possible to replenish the magazine with floss after the original supply is exhausted, both of the T-shaped end members are permanently attached to the hollow cylindrical stem C in any suitable manner, as by being cemented in position, sweated in position, etc.

Disposed in the magazine afforded by the hollow cylindrical member C, is a supply of wound floss, indicated at 17, which preferably is of elongated cylindrical shape, as illustrated. The free end of this supply of floss is led through an opening 18, in the receptacle portion 10 of the T-shaped end member A, and is then strung tautly between the several arms 11—11 and 12—12, as indicated in the drawing. In stringing the floss on each of the said arms, it is conveniently passed through the slot 13, thence halfway around the arm through one section of its groove 14, and thence again through the slot and on to the next arm. After the stringing of the floss on the arms has been accomplished, the free extremity thereof may be passed under the cutting tongue 16 if desired. The precise detail of the manner in which the floss is attached to the extremities of the several arms 11—11 and 12—12 is not particularly material. The important consideration is that the floss when strung on the holder, shall present two tautly drawn parallel strand sections as indicated at D and E, respectively.

In the use of the holder just described, it is grasped by one or the other of its T-shaped end members A and B, or by its hollow cylindrical stem C, and is inserted into the mouth of the user with the strands D and E occupying a vertical plane. The user then bites upon the spaced strands D and E, the former strand passing between proximal surfaces of a pair of upper teeth, and the strand E simultaneously passing between the proximal surfaces of a pair of lower teeth. By placing the holder in different portions of the mouth, and by successive bites upon the strands D and E, the spaces between the proximal surfaces of all the teeth may be thoroughly cleansed by means of dental floss in much less time than is required to clean such spaces by means of floss used without a holder, or by means of floss carried on the types of holders heretofore known. Another important advantage of the device of the present invention is that it effects the cleaning of the spaces between the proximal surfaces of the teeth without requiring that the floss be drawn to and fro in such spaces,—an operation which unless very delicately performed, is apt in time seriously to affect the enamel of the teeth, and/or mutilate the gums.

In that embodiment of my invention which is illustrated in Figs. 5 and 6, the arms 11—11 and 12—12 are formed in one piece, preferably from a molded material, with a solid stem 19, the arms 11—11 and 12—12, as in the embodiment of the invention hereinbefore described, being provided with the slots 13 and annular grooves 14 to facilitate the stringing of the floss on and between the arms. In this embodiment of the invention, illustrated in Figs. 5 and 6, a magazine for a disc-like supply of floss indicated at 20 is afforded by forming a circular receptacle 21 in that end of the molded structure which comprises the stem 19 and the arms 11—11 and 12—12, the open side of said magazine being closed by a metal cover plate 22 which is either permanently fixed in position or removable, as desired. The cover plate

22 is provided with an aperture 22' through which the floss may be led from the magazine, and it is also preferably provided with an integral outstanding tongue 23 which may be utilized to sever used floss when the same is to be removed from the holder and thrown away.

In this embodiment of the invention, which is exhibited in Figs. 5 and 6, that portion of the holder which constitutes the magazine, serves as a convenient finger grip by means of which the holder may be manipulated in the mouth. In this, and in all other embodiments of my invention, the floss is strung upon the holder in such a way as to afford the two parallel strand sections D and E upon which the user may bite to effect the cleansing of the spaces between the proximal surfaces of the upper and lower teeth without there being any necessity for sawing the floss strands to and fro in such spaces, as is necessary when floss is employed for tooth cleansing either with ordinary holders or without a holder.

In Fig. 7 I have illustrated a simplified embodiment of my invention, which comprises no magazine, all parts of the device being formed from a single piece of material, a molded material being most satisfactory for my purpose. The device, however, may be formed from metal or from a variety of other materials, if desired. In this embodiment of the invention, the arms 11—11 and 12—12 are integral with the stem 19 and with a handle 24 by means of which the device may be manipulated. In this embodiment of the invention, as in the forms exhibited in the preceding figures, the extremities of the arms 11—11 and 12—12 are provided with the slots 13 and the annular grooves 14 to facilitate the stringing upon the said arms of floss in such a way as to provide two spaced parallel strand sections upon which the user may bite to accomplish tooth cleansing in the manner contemplated by the present invention.

In the last form of my invention which is exhibited in Figs. 8 and 9, the holder is again formed from a single piece of material, i. e., molded material, metal, or the like. This form of the invention does not comprise a magazine. The arms 11—11 and 12—12, provided as before with their slots 13 and grooves 14, are formed integral with the stem 19. Formed in the sides of the holder, at approximately the points where the arms 11—11 and 12—12 merge into the stem 19, are circular depressions 25—25. These depressions, when the holder is grasped at either end, serve to receive the tips of the thumb and forefinger, and thus facilitate the manipulation of the holder in the mouth to effect tooth cleansing after the manner contemplated by the present invention. In this form of the invention, as in the others hereinbefore described, the dental floss is strung upon and between the arms 11—11 and 12—12, so as to afford spaced parallel strands of floss upon which the user may bite to effect cleansing of the spaces between the proximal surfaces of the upper and lower teeth without necessarily moving the floss to and fro in such spaces as has been customary heretofore.

The arrangement portrayed in Fig. 10 corresponds generally with that shown in Figs. 1 to 4, both inclusive, the only difference being in the nature and manner of supporting the element which carries the floss-cutting tongue 16. In the arrangement of Fig. 10, the tongue 16 is formed on an integral metal clip 26 which is provided with an end lip 27 and an intermediate transverse bead 28. The details of the clip are illustrated

in Fig. 11. Placed in the position shown in Fig. 10, the clip is located between the end member A and the hollow stem C, and is effectively held against displacement by the lip 27 and the bead 28 so long as the elements A and C remain assembled. This arrangement affords the decided advantage that the element which provides the floss-cutting tongue need not be embedded in the molded material of the element A.

Having thus illustrated and described several practical embodiments of my invention, what I claim is new and desire to secure by Letters Patent of the United States, is:

1. A dental floss holder comprising a stem and a plurality of arms on and between which floss may be strung to afford upper and lower floss sections upon which the user simultaneously may bite with the teeth of the upper and lower jaws, respectively, each of said arms being provided at its extremity with a slot and an annular groove, substantially as and for the purpose described.

2. A dental floss holder comprising a hollow stem of glass, said stem constituting a floss magazine, and end portions carried by said hollow stem and comprising arms on and between which floss may be strung to afford a pair of spaced strand sections on which the user may bite.

3. A dental floss holder comprising a hollow stem of glass, said stem constituting a floss magazine, and end portions carried by said hollow stem and provided with arms on and between which floss may be strung to afford a pair of spaced floss sections upon which the user may bite, substantially as and for the purpose described.

4. A dental floss holder comprising a stem hav-

ing arms carried at the extremities of said stem, on and over which dental floss may be strung to afford a pair of substantially parallel spaced dental floss sections upon which the user may bite, said stem and said arms being formed in a unitary structure which also affords a receptacle for a supply of dental floss, substantially as and for the purpose described.

5. A dental floss holder comprising a hollow stem, a pair of T elements mounted on said stem, the ends of the projecting arms of said T elements being adapted to receive dental floss strung between the elements, the stem and T elements being adapted to lie in a single plane.

6. A dental floss holder comprising a pair of parallel arms, an integral straight element connected to the central portions of said arms and a handle integral with said arms and element being substantially a continuation of said element, said arms being provided at opposite ends with means whereby dental floss may be strung between the arms, one length on each side and in spaced parallel relation to said element.

7. A dental floss holder comprising two parallel arms connected together by an integral rigid element which extends between their mid points and lies within the plane of the arms, said arms being adapted to each end to receive dental floss which may be hung in opposite lengths on either side of the rigid element and in spaced relation thereto whereby the user may bite upon said lengths of floss substantially as and for the purpose described, and a magazine for dental floss carried by the holder.

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