Oct. 21, 1924. 1,512,633

J. A. PECKHAM

DENTAL FLOSS HOLDER

Filed Nov. 15, 1923

Fig. 1.

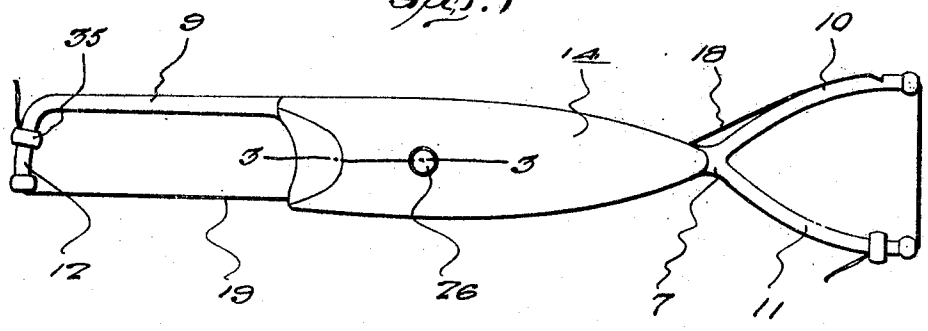


Fig. 2.

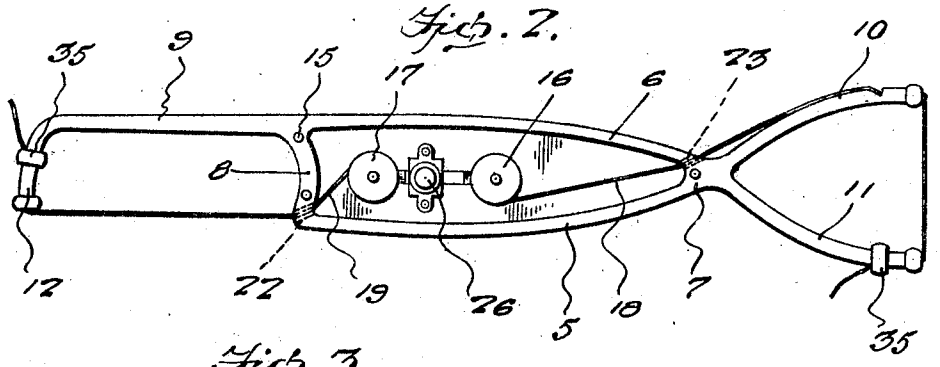


Fig. 3.

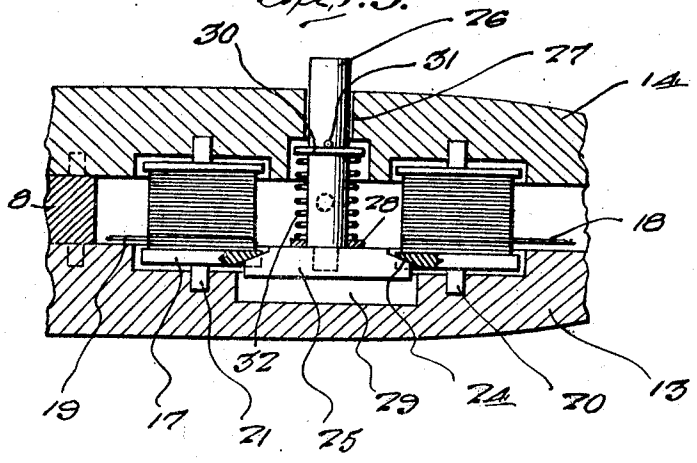
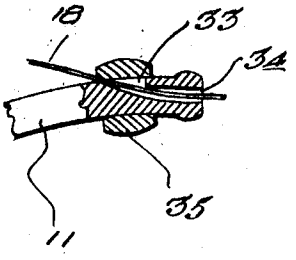


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DENTAL FLOSS HOLDER.

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To all whom it may concern:

Be it known that I, JOHN A. PECKHAM, citizen of the United States, residing at Roxbury, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Dental Floss Holders, of which the following is a specification.

This invention relates to certain new and useful improvements in dental floss holders of that type embodying means for holding spools of dental floss or thread, and means for holding portions of said thread in exposed position under tension for tooth cleaning purposes.

The primary object of the invention is to generally simplify and improve devices of the above character whereby the same may be cheaply and easily manufactured and placed in use, and whereby the same will be durable and efficient in operation for meeting with all of the requirements for a successful commercial use.

Another object of the invention is to provide means, in a single implement for exposing and holding under tension portions of two cleaning threads in different relations whereby the same implement may be effectively employed for cleaning the teeth both in the front and rear portions of the mouth.

Still another object of the invention is to provide improved means for maintaining the exposed portions of the thread under tension.

Other objects will appear as the nature of the invention is better understood, and the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawing, wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a side elevational view of a dental floss holder constructed in accordance with the present invention.

Figure 2 is a view similar to Figure 1 with the cover plate removed.

Figure 3 is an enlarged longitudinal fragmentary sectional view, taken substantially upon the line 3—3 of Figure 1, and

Figure 4 is a fragmentary view, partly in elevation and partly in longitudinal section of one of the arms between which portions of the thread or floss are exposed and held under tension.

Referring more in detail to the drawings, the present invention embodies a rigid metallic frame composed of side members 5 and 6 that converge and connect with each other at one end as indicated at 7 and that are rigidly connected in spaced relation at the other end by means of the inner arm 8 of a U-beam 9, said arm 8 extending transversely of the frame as shown in Figure 2. Rigid with the frame at the end of the latter when the members 5 and 6 converge and connect with each other, is a fork composed of a pair of arms 10 and 11, the outer ends of which are formed similar to the other arm 12 of the U-beam 9, and similar to each other, which construction, as will presently become apparent provides for holding exposed portions of dental floss under tension for tooth cleaning purposes.

Disposed and secured against opposite sides of the frame members 5 and 6 and the arm 8 are a pair of complemental plates 13 and 14 which conform in shape to said frame, and thereby close the space between the frame members 5 and 6 for forming a chamber. The connection between each of the plates 13 and 14 may consist in a plurality of dowel pins 15 rigidly connected with the arm 8 and the connected ends of the frame members 5 and 6, snugly fitting in sockets provided in the adjacent portions of the inner faces of said plates 13 and 14.

The plates 13 and 14 cooperate with the frame to provide a handle for the implement, and the plate 13 is adapted to be substantially permanently connected with the frame and providing an extremely tight fit of the dowels in the sockets of said plates 13. On the other hand, the plate 14 is adapted to form a removable cover by making the dowels fit within the sockets of the plate 14 sufficiently loose to permit forcible manual removal of said plate 14 from said dowel, while at the same time permitting accidental displacement of the same therefrom. In this manner, access may be had to the chamber within the frame and between the plates for the purpose of renewing the spools of dental floss as will presently become apparent.

Disposed within the handle chambers are a pair of spaced spools 16 and 17 upon which the separate strands or dental floss 18 and

19 are respectively wound, said spools being provided with rigid end pintles 20 and 21 respectively, which are removably journalled in opposed sockets provided in the handle plates 13 and 14.

The arm 8 of the U-beam 9 is provided with an opening as at 22 through which the thread 19 is passed from the spool 17, while the frame member 6 is provided with a similar opening as at 23, through which the thread 18 is passed from the spool 16.

The flanges of each of the spools 16 and 17 adjacent the handle plate 13 are provided with a series of notches as indicated at 24, and one notch of both spools is adapted to be engaged by the adjacent end of a cross bar 25 forming part of a catch for holding the spools against unintentional or accidental rotation. This catch further includes a stem 26 upon the inner ends of which the cross bar 25 is secured, and that is slidably mounted in a transverse opening 27 of the handle plate 14 as well as in a transverse opening provided in a plate 28 that is secured against the inner surface of the handle plate 13 so as to bridge a relatively large notch 29 provided in said surface and in which the cross bar is movable. A washer or the like as at 30 is held upon the stem 26 against outward displacement by means of a cross pin 31 or its equivalent, and a helical compression spring 32 is disposed about the stem between the plate 28 and the washer 30 for normally urging the stem 26 outwardly and thereby engaging the ends of the cross bar 25 simultaneously with opposed notches of the spools 16 and 17. The stem 26 extends outwardly of the opening 27 to form a finger piece, by means of which said stem may be depressed against the action of the spring 32 for simultaneously releasing the cross bar 25 from both of the spools.

The arms 10, 11, and 12 are of similar construction at their outer ends, each having a side opening 33 communicating with a bore 34 that extends longitudinally of the arm and opens at the outer end thereof as shown in the several views, particularly Figure 4. The arms 11 and 12 have their outer ends tapered gradually to a smaller diameter toward their free ends, and slidably disposed upon these tapered ends are collars 35.

In use, the thread 18 is passed through the opening 23 as set forth above, after which it is threaded into the opening 33 of the arm 10 and outwardly thru the bore 34 thereof. This thread is then extended across the arm 11 and into the bore 34 of the latter, after which the free end of the string is passed outwardly through the opening 33 of the arm 11, between the latter and the collar 35, the collar 35 of the arm 11 being slid outwardly for permitting the thread to be passed through the opening 33 thereof. This collar 35 is then slid inwardly, and by means of the tapering form of the outer end portion of said arm adjacent the opening 33 thereof, the end of the thread will be effectively wedged between the collar 35 and the arm 11 for maintaining the exposed portion of the thread between the arms 10 and 11 under tension when the cross bar 25 is engaged with a notch of the spool 16. In a like manner, the thread 19 is passed into the bore 34 of the arm 12 and outwardly thru the opening 33 thereof while the collar 35 of said arm 12 is disposed outwardly of said opening 33 of the same. The collar 35 of the arm 12 is then slid inwardly so as to tightly wedge the free end portion of the thread 19 between the collar 35 and the arm 12 for maintaining the exposed portion of the thread 19 between the arms 8 and 12 under tension when the cross bar 25 engages a notch in the spool 17. In this manner, an exposed portion of the thread 18 is held under tension extending transversely of the handle at one end of the latter, while the exposed portion of the thread 19 is held under tension extending parallel with the longitudinal axis of said handle at the other end of the same and at a side of the device. This provides for exposed thread portions extending at right angles to each other, whereby the desired exposed thread portions may be employed for cleaning certain teeth. In practice, the exposed portion of the thread 18 can be better used for cleaning particles of food from between the back teeth, while the exposed portion of the thread 19 may be better employed for cleaning particles of food from between the front teeth. When it is desired to expose a new portion of the thread, the collars 35 are released by sliding the same outwardly after which the stem 26 is depressed for disengaging the cross bar 25 from the spool. The user is then free to draw the thread outwardly by reason of the spool being free to rotate, and when this has been effected to the desired extent, the stem 26 is released for again locking the spools against rotation. The thread is then drawn through the openings in the arms 10, 11, and 12, until the new exposed portions thereof are under tension after which the collars 35 of the arms 11 and 12 are again slid inwardly for wedging the free ends of the threads between the collars and their respective arms. The device is then ready for subsequent use.

From the above description, it is believed that the construction and operation, as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art.

What I claim as new is:

1. In a dental floss holder of the charac-

ter described, a hollow handle having means for removably journalling a pair of dental floss holding spools therein in spaced relation, a fork rigid with one end of the handle and composed of a pair of longitudinally extending outwardly diverging arms, a U-beam rigid with the other end of the handle and including spaced transversely extending arms, means carried by the handle between the spools for releasably holding the same against rotation, said arms being provided with openings through which the threads of the spools may be passed whereby a portion of the thread of one spool may be extended across and exposed between the ends of a fork arm and a portion of the thread of the other spool may be extended across and exposed between the arms of the U-beam, and means associated with one arm of the fork and one arm of the U-beam for holding their respective threads under tension when the spools are held against rotation.

2. In a dental floss holder of the character described, a hollow handle having means for removably journalling a pair of dental floss holding spools therein in spaced relation, a fork rigid with one end of the handle and composed of a pair of longitudinally extending outwardly diverging arms, a U-beam rigid with the other end of the handle and including spaced transversely extending arms, means carried by the handle between the spools for releasably holding the same against rotation, said arms being provided with openings through which the threads of the spools may be passed whereby a portion of the thread of one spool may be extended across and exposed between the ends of a fork arm, and a portion of the thread of the other spool may be extended across and exposed between the arms of the U-beam, and means associated with one arm of the fork and one arm of the U-beam for holding their respective threads under tension when the spools are held against rotation, and said handle comprising a frame with handle plates secured against opposite sides thereof in which the spools are journalled, and said frame further embodying side members rigidly connected at one end by the inner arm of said U-beam.

3. In a dental floss holder of the character described, a hollow handle having means for removably journalling a pair of dental floss holding spools therein in spaced relation, a fork rigid with one end of the handle and composed of a pair of longitudinally extending outwardly diverging arms, a U-beam rigid with the other end of the handle and including spaced transversely extending arms, means carried by the handle between the spools for releasably holding the same against rotation, said arms being provided with openings through which the threads of the spools may be passed whereby a portion of the thread of one spool may be extended across and exposed between the ends of the fork arm, and a portion of the thread of the other spool may be extended across and exposed between the arms of the U-beam, and means associated with one arm of the fork and one arm of the U-beam for holding their respective threads under tension when the spools are held against rotation, said handle comprising a frame with handle plates secured against opposite sides thereof in which the spools are journalled, said frame member further embodying side members rigidly connected at one end by the inner arm of said U-beam, the means for securing the handle plate to the frame comprising dowel pins rigid with the latter.

In testimony whereof I affix my signature.

JOHN A. PECKHAM.