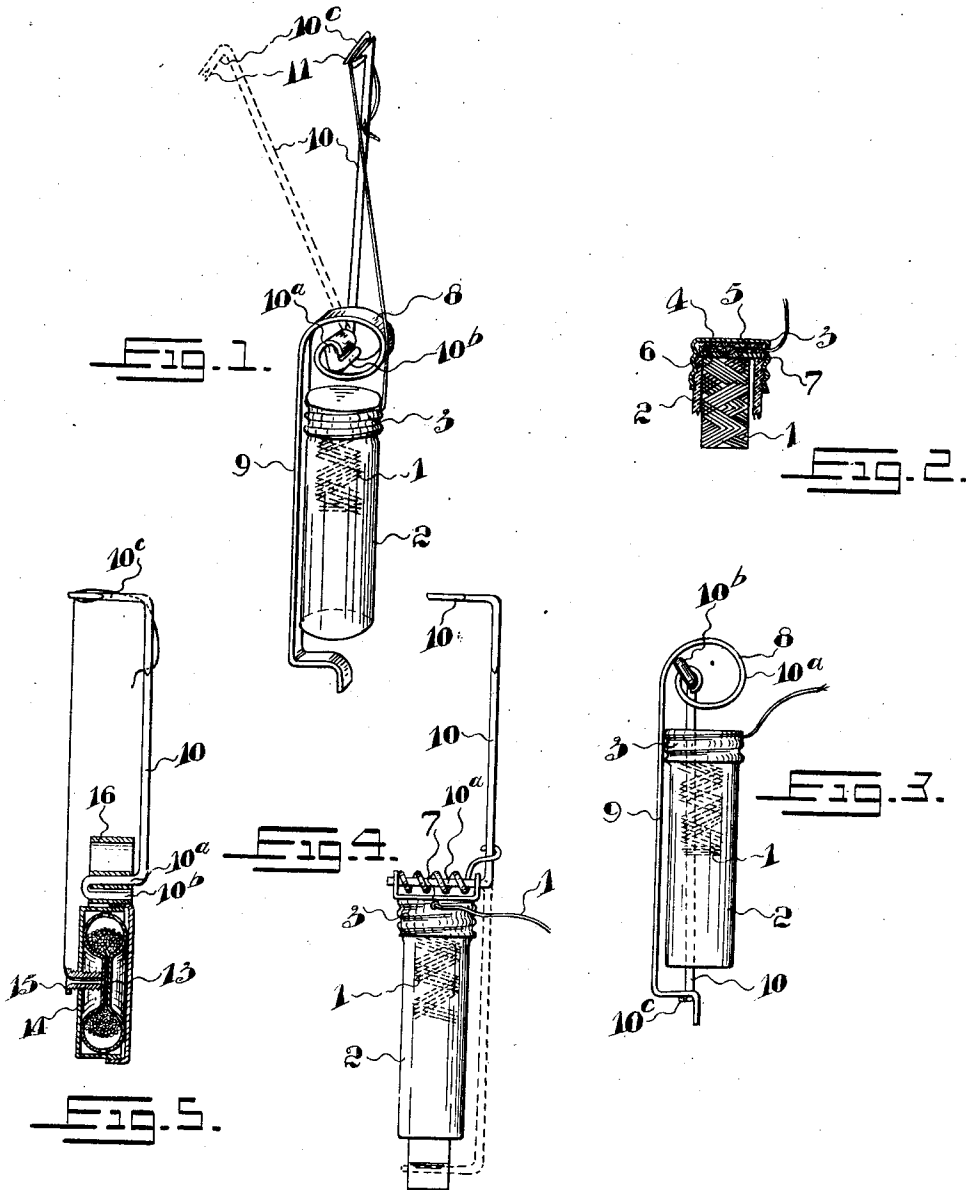


April 17, 1928.

R. L. CUMMER  
DENTAL FLOSS HOLDER  
Filed April 8, 1927

1,666,877



INVENTOR.  
*R. L. Cummer.*  
BY *J. Edward Marbee.*  
ATTY.

# UNITED STATES PATENT OFFICE.

ROBERT L. CUMMER, OF TORONTO, ONTARIO, CANADA.

## DENTAL FLOSS HOLDER.

Application filed April 8, 1927. Serial No. 182,152.

This invention relates to holders for dental floss, which is used for the purpose of cleaning between the teeth. Considerable difficulty has been experienced with holders such as heretofore in use in holding the floss sufficiently taut to satisfactorily clean the teeth, and particularly on account of the fact that floss has a tendency to stretch when dampened, thus increasing the difficulty due to the loose floss as the cleaning progresses.

My object therefore is to devise a construction having improved means for securing the floss taut in the first instance and for automatically taking up any looseness in the floss which would be caused due to the stretching aforesaid. A further object is to devise a construction which may be used in conjunction with the rolls or spools of floss now in common use, and which is also sufficiently cheap that a fresh holder may be supplied with each spool and the whole device discarded when the spool has been used.

The floss is usually sold in a small glass container having its mouth closed by a metal screw cap, and I attain my objects by mounting a spring on the metal cap, with which spring is connected an arm to the end of which the floss is fastened. The spring and arm are arranged so that the spring tends to rock the arm to cause a tension on the floss, the movement of the spring and arm being sufficient to take up any slackness in the floss due to stretching of the latter when dampened.

The construction is hereinafter more specifically described and illustrated in the accompanying drawings in which

Fig. 1 is a perspective view of the preferred form of my invention;

Fig. 2 a section through the top of the container illustrating the method of gripping the floss;

Fig. 3 a side elevation of a form of my device in folded position;

Fig. 4 a side elevation of a modified form of my invention; and

Fig. 5 a sectional view of another type of container having my invention applied thereto.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

1 represents a roll or spool of floss, 2 the glass container in which it is usually sold, and 3 the metal screw cap for the container.

Within the top of the cap is placed a

washer 4 of suitable material having a good gripping surface and also a second washer 5 having a hole 6 therein. In the side of the cap is formed a hole 7. The floss is threaded through the hole 6, then between the two washers and through the hole 7. It will be evident therefore that if the container be screwed tightly into the cap that the two washers will be tightly forced together to prevent passage of the floss, and that if the container be loosened in the cap, the washers will move sufficiently to allow the floss to be withdrawn from the spool through the opening 7.

Secured to the cap is a coil spring 8, preferably formed as part of a guard 9, which extends down one side of the container 1. It is evident, of course, that the guard may extend around the bottom and up the opposite side of the container if so desired.

10 is an arm, having both ends bent at substantially right angles to the main part of the arm. The end 10<sup>a</sup> is pivoted in an eye formed at the inner end of the spring 8. This end 10<sup>a</sup> is doubled back on itself to form a projection or shoulder 10<sup>b</sup> adapted to engage the spring adjacent the eye and limit the rocking of the arm in one direction.

The other end 10<sup>c</sup> of the arm is provided with one or more notches 11 in which the end of the floss may be engaged.

The spring normally tends to rock the arm to the position shown in dotted lines in Fig. 1. When it is desired to use the floss the arm is rocked against the tension of the spring to the position shown in full lines in Fig. 1, in which position the end 10<sup>c</sup> is closest to the hole 7. A sufficient length of floss having been drawn through the opening 7 and the container tightly screwed home to prevent further withdrawal, the floss is engaged in the notches 11. The arm is then set free and the spring tends to rock it back to the position shown in dotted lines, but is prevented by the floss itself on account of the arm being pivoted to one side and the movement of the arm towards the dotted position gradually increasing the distance of its end 10<sup>c</sup> from the hole 7. As the spring is thus under tension if there be any stretching of the floss, the arm will be forced back, but as its end moves further from the hole 7, the slack in the floss will be automatically taken up.

Various arrangements of the spring for actuating the arm 10 may be devised, one

modification being shown in Fig. 4 in which the arm is pivoted on a suitable support and a coil spring is mounted on the arm, one end of the spring engaging the support and the other end the arm.

In either form the arm may be folded as shown in Fig. 4, and the frame may be provided with a clip to hold the device in a vest pocket in the same manner as a pencil or pen.

In Fig. 5 another type of container is shown. The container is circular in shape with a wide annular channel adjacent its periphery, the walls at the centre being normally comparatively close together but adapted to be clamped tightly together. One wall has an opening 13 therethrough for the passage of floss. To this side of the container is secured a bridge 14 through which is threaded a screw 15. By tightening down on this screw, the adjacent wall of the container may be forced against the opposite wall to clamp the floss between them. The screw 15 is provided with a hole in alignment with the passage 13.

To the outer periphery of the casing is secured the spring 16, which has a tension arm 10 which is mounted and acts in exactly the same manner as in the form shown in Fig. 1.

What I claim is:

1. In a dental floss holder, the combination of a receptacle for holding the floss and having an outlet through which a length of floss may be drawn; means adjacent the outlet for gripping the floss; a spring secured to the receptacle; and an arm pivoted on said spring and adapted to have the end of the floss engaged therewith, said arm having an extension adapted to engage the spring whereby the spring tends to rock the arm to tension the floss.

2. In a dental floss holder, the combination of a receptacle for holding the floss and having an outlet through which a length of floss may be drawn; means adjacent the outlet for gripping the floss; a swinging arm adapted to have the end of the floss engaged therewith; and spring means tending to rock the arm to tension the floss.

3. In a dental floss holder, the combination of a carrier for the floss; floss gripping means on said carrier; an arm movable relative to the carrier and adapted to have the end of the floss engaged therewith; and a spring normally tending to move said arm to tension the length of the floss between the gripping means on the carrier and the arm.

Signed at Toronto, Canada, this 5th day of April, 1927.

ROBERT L. CUMMER.