Nov. 9, 1937. C. E. BLUHM 2,098,610

DENTAL FLOSS HOLDER

Filed May 6, 1937

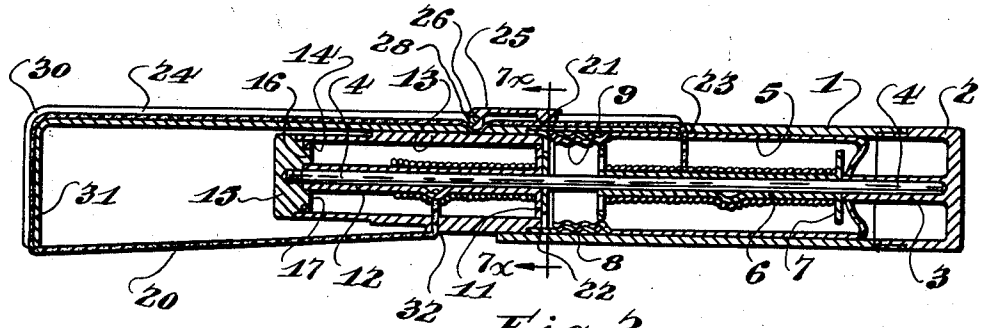



Fig. 2




Fig. 1

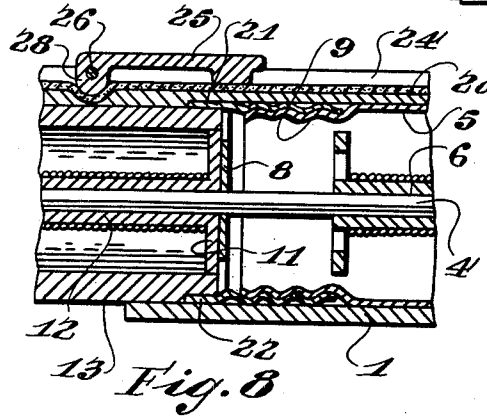



Fig. 8

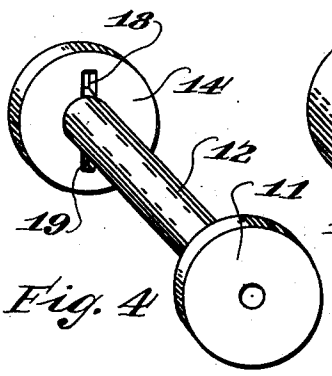



Fig. 4

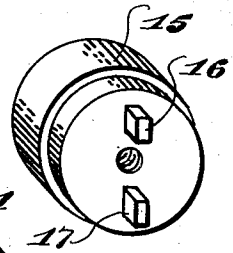



Fig. 3

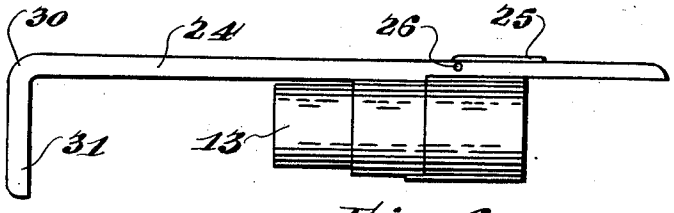



Fig. 6

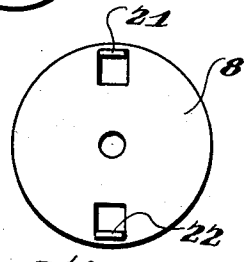



Fig. 5




Fig. 7

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## DENTAL FLOSS HOLDER

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Application May 6, 1937, Serial No. 141,137

5 Claims. (Cl. 132—92)

The object of this invention is to provide a device that will hold a strand of dental floss in tension, permitting its use from time to time, and will also hold a supply spool of dental floss from which the strand is unwound or unreeled, and a receiving spool on which it is wound as fast as it is necessary because of use, soiling, or otherwise.

These and other objects of the invention will be illustrated in the drawing, described in the specification, and pointed out in the claims at the end thereof.

In the drawing:

Figure 1 is a top plan view of the device.

Figure 2 is a longitudinal section on the line 2*x*—2*x* of Figure 1.

Figure 3 is a perspective view of the clutch that drives the receiving spool.

Figure 4 is a perspective view of the spool that is used both as a receiving spool and as a supply spool.

Figure 5 is an end elevation of the cap used on the end of the bottle containing the supply spool.

Figure 6 is a detail view of the supporting sleeve and bracket through which the floss travels from one spool to the other and by which the span of floss is held in tension.

Figure 7 is a vertical section through the tension clamp shown in Figure 2, the section being taken on the line 7*x*—7*x* of Figure 2.

Figure 8 is an enlarged detail view of the central part of Figure 2, the parts being shown in section.

In the drawing like reference numerals indicate like parts.

In the drawing reference numeral 1 indicates the handle or sleeve of the device. 2 indicates a cap on the end thereof having a sleeve 3 formed centrally thereof on the inside, which sleeve has a socket therein which receives the shaft 4 which makes a pressed fit therewith. 5 indicates a bottle made preferably of celluloid, which holds a spool 6 on which is wound the supply of dental floss. This bottle 5 has an opening in the bottom thereof through which extends the sleeve 3, which bears against the end flange 7 of the spool 6. The shaft 4 extends through the spool 6 and through the cap 8, which is on the threaded open end 9 of the bottle, against which cap bears the end flange 11 of the spool 12. This flange 11 nests in one end of the sleeve 13, and the flange 14 nests in the other end of the sleeve 13.

At the left hand end of the sleeve 13 is the end cap or clutch member 15. This member is threaded with a female thread in which the male thread on the end of the shaft 4 engages, and by this engagement the clutch member 15 is drawn toward the cap 2, holding all of the intermediate parts together, and by it the clutch member is turned by the cap 2.

On the right hand end of the clutch member 15 are the two lugs 16 and 17, which engage in recesses 18 and 19 of the end flange of the receiving spool 12. By means of this engagement the receiving spool 12 is turned by turning the cap 2, which turns the shaft 4, the clutch member 15, and the spool 12. The spool 12 is the receiving spool and on it is wound up the floss 20 which is drawn from the supply spool 6. It will be understood that the bottle 5 is stationary and does not turn. It is held against turning by the cap 8 threaded thereon, which has two lugs 21 and 22 struck up therefrom, which lugs engage in recesses cut in the end of the sleeve 13.

The bottle 5 has a hole in the side thereof, indicated at 23, through which the floss is drawn. It also passes through the sleeve 1 and nests into a groove cut in the upper side of the rod 24 which is attached to the sleeve 13. This rod is cut away to receive a retarding or friction device 25, which is pivotally mounted on the sleeve 13 at 26. This friction device is shown in cross section in Figure 7 and has a groove 27 therein through which the floss travels and with which it is in frictional engagement. On the hub of this friction device 25 is an eccentric 28 which clamps the floss against the sleeve 13 and holds it firmly in place when the device 25 is in the position shown in Figure 2. When this device is raised up at the right hand end, the floss is released and can travel through the groove provided in the rod 24. The groove in the rod 24 is cut from the top down, and not from the bottom up, and the floss lies in this groove. It travels around the bend 30 and along the offset part 31, and from there the floss is an open span as indicated at 20, which span at the right hand end travels through an opening 32 in the sleeve 13, into engagement with the spool 12 on which it is wound up. On this spool 12 is a little blister struck up, leaving an opening through which the floss can be inserted so as to positively engage with the spool and be drawn thereby as the spool is turned by the shaft 4 and the clutch 15. In this way the floss is wound up on the spool 12 and a fresh supply is drawn into the span 20 from time to time, where it is exposed

for use on the teeth, and is drawn off from the spool 6, which is free to turn idly.

It will also be understood that the arm 25 is raised to release the floss each time it is drawn forward, and is moved down again to the position shown in Figure 2 to clamp the floss in place after a fresh supply has been drawn forward, so that the span 20 will be held in tension.

I claim:

1. A device for holding a short length strand of dental floss exposed in tension, said device comprising a hollow handle having a receiving spool and a supply spool located therein, a shaft on which both of said spools are mounted to rotate, one of said spools rotating idly on said shaft and the other spool being keyed to said shaft and driven thereby.

2. A device for holding a short length strand of dental floss exposed in tension, said device comprising a hollow handle having a receiving spool and a supply spool located therein, a shaft on which both of said spools are mounted to rotate, one of said spools rotating idly on said shaft and the other spool being keyed to said shaft and driven thereby, a forwardly extending arm mounted on the side of said handle, a laterally extending bracket on the end of said arm, a groove in said handle and bracket through which said strand of floss is adapted to travel from one spool to the other.

3. A device for holding a short length strand of dental floss exposed in tension, said device comprising a hollow handle having a receiving spool in one end thereof and a supply spool in the other end thereof, a shaft extending the length of said handle on which both of said spools are mounted to rotate, one of said spools rotating idly on said shaft and the other spool being keyed to said shaft and driven thereby, a forwardly extending arm mounted on the side of said handle and a laterally extending bracket on the end of said arm, a groove in said handle and bracket through which said strand of floss is adapted to travel from the rear spool as it is drawn by the forward spool, a clamping device on the handle for clamping the strand of floss and holding it against movement, the rotation of the shaft and forward spool drawing the floss tight over the arm and bracket and in the open span between the end of the bracket and the handle.

4. A device for holding a short length strand of dental floss exposed in tension, said device comprising a hollow handle having a receiving spool in one end thereof and a supply spool in the other end thereof, a shaft extending the length of said handle on which both of said spools are mounted to rotate, the rear spool being the supply spool and rotating idly on the shaft, the forward spool being the receiving spool and being keyed to said shaft and being driven thereby, a strand of floss extending out laterally through the handle and passing along the outside thereof from the supply spool and extending in laterally through the handle to the receiving spool, means for holding the intermediate part of the floss in open suspension under tension.

5. A device for holding a short length strand of dental floss exposed in tension, said device comprising a hollow handle having a receiving spool in the rear end thereof and a supply spool in the forward end thereof, a shaft extending centrally the length of said handle on which both of said spools are mounted to rotate, one of said spools rotating idly on said shaft and the other spool being keyed to said shaft and driven thereby, a cap on the end of said handle, positively engaged with said shaft, said shaft being turned by the turning of the cap.

CHARLES E. BLUHM.