

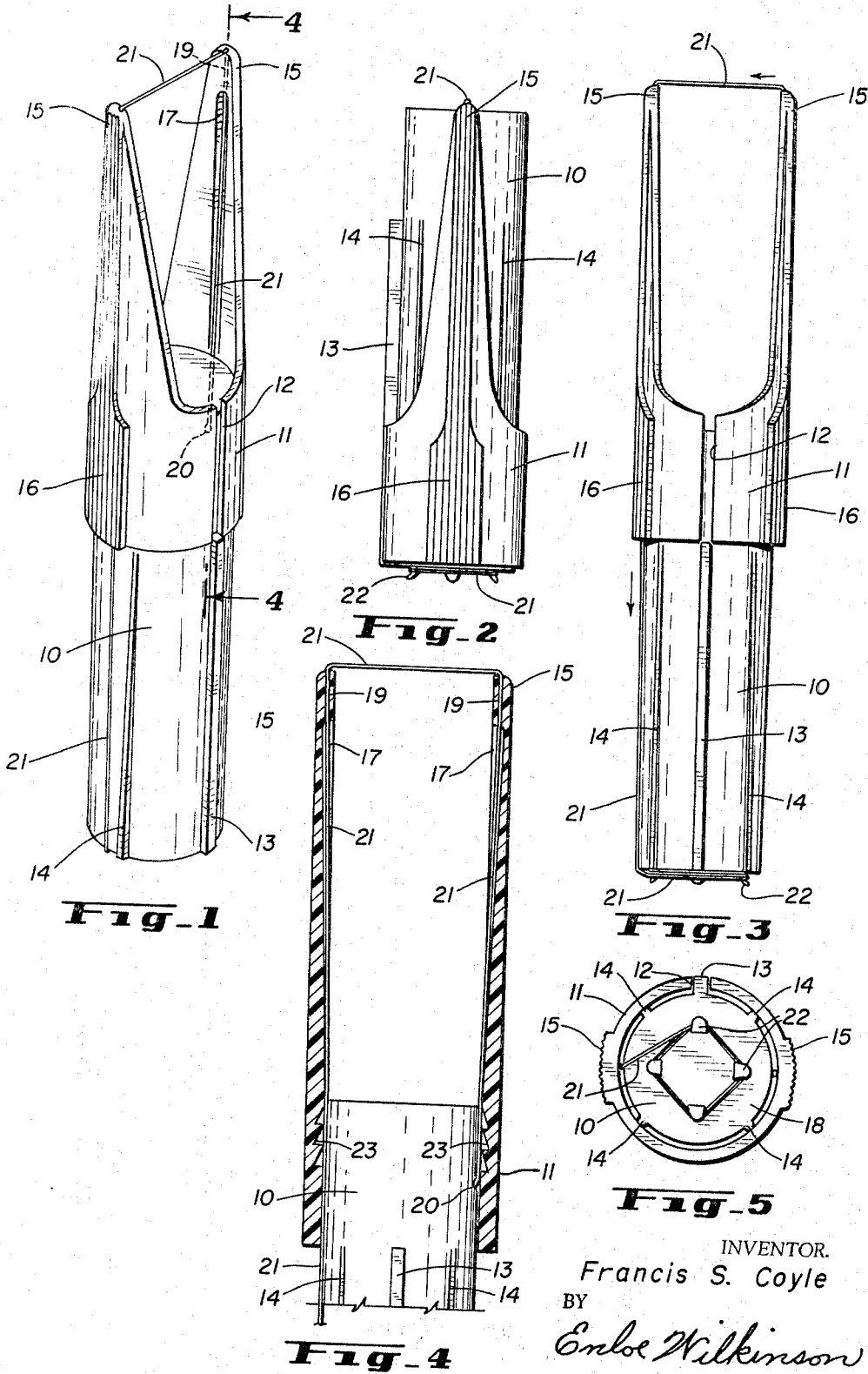
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DENTAL FLOSS APPLICATORS

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2 Claims. (Cl. 132-92)

This invention relates to a dental floss applicator and more particularly to a simplified applicator and holder, wherein a length of dental floss is held taut in position to be inserted between adjacent teeth.

It is an object of the invention to provide such an improved device wherein a single movement of the device causes a taut stretch of dental floss to be presented for immediate use.

Another object is to provide a device which is substantially the size of an ordinary dental floss cartridge in operative position.

A further object is to provide a device wherein it is not necessary for the operator to touch the sanitary dental floss from the time it leaves the cartridge until after it has been placed in operative position and used.

Another object is to provide an improved device wherein the necessity for manually tying, looping or threading the dental floss is eliminated.

Still a further object is to provide a device which is economical to manufacture to the extent that the entire device, including the empty cartridge may be discarded at such time as the empty supply of dental floss in the cartridge is exhausted.

With these and various other objects in view, the invention may consist of certain novel features, as will be more fully described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings, in which like characters are used to designate like parts—

FIG. 1 is a perspective view of a device embodying the invention and showing it in position.

FIG. 2 is a side elevation of the device in inoperative or retracted position.

FIG. 3 is a front elevation of the device shown in extended position.

FIG. 4 is an enlarged sectional elevation of the body portion shown in extended position taken on the line 4-4 of FIG. 1.

FIG. 5 is an enlarged bottom view of the device.

Referring in detail to the drawing, the device consists of a cylindrical cartridge 10 which is slightly tapered, being larger at the top than the bottom and a tubular body portion 11 which is slidably mounted on the cartridge. The body has vertical slot forming portions 12 and the cartridge has a control ridge 13 which fits into the slot of the body. The cartridge is provided with vertical fins 14, which engage the interior surface of the body 11 providing an air space between the body and cartridge when the device is in retracted or inoperative position.

The tubular body 11 carries a pair of oppositely disposed fingers 15 which have ribs 16 extending along their outer surfaces which strengthen the fingers and facilitates the manipulation of the device. The inside surfaces of the fingers are provided with grooves 17.

The lower part of the body 11 has gripping ridges 23 around its inner surface. The grooves 17 terminate short of the upper extremities of the fingers 15 and passages 19 extend from the upper ends of the grooves through the upper ends of the fingers.

The cartridge 10 is adapted to hold a conventional spool of dental floss. An orifice 20 is positioned in the sidewall of the cartridge near its upper end, through which a strand of dental floss 21 extends. The orifice 20 is in vertical alignment with the groove 17 and passage 19 of the adjacent finger. The control ridge 13 positioned in the slot 12 maintains the orifice 20, groove 17 and pas-

sage 19 in alignment when there is vertical movement between the cartridge 10 and body 11, to the extent that the control ridge is positioned within the slot.

The strand 21 issuing from orifice 20 is threaded upwardly through the passage 19 and downwardly through the passage of the opposite finger. The strand is extended downwardly to the bottom of the cartridge 10 where it is anchored by winding it around the dimples 22 mounted on the closure plug 18 which closes the bottom of the cartridge. The interior surface of the lower portion of the body 11 is provided with gripping ridges 23 which are formed by a series of notches in the inner surface of the body.

In inoperative or retracted position the strand of floss extends from the end of one finger to the other as shown in FIG. 2 and the top of the cartridge 10 is substantially even with the upper ends of the fingers and the bottom of the cartridge is substantially flush with the lower margin of the body portion 11. With the free end of strand 21 anchored to the dimples 22 on the bottom of the cartridge, the floss in the cartridge will be drawn out through the orifice 20 as the body 11 is moved upwardly on the cartridge.

As the body 11 is moved upwardly on the cartridge 10 it is prevented from rotating by the control ridge 13 positioned in the slot 12. When the body has been moved upwardly on the cartridge to the position shown in FIGS. 1, 3 and 4, the body 11 may be rotated slightly in either direction, since the lower end of the slot 12 is above the upper end of control ridge 13. This causes the lower margin of the body to become engaged with the upper end of the control ridge and prevents the body from sliding downwardly on the cartridge.

The cartridge being slightly tapered causes a wedging action between the cartridge 10 and body 11 as the body is moved upwardly on the cartridge. The grooves 17 in the inner surfaces of the fingers 15 terminate at their lower ends at a point slightly above the upper end of the cartridge 10 when the body has been moved upwardly to the extended or operative position of the device as shown in FIGS. 1 and 2. At such time as the grooves are adjacent the outer sidewall of the cartridge, the strand of floss 21 which passes through the grooves will not be engaged by the cartridge and the strand may move freely without any binding between the cartridge and body.

At such time as the body 11 has been moved upwardly to a point where the outer surface of the cartridge 10 is no longer opposite the groove portions 17, and strand 21 is gripped by the binding contact of the cartridge with the body and the gripping ridges 23 at the lower end of the body; consequently further upward movement of the body causes the strand 21 to tighten and become taut across the upper ends of the fingers 15.

After the portion of the strand of floss 21 which extends between the ends of the fingers has been used, the device may be retracted to the position shown in FIG. 2 by rotating the body to the point where the slot 12 is again in alignment with control ridge 13 at which time the body 11 may be moved downwardly on the cartridge 10. The resulting slack in the floss strand 21 may then be taken up by disengaging the portion of the strand which has been anchored to the dimples 22 on the plug in the bottom of the cartridge and pulling it downwardly until the slack has been removed. The strand may be again anchored to the dimples and the dimples may have sharp enough edges to cut the used portion of the strand when given a jerk after being wound around them. The used portion of the strand is thus removed and the device is again ready to be moved into operative position with a fresh portion of the floss presented between the ends of the fingers 15.

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It is apparent that the sanitized portion of the floss which is drawn through the orifice 20 of the cartridge and across the fingers 15 need not be handled prior to being used.

It is to be understood that this invention is not to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various other forms of the device will be apparent to those skilled in the art without departing from the spirit of the invention or scope of the claims.

I claim:

1. A dental floss applicator comprising a cylindrical cartridge having sidewalls tapering from top to bottom adapted to hold a spool of dental floss, an orifice in the sidewall of said cartridge adjacent the top thereof, a vertical control ridge on the outer surface of said cartridge extending from the bottom to a point spaced from the top thereof, a closure plug in the bottom of said cartridge having floss securing dimples thereon, a tubular body moveably mounted on said cartridge having slot forming portions on each side of said control ridge, oppositely positioned, upwardly extending fingers on said body, longitudinal grooves in the inner surfaces of said fingers, one of said grooves being in alignment with said orifice, the upper ends of said grooves terminating at a point spaced from the upper ends of said fingers, passages extending through the upper ends of said fingers and communicating with the upper ends of said grooves, horizontal ridge forming portions on the interior surface of the lower part of said body and a strand of dental floss extending from the interior of said cartridge through said orifice upwardly along the aligned groove and through the passage in one of the fingers, thence downwardly through the passage and along the groove of the opposite

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finger, passing between the cartridge and body and extending to the dimples on the closure plug in said cartridge.

2. A dental floss applicator comprising a substantially cylindrical tapered cartridge adapted to hold a spool of dental floss therein having an orifice adjacent its upper end, a tubular body split lengthwise to form a slot slideably mounted on said cartridge, a pair of diametrically opposed fingers extending from one end of said body having longitudinal passages extending through their upper ends, a longitudinal control ridge on said cartridge positioned within the slot of said body, said control ridge extending from the lower end of said cartridge to a point spaced from the upper end thereof, horizontal ridges on the interior surface of the lower part of said body and a strand of dental floss issuing from the orifice in said cartridge extending through the passages in said fingers and between the body and cartridge.

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