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THREAD-HOLDING PINCERS FOR THE CLEANSING OF INTERDENTAL AND INTERMOLAR SPACES

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Fig. 1.

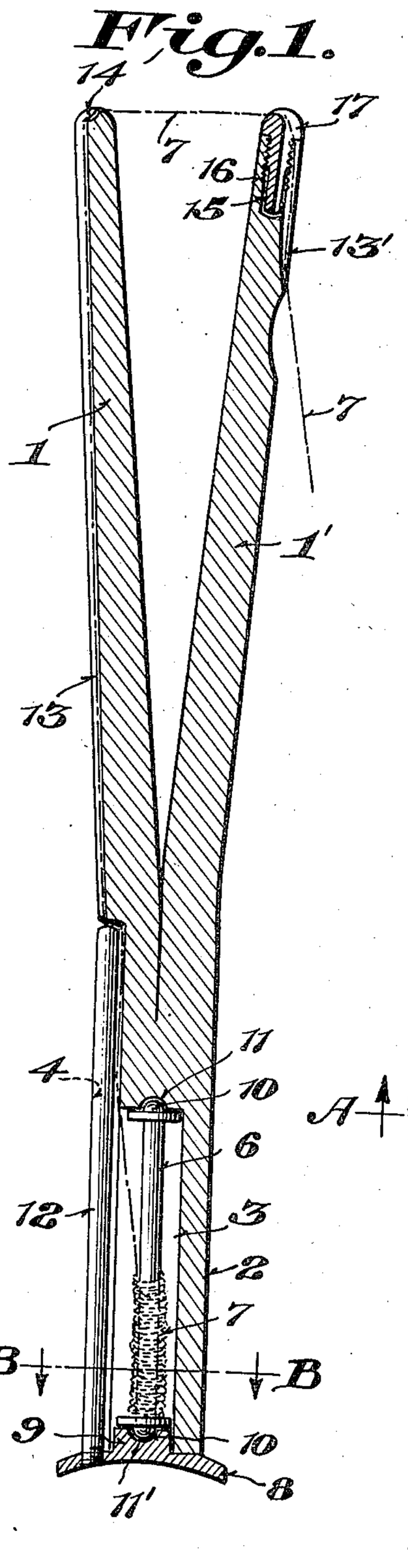


Fig. 2.

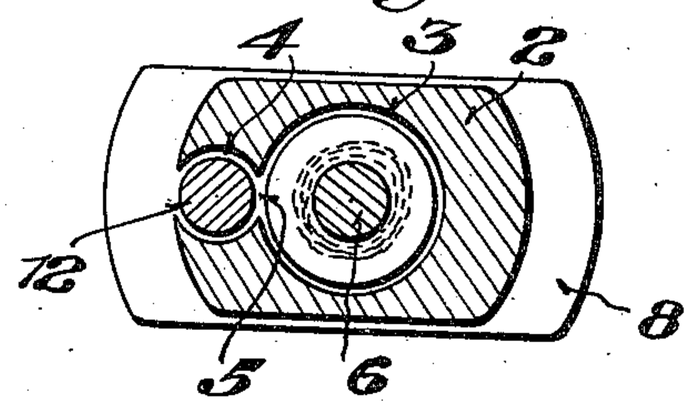
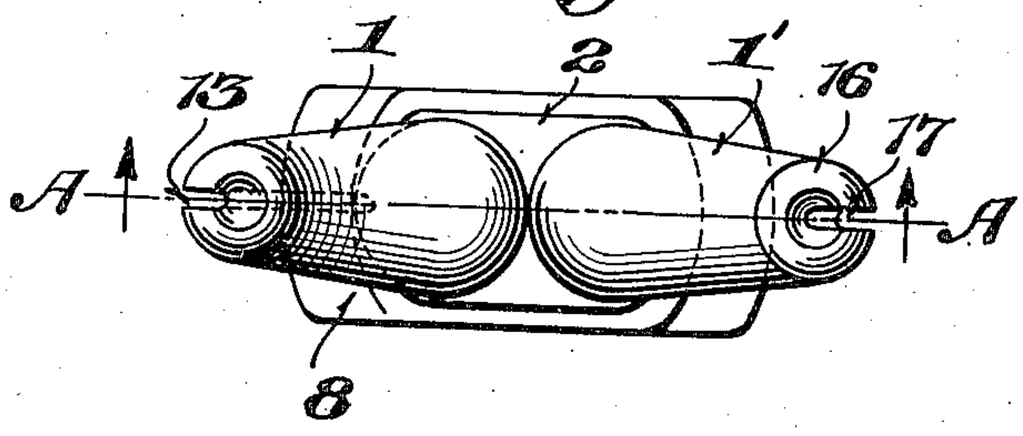


Fig. 3.



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THREAD-HOLDING PINCERS FOR THE CLEANSING OF INTERDENTAL AND INTERMOLAR SPACES

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4 Claims. (Cl. 132—92)

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This invention relates to improvements in thread-holding pincers for cleaning interdental and intermolar spaces, having for its main object the adapting of said pincers to certain constructive and functional improvements, making it possible to obtain evident advantages in the use of same.

This invention likewise includes other secondary objects, which will appear from the following description, and in order that the invention may be readily understood and carried into effect, a preferred embodiment of one of its more usual forms has been explained in detail in conjunction with the accompanying drawings, in which:

Figure 1 is a longitudinal section of the thread-holding pincers according to this invention, and as seen from cut A—A of Figure 3.

Figure 2 is a transverse cross section of the same pincers, taken along the line B—B of Figure 1, and finally:

Figure 3 is an assembly detail of the same pincers seen from one of its ends.

Like numerals refer to like parts in the several figures of the drawings.

According to these drawings, the novel pincers are formed by two armpieces 1 and 1' made of resilient material, and being an integral part of headpiece 2. The headpiece or base 2 contains a cylindrically shaped orifice 3, which enters and extends axially and longitudinally up to a depth appropriate for said headpiece. This orifice, in turn communicates, through one wall thereof, with a second orifice 4 parallel to the former one. This second orifice is of a smaller cross-sectional diameter but of greater length than the adjacent orifice 3.

The distance between both orifices 3 and 4 is such that at their point of contact they form a narrow opening 5, the object of which will be made clear further on.

The above described orifice 3 is to contain a thread-carrying reel, essentially composed of reel 6, on which the corresponding adequate thread 7 is wound. This thread is held in position by means of a removable cover 8, fitting in the mouth of the orifice 3 in any convenient fashion. For example, said cover may be provided, to this end, with a round protuberance 9, which fits like a stopper into the mouth of said orifice.

In order that reel 6 may be kept perfectly guided for its rotation, both ends of same may be provided with two small projections 10, semi-spherical or otherwise adequately shaped, which rest in two small cavities 11 and 11', formed, respectively, at base of orifice 3 in the headpiece or base member 2 and in the inside face of projection 9.

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In turn, the removable cover 8 has a cylindrical stem 12 fixed on to it by a screw thread or other means, which stem fits tightly against the internal surface of orifice 4. Its object will be seen further on.

Furthermore, it will be seen from the drawings that armpiece 1 bears on its outside a narrow groove 13, which runs from the bottom of orifice 4 up to the end 14 of said armpiece, meanwhile, constantly increasing in depth; in turn, the opposite armpiece 1' carries a similar groove 13' on its outer surface, but which runs only for a short length. On the other hand, the free end of this armpiece is perforated axially by hole 15, in which a screw 16 is adjusted by rotation. This screw is provided at one side with a longitudinal slot 17, capable of aligning itself with groove 13' at a given moment.

The above-mentioned device is operated as follows:

Through a slight pull, thread 7 unwinds to a certain extent from reel 6. The thread, in its passage through orifice 4, is subjected to pressure by stem 12, thus preventing more thread from coming out.

On emerging from orifice 4, thread 7 is made to pass through grooves 13 and 14 of armpiece 1; in this state, the thread under convenient tension, as shown in Figure 1, is made to enter slot 17, of screw 16, and groove 13'.

The thread is held in the slot 17 by pressure of the same against the side of arm 1' by the thumb of the user. Then the resilient arms 1 and 1' are squeezed lightly to move their respective tip ends closer together. While holding the arms under this slight squeezing pressure, the screw or threaded bolt 16 is turned in the bore 15 through an angle of approximately 90°, to thereby disalign the slot 17 with groove 13'. Turning of the threaded bolt 16 serves to wind a small portion of the thread around the shank of the bolt and secures this portion of the thread 7 between the underside of the notched bolt head and the top rim of the bore 15 in the tip end of arm 1'. Thus, the thread 7 will be held in proper position at this end, and it is secured sufficiently tight so that release of the squeezing action on the arms 1 and 1' will not pull it out. When the arms are released they tend to return to their normal spread-apart positions, and, as they do, an added tension is put on the strand of thread stretched between them. The return action of the resilient arms does not pull out more thread from the spool chamber 3, as

the stem 12 yieldably holds a portion of the thread after it leaves the spool and secures the same tight enough to counteract the pull set up by the added tension on the thread between the arms 1 and 1'. Thus due to the yieldable resiliency of the armpieces 1 and 1', the portion of thread between the ends of said armpieces will be kept under tension, as shown in detail in Figure 1. The device is thus ready for use.

Whenever it is necessary to change the used portion of thread, this is done by again turning screw 16 through a 90° angle until the notch 17 and groove 13' are lined up in the position indicated in Figure 1, after such alignment, the free end of thread 7 being thus entirely loose. Another slight pull at this thread will unwind a new portion of same from reel 6 to be again held in position through the operation described above.

The invention as herein described will be readily understandable and further explanations will not be required by those versed in the matter.

I do not wish to be limited to the precise construction shown in this application and the same may be varied so long as the variation is within the scope of a fair interpretation of the claims.

I claim:

1. A thread holder comprising, a hollow elongated base opening at one end, a pair of resilient outwardly diverging arms extending from the other end of the base, one of said arms having an elongated groove along its outer surface and a notch across the tip end thereof in alignment with the groove, said other arm having a threaded bore in its tip end and a longitudinal groove along a short portion of its outer surface, a threaded bolt with a notched head threaded into the bore of said last-mentioned arm, said notch in the bolt head being adapted to be turned into and out of alignment with said short longitudinal groove, said hollow base being formed as two connected elongated bores, the first bore being relatively larger in cross-sectional diameter and shorter than the second, a spool of thread rotatably mounted therein arranged to supply a strand of thread upwardly from said first bore into the second mentioned bore and to the outside of the base upwardly along the elongated groove of the first-mentioned arm, an end cap having a socket for cooperating with a like socket in the bottom of the said first bore for rotatably mounting said spool of thread, and an elongated member with an end mounted in the inner surface of said cap and extending upward into said second bore, to thereby yieldably squeeze the strand of thread leading from the spool to the outside of the base against the interior upper portion of the second bore, whereby upon spanning the free end of said thread strand between the notch in the tip end of the first arm and the notch in the said bolt head, the arms may be pressed toward each other, and the bolt turned to thereby secure the same between the body of the bolt and the said bore into which it threads, so that release of pressure on said resilient arms causes them to return toward their normal position and provide tension on the thread strand spanned between the said arms.

2. Improvements in thread-holding pincers for cleansing of interdental and intermolar spaces having two armpieces, a headpiece, said armpieces being an integral part of the headpiece, said headpiece being in part axially perforated by first and second connecting elongated orifices of different depths, a thread bearing reel mounted in said first orifice of lesser depth, a strand of thread wound on said reel, means for exerting pressure on the thread on its unwinding from the thread-bearing reel, said reel being mounted to rotate in the said first orifice of lesser depth and being supported together with said means by a removable cover detachably fixed to the headpiece, said means extending into the second orifice, thread-guiding and thread-sustaining grooves formed in the external faces of said armpieces, and a screw formed with a slot mounted in the end of one of said armpieces adapted to secure a portion of the free end of said thread.

3. In a dental floss holder, a pair of resilient diverging arms extending from an elongated hollow base containing a spool of dental floss, said base having a side aperture connecting with the spool chamber out of which feeds the strand of dental floss to and across the respective ends of the arms, a notch in the tip end of one arm, and a member with a notched head rotatably mounted in the tip end of the other arm, whereby upon manual squeezing of the arms toward each other to shorten the space between the notched tip end of one arm and turning the said notched head of the other arm, the strand of floss becomes secured to the tip end of the said arm by said notched head and a release of the said manual pressure thereby provides tension on the strand of floss spanned across the respective ends of the arms, a closure cap secured in the end of said hollow base for holding said spool of floss in said base, and a rod carried by said cap extending into a hollow bore connecting with the spool chamber, said rod holding a portion of the fed out strand of floss, after it leaves the spool, to thereby prevent unwinding of the floss when the same is under tension by the resilient arms.

4. In a dental floss and spool holder of the forked-arm type having an elongated hollow base, said hollow base being formed as two connected elongated bores opening to the end of the base, a cap for covering the end of the base and for holding a spool of dental floss within the first of the said bores, and an elongated rod carried by said cap extending upward into the second of said bores in frictional engagement with the walls thereof, whereby the said rod resists the unwinding of the dental floss from a spool of dental floss supported by the cap over the end of the said hollow base.

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