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HOLDER FOR DENTAL INSTRUMENTS

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Fig. 1

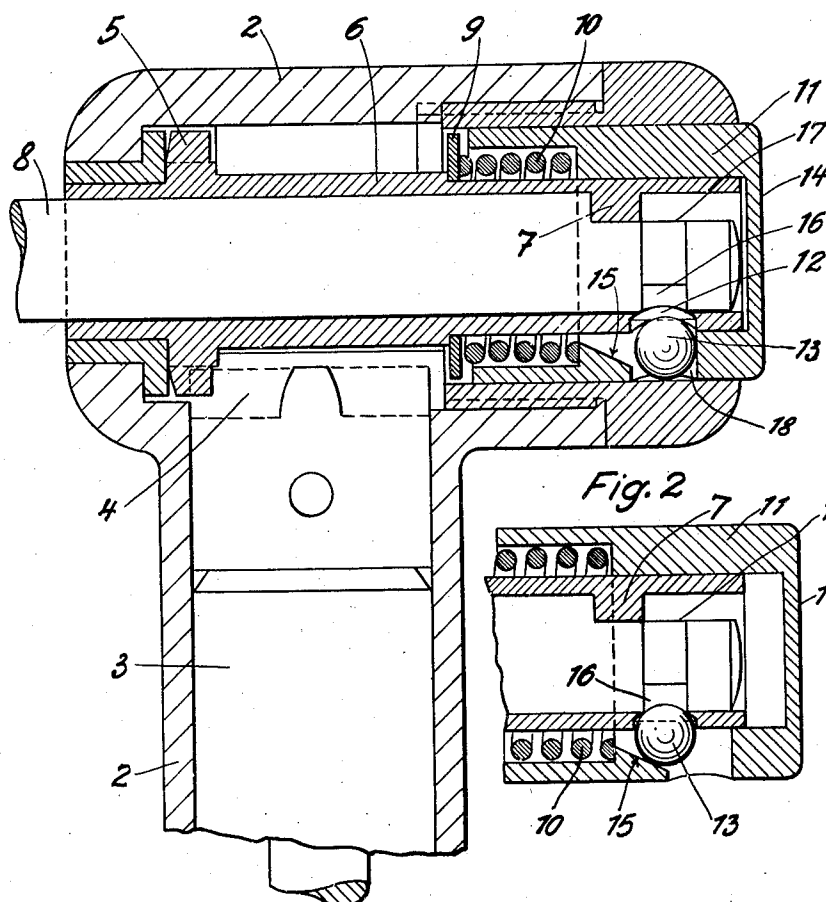


Fig. 2

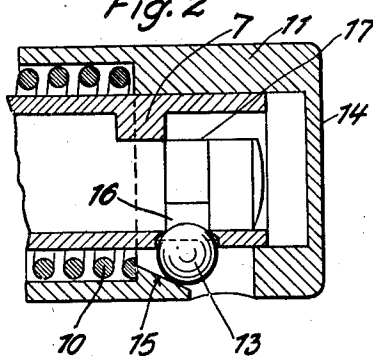
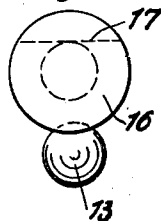


Fig. 3



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HOLDER FOR DENTAL INSTRUMENTS

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2 Claims. (Cl. 279—82)

This invention relates to holders for dental instruments. The object of the invention is to facilitate the clamping of the drill or other instrument in the holder and its release therefrom, to give the exterior of the holder a better appearance and, by avoiding projecting parts which can only be cleansed with difficulty, to enable the holder to be thoroughly disinfected. The clamping device for the instrument, for example a drill, comprises, in accordance with the invention, a ring, which is axially displaceable in the head of the holder, by the displacement of which a locking member can be pressed into or released from an annular groove which is provided in the drill or the like. This locking member preferably consists of a ball with which a conical surface provided on the displaceable ring coacts and thereby presses the ball into the annular groove in the drill or other instrument, the displaceable ring being held in the locked position by means of a spring which presses against it. The release of the drill or other instrument is effected by compressing the spring which presses against the ring whereby the conical surface is moved away from the locking member and the latter falls into a recess in which it lies out of engagement with the drill or other instrument.

A constructional embodiment of the invention is illustrated by way of example in the accompanying drawing, in which:—

Figure 1 is a cross section through the head of the instrument holder with the locking member in the position in which it is out of engagement with the drill or other instrument;

Figure 2 is a partial section similar to Figure 1, but with the locking member in engagement with the instrument; and

Figure 3 is a detail view.

Referring to the drawing, the numeral 2 represents the head of the holder in the neck of which the part 3 which carries the lower driving member 4 is mounted. The lower driving member 4 engages an upper driving member 5 at right angles thereto which is provided on a sleeve 6 which is revoluble in the head 2. The drill 8 is inserted in the sleeve 6 and held therein as hereinafter described.

The rotary sleeve 6 has an annular shoulder 9 against which one end of a helical spring 10 abuts. The other end of the spring can be compressed by an end face of an axially displaceable ring-like member 11. The sleeve 6 is provided at 12 with a recess into which a ball 13 can partly enter. This happens if no pressure is

exerted on the rear surface 14 of the annular member 11 (see Figure 2). In this case the spring 10 presses the annular member 11 to the rear so that an inclined surface 15 on the annular member coacts with the ball 13 and presses it into the recess 12 in such a manner that a part of the ball projects into an annular groove 16 in the drill 8 and prevents the drill from being displaced in an axial direction (see Figures 2 and 3). The drill 8 is rotated by the sleeve in known manner by means of a flat 17 provided at the rear end of the drill with which a corresponding flat 7 on the sleeve 6 engages. In order to release the drill (see Figure 1), pressure is exerted against the rear face 14 of the annular member 11 so that the spring 10 is compressed and the conical surface 15 is removed from the ball 13 which, therefore, falls into the recess 12 in the annular member 11 and into a position in which it is out of engagement with the annular groove 16. The drill 8 can then fall out. The clamping of the drill in the sleeve can take place by simply pushing it into the sleeve when the ball 13 first presses the conical surface 15 a short distance backwards against the action of the spring 10 and then automatically re-engages with the annular groove 16 as soon as this comes within range.

Several balls, for example three, may be employed instead of only one. When several balls 30 are used the flats 17 and 7 for causing the drill to rotate with the sleeve can be omitted, since, if the implement be properly constructed, the clamping action of the balls is sufficient to ensure that the drill is rotated without slip together with the sleeve. Also other rolling bodies, for example rollers, can be employed instead of balls. It is also possible to arrange a roller in such a way as to cause the drill to rotate with the sleeve, that is to say so as to replace the flat 7 on the sleeve 6.

Instead of the annular groove 16, the drill may be provided with a number of recesses corresponding in number to the number of balls employed into which the balls 13 enter. The described form of construction has the advantage that even after a long period of use there is no axial play and that small deviations in the width and depth of the annular groove 16 which is usually provided in the drills do not impair the tightness of the clamping, because inequalities of this kind are neutralized by the ball entering to a greater or less depth into the recess 12.

A similar construction can also be employed

for coupling the axle 3 with an elbow piece or double elbow piece situated beneath it.

I claim:—

1. A holder for dental instruments comprising
5 a casing, a sleeve revolubly mounted in the casing and adapted to receive the shank of an instrument, an annular member fitted in the casing
10 over one end of said sleeve so as to be axially displaceable thereon, an aperture in a part of the sleeve surrounded by the annular member,
a locking member located in said annular member
15 in proximity to said aperture, means on said annular member whereby in one axial position said locking member is caused to project in part through said aperture and in another axial position
to be released therefrom, and a spring whereby the said annular member is held in the
position in which the locking member engages in the aperture.

2. A holder for dental instruments comprising a casing, a sleeve revolubly mounted in the casing and adapted to receive the shank of an instrument, an annular member fitted in the casing over one end of said sleeve so as to be axially
5 displaceable thereon, an aperture in a part of the sleeve surrounded by the annular member, a recess in said annular member in proximity to
10 said aperture, a ball located in said recess when the annular member is in one axial position, an inclined surface on said annular member whereby
15 said ball is caused to project in part through said aperture when the annular member is displaced into another axial position, and a spring whereby the annular member is held in the position in which the locking member engages the aperture.

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