

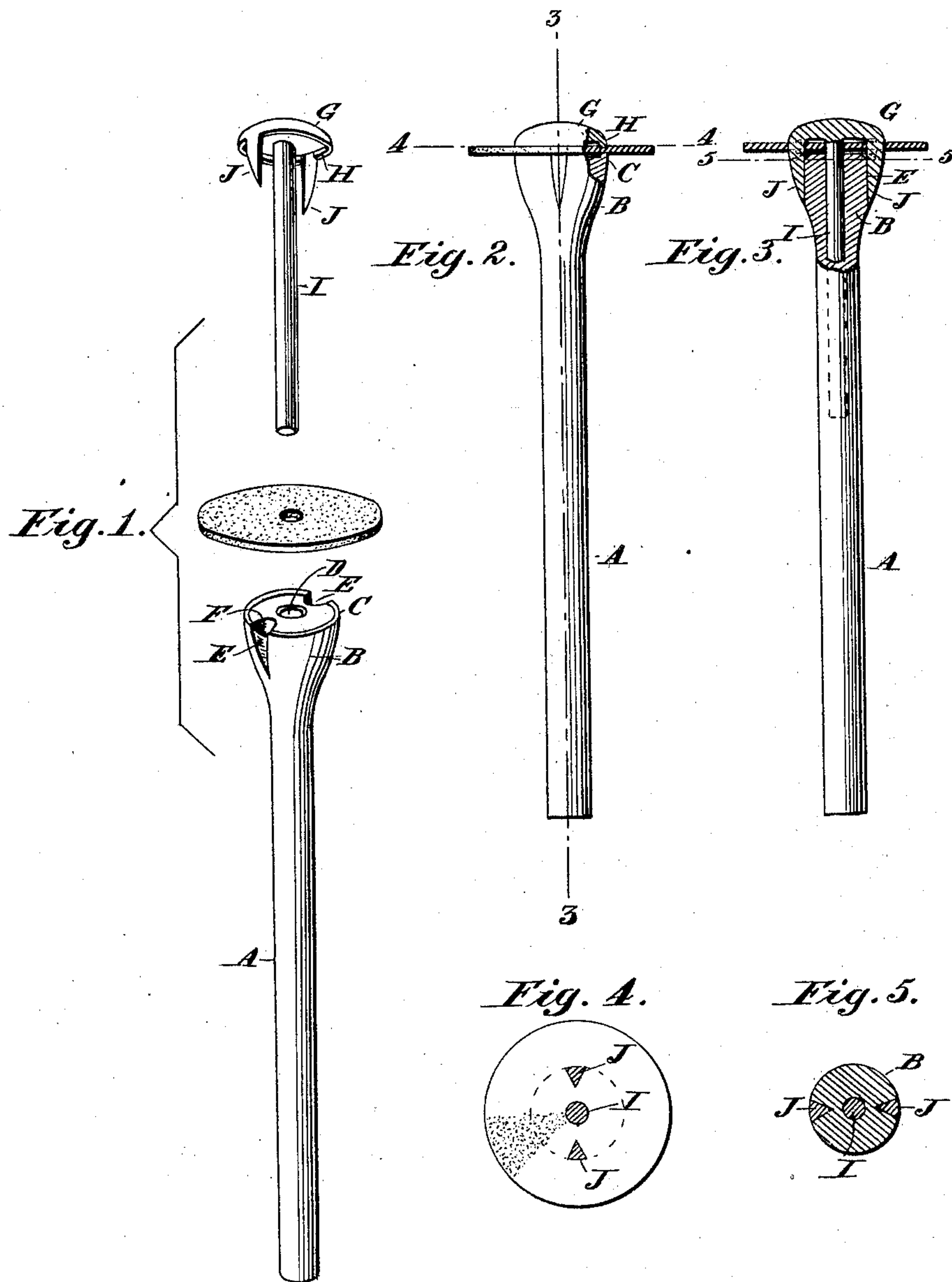
No. 711,340.

Patented Oct. 14, 1902.

G. J. PAYNTER,
DENTAL MANDREL.

(Application filed Apr. 2, 1902.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE JANVIER PAYNTER, OF PHILADELPHIA, PENNSYLVANIA.

DENTAL MANDREL.

SPECIFICATION forming part of Letters Patent No. 711,340, dated October 14, 1902.

Application filed April 2, 1902. Serial No. 101,114. (No model.)

To all whom it may concern:

Be it known that I, GEORGE JANVIER PAYNTER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Mandrels, of which the following is a specification.

My present invention pertains to improvements in mandrels, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a perspective view of the mandrel and disk to be held thereby, the parts being shown in their separated condition; Fig. 2, a side elevation, partly in section; Fig. 3, a vertical sectional view on the line 3 3 of Fig. 2; and Figs. 4 and 5, cross-sectional views on the lines 4 4 and 5 5, respectively.

The object of the present invention is the production of a mandrel which may be quickly and easily assembled and which when the parts are positioned with the disk in place will securely hold the disk and cause a positive rotation thereof irrespective of the direction of rotation of the mandrel. The positive rotation of the disk is of course of material advantage, and the present construction is also advantageous in that the faster the mandrel is rotated the tighter the parts hold. The construction is such that the disks will not slip off when subjected to thrust or pull.

Referring to the drawings, A denotes the spindle or stem of the mandrel, having one end enlarged, as at B, and formed with a circumferential upstanding rim C. The spindle is likewise provided with a central axial opening D and with a series of substantially V-shaped notches E, formed in the body, two of said notches being shown in the form illustrated. These notches are preferably arranged diametrically opposite and, as will be seen upon reference to Figs. 1 and 3, are formed in line with lead-grooves F, the function of which will presently appear.

G denotes the head, preferably formed with a depending flange or rim H and likewise provided with a stem or post I. Said head has two fingers or lugs J, extending down therefrom at or near its periphery, which are

so positioned or arranged with reference to the notches E that they pass into said notches when the parts are assembled. As will be noted more particularly upon reference to Figs. 4 and 5, the fingers are V-shaped in cross-section, being complementary to the notches. This construction produces upon the ends of the fingers sharp or substantially sharp points which readily puncture the disk K and yet leave no sharp point or any projection whatsoever when the parts are assembled, the fingers throughout lying flush with the body B and presenting an even smooth surface.

In the act of securing a disk in place the stem or post I is passed through the central opening in the disk and into the opening D. The head is then pushed down, the fingers passing down through the disk and into the notches E. Should the fingers, however, not be in direct alinement with the said notches, then the grooves F come into play, serving to direct the ends of the fingers into the notches E, giving the head a slight turn or rotation in so doing. The parts are so proportioned that the fingers fit snugly into the notches E. In fact, the fingers may be said to be sprung outwardly to a slight degree as they are forced down to place. The oppositely-disposed rims C and H bind upon or bite into the disk slightly, thereby assisting the fingers in the secure holding of the disk.

As will be readily understood, the rotation of the mandrel causes what may be termed a "setback" of the disk and head, thereby causing the fingers to bind tightly on the inclined faces of the notches, rendering separation of the parts all the more difficult. The greater the rotation speed the greater the centrifugal action and as a consequence the greater the binding action between the parts. In practice with the disk at work the disk will drag back against the fingers, thereby causing them to bind against the walls of the notches. This coupled with the centrifugal action insures an effectual clamping of the disk in place.

It is to be noted that there are no screws, springs, nuts, or the like to become worn and loose and there is in addition to the disk itself, but one movable part—namely, the head. The disk may be quickly secured in place or

removed by simply pushing the head to place or removing the same. Moreover, the construction affords an even surface all over, free from any projections whatsoever.

5 Having thus described my invention, what I claim is—

1. In combination with a mandrel, a stem having a series of notches or grooves formed in the outer side face thereof at one end; and
10 a head having downwardly-projecting fingers adapted to pass through a disk interposed between the head and the stem, said fingers fitting within the grooves and binding the parts together, substantially as described.

15 2. In a mandrel, the combination of a stem having a series of substantially V-shaped notches or grooves formed in the outer side face thereof at one end; and a removable head having downwardly-projecting fingers
20 adapted to pass through a disk interposed between the head and stem, said fingers fitting within the notches or grooves, substantially as described.

3. In a mandrel, the combination of a stem;
25 a removable head; and connections between said head and stem having oppositely-inclined bearing-faces, said faces lying in planes substantially parallel to the axis of the stem whereby the greater the speed of revolution
30 of the mandrel the greater the frictional contact between the parts.

4. In a mandrel, the combination of a stem having a central axial opening, and a series of substantially V-shaped notches or grooves
35 formed in the side face thereof at one end; a head having downwardly-projecting fingers adapted to pass through a disk interposed between the head and stem, said fingers fitting

within the grooves and being complementary in form to said grooves; and a post extending downwardly from said head and passing into the opening formed in the stem. 40

5. In a mandrel, the combination of a stem having an enlarged end, said end being provided with a central axial opening and with
45 substantially V-shaped notches or grooves in its outer face; an upstanding rim formed around the periphery of said end; a head provided with downwardly-projecting V-shaped fingers, said fingers fitting within the notches
50 or grooves formed in the enlarged end; a central post extending downwardly from said head; and a depending rim or flange likewise extending downwardly from said head, substantially as described. 55

6. In a mandrel, the combination of a stem having an enlarged end B, said end being formed with an upstanding rim around its periphery and likewise provided with V-shaped notches or grooves formed in its outer face,
60 and a second series of grooves formed in its upper end in line with the notches or grooves in the side; and a head provided with downwardly-projecting fingers, a downwardly-projecting central post adapted and arranged to
65 pass into an opening formed in the center of the stem, and likewise provided with a downwardly-projecting rim, substantially as and for the purpose described.

In testimony whereof I have signed my
70 name to this specification in the presence of two subscribing witnesses.

GEORGE JANVIER PAYNTER.

Witnesses:

THEO. H. M'CALLA,
HARRY BOSWELL.