No. 719,312. PATENTED JAN. 27, 1903.

E. J. DOUHET.

DENTAL DISK HOLDER.

APPLICATION FILED DEC. 10, 1901.

NO MODEL.

Fig. 4.

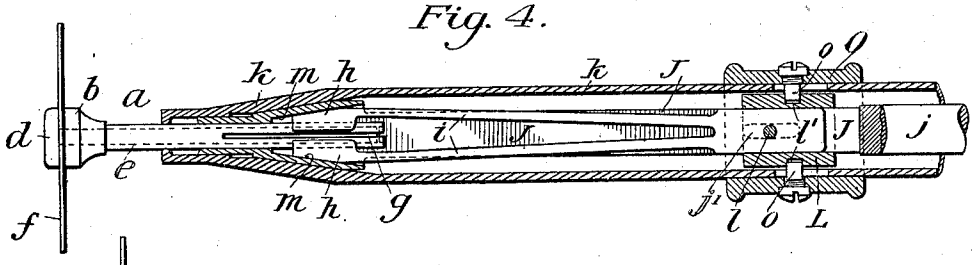


Fig. 1.

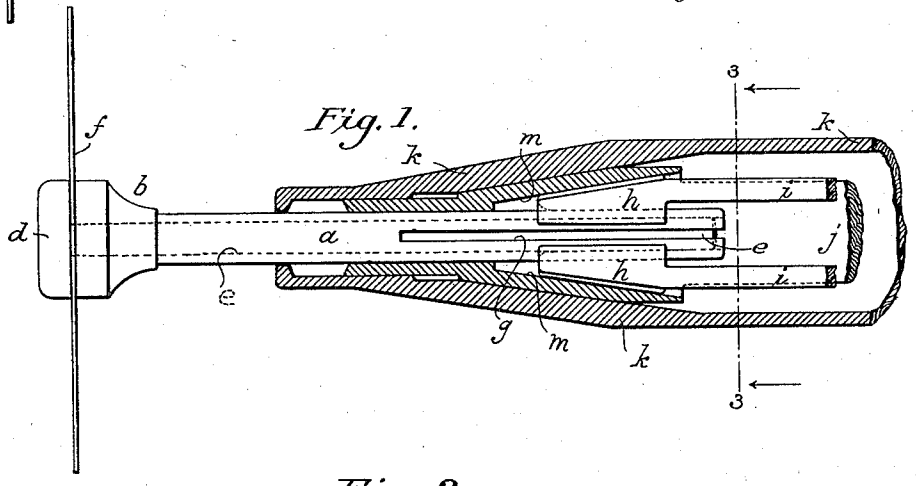


Fig. 2.

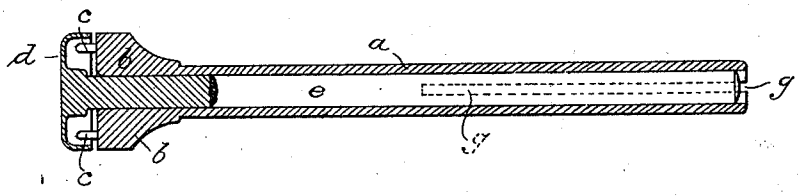
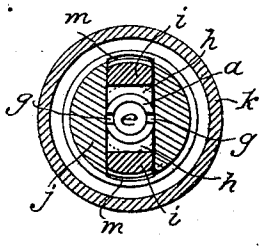


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DENTAL DISK-HOLDER.

SPECIFICATION forming part of Letters Patent No. 719,312, dated January 27, 1903.

Application filed December 10, 1901. Serial No. 85,373. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. DOUHET, a citizen of the United States, residing at Cleveland, Cuyahoga county, Ohio, have invented a new and useful Improvement in Dental Disk-Holders, of which the following is a specification, that will enable those skilled in the art to which my invention pertains to make and use the same, reference being had to the accompanying drawings, forming part of the same.

My invention relates to an implement for holding the paper or other rotary disks used in dentistry for abrading and polishing dental surfaces. Its object is to provide a device that will securely hold the rotating disks regardless of the direction from which force may be applied to it, so that it may be either pushed or pulled against a surface to be operated upon to make a draw cut without danger of loosening the parts; and it consists of a hollow tool-shank provided with the usual flattened head having pins to pierce the disks and a detachable outer cupped head to clamp the disks, provided with a cylindrical stem which fits into the hollow tool-shank, the latter being springy for a portion of its length from the inner end to make it transversely yielding to the pressure of the chuck-jaws of a dental handpiece, and thus firmly clamp it upon the inner stem.

In its main features of construction my disk-holder resembles some now in use among practicing dentists, which have the hollow shank with its head and pins and the outer cupped disk with its cylindrical stem to fit into the hollow shank; but in most, if not all, of these holders the stems are held in place in the hollow shanks by frictional devices within the tool itself, which, while admitting of the ready insertion or withdrawal of the stem from the shank by the fingers or finger-nails of the operator, hold the parts together with sufficient force to compel the rotation of the disk in their embrace. In my device, however, I not only employ such incidental frictional contact as there may be between the stem and the hollow tool-shank, but I also have the full power of the chuck-jaws, which cause the springy shank to grip upon the stem with as much tenacity as the shank itself is gripped by the jaws, so that when the parts are so engaged they are clamped with a sufficient degree of force to hold them securely in any operation which it is desired to perform with the disks.

The accompanying drawings show my invention in the best forms that now occur to me; but some changes not requiring the exercise of invention might, doubtless, be made therein by a skilled mechanic without departing from the spirit of my invention as set forth in the claims at the end of this specification.

Figure 1 is a side elevation, on a large scale, of a dental disk-holder embodying my invention and engaged by the chuck-jaws of a dental handpiece, one end of which is shown in section. Fig. 2 is a longitudinal central section through the disk-holder. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a general view of a portion of a handpiece in section with my disk-holder engaged thereby.

My disk-holder consists of a hollow shank *a*, having an enlarged head *b*, from the front face of which are holding-pins *c* and a removable cupped disk *d*, mounted on a cylindrical stem *e*, adapted to fit snugly within the hollow shank, as shown. The dental disks *f* are pierced at their centers for the passage of the stem *e*, and when the cupped disk is pushed toward the head *b* the pins *c* are forced through the paper dental disk to compel its rotation with the tool. The inner end of the hollow shank is split or slotted, as shown at *g*, so that its sides are somewhat springy, and preferably the side prongs are sprung and slightly inset in order to give them a slight frictional contact with the inner end of the stem *e* sufficient to prevent accidental displacement when the holder is removed from the chuck-jaws of a dental handpiece. In the drawings these jaws *h* are shown on the ends of the arms *i*, carried in a chuck-shaft *j*, which is mounted and revolves in a handpiece *k*. By any suitable contrivance the arms and chuck-jaws may be made to move longitudinally of the chuck-shaft to grip or release a tool-shank by their action on the inclined inner surface *m* near the forward end of the chuck-shaft, as will be understood by those familiar with such constructions.

The chuck-jaws are formed on the ends of

a bifurcated piece I, mounted in a slot J of the shaft *j*, on which is a sliding collar L, connected by a cross-pin *l* to the chuck-piece I, said pin lying in a longitudinal slot *j'* of the shaft. A collar O on the outside of the casing is provided with screw-lugs *o*, which project through longitudinal slots *k'* in the casing and engage a circumferential groove *l'* in the collar L to give it the required endwise movement to operate the chuck, as will be understood from an inspection of the drawings.

It will be seen that the chuck-jaws grip upon the inner end of the hollow shank and press in upon its springy sides until they are in firm gripping contact with the stem, which is thus held in the shank with all the power of the chuck-grip.

The essential feature of my invention is to have the walls of the inner end of the hollow tool-shank split longitudinally and made springy or yielding to side pressure, so that they may be forced into firm gripping contact with the stem of a disk-holder by the pressure of the chuck-jaws of a handpiece. I have shown this as accomplished by the two slots *g;* but in some cases a single slot might be sufficient and in others more than two might be required, while in others, again, I propose to make the walls without any slots, but thin enough to spring and yield laterally under the pressure of the chuck-jaws sufficiently to carry out the purpose of my invention, which is to produce a frictional contact between the hollow shank and the stem sufficient for working purposes by the pressure of the chuck-jaws of a handpiece.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

1. In a dental disk-holder, the combination of a hollow tool-shank having an enlarged head at one end and its walls at the other end made springy or compressible, a removable disk having its stem adapted to fit in the hollow shank and extend to and lie within the yielding portion of the walls thereof, with a handpiece-chuck adapted to engage the tool-shank and compress its springy walls upon the stem, substantially as and for the purpose set forth.

2. In a dental disk-holder the combination of a hollow tool-shank with its enlarged head and the removable disk with its stem adapted to fit in the hollow shank, with longitudinal splits or openings in the inner ends of the walls of the hollow shank and a handpiece adapted to compress the split walls upon the said stem, substantially as and for the purpose hereinbefore set forth.

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

EDWARD J. DOUHET.

Witnesses:
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WM. A. SKINKLE.