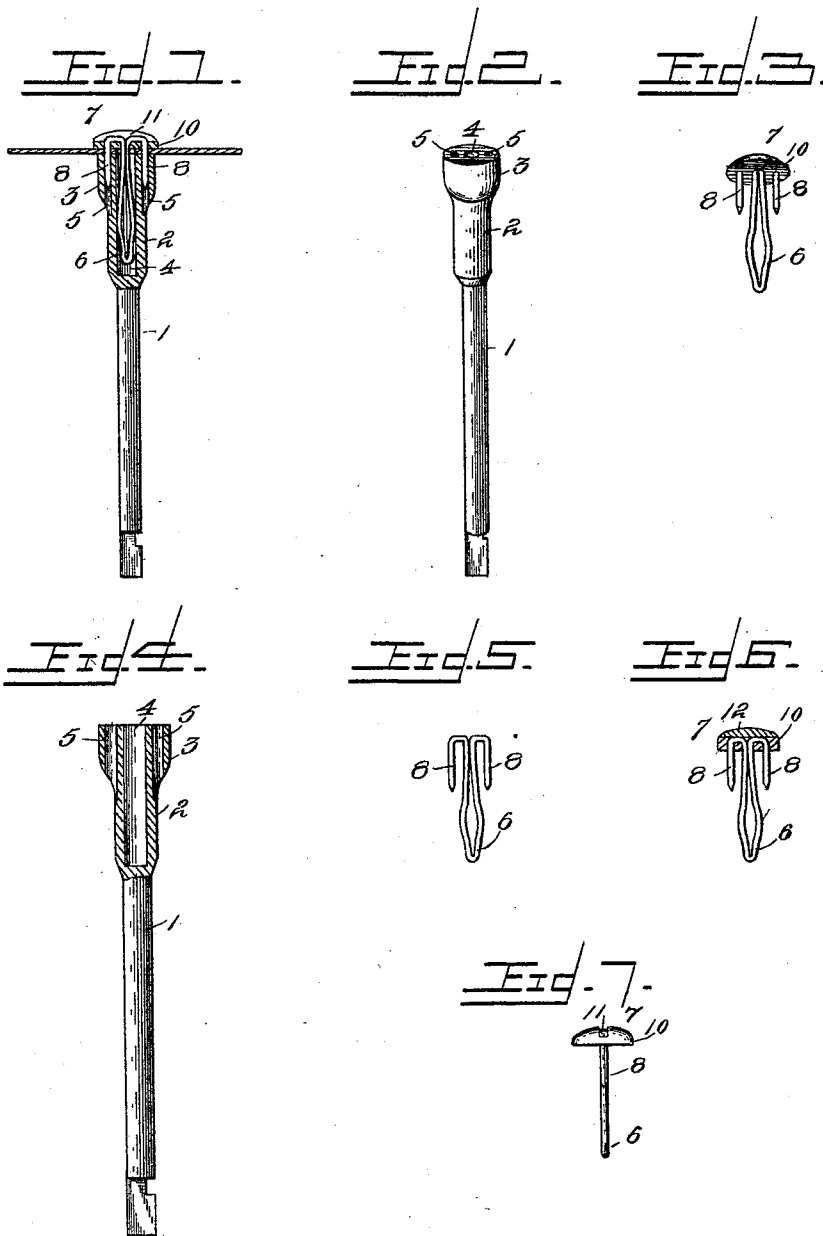


(No Model.)

C. J. PETERSON.
DENTAL MANDREL.

No. 582,796.

Patented May 18, 1897.



Inventor

Charles J. Peterson.

Witnesses

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U. B. Hilliard.

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UNITED STATES PATENT OFFICE.

CHARLES J. PETERSON, OF DUBUQUE, IOWA.

DENTAL MANDREL.

SPECIFICATION forming part of Letters Patent No. 582,796, dated May 18, 1897.

Application filed June 25, 1896. Serial No. 596,874. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. PETERSON, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented a new and useful Dental Mandrel, of which the following is a specification.

The invention relates to a mandrel for carrying a disk of emery, sandpaper, rubber, or other material generally used in prosthetic or mechanical dentistry for grinding and polishing fillings, crown, bridge, and other work.

The purpose of the improvement is to secure the disk against turning whether the mandrel is driven forwardly or backwardly and to provide for the quick adjustment and removal of the disk when worn.

A further purpose is to provide a mandrel for dental work which will be simple in construction, positive in action, easy of manipulation, and operate effectively and satisfactorily.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a mandrel having a disk fitted there-to. Fig. 2 is a perspective view of the mandrel. Fig. 3 is a perspective view of the retainer. Fig. 4 is a sectional detail view of the mandrel. Fig. 5 is a side elevation of the retainer in its simplest form with the head removed. Fig. 6 shows a different manner of applying the head to the retainer. Fig. 7 is a side view of the preferred form of retainer.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference-characters.

The mandrel 1 in general appearance is of ordinary formation and is enlarged near its outer end, as shown at 2, and terminates in

a head 3, the head and enlarged portion being centrally bored so as to provide an opening 4. Smaller openings 5 are provided in the head 3, equidistant from the central opening 4, and extend through the head, so as to prevent clogging or choking and providing for the escape of any matter which may find its way into the said openings 5. The central opening 4 is large compared with the side openings 5, so as to receive the spring-shank 6 of the retainer.

The retainer 7 comprises, essentially, a spring-shank 6 and side points 8, the latter extending about parallel with each other and with the shank and located equidistant from the latter and sharpened, so as to readily penetrate and pass through the disk 9. The spring-shank and side points are integrally formed, being parts of a single length of wire which is doubled upon itself and has its end portions recurved and extending parallel with the shank and forming the side points. The members or parts of the spring-shank bulge or spread and are adapted to be compressed when forcing the shank home into the opening or bore 4. The retainer is held in place by the frictional engagement of the members of the spring-shank with the sides of the opening 4, and should the frictional contact be insufficient to hold the retainer in operative relation the members of the shank can be spread by prying them apart, which is effected by inserting a sharp-pointed instrument between them.

The spring-shank is considerably longer than the side points, and the latter are of such a length so as to prevent their ready disengagement from the disk when the latter is applied to the mandrel. In order to give a neat appearance and finish to the retainer, the latter is supplied with a cap 10, which is a disk corresponding in diameter to the head 3 and convexed on its outer side to obviate projecting corners, which would be liable to injure the mouth of the patient. This cap has openings for the passage therethrough of the shank 6 and side points 8, a kerf or slot 11 being formed in the outer side of the cap to admit of the connecting portions between the side points and shank coming about flush with the outer side of the cap, so as to obviate projecting parts. If preferred, the kerf

or slot may be filled by solder or other material, so as to give a smooth surface to the exterior of the cap. As shown in Fig. 6, a finishing-plate 12 is fitted to the outer side of the cap and is soldered or otherwise secured thereto and extends over the outer end of the retainer and affords a neat finish thereto and to the cap.

The disk 9 is typical of the ordinary grinding or polishing disk commonly employed in dentistry and is secured to the mandrel by passing the spring-shank 6 through the central opening thereof, and the said shank being fitted into the bore or opening 4 and the side points adjusted so as to register with the side openings 5 the retainer is pressed home, thereby causing the points to pass through the disk and into the said side openings and holding the disk against turning, whether the mandrel is rotated in one or the other direction. The side points penetrating the disk to one side of its central opening cause the disk and mandrel to rotate in unison. An obvious construction would be to provide the cap 10 with a spring-shank and side points, and the device would operate precisely in the same manner as herein described. The construction herein disclosed is preferred, since it obviates independent joints, is durable, and admits of the retainer being cheaply manufactured in large quantities, since the parts 6 and 8 are integrally formed of a single length of wire, which is capable of being bent by

suitably-constructed dies or mechanism into the required shape.

Having thus described the invention, what is claimed as new is—

1. In combination, a mandrel having a central and side openings, and a retainer formed of a single length of wire doubled upon itself to provide a spring-shank to enter and engage frictionally with the central opening of the mandrel, and having its end portions recurved and extending about parallel with each other and the shank to enter the side openings of the mandrel, substantially as and for the purpose set forth.

2. In combination, a mandrel having a central and side openings, a retainer consisting of a single length of wire doubled upon itself to form a spring-shank, and having its end portions recurved to form points, the said shank and points adapted to enter the central and side openings of the mandrel, and a cap having openings for the passage there-through of the shank and points of the retainer, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES J. PETERSON.

Witnesses:

WILLIAM B. KEOGH,
C. H. REYNOLDS.