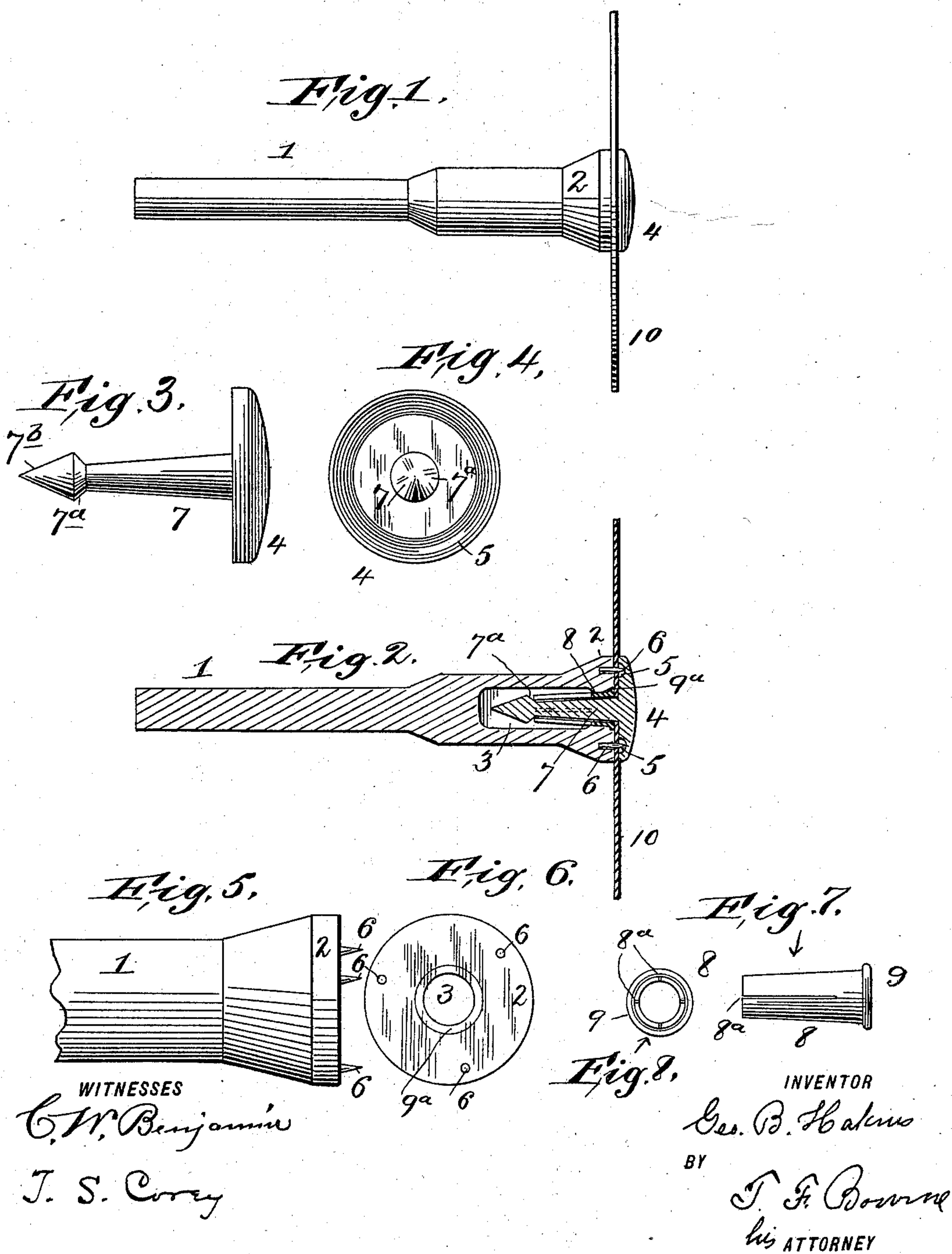


(No Model.)

G. B. HAKINS.
DENTAL DISK HOLDER.

No. 574,031.

Patented Dec. 29, 1896.



UNITED STATES PATENT OFFICE.

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DENTAL DISK-HOLDER.

SPECIFICATION forming part of Letters Patent No. 574,031, dated December 29, 1896.

Application filed June 30, 1896. Serial No. 597,515. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. HAKINS, a citizen of the United States, residing in Norwood, St. Lawrence county, New York, have invented certain new and useful Improvements in Dental Disk-Holders, of which the following is a specification.

The object of my invention is to provide a mandrel which is particularly adapted for dental uses, and by means of which emery or other grinding or polishing disks can be firmly and accurately carried and rotated, and wherein also the disks can be readily detached and replaced.

The invention consists in a mandrel having a suitable head at one end and a recess or socket in said head, combined with a cap to cover said head, a pin or projection carried by said cap and having a head or enlargement to enter said recess in the mandrel, and a spring lock or clamp carried by said mandrel to engage and hold said pin or projection, whereby said cap can be firmly yet detachably held on the end of the mandrel, so as to hold a disk between the head on the mandrel and the cap.

The invention also consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side elevation, on an enlarged scale, of my improved mandrel suitable for dental purposes, showing a grinding or polishing disk in position. Fig. 2 is a longitudinal section thereof. Fig. 3 is an enlarged detail view of the cap. Fig. 4 is an end view of the cap, looking from the left in Fig. 3. Fig. 5 is an enlarged detail side view of one end of the mandrel, showing the head and its pins. Fig. 6 is an end view thereof, looking from the right in Fig. 5. Fig. 7 is a side view of the spring-lock for holding the cap on the head; and Fig. 8 is an end view thereof, looking from the left in Fig. 7.

In the accompanying drawings, in which similar numerals of reference indicate corresponding parts in the several views, the numeral 1 indicates the shank or main portion of a mandrel, which may be of any suitable

size and shape and suitably arranged to be attached to a shaft or other proper device by which it can be rotated. The mandrel 1 at one end has a head 2 of suitable size and preferably annular, and in this head and the corresponding end of the mandrel is a recess or socket 3.

4 is a cap or disk which is adapted to fit on the face of the head 2, and this cap preferably has substantially the same-sized periphery as the head 2, so as not to project edge-wise beyond the latter. The cap 4 has an annular groove 5 on its inner face, which is adapted to receive pins 6, that project from the face of the head 2. (See Fig. 2.) The depth of the groove 5 and the length of the pins 6 are by preference such that when the cap 4 is in position on the head 2 the cap 4 will not rest against said head, whereby a person can readily insert the finger-nails between the cap and head to remove the former from the latter.

The cap 4 has a pin or projection 7, which extends from the face of the cap that has the groove 5, said pin or projection being adapted to enter the recess or socket 3 in the head 2 of the mandrel. The pin or projection 7 is held upon the mandrel by means of a self-acting spring lock or clamp 8, which is carried by the head 2 in the recess or socket 3. For this purpose the pin or projection 7 is shown provided with a cone-like head or enlargement 7^a, and the spring lock or clamp 8 is shown in the form of a tubular metal socket having one or more slits 8^a extending inwardly from one end, thereby forming spring-arms to clamp the head 7^a. (See Fig. 2.) The spring lock or clamp 8 may also have an enlargement or annulus 9 to fit in a corresponding groove 9^a in the head 2 to hold said lock in position therein.

The spring lock or clamp 8 passes into the socket 3 in head 2, and may be held on the latter by solder, a rivet, or by any suitable means. The pin or projection 7 on cap 4 passes through the spring lock or clamp 8 and beyond the end of the latter, so that the spring tendency of the arms of the latter will serve to hold the cap 4 in position on the head 2. The extreme end of the pin or projection 7 may be tapered at 7^b to assist its

passage through the lock or clamp 8. It is evident that the spring lock or clamp 8 may be arranged otherwise than as shown to accomplish the same purposes.

5 My improved mandrel is used as follows: A suitable grinding or polishing disk 10, of emery or other proper material and having a central aperture, is placed against the outer
10 face of the head 2 with its aperture in line with the recess or socket 3 in the latter. The pin or projection 7 of the cap 4 is then passed through the aperture in said disk and through the spring lock or clamp 8 until the cone-like
15 head 7^a of said pin or projection passes beyond the inner end of the lock or clamp 8, as in Fig. 2. The cap 4 will thus be held firmly upon the disk 10, the pins 6 being thus forced through said disk, as shown, said disk being thus clamped between the head 2 and cap 4.
20 When it is desired to remove the disk 10, the cap 4 is withdrawn, which may be done by passing the finger-nails between the cap and disk, the arms of the spring lock or clamp 8 thereupon yielding to allow the passage of
25 the cone-like head 7^a of the pin 7.

By means of my improvement disks of varying thicknesses can be readily clamped, because the arms of the lock or clamp 8 will yield to the cone-like head 7^a and will clamp
30 the latter at different points, according to how far it may be pushed in. Another advantage is that if extra pressure is put upon one side of the cap 4 during use the spring lock or clamp 8 will yield to different positions of
35 the pin 7, while still firmly holding the latter.

The device is simple, yet accurate in use, not liable to get out of order, and is cheap to manufacture.

I do not limit my invention to the precise details of construction shown and described, 40 as they may be varied without departing from the spirit of my invention.

Having now described my invention, what I claim is—

1. In a mandrel, a shank having a head and 45 a recess or socket therein, combined with a cap having a projection to enter said socket, and a spring lock or clamp located in said recess or socket and normally acting to grasp said projection, substantially as described. 50

2. In a mandrel, a shank having a head and a recess or socket therein, combined with a cap having a projection provided with a cone-like head adapted to enter said recess or socket, and a tubular spring lock or clamp 55 located in said recess or socket and adapted to permit said projection and its head to pass therethrough to hold the cap on the head of the mandrel, substantially as described.

3. In a mandrel, a shank having a head and 60 a recess or socket therein, combined with a cap having a projection provided with a cone-like head having a tapered portion 7^a adapted to enter said recess or socket, and a spring lock or clamp composed of a tube having one 65 or more slits at one end, means for securing said lock or clamp on said head and within the recess or socket therein, the bore of said lock or clamp being alined with said recess or socket so as to receive the projection on said 70 cap, substantially as described.

GEORGE B. HAKINS.

Witnesses:

HORACE G. ATWATER,
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