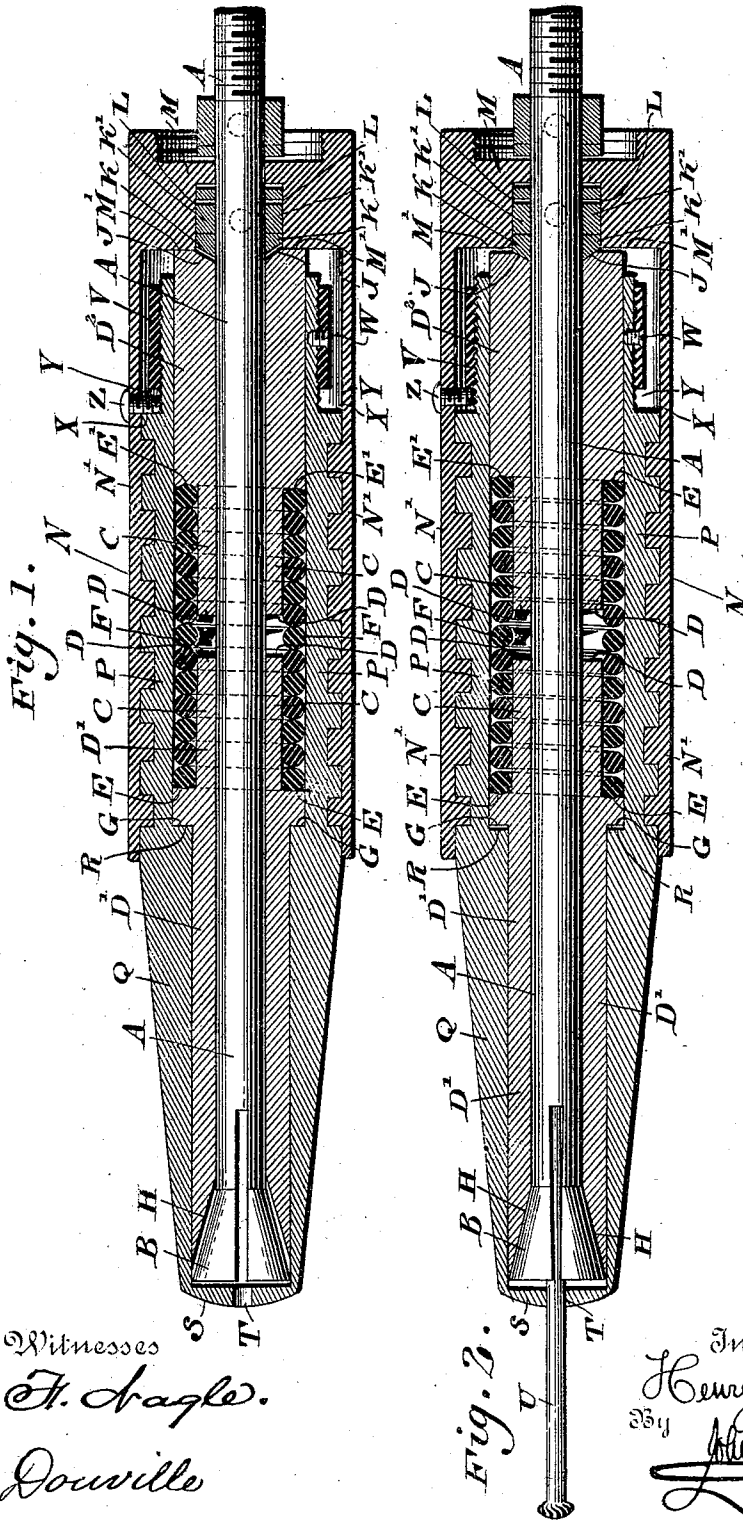


(No Model.)

H. C. REGISTER.
DENTAL HANDPIECE.

No. 554,032.

Patented Feb. 4, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY C. REGISTER, OF PHILADELPHIA, PENNSYLVANIA.

DENTAL HANDPIECE.

SPECIFICATION forming part of Letters Patent No. 554,032, dated February 4, 1896.

Application filed February 7, 1895. Serial No. 537,558. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. REGISTER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Dental Handpieces, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a dental handpiece having a tool-holding chuck which may be opened and closed for the removal and application of the tool by simply moving an exterior sleeve or part of the casing in reverse directions, it not being necessary to stop the engine or motor to remove the bur or tool, and the piece may be operated at either end to close or open said chuck, these results being accomplished in a manner as will be hereinafter set forth.

Figures 1 and 2 represent longitudinal sections of a dental handpiece embodying my invention, the chuck being open and the tool removed therefrom in Fig. 1 and the chuck closed and holding the tool in Fig. 2.

Similar letters of reference indicate corresponding parts in the two figures.

Referring to the drawings, A designates a spindle which has its forward end provided with the chuck B and its rear end adapted to be attached to the shaft of a dental engine or other source of power. Surrounding said spindle is a sleeve C, which is divided, as at D, forming the sections D' D², the sections having in their outer surface the shoulders E E', against which bears the coiled spring F.

The section D' has a shoulder G adjacent to the shoulder E, and the inner face of its forward end is conical, as at H, and adapted to ride over the chuck B to close the same when the tool is to be tightened therein.

The section D² has at its rear end the conical recess J, whose wall is adapted to be engaged by the conical collar K on the adjacent portion of the spindle A, said collar freely occupying the recess L in the rear collar M of the exterior rotatable sleeve N, a portion N' of whose inner face has screw-threads thereon for engagement with the screw-threads on a portion P of the sliding casing Q, said portion P freely encircling portions of the sectional sleeve C and the spring F.

On the inner face of the casing Q adjacent

to the shoulder G is a shoulder R, the portion of said casing forward of said shoulder R freely encircling the section D' of the sleeve C and having at its front end the wall S, in which is an opening T for introduction of the dental tool U into the chuck B.

On the outer face of the portion P, at the rear end thereof, is an annulus or ring V, which is secured thereto by the screw W or other suitable means. Between said ring and the shoulder X on the portion P is a space Y, into which projects the screw or stud Z, which is secured to the exterior sleeve N, which is adapted to be engaged by said shoulder and ring, as will be hereinafter further explained.

On the shaft, rearward of the conical collar K, are washers K', which freely occupy the recess L in the collar M of the sleeve N.

The operation is as follows: In Fig. 1 the chuck is shown open and the tool U removed therefrom. The tool is inserted and the sleeve N rotated in one direction. Simultaneously therewith the casing is rotated in the other direction, said sleeve moving rearward and said casing moving forward, limited by the screw Z and ring V, so that the shoulder R recedes from the shoulder G and the front wall M' of the collar M of the sleeve N moves back from the front of the collar K. (See Fig. 2.) The spring F now becomes operative and it presses against the shoulders E E' of the sections D' D² of the divided sleeve C, and the section D' is advanced so as to compress and close the chuck B and clamp the tool therein. The section D² is moved rearward and the wall of its recess J engages with the collar K, whereby the rotary motion of the spindle A is communicated to the divided sleeve, while the latter retains the chuck in closed position. When the tool is to be removed, the sleeve N and the casing are rotated in the reverse direction to that above described, said sleeve then advancing, while the casing Q moves rearward until the shoulder X strikes the screw Z as a stop. The shoulder R of said casing now presses against the shoulder G and moves the section D' rearward, thus releasing the chuck and permitting the same to open. The spring F is now compressed by the moving section D' and exerts its pressure on the section D², while the latter is engaged solidly by the front wall M'

of the collar M of the advanced sleeve N, as shown in Fig. 1, where it will be seen that said wall has advanced, so that the collar K does not contact with the section D², and thus the latter does not receive rotary motion from the spindle A, which may be kept running, the parts being shown in Fig. 1, and the removal of the tool having been effected, it being also evident that as the outer casing and sleeve or shells screw on each other the instrument or piece may be operated at either end for closing or opening the chuck.

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

1. An inner divided sleeve with a spring between the sections bearing against the same, a spindle with a tool-holding chuck adapted to be engaged by the forward section of said sleeve, an exterior casing having a shoulder adapted to engage a shoulder on said forward section, an exterior sleeve connected by screw-threads with said casing and a collar on said exterior sleeve adapted to engage the rear section of the inner sleeve, whereby by the rotations of the exterior sleeve in opposite directions, the sections of the inner sleeve may be operated to close and open the chuck as stated.

2. A dental handpiece consisting of a spindle with a chuck on one end, an interior sec-

tional sleeve surrounding said spindle and having a spring between bearing against said sections, the sliding casing Q on said sleeve, the exterior rotatable sleeve N having a rear collar M with a recess therein, and the collar K in said recess and in contact with the rear section of said inner sleeve, and the ring V on the outer face of said casing, said sleeve N having a screw-threaded connection with said casing and provided with a stud projecting into a space between said ring and a shoulder on said casing, said parts being combined substantially as described.

3. In a dental handpiece, a casing having a sectional sleeve within the same, and a spring bearing against the sections in opposite directions, an exterior sleeve engaging said casing, a collar on the rear of said exterior sleeve, a chuck-spindle passing through said collar and inner sleeve, a collar on said spindle freely occupying a recess in the said rear collar of the exterior sleeve, and a nut on a threaded end of said spindle bearing against the collar on the rear end of said exterior sleeve, said parts being combined substantially as described.

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Witnesses:

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