

E. T. STARR.

HAND-PIECES FOR DENTAL-ENGINES.

No. 184,992.

Patented Dec. 5, 1876.

Fig 1.

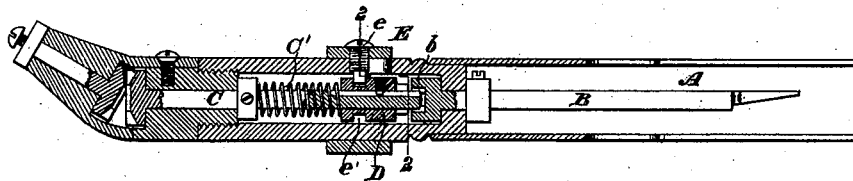


Fig 2

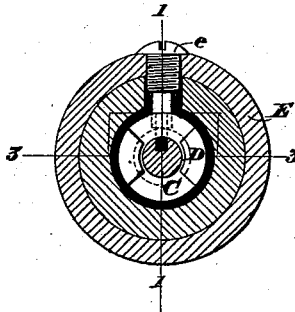
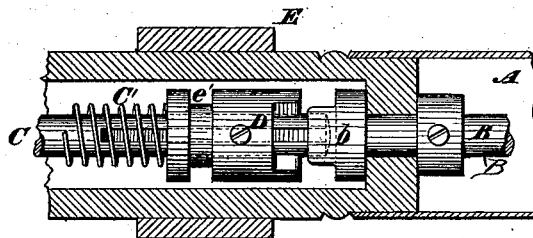


Fig 3



WITNESSES

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# UNITED STATES PATENT OFFICE.

ELI T. STARR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SAMUEL S. WHITE, OF SAME PLACE.

## IMPROVEMENT IN HAND-PIECES FOR DENTAL ENGINES.

Specification forming part of Letters Patent No. 184,992, dated December 5, 1876; application filed October 24, 1876.

### *To all whom it may concern:*

Be it known that I, ELI T. STARR, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Hand-Piece Attachments for Dental Engines, of which the following is a specification:

The object of my invention is to enable the operator readily to stop or start the tool mounted in the hand-piece attachment without removing his fingers from the instrument, and without stopping the rotation of the driving-shaft of the engine, which end I attain by means of a novel organization of parts, hereinafter distinctly specified.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section through my improved attachment, on the line 1 1 of Fig. 2; Fig. 2, a transverse section on the line 2 2 of Fig. 1; and Fig. 3, a longitudinal section, on an enlarged scale, through the line 3 3 of Fig. 2.

In this instrument my improvement is shown as adapted to an angle attachment of a dental engine, but obviously may be employed in other well-known forms of attachments. The casing or barrel A of the attachment is shown as adapted for the reception of the nose or hand-piece of the ordinary dental engine. A coupling-shaft, B, mounted axially in the bore of the casing, in suitable bearings, is provided at one end with a flattened side and a transverse groove, to adapt it to the hand-piece of the well-known S. S. White dental engine. The other end of this shaft is provided with clutch-lugs *b*. A driven shaft, C, revolves in suitable bearings in the forward end of the attachment, in the same axial plane as the coupling-shaft, that turns independently of it, except when interlocked with it by means of

a clutch-coupling, D, sliding freely endwise on the shaft C, but prevented from turning by the usual longitudinal groove and feather, as clearly shown in the drawings. A spiral spring, C', encircling the shaft C, tends to hold the clutch locked with the coupling-shaft. The shaft is disconnected, when desired, by means of the sliding ring E, movable endwise on the barrel A, and carrying a pin, *e*, projecting through a slot in the casing, into an annular groove, *e'*, on the clutch, as usual.

In the drawings the driven shaft is shown as carrying a bevel-gear driving an angle-shaft adapted for the reception of a disk or burr; but in some instances I propose to substitute a straight nose for the bent angle-piece shown, to prolong the coupling-shaft, to dispense with the gearing, and to secure the tool or tool-holder directly to the end of the shaft.

I claim as of my own invention—

The hand-piece attachment for dental engines hereinbefore described, consisting of the combination of the barrel or casing adapted to fit the hand-piece of a dental engine, the coupling-shaft mounted in said attachment and adapted to connect with the driving-shaft of the hand-piece, the driven shaft mounted in the attachment independent of the coupling-shaft, the clutch-coupling connecting the two, and the sliding ring on the casing, whereby the operator is enabled to stop or start the tool without stopping the engine or coupling-shaft.

In testimony whereof I have hereunto subscribed my name.

ELI T. STARR.

Witnesses:

J. A. B. WILLIAMS,  
ELI S. MUSTIN.