J. W. GILBERT.

HAND PIECES FOR DENTAL DRILLS.

No. 171,009. Patented Dec. 14, 1875.

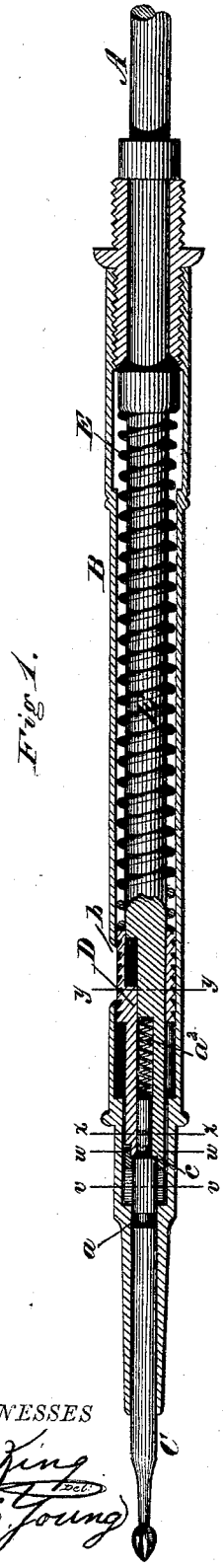

Fig. 1.

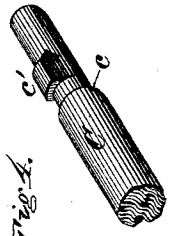

Fig. 4.

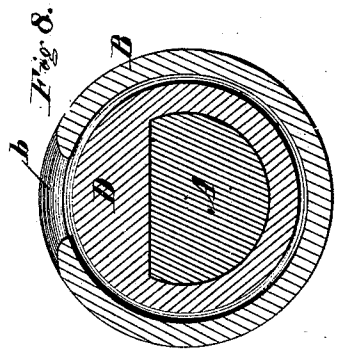

Fig. 8.

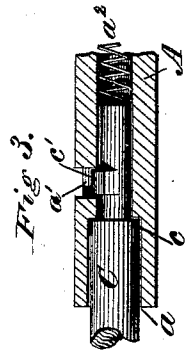

Fig. 3.

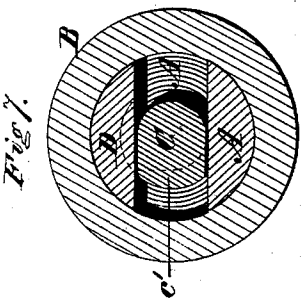

Fig. 7.

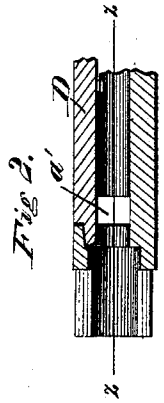

Fig. 2.

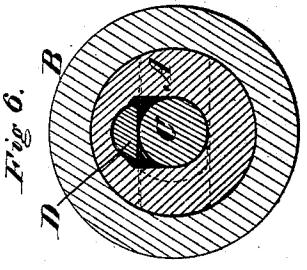

Fig. 6.

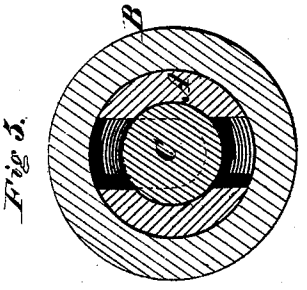

Fig. 5.

WITNESSES

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By his Attorney

Wm D. Baldwin

UNITED STATES PATENT OFFICE.

JOHN W. GILBERT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SAMUEL S. WHITE, OF SAME PLACE.

IMPROVEMENT IN HAND-PIECES FOR DENTAL DRILLS.

Specification forming part of Letters Patent No. **171,009**, dated December 14, 1875; application filed November 19, 1874.

CASE B.

To all whom it may concern:

Be it known that I, JOHN W. GILBERT, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Dental Drills, of which the following is a specification:

My invention relates to a novel method of securing a dental burr, drill, or other tool in the power-driven revolving chuck or tool-holder of the hand-piece of a dental engine. The subject-matter claimed is hereinafter specified.

In the accompanying drawings, Figure 1 represents an axial section through the hand-piece; Fig. 2, a similar view of a portion of the chuck on an enlarged scale. Fig. 3 is a similar section on the line *z z* of Fig. 2, with the tool inserted in the chuck; Fig. 4, a detail view of a portion of the tool; Fig. 5, a transverse section through the instrument, on the line *v v* of Fig. 1; Fig. 6, a similar section, on the line *w w* of said figure; Fig. 7, a similar section on the line *x x* of said figure; Fig. 8, a like section, on the line *y y* of said figure.

A power-driven shaft, A, revolves in suitable bearings in a tubular casing or hand-piece, B. The forward end of the revolving shaft is perforated axially for the reception of a tool, C, which has a shoulder, *c*, turned on its end. A lug, *c'*, projects radially from this shoulder. The tool is inserted in its socket *a*, and pressed in until the lug comes opposite a slot, a^1, in the wall of the tool-holder, when it is turned partially around on its axis, so as to bring this lug behind the shoulder of the tool-holder. (See Fig. 3.) A spiral spring, a^2, in the tool-holder tends to force the tool outward when released. A locking slide or bolt, D, movable endwise on the tool-holder, is protruded whenever released from backward pressure by a spiral spring, E, on the shaft A. The locking-bolt D, when thrown forward, moves across the opening of the slot a^1, through which the lug is passed, and prevents the stool from turning. (See Figs. 1 and 2.) The slide may be retracted by pressing on its roughened surface with the thumb-nail through a slot, *b*, in the casing of the hand-piece, the surface of the slide being roughened to aid this operation.

I am thus, by my invention, enabled to lock a tool securely in place, to prevent it from becoming loosened, either by a reversal of the movement of the engine, or by a pushing or pulling strain.

I claim as of my own invention—

1. The combination of the slotted tool-socket, the interlocking slide movable endwise and externally on the tool-holder, and the locking-spring encircling the tool-holder.

2. The combination of the casing, the power-driven shaft rotating in bearings therein, and perforated and slotted to form a tool-holder, a tool provided with a radial lug on its shank, the spring encircling the shaft, and the locking-slide actuated by said spring, to lock the lug on the tool-shank in the slot in the tool-holder, substantially as hereinbefore set forth.

3. The combination of a dental-tool socket, formed substantially as described, and a locking-slide operating to close the path by which the lug on the tool enters a shouldered recess of said socket, substantially as hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

JOHN W. GILBERT.

Witnesses:

J. A. B. WILLIAMS,

J. W. DE BARGER.