

J. W. GILBERT.

Hand-Pieces for Dental-Instruments.

No. 158,635.

Patented Jan. 12, 1875.

Fig. 1.

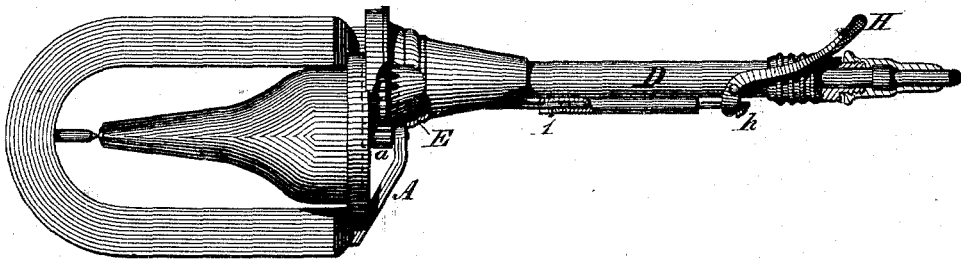
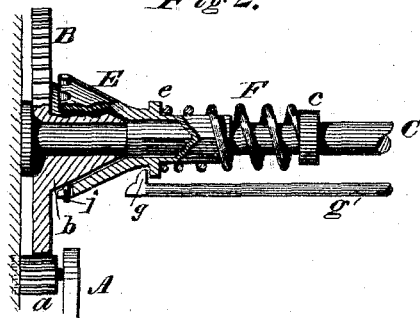


Fig. 2.



WITNESSES

*Harry King*  
*Wm. J. Peyton*

*John W. Gilbert.*

By *his* Attorney

INVENTOR

*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 INSTRUMENTS.

Specification forming part of Letters Patent No. **158,635**, dated January 12, 1875; application filed  
December 29, 1874.

### CASE E.

*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 a certain new and useful Improvement in Hand-Pieces for Dental Instruments, of which the following is a specification:

My invention relates to that class of dental instruments in which rotary motion is imparted to the tool. Its object is to place the instrument completely under the control of the operator, so that he may be able instantly to start or stop it without shock or jar; to which end my improvement consists in combining the driving-wheel with the tool-holder by means of an endless sliding cone-clutch controlled by the operator.

In the accompanying drawings my improvement is shown as applied to an electro-magnetic burring-engine, invented by George F. Green, of Kalamazoo, Michigan, and manufactured by Samuel S. White, of Philadelphia, Pennsylvania. Obviously, however, it might be adapted to engines driven by an ordinary lathe, or in other well-known ways.

Figure 1 represents a view, partly in section, of the apparatus; and Fig. 2, an enlarged sectional view of a portion of the mechanism.

A pinion, *a*, mounted upon a frame, *A*, forming part of the instrument, and driven in any suitable way, gears into a corresponding gear-wheel, *B*, turning freely upon a mandrel, *C*, revolving in suitable bearings in a tubular case or hand-piece, *D*. A cone-pulley, *b*, is attached to or forms part of this gear-wheel. A corresponding cone-sleeve, *E*, slides freely upon and turns with the mandrel. A coiled spring, *F*, bears upon a shoulder, *c*, on the mandrel, and a corresponding one, *e*, on the cone-sleeve, and tends to force the cone-sleeve down upon the cone-pulley. When the sleeve and pulley are in contact the mandrel will be driven by friction. The gear-wheel *B* may thus run continuously while the instrument is in use; but the mandrel is held out of gear by

means of a hook, *g*, on a link-rod, *g'*, which bears on the shoulder *e* on the cone-pulley. This rod slides in a bearing in the tubular case, and is prevented from turning therein by a guide-pin, *l*. The operator controls this link-rod by a thumb-lever, *H*, pivoted on the case, the end of the lever bearing against a lip, *h*, on the rod.

By the devices above described the mandrel can be instantly stopped by separating the cone-pulley and cone-sleeve; or it can be started without shock by releasing the thumb-lever, and allowing the spring to throw the cone-pulley and cone-sleeve into contact.

When a positive motion is desired, the bottom of the cone-sleeve may be scalloped, so as to engage with a pin, *i*, on the cone-pulley. This construction allows the mandrel to be rotated in either direction with equal facility. The spring might be dispensed with, and the cone-sleeve moved positively by the lever in a well-known way; but I prefer the spring-connection for obvious reasons.

A socket is formed in the end of the mandrel to receive the shank of the tool in any of the usual well-known ways; but I make no claim herein to the mode of fastening the tool in the socket or holder, as this feature forms the subject-matter of other pending applications of mine for Letters Patent of the United States.

I claim—

In a dental instrument, the combination of a revolving mandrel, a driven cone-pulley revolving freely thereon, a cone-sleeve revolving with the mandrel and moving freely endwise thereon, and mechanism controlled by the operator for stopping and starting the mandrel, all the mechanism being mounted upon the instrument itself, substantially as specified.

In testimony whereof I have hereunto subscribed my name.

JOHN W. GILBERT.

Witnesses:

JAS. B. WILLIAMS,  
LEVI TEAL.