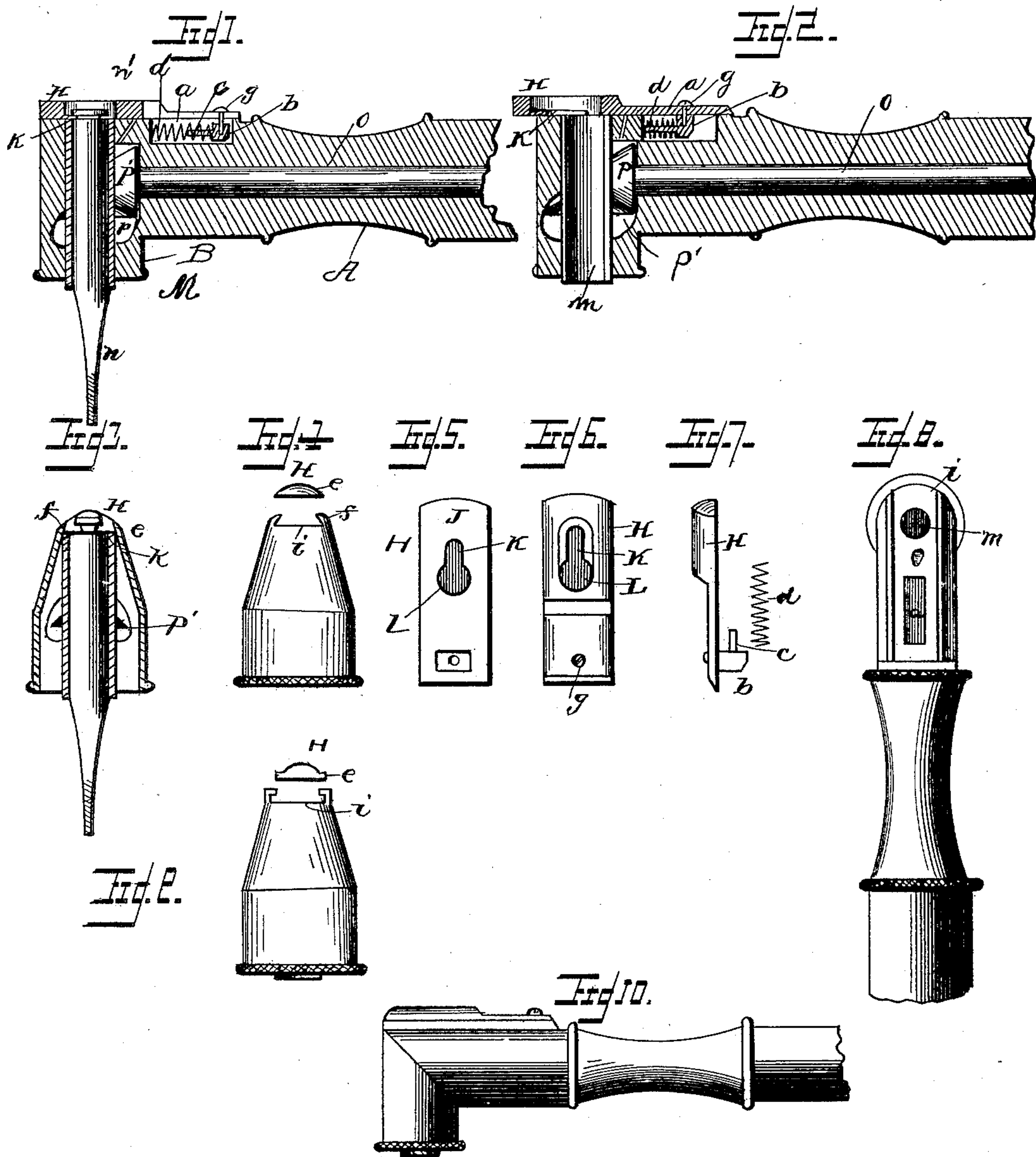


(No Model.)

E. D. EDDY.
ATTACHMENT FOR DENTAL ENGINES.

No. 462,896.

Patented Nov. 10, 1891.



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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR DENTAL ENGINES.

SPECIFICATION forming part of Letters Patent No. 462,896, dated November 10, 1891.

Application filed January 16, 1891. Serial No. 378,059. (No model.)

To all whom it may concern:

Be it known that I, EARL D. EDDY, of the town of San Mateo, in the county of San Mateo and State of California, have invented certain new and useful Improvements in Right-Angle Hand-Pieces or Attachments for Dental Engines, of which the following is a full, clear, and exact description.

This invention has relation to attachments for dental engines; and it consists in certain peculiarities in the construction, arrangement, and combination of the several parts, substantially as hereinafter described, and particularly pointed out in the subjoined claims.

The objects of the invention are to provide a right-angle hand-piece or attachment for dental engines in which, first, the facility for quickly changing the tool will be increased; second, the tool will be held with greater security; third, all wear at the point of union between the locking-flange and the head will be taken up; fourth, the tool will operate with less noise than those now in use, and fifth, the tool will operate with greater comfort to the patient. These objects are accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal central section of that portion of a right-angle hand-piece or attachment involving my improvement, and shows the tool locked in place ready for the rotary motion or driving power to be applied. Fig. 2 is a similar view showing the tool removed and the device ready for the insertion of a tool. Fig. 3 is a transverse section of the instrument at the longitudinal center of the tool, showing the tool locked in position, as in Fig. 1. Fig. 4 is a front elevation or face view of the instrument with the sliding tool-lock removed, so as to show the flange *e* and the corresponding groove *f* to better advantage than when in place, as in Fig. 3. Fig. 5 is the under surface of tool-lock H, designed especially to show the recessed seat for the base of the lug *b*. Fig. 6 is a view of the upper surface of the sliding tool-lock H. Fig. 7 is a side elevation of sliding tool-lock with lug attached and spiral spring *d* removed from the projection C. Fig. 8 is a plan view of the upper surface of a right-angle hand-piece or attachment for a dental engine, showing the rectangular recess *a* in the body or frame of

the instrument and also the plane surface on which the sliding tool-lock H is operated. Fig. 9 is another form or shape of flange *e* and groove *f* shown in Fig. 4. Fig. 10 is a plan view, side elevation, of a right-angle hand-piece or attachment for a dental engine containing my improvements, showing the sliding tool-lock closed and the tool absent.

The hand-piece to which my improvement is applied consists of the stock A and the tool-head B, integral with said stock, but at right angles thereto. This stock A is formed with a mortise-shaped rectangular recess *a*, and the head B is formed with a groove *f*, said recess being designed to contain and facilitate the operation of a lug *b* with its cylindrical arm *c* and spiral spring *d*, and said groove to receive flanges *e*, formed on and projecting from a sliding tool-lock H, the under surface J of which lock is in contact with the upper surface *i* of said head. The sliding tool-lock H is also formed with an inward projection K, which engages a groove *n'*, formed in the head of the tool *n*, and locks said tool in place, and with an aperture L, through which the head of said tool passes before its engagement with the locking-flange K. The lug *b* is secured to said sliding tool-lock by a screw *g*. A recessed seat is provided on the under surface J of said sliding tool-lock for the purpose of holding said lug in such position that its cylindrical arm or projection *c* will always be parallel to the direction in which the sliding tool-lock moves in its operation of locking and unlocking the head of the tool *n*. The cylindrical arm *c* is simply a projection from the perpendicular face of the lug *b*, and is designed to support the spiral spring *d* and also to form a stop for the tool-lock H when the latter is forced open to receive the head of the tool *n*, as will be clearly seen on reference to Fig. 2. One end of the spiral spring *d* has its bearing on the face of the lug *b* and the other end thereof finds its bearing on the opposite face of the recess *a*, and said spiral spring is of such tension that it may be contracted sufficiently to open the sliding tool-lock H by a moderate pressure of the thumb or finger applied on the upper surface thereof just back of the aperture L, which surface may be beveled for this purpose. The functions of this spiral spring *d* are, first, to hold

the sliding tool-lock securely closed at all times, except when forced open for the purpose of changing or removing tools, and, second, to take up the wear of the locking-flange K, Figs. 1 and 2, which it continues to do until the back of the lug *b* comes in contact with the wall of the recess *a*, and it furthermore compensates for slight variations in the size of the different tool-heads.

10 M designates the hollow shaft, which contains the shank of the tool *n* and receives motion from the driving-shaft O, at the end of which is a pinion *p*, that engages with a similar pinion *p'* in the hollow shaft M, thus forming a right angle in the direction of the rotary motion, and by reason of the close frictional contact with it of said tool communicates its motion to the latter.

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

1. The herein-described attachment for dental engines, consisting of an angular hand-piece adapted to hold a tool and formed with a recess, a sliding tool-lock adapted to engage the tool and provided with a lug projecting into said recess in the hand-piece and having a horizontal arm, and a spiral spring encircling said arm and having its abutment against one wall of said recess and said lug.

2. In an angle attachment for dental engines, the stock, the tool-head extending at right angles to the stock, and the headed tool passing through said head, in combination

with a spring-actuated sliding tool-lock having flanges engaging in the head of said tool.

3. In an angle attachment for dental engines, the tool-head and the headed tool passing through said tool-head, in combination with a sliding tool-lock having an opening to permit the insertion of the tool, and a flange to engage the head of the tool.

4. In an attachment for dental engines, the combination of the hand-piece, a hollow shaft extending vertically therethrough, a headed tool extending through said shaft, a sliding tool-lock adapted to engage the head of the tool, and means for imparting motion to said hollow shaft.

5. In an angle attachment for dental engines, the tool-head, the stock having a recess, and the headed tool passing through said tool-head, in combination with a sliding tool-lock having near one end an opening to permit the insertion of the tool, and a flange to engage the head of the tool, a lug projecting into said recess from the opposite end of said tool-lock and provided with a horizontal arm, and a spiral spring encircling said arm and having its abutment against one wall of said recess and said lug.

In witness whereof I have hereunto set my hand this 1st day of January, A. D. 1891.

EARL D. EDDY.

Witnesses:

C. M. MORSE,

I. R. GOODSPEED.