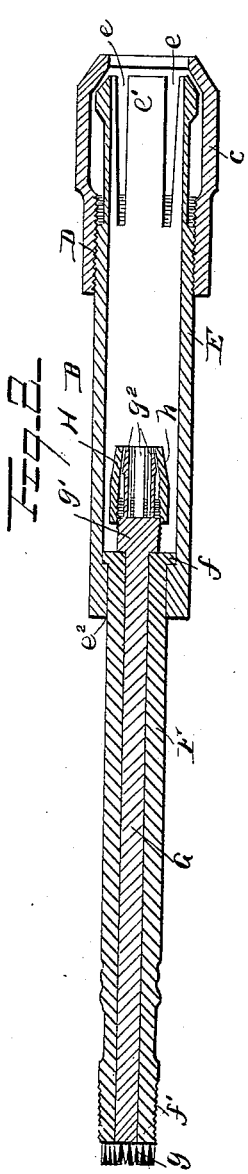
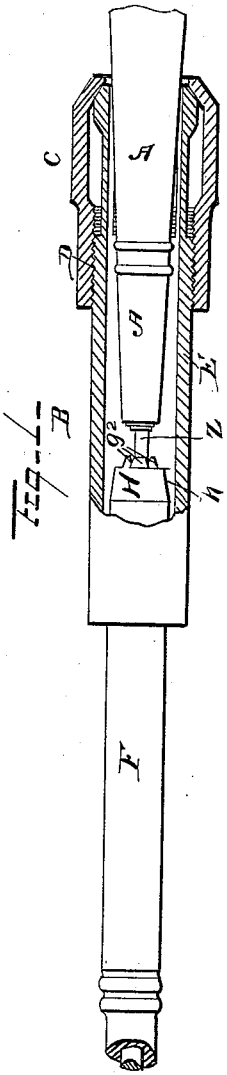
(Model.)

S. J. LEA.

DENTAL DRILL.

No. 348,131. Patented Aug. 24, 1886.





Witnesses
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UNITED STATES PATENT OFFICE.

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DENTAL DRILL.

SPECIFICATION forming part of Letters Patent No. 348,131, dated August 24, 1886.

Application filed January 7, 1884. Serial No. 116,731. (Model.)

To all whom it may concern:

Be it known that I, SAMUEL JORNAGAN LEA, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and Improved Appliance called a "Combination-Chuck;" and I verily believe myself to be the original and sole inventor of the combination-chuck described and claimed in the following specification, and that the same has not been patented, made, or used, to the best of my knowledge and belief, either in the United States or any foreign country.

My invention relates to an improvement in hand-piece attachments for dental engines; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is an elevation, partly in section, of my improved attachment applied to the shaft of a dental engine. Fig. 2 is a longitudinal sectional view of my attachment.

A represents the shaft of the engine, and B represents the attachment, which consists of the annular sleeve C, having an interior screw-thread, D, at one end to receive the threaded extremity of a sleeve, E, of somewhat less diameter than the sleeve C. The sleeve E is provided with a projecting end, which extends beyond the threaded portion of the sleeve, the said projecting end being provided with open slots *e*, thereby forming a series of spring-arms, *e'*. The outer end of the sleeve C, on the inner side of the latter, is inclined, as at *c*, and adapted to bear against the outer ends of the springs *e'* as the sleeve E is screwed into the sleeve C, thereby causing the said spring-arms *e'* to be compressed against the shaft A of the engine, and thus secure the attachment thereto. The outer end of the sleeve E is provided with a reduced opening, e^2.

F represents a hollow spindle or shaft, which is provided at its inner extremity with an enlarged head, *f*, which corresponds to the diameter of the bore of the hollow sleeve E. The said spindle F is inserted into the sleeve E, and projects outwardly from the outer end of the latter, as shown. The outer end of the spindle F is provided with screw-threads *f'*, for the attachment of an angle-piece carrying a gear-pinion. The construction of this angle-piece will be readily understood by dentists and others skilled in the art, and is not here shown nor more particularly described, as it forms no part of this invention.

G represents a shaft which extends through the hollow spindle F. To the outer end of the shaft G is attached a gear-pinion, *g*, and the inner end of the said shaft, inclosed in the sleeve E, forms a head, *g'*, which is screw-threaded, and is provided with spring clamping-arms g^2, similar to the arms *e'*.

H represents an annular sleeve or collar, which is interiorly screw-threaded at one end to engage the screw-thread on the head *g'*, the said collar having its outer end reduced and inclined, as at *h*, and thereby adapted to bear against the outer ends of the spring-arms *g'* and force them inwardly when the collar H is screwed home on the head *g'*.

It will be readily understood from this description that the sleeve C and the arms *e'* form a clutch at the outer end of the sleeve E, and that the collar H and the arms g^2 form a clutch at the inner end of the shaft G.

In order to attach my hand-piece attachment to the shaft A of the dental engine, it is only necessary to first secure a bit, Z, to the outer end of the shaft A in the usual manner, and then cause the clutch at the outer end of the sleeve E to engage the shaft A, and the clutch at the inner end of the shaft G to engage the bit Z, as shown at Fig. 1.

A hand-piece attachment thus constructed is adapted to be attached to the shaft of a dental engine of any make.

Having thus described my invention, I claim—

1. The combination of the sleeve E, having the clutch at one end to engage the shaft A of the engine, the hollow shaft F, swiveled in the sleeve E and movable longitudinally therein, and the shaft G, extending through the hollow shaft or sleeve, and having the clutch at its inner end to engage the bit in the engine-shaft, substantially as described.

2. The combination, in a hand-piece attach-

ment, of the sleeve E, having the arms e', the sleeve or collar C, screwed to the sleeve E, and having the incline c for compressing the outer end of the arms e', the hollow shaft F, swiveled in the sleeve E and movable longitudinally therein, and the shaft G, extending through the hollow shaft or spindle F, and provided at its inner end with the spring-arms g^2, and the head g', and the collar or sleeve H, screwed onto the head g', and having the incline h to compress the outer end of the arms g^2, for the purpose set forth, substantially as described.

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