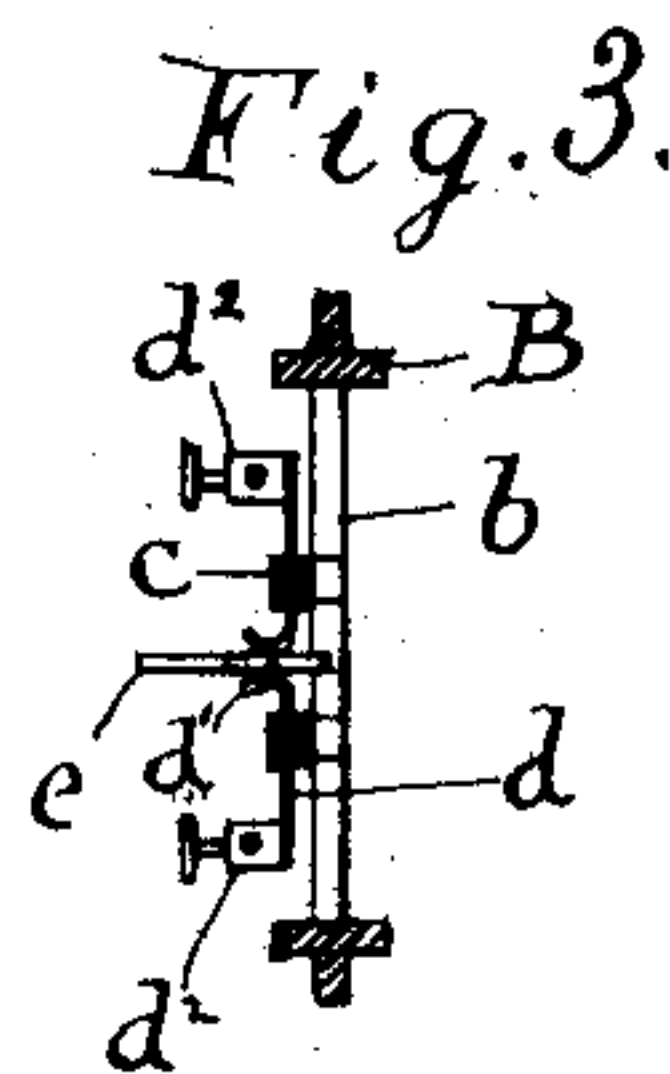
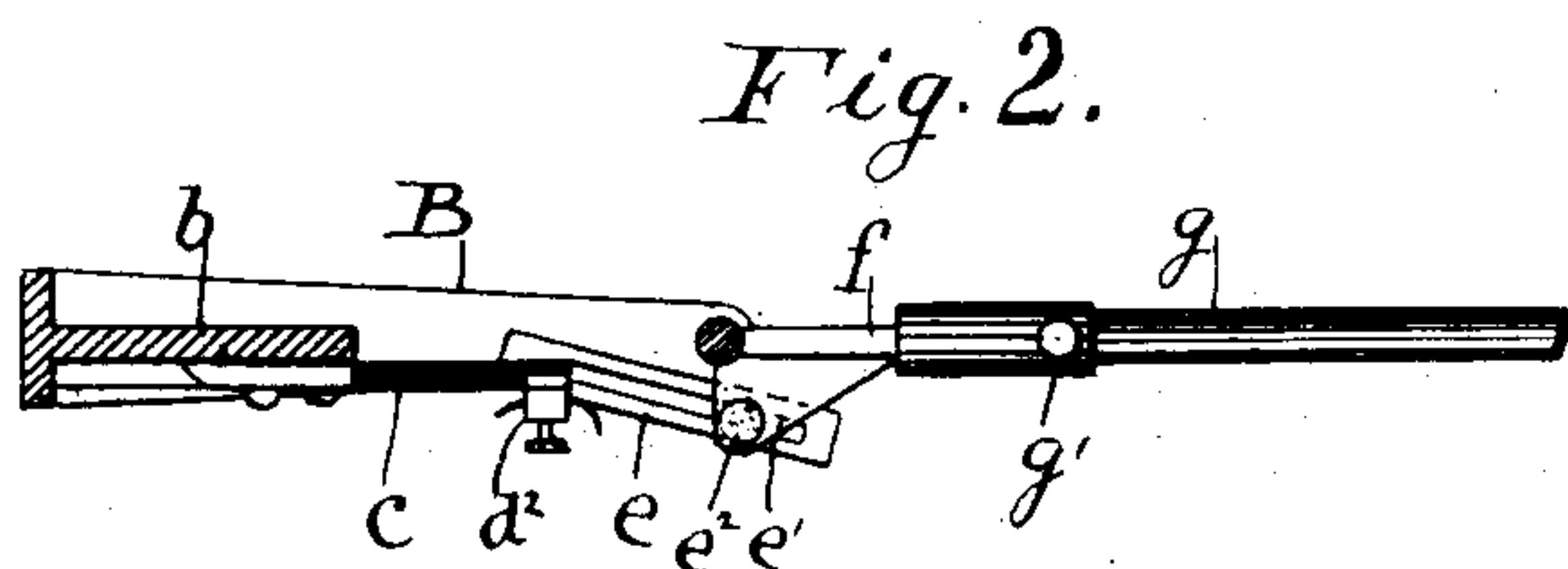
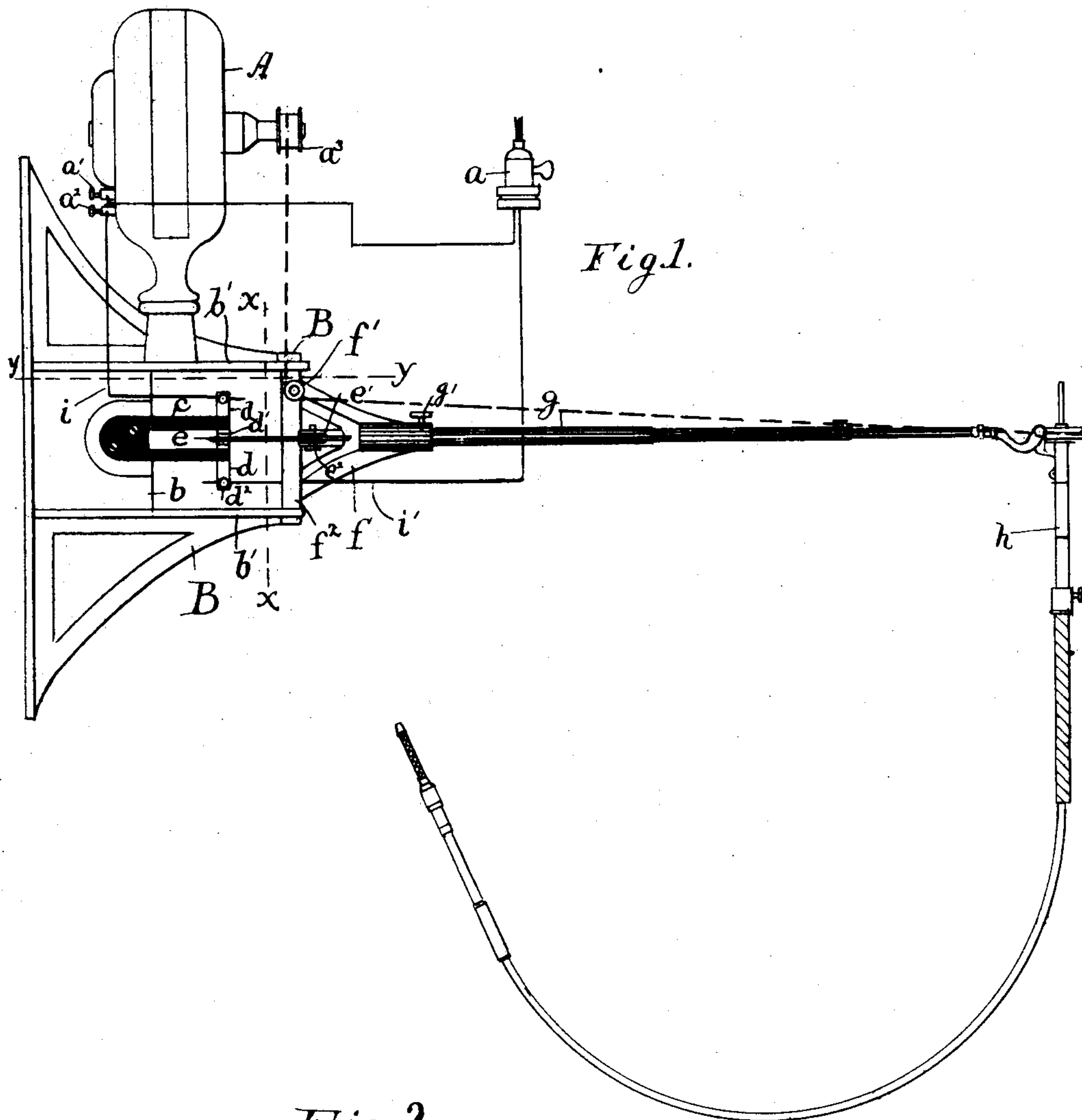


No. 869,840.

PATENTED OCT. 29, 1907.

W. E. HANSON.
DENTAL ENGINE.

APPLICATION FILED FEB. 21, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

WINFIELD E. HANSON, OF BIDDEFORD, MAINE.

DENTAL ENGINE.

No. 869,840.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed February 21, 1907. Serial No. 358,657.

To all whom it may concern:

Be it known that I, WINFIELD E. HANSON, a citizen of the United States of America, and a resident of Biddeford, Maine, have invented certain new and useful Improvements in Dental Engines, of which the following is a specification.

My invention relates to a dental engine and particularly to such an engine adapted to be operated by an electric motor.

10 The object of my invention is first, to construct a dental engine driven by an electric motor in which the current will be shut off automatically as the operating arm is swung around out of position and will be turned on when it is swung around into position to be used, 15 and, second, to so construct that portion of the engine which supports the motor so that the post and arm of an ordinary dental engine can be attached to it directly, saving the duplication of these parts. To accomplish these objects, I support my motor on a bracket 20 which is adapted to be attached to a wall or partition and to this bracket is pivoted a short horizontal arm adapted to be swung in a horizontal plane, this having an opening or socket adapted to receive the end of the post of an ordinary dental engine. On the bracket and 25 the swinging arm are located the two parts of a switch which controls the current passing to the motor and this switch is opened and closed by the swinging of the arm to bring the hand piece of the dental engine into position or out of position. Thus if a dentist desires to 30 buy an electric engine, he only has to buy the bracket with its motor, utilizing the post and flexible shaft of his old engine and by means of my automatic switch, all the other switches and cut offs are done away with.

35 I illustrate my invention by means of the accompanying drawing in which

Figure 1 is a side elevation of my improved dental engine, Fig. 2 is a section on the line *y y* of Fig. 1 and Fig. 3 is a section on the line *x x* of Fig. 1.

40 In the drawing B represents generally a bracket adapted to be fastened against a wall or partition. The bracket has two horizontal arms *b'* one over the other and pivoted to the ends of these arms is the upright member *f*² of a short horizontal arm *f* which is adapted to swing in a horizontal plane.

45 A represents the motor with its pulley *a*³ and binding posts *a'* and *a*². This motor is supported in any suitable manner on the upper portion of the bracket. Secured to the arm *f* and to the body of the bracket, are the two parts of a switch which controls the current to 50 the motor A and the switch is so arranged that as the arm *f* is swung horizontally, the switch is opened and closed.

55 As here shown, the central portion of the bracket between the arms *b'*, is composed of a web *b* to which is attached a U-shaped piece of hard rubber or other insulating material *c* and to the outer ends of the two arms

are secured the two parts or switch terminals of a "jack-knife" switch. Each of these terminals is composed of a plate *d* set in the end of the insulating piece *c* and having its inner end turned up to form a contact spring *d'*. 60 On the outer end of each terminal there is a binding post *d*², one of which connects with a wire *i* leading to the motor, and the other connecting with a wire *i'* leading to the plug *a*. The knife portion of the switch is composed, as here shown, of an elongated contact plate 65 *e* having a central longitudinal slot formed for the purpose of adjustment. This contact plate is held in such a way that when the arm *f* is swung to the left as shown in Fig. 2, the switch will be opened and when swung 70 to the right it will be closed. As here shown, the plate *e* is held in a slotted projection *e'* which is formed on the arm *f* the slot being just wide enough to receive the plate. The plate is adjustably held by means of a set screw *e*² which passes through the longitudinal slot in 75 the contact plate.

Means are provided for attaching to the swinging arm *f* the operating parts of an ordinary dental engine, that is, the post and flexible shaft with its hand piece. For this purpose I form in the outer end of the arm *f* a socket adapted to receive the end of the telescoping 80 rod or post *g* having journaled at its end the flexible shaft *h*. A set-screw *g'* secures the rod *g* in place and by loosening the set screw the rod and the parts attached thereto may be removed. Power is applied from the pulley *a*³ of the motor to the whirl on the 85 flexible shaft by a belt shown in dotted lines passing over the pulleys *f'* journaled one on each side of the vertical member of the arm *f*.

Having explained the construction of my device, its operation will be readily understood. The plate is so 90 set that when the arm *g* is in such position that the hand piece can be operated, the switch is closed and the motor is started but when it is swung off to the left, the switch is open and the motor stopped.

In putting the device onto the market, the bracket 95 motor and switch would be furnished and the dentist would use the arm *f* and shaft *h*, these being parts of the old foot operated dental engine. A dentist would thus be enabled to fit up with electricity at a small expense compared with the cost of a whole electrical 100 outfit.

If it is desired to have the arm *f* swing in the opposite direction to disconnect the motor, it may be taken from its bearings and reversed.

I claim:—

1. The herein described dental engine consisting of a bracket, an electric motor mounted on said bracket, an arm pivoted to said bracket and adapted to swing in a horizontal plane, a flexible shaft and hand piece journaled at the end of said arm and a switch for controlling the current to said motor adapted to be opened and closed by the swinging of said arm. 110

2. The herein described dental engine consisting of a

5 bracket, an electric motor mounted on said bracket, an arm pivoted to said bracket and adapted to swing in a horizontal plane, a pair of switch terminals on said bracket, adapted to be connected to said motor and a contact plate adjustably secured to said arm and adapted to connect and disconnect said switch terminals.

10 3. The herein described dental engine consisting of a bracket, an electric motor mounted on said bracket, an arm pivoted to said bracket and adapted to swing in a horizontal plane, a pair of switch terminals on said bracket adapted to be connected with said motor, a slotted projection on said arm, a contact plate fitting in the slot of said projection and adapted to connect and disconnect said switch terminals, and having a longitudinal slot
15 therein, and a clamping screw passing through said pro-

jection and said longitudinal slot for adjustably holding said contact plate in place.

4. The herein described dental engine consisting of a bracket, an electric motor mounted on said bracket, an arm pivoted to said bracket, and adapted to swing in a horizontal plane, a flexible shaft and pulleys journaled on said arm at or near the pivoting point for carrying the power band. 20

Signed by me at Portland, this 13th day of February A. D., 1907.

WINFIELD E. HANSON.

Witnesses:

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