E. A. NEEL.

MOTOR ATTACHMENT FOR USE BY DENTISTS OR BARBERS.

APPLICATION FILED OCT. 31, 1919.

1,360,778. Patented Nov. 30, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

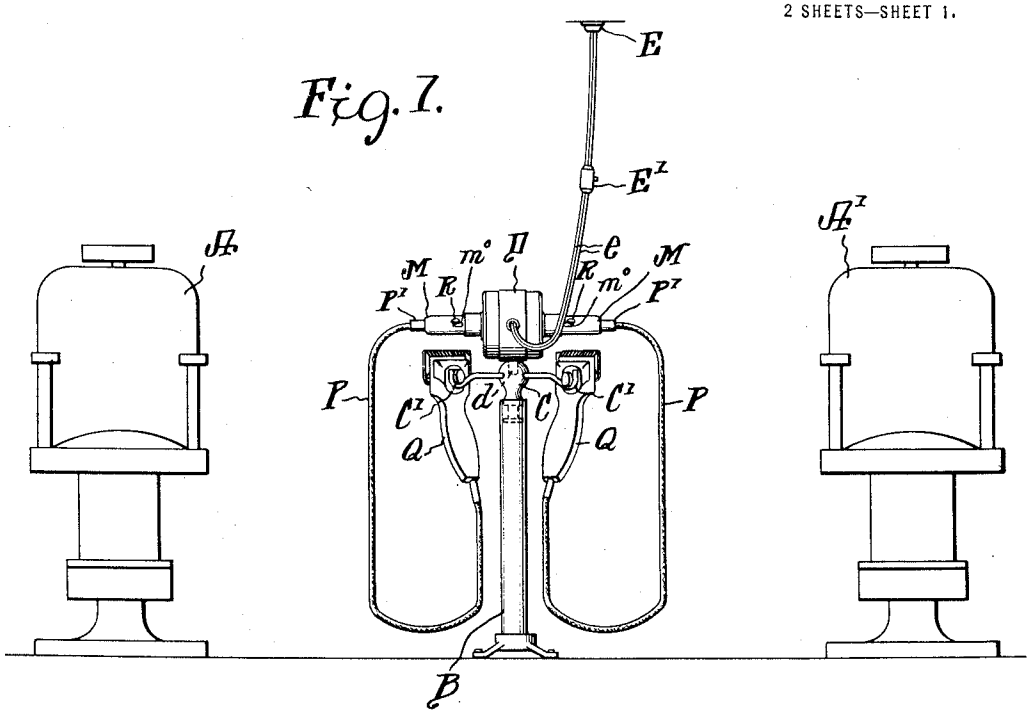
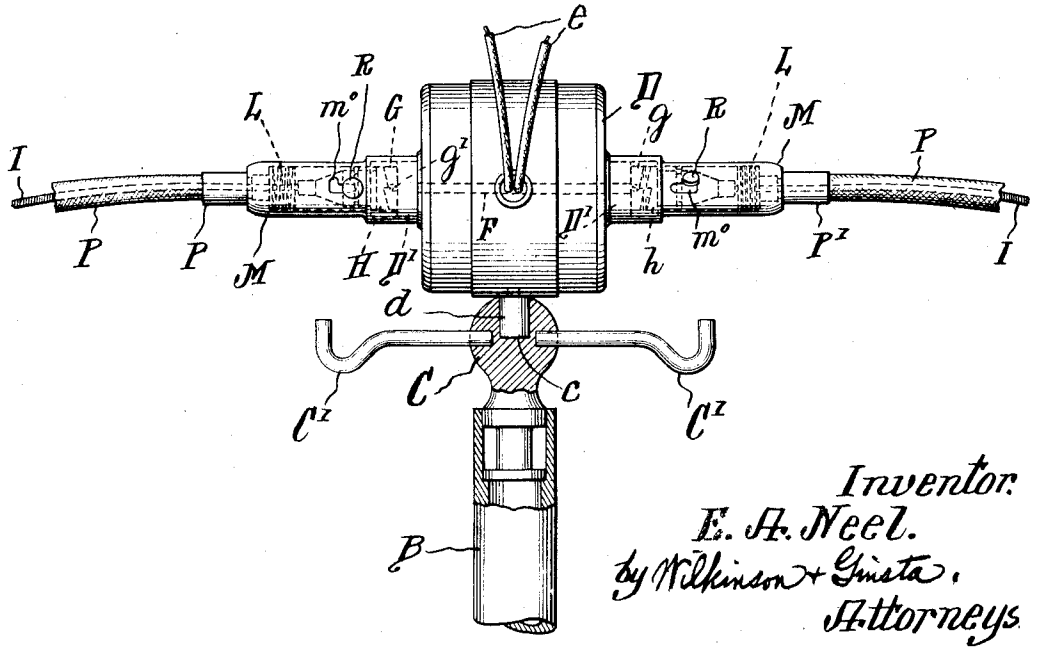


Fig. 2.



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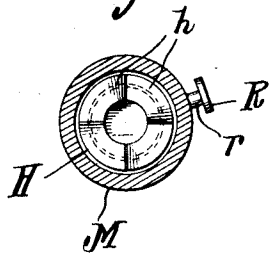
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2 SHEETS—SHEET 2.

Fig. 5.



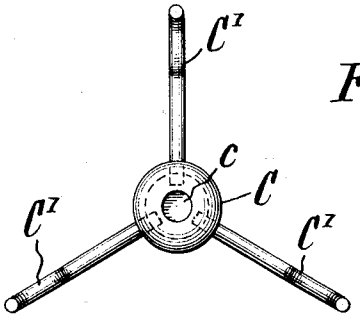
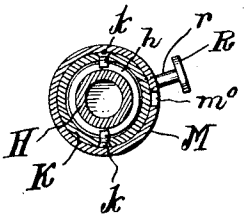
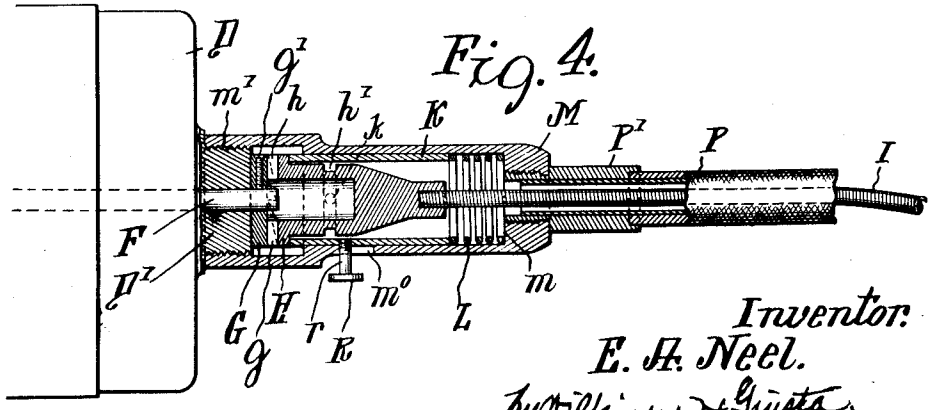


Fig. 7.

Fig. 6.





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UNITED STATES PATENT OFFICE.

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MOTOR ATTACHMENT FOR USE BY DENTISTS OR BARBERS.

1,360,778. Specification of Letters Patent. Patented Nov. 30, 1920.

Application filed October 31, 1919. Serial No. 334,665.

To all whom it may concern:

Be it known that I, ERNEST ARMOND NEEL, a citizen of the United States, residing at Ripley, in the county of Lauderdale and State of Tennessee, have invented certain new and useful Improvements in Motor Attachments for Use by Dentists or Barbers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to attachments for use with electric motors in such places as it may be desirable to drive simultaneously or singly two cutting or boring implements from a single electric motor.

The invention is especially adapted for use in dentists' offices where it is desirable to provide a quick and convenient attachment for driving the rotary instrument for treating the teeth; or in barber shops where it is desirable to provide clipping instruments for use in trimming the hair or treating the face.

Under such conditions it has hitherto been the custom to use a single electric motor for driving each implement, and where there are two barbers who desire to use the clippers it is customary for one to wait on the other, thus necessitating delay to the person being operated upon. In the same way, where there are two dentist chairs with a single motor it has hitherto been the custom to treat each patient separately.

According to my invention I provide the armature shaft to the motor with two free ends, each projecting beyond the motor casing, and I provide the arrangements by means of which an implement may be driven from each end of the motor shaft, and also I provide means for cutting out either or both implements when not in use, and also for starting or stopping the rotation of the armature shaft referred to.

One embodiment of my invention as applied to use in barber shops is shown in the accompanying drawings, in which like parts are indicated by similar reference symbols throughout the several views, and in which:

Figure 1 shows the motor mounted between two barber chairs, the motor being shown on a greatly enlarged scale relative to the chairs.

Fig. 2 is a front elevation of the motor on a still larger scale than in Fig. 1, parts being broken away.

Fig. 3 shows a central horizontal section through the clutch for attaching one end of the armature shaft of the motor to the flexible driving shaft, the clutch being shown in the inoperative position.

Fig. 4 is a similar view to Fig. 3, but shows the clutch in the engaging position.

Fig. 5 shows a section along the line 5—5 of Fig. 3, and looking in the direction of the arrows.

Fig. 6 shows a section along the line 6—6 of Fig. 3, and looking in the direction of the arrows; and

Fig. 7 is a plan view of the swiveled head on which the motor is pivoted, and to which the various tools are suspended.

A and A′, shown in Fig. 1, represent two barber chairs shown on a much reduced scale with regard to the motor, and between these chairs I provide a tubular support B on which the swiveled head C is mounted. This head is provided with a socket *c* to engage the lug *d* of the motor casing D, and this head may be provided with a series of arms, preferably hook-shaped as shown at C′, on which may be conveniently hung the various tools or other implements which are intended to be driven by the motor.

The electric motor is provided with leading-in wires *e*, controlled by the switch E′, and receiving current from any suitable source of electricity E, as shown most clearly in Fig. 1.

The armature shaft F of the motor is journaled in suitable bearings, such as D′, preferably integral with the motor casing D, as shown most clearly in Figs. 3 and 4, and each end of the shaft carries a clutch member G provided with engaging teeth *g* and connected to the armature shaft in any convenient way, as by means of the pin *g*′. Since the connections are similar at each end of the armature shaft, but with the clutch teeth, of course, reversed, I have only shown in detail the connections at one end, see Figs. 3 and 4.

The companion member of the clutch H

is provided with engaging teeth h and with an annular groove h' adapted to engage the pins k on the sliding sleeve K, which is normally pressed forward by the spring L mounted in the casing M, which spring abuts against a shoulder m of the clutch casing M. The forward end of this casing is screwed, as at m', onto the bearing D', and the clutch member H is connected to the flexible shaft I which is carried in the flexible casing P, connected by the union P' to the clutch casing M. The free end of this flexible shaft I is connected to the implement to be operated, indicated by the clippers Q, see Fig. 1.

The clutch member H is thrown into and out of engagement by means of the handle R which is fast to the sliding sleeve K, and has its stem r projecting into the L-shaped slot m^0 in the clutch casing M. By drawing the handle R to the rear and turning it slightly to the position shown in Fig. 2, the clutch member H is held out of engagement, as shown in Fig. 3, while by reversing the movement of the handle R the clutch member H is thrown into engagement as shown in Fig. 4.

The construction of the clutch at the opposite side of the motor is substantially identical with that shown in Figs. 3 and 4, except that the direction of the teeth would, of course, be reversed, since the electric motor is designed to rotate in one direction only.

It will be obvious that either or both implements may be thrown out of operation, or either or both thrown into operation while the motor is running, and that the motor may be cut off when desired. Thus, by using a single electric motor and motor support, two tools or other implements may be independently operated, and thus two barbers or two dentists may be able to independently use the apparatus driven by the motor without interfering with each other.

It will be obvious that various modifications might be made in the herein described apparatus and in the construction, combination and arrangement of parts which could be used without departing from the spirit of my invention, and I do not mean to limit the invention to such details except as particularly pointed out in the claims.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. The combination with an electric motor provided with a casing having oppositely disposed journal bearings therein, and with an armature shaft having its free ends projecting through and beyond said bearings, of clutch members connected respectively to the free ends of said armature shaft, clutch casings connected respectively to said oppositely disposed bearings, and containing sliding clutch members adapted to coöperate with those carried by the corresponding ends of the armature shaft, said sliding clutch members being mounted in said clutch casings, means for throwing said sliding clutch members into and out of engagement as desired, flexible shafts connected to said sliding clutch members, and implements connected to and operated by said flexible shafts, substantially as described.

2. The combination with an electric motor provided with a casing having oppositely disposed journal bearings therein, and with an armature shaft having its free ends projecting through and beyond said bearings, of clutch members connected respectively to the free ends of said armature shaft, clutch casings connected respectively to said oppositely disposed bearings, and containing sliding clutch members adapted to coöperate with those carried by the corresponding ends of the armature shaft, said sliding clutch members being mounted in said clutch casings, means for throwing said sliding clutch members into and out of engagement as desired, flexible shafts connected to said sliding clutch members, and clippers connected and operated by the free end of each flexible shaft, substantially as described.

3. In apparatus of the character described, the combination with a tubular support, of a head carried by said support and provided with projecting arms, an electric motor provided with a casing pivotally connected to said head, said casing having oppositely disposed journal bearings therein, and with an armature shaft having its free ends projecting through and beyond said bearings, of clutch members connected respectively to the free ends of said armature shaft, clutch casings connected respectively to said oppositely disposed bearings, and containing sliding clutch members adapted to coöperate with those carried by the corresponding ends of the armature shaft, said sliding clutch members being mounted in said clutch casings, means for throwing said sliding clutch members into and out of engagement as desired, flexible shafts connected to said sliding clutch members, and implements connected to and operated by said flexible shafts, substantially as described.

4. In apparatus of the character described, the combination with a tubular support, of a head carried by said support and provided with projecting arms, an electric motor provided with a casing pivotally connected to said head, said casing having oppositely disposed journal bearings therein, and with an armature shaft having its free ends projecting through and beyond said bearings, of clutch members connected respectively to

the free ends of said armature shaft, clutch casings connected respectively to said oppositely disposed bearings, and containing sliding clutch members adapted to coöperate with those carried by the corresponding ends of the armature shaft, said sliding clutch members being mounted in said clutch casings, means for throwing said sliding clutch members into and out of engagement as desired, flexible shafts connected to said sliding clutch members, and clippers connected and operated by the free end of each flexible shaft, substantially as described.

ERNEST ARMOND NEEL.