H. A. EVERETT.

ELECTRIC SWITCH HANDLE.

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Fig. 1.

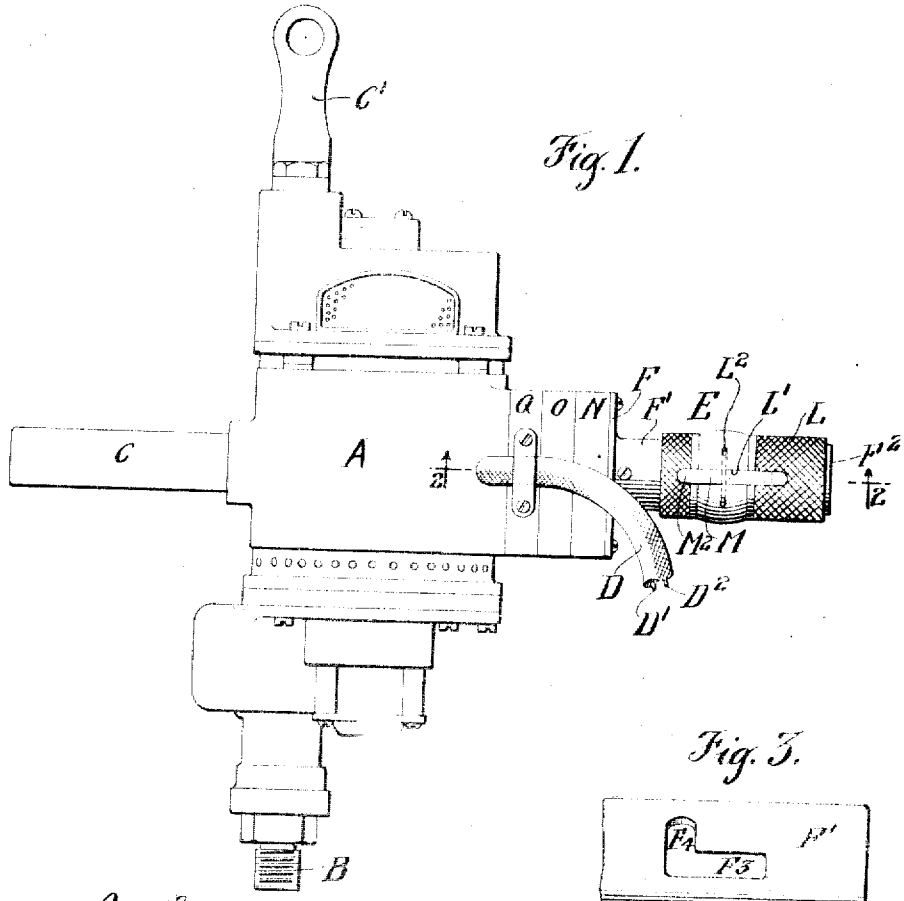
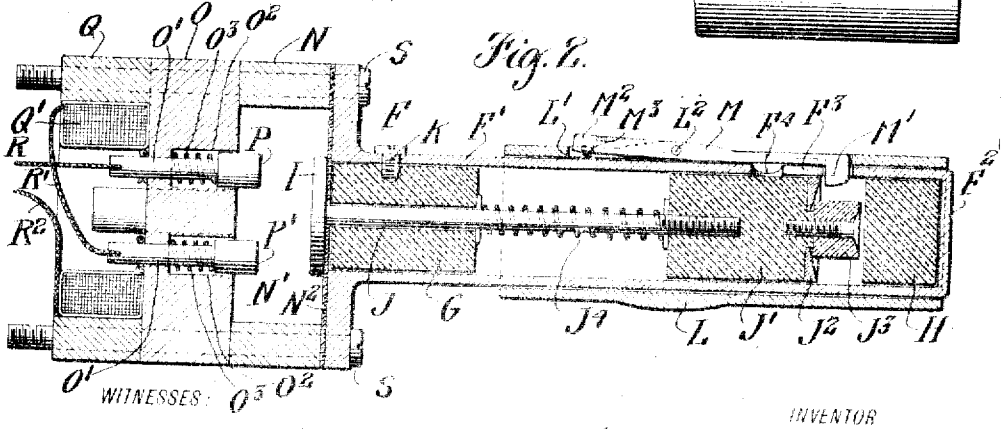


Fig. 3.

Fig. 2.



WITNESSES:

Gustav Tenglinger.

INVENTOR

Henry A. Everett

BY

Francis Chandler

his ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY A. EVERETT, OF HADDON HEIGHTS, NEW JERSEY, ASSIGNOR TO HIMSELF AND LEWIS SYKES, OF CAMDEN, NEW JERSEY.

ELECTRIC-SWITCH HANDLE.

1,368,617. Specification of Letters Patent. Patented Feb. 15, 1921.

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To all whom it may concern:

Be it known that I, HENRY A. EVERETT, a citizen of the United States of America, residing in Haddon Heights, county of Camden, in the State of New Jersey, have invented certain new and useful Improvements in Electric-Switch Handles, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to switch handles intended for use in connection with electrically driven tools and particularly adapted for use in connection with portable electrically driven drilling and reaming machines. In such machines as heretofore constructed it has been found that in the course of use the machine not infrequently gets into positions which makes it impossible for the operator to have access to the buttons or triggers provided for opening and closing the switches for starting and stopping machines, and it is particularly to provide a switch handle which will put the starting and stopping of the machine at all times within the operator's control that my invention is designed, though I have also in view the provision of a switch actuating handle by means of which the switch can be opened and closed by a slow jabbing action whereby full control of the machine is imparted both in starting the machine and when the tool is about to break through the hole or where very thin metal is encountered. A further object of my invention is to simplify the general construction of the switch handle and avoid the use of complicated and delicate machinery.

The nature of my improvements will be best understood as described in connection with the drawing in which—

Figure 1 is a side elevation of an electrically driven tool provided with my improved switch handle.

Fig. 2 is a sectional plan view of the switch handle and of a portion of its coacting mechanism taken as on the section line 2—2 of Fig. 1, and

Fig. 3 is a plan view of a portion of the fixed part of the handle showing the bayonet joint slot which I find to be the most convenient latching device for holding the grip and switch closing plunger in switch closing position.

A indicates the electrically driven tool which may be of any usual construction and is not shown in detail. C is a fixed handle member extending out from the tool, and C′ another fixed handle member with which such tools are frequently provided. D indicates the usual cord containing the live wires D′ and D² which are, in any convenient way, connected to the switch contacts P and P′. At E, I have indicated my improved switch handle, which as shown, and as preferably constructed, consists of a base plate F adapted to be secured to the machine and having extending from it a fixed handle member F′, preferably made, as shown, in the form of a sleeve with a closed end indicated at F², and in this sleeve I form a bayonet joint, see Fig. 3, consisting of a longitudinal portion F³ of sufficient length to provide for the longitudinal motion to be given to the plunger and to a portion F⁴ extending from the slot F³ at right angles, as shown. G is a guide block formed with a central longitudinal perforation and held in place, as shown, by a screw K. H is a buffer block, preferably of rubber, set in the end of the tubular portion F′, as shown. I is a switch closing plate or disk secured on the end of a flange rod J, the other end of which is secured to a slide J′ of insulating material moving in the tube F′ and having, as shown, a metallic ring, preferably of steel, secured at its outer end, as shown at J², and on this same end of the slide block J′ is secured a buffer contacting part indicated at J³. J⁴ is a spring extending between the stationary insulating guide block G and the slide J′ and acting to push the plunger and switch contact plate in direction to open the switch. L is the grip portion of the switch handle, preferably made, as shown, in the form of a sleeve, longitudinally and rotatively movable on the fixed tubular portion F′ of the handle. The sleeve is, as shown, slotted at L′ and through this slot extends a pivot pin L² on which is pivotally connected the lever M, from one end of which extends the latch

lug M′, which extends through the slot F^3 in the sleeve F′, and engages ring J^2 on the end of the slide block J′. As shown in Fig. 2, the other end of the lever M, indicated at M^2, is held in elevated position by a spring as indicated at M^3, and is so located as to be conveniently accessible to the finger of the operator gripping the sleeve L, so that he can depress it and elevate the latch lug M′ so that it will release the slide member J′.

As shown, the plate F is secured directly to a rim N within which is formed a chamber N′, and to the other edge of which is secured the plate O, through which are perforations O′, O′ for the switch terminals, said perforations extending into the spring chambers O^2, O^2 in which are located springs O^3, O^3. P and P′ indicate the switch terminals yieldingly held in the position indicated in Fig. 2 by the action of the springs O^3. Attached to the outer side of the plate or block O is the rim Q containing a blowout coil Q′. R is the conducting wire extending from the switch terminal P, R′ a conducting wire extending from the switch terminal P′ and connecting with the blowout coil Q′ from which leads the conducting wire R^2. S, S, indicate bolts by which the switch handle, and immediately connecting parts, are secured to the body of the tool A.

In operation the sleeve grip is normally connected to the switch actuating plunger by the engagement of the lug M′ with the plunger, as shown in Fig. 2. When it is desired to close the switch the sleeve grip is moved toward the tool carrying with it the switch closing plunger until it comes in contact with the terminals P and P′, and it will be observed that the device is of such a character that the switch can be closed and opened by a jabbing motion of the hand, so as to control the action of the tool in starting or where delicate work is involved. When it is desired to permanently close the switch all that is necessary is for the operator to give a slight rotative movement of the sleeve handle engaging the lug M′ in the portion F^4 of the slot formed in the sleeve F′. When again it is desired to open the switch this may be done by turning the handle to disengage the lug finger from the bayonet joint slot or by pressing down on the end M^2 of the lever M, leaving the lug finger M′ out of engagement with the switch carrying plunger, which, through the action of the spring J^4, will at once move into position to open the switch, the impetus of the moving parts being taken up on the buffer block H.

While I have, as required by law, illustrated and described by invention in what I believe to be its most perfect and useful adaptation and form it will be understood that I do not intend to limit the claims to the specific embodiment of the invention illustrated, as it is capable of useful application in many terms and modifications.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A switch handle for electric tools comprising a fixed handle member adapted to be secured to and to project from the body of the tool, in combination with a switch closing plunger guided in said member, a spring acting to move the plunger in direction to open the switch, a sliding grip longitudinally movable on the fixed member, means engaging the grip and plunger so that they will move together and a latch for holding the grip in switch closing position.

2. A switch handle for electric tools comprising a fixed handle member adapted to be secured to and to project from the body of the tool, in combination with a switch closing plunger guided in said member, a spring acting to move the plunger in direction to open the switch, a sliding grip longitudinally movable on the fixed member, a latch extending from the grip to engage the plunger, latch releasing means accessible from the outside of the grip, and a latch for holding the grip in switch closing position.

3. A switch handle for electric tools comprising a fixed handle member adapted to be secured to and to project from the body of the tool, in combination with a switch closing plunger guided in said member, a spring acting to move the plunger in a direction to open the switch, a sleeve handle grip longitudinally and rotatively movable on the fixed handle member and connected to the plunger so as to move longitudinally with it and a catch for holding the sleeve and plunger in position to close the switch engaged and disengaged by a rotative motion of the sleeve on the fixed handle member.

4. A switch handle for electric tools comprising a tubular fixed handle member adapted to be secured to and to project from the body of the tool, and having a bayonet joint slot formed through its wall, in combination with a switch closing plunger guided in said member, a spring acting to move the plunger in a direction to open the switch, a sleeve handle grip longitudinally and rotatively movable on the fixed handle member and a finger extending from the sleeve through the slot in the tubular member and engaging the plunger, said finger being adapted to engage with the bayonet joint slot and hold the plunger in switch closing position.

5. A switch handle for electric tools comprising a fixed handle member adapted to be secured to and to project from the body

of the tool, in combination with a switch closing plunger guided in said member, a spring acting to move the plunger in a direction to open the switch, a sleeve handle grip longitudinally and rotatively movable on the fixed handle member, a catch finger secured to the sleeve and adapted to engage the plunger, a catch finger releasing device lying on the outside of the sleeve, and a catch for holding the sleeve and plunger in switch closing position engaged and disengaged by a rotative movement of the sleeve.

HENRY A. EVERETT.