

Oct. 10, 1950

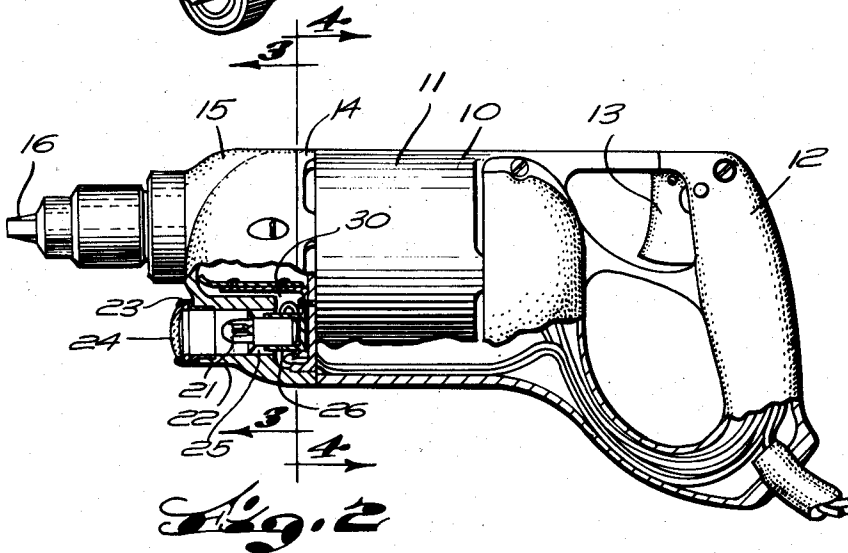
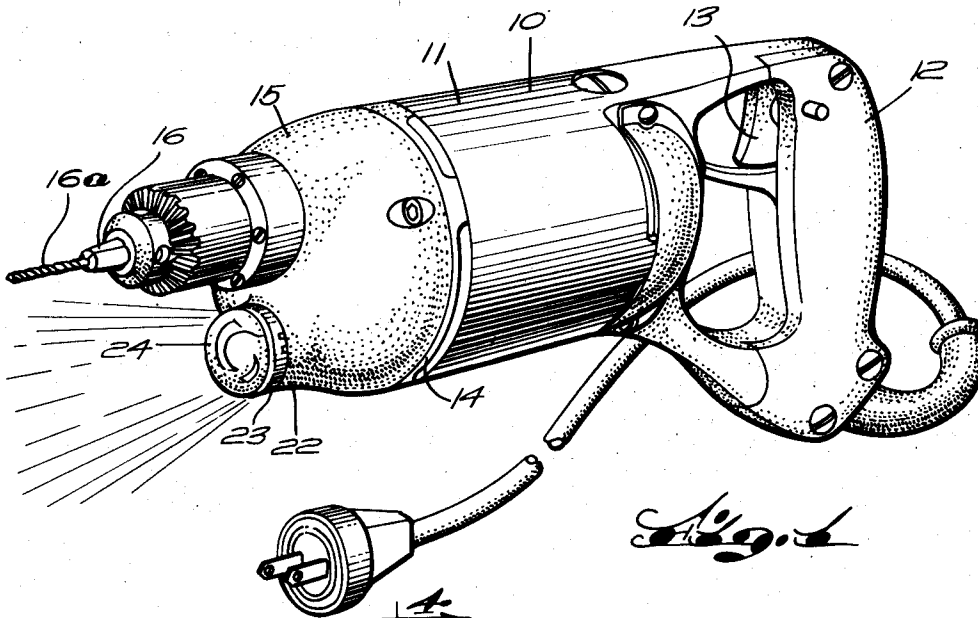
L. F. CAMERON ET AL

2,525,588

ILLUMINATED ELECTRIC DRILLS AND THE LIKE

Filed Dec. 12, 1946

2 Sheets-Sheet 1



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ILLUMINATED ELECTRIC DRILLS AND THE LIKE

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2 Sheets-Sheet 2

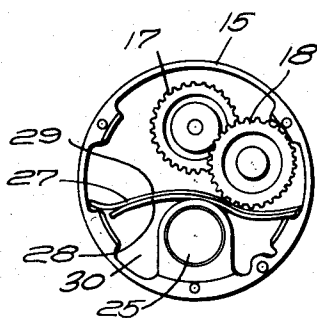


Fig. 3

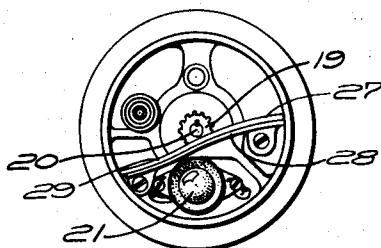


Fig. 4

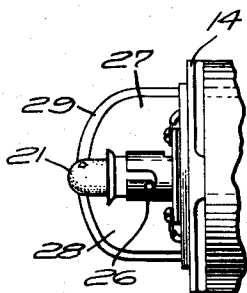


Fig. 5

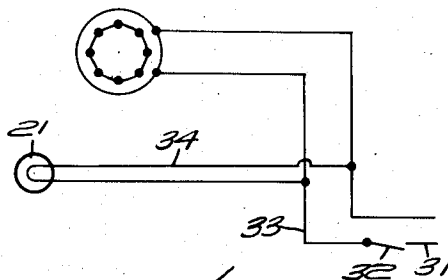


Fig. 6

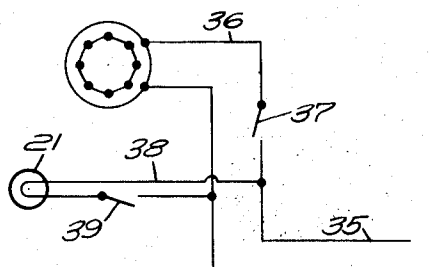


Fig. 7

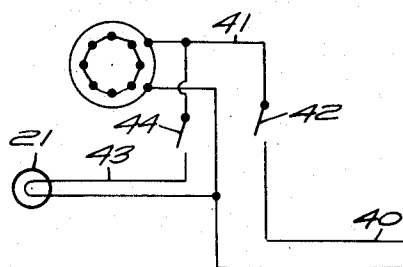


Fig. 8

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UNITED STATES PATENT OFFICE

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ILLUMINATED ELECTRIC DRILL AND
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Application December 12, 1946, Serial No. 715,744

2 Claims. (Cl. 240—2)

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The present invention relates to portable tool constructions, and has particular reference to a novel improvement for an electric drill.

The principal object of the invention is to provide an electric drill which has a lighting unit mounted therein for lighting the drill point and the work area.

Another object of the invention is to provide a cap and cover plate arrangement for an electric drill which includes a separate compartment for a lighting unit.

With the above and other objects and advantageous features in view, the invention consists of a novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more specifically defined in the claims appended thereto.

In the drawings:

Fig. 1 is a perspective view of an electric drill provided with an integral lighting unit;

Fig. 2 is a side view thereof, parts being shown in section;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a section on the line 4—4 of Fig. 2;

Fig. 5 is a side view, partly broken away, of Fig. 4; and

Figs. 6, 7 and 8 are diagrammatic views illustrating preferred electrical controls for the electric drill circuit and the lighting unit circuit.

It has been found desirable to provide a portable tool such as an electric drill, with an integral lighting unit so that the work is fully illuminated. To this end, we have formed the drill casing to include a lighting compartment, and we have mounted a light in the compartment which is included in the power circuit and fully illuminates the work. This arrangement is particularly effective when drilling in interior or relatively inaccessible parts of a job.

Referring to the drawings, the illustrative electric drill includes a casing 10 comprising a main body portion 11 of generally cylindrical form, a trigger handle portion 12 in which the trigger switch element 13 is mounted, a cover plate 14 which covers the motor and its associated parts, and a cap 15 which carries a chuck 16 for an electric drill 16a, the drill being operatively connected to the motor through gears 17, 18 and 19 and the power shaft 20.

An electric bulb 21 is mounted in a passageway 22 in the form of a shell in the cap 15, in such manner as to direct light towards the drill point, the shell having a removable cap 23 provided with a focusing glass 24. The base of the

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bulb extends through an opening 25 in the base of the shell for detachably locking in a bulb socket 26 in the usual manner, a bayonet type lock being shown, the bulb socket 26 being mounted on the upper surface of the cover plate 14. A sealing member 27, see Figs. 3, 4 and 5, is secured to the upper surface of the cover plate, and preferably includes a shaped metal plate 28 and a leather backing 29 of larger area, the edge of the leather backing contacting the inner surface of the cap to form a sealed compartment 30 around the lighting unit.

It is preferred to have the light go on when the drill is operated. An illustrative wiring for accomplishing this is shown in Fig. 6, wherein the power wiring 31 has a main switch 32 operated by the trigger element 13, and the motor circuit wiring 33 and the lighting circuit wiring 34 are in parallel. If desired, the lighting circuit may have an independent switch, as illustrated in Fig. 7, the power wiring 35 having motor circuit wiring 36 which is controlled by a switch 37 operated by the trigger element 13, and lighting circuit wiring 38 which is controlled by a separate switch 39.

Another control system is illustrated in Fig. 8, wherein the power line 40 has motor circuit wiring 41, controlled by a switch 42 operated by the trigger element 13, and lighting circuit wiring 43 which is connected across the motor circuit and has its own switch 44, whereby the trigger element closes both the motor circuit and the lighting circuit but the lighting circuit may be independently opened.

The preferred type of lighting bulb is of the house current type, usually 110 v., but a low voltage bulb may be used in combination with a transformer, not shown, the lighting compartment being enlarged or a separate compartment being provided, if desired, to accommodate the transformer. Other changes such as providing a reflector or the like, or making the lighting unit movable, may be made in customary manner.

The above description discloses an illustrative layout for an electric drill, but the invention may be applied to other types of portable tools, and changes in the size, shape and arrangement of the parts may be made to suit requirements for different designs of portable tools, without departing from the spirit and the scope of the invention as defined in the appended claims.

We claim:

1. In an electric drill, a casing including a body portion housing an electric motor, a cover plate

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for said body portion, and a cap mounted on said cover plate, a chuck rotatably mounted in said cap, mechanism operatively connecting said chuck to said motor, wiring in said casing comprising a motor circuit and including a manually operable switch, sealing elements comprising a metal plate and a leather backing and mounted on said cover plate and engaging said cap to form a compartment, a lighting bulb socket in said compartment mounted on said cover plate, a lighting bulb in said socket, said cap having a passageway for passage of light rays from said bulb towards a tool secured in said chuck, and wiring in said casing connected to said motor circuit and comprising a lighting circuit.

2. In an electric drill, a casing including a body portion housing an electric motor, a cover plate for said body portion, and a cap mounted on said cover plate, a chuck rotatably mounted in said cap, mechanism operatively connecting said chuck to said motor, wiring in said casing comprising a motor circuit and including a manually operable switch, sealing elements comprising a metal plate and a leather backing and mounted on

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said cover plate and engaging said cap to form a compartment, a lighting bulb socket in said compartment mounted on said cover plate, a lighting bulb in said socket, said cap having a passageway for passage of light rays from said bulb towards a tool secured in said chuck, and wiring in said casing connected to said motor circuit and comprising a lighting circuit, said lighting circuit having a manually operable switch.

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The following references are of record in the file of this patent:

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