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J. ROSENBERG

ILLUMINATING SCREW DRIVER

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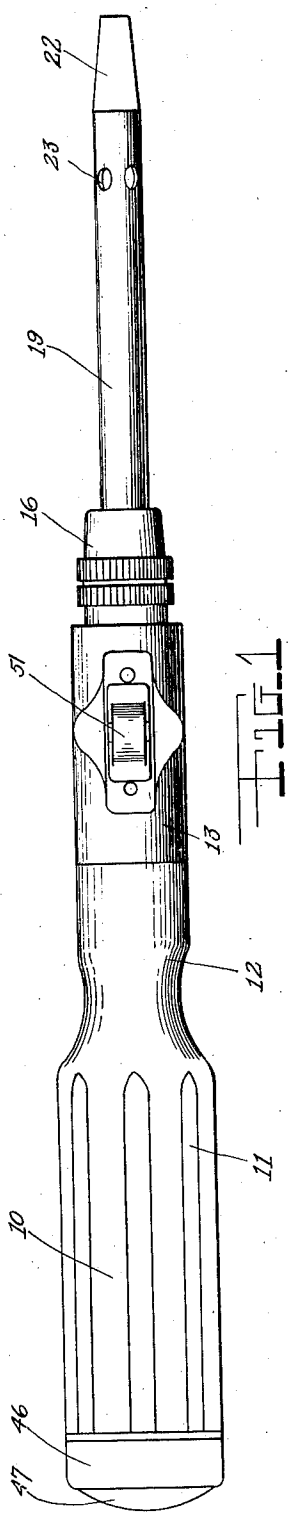


FIG. 1

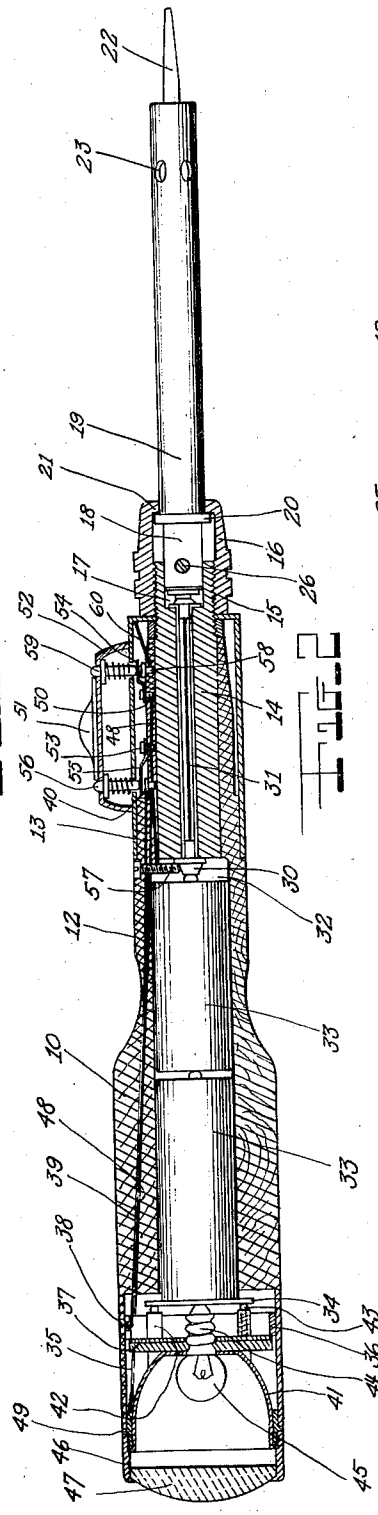


FIG. 2

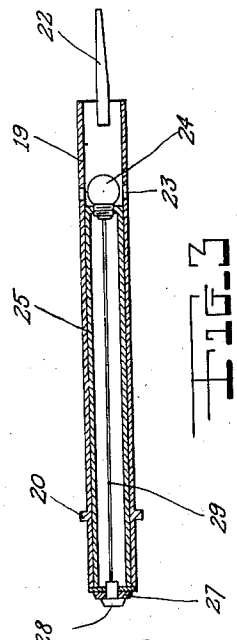


FIG. 3

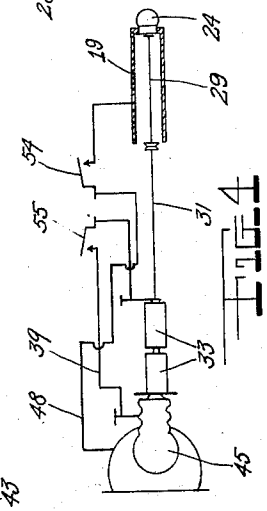


FIG. 4

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ILLUMINATING SCREW DRIVER.

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The main object of this invention is to provide a screw driver having a detachable shank and means illuminating the area around the tip of said shank so that when the tool is used in the dark, the slot of a screw head is illuminated so that the screw driver may be easily placed in said slot to turn the screw.

Another object is to provide a screw driver having an illuminated detachable shank and a flashlight at the handle end of the screw driver, the flashlight and the illuminated end of the screw driver being so constructed that either may be selectively used as desired by the operation of a dual switch.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawing.

Referring briefly to the drawing, Figure 1 is a longitudinal elevational view of the screw driver.

Figure 2 is a longitudinal sectional elevational view of the screw driver.

Figure 3 is a longitudinal sectional elevational view of the shank of the screw driver.

Figure 4 is a wiring diagram, showing the system of wiring used in the tool.

Referring in detail to the drawing, the numeral 10 indicates the handle body of the tool. Said body is formed of wood or any other desirable material and may be fluted, as shown at 11, to provide a better grip at the turning end of the tool. The handle at the end at which it is attached to the removable end of the tool, is formed into a reduced neck 12, which neck has a turned-down portion on which a hollow cylindrical sleeve 13 is rigidly attached. The lower neck of the handle body extends into the sleeve and has a shaft member 14 rigidly mounted therein. This shaft member projects beyond the lower end of the sleeve 13 and has threads 15 formed thereon which are engaged by an internally threaded and flanged nut member 16. The threaded end of the shaft 14 has a square orifice 17 formed therein which is adapted to receive a similarly formed square end 18 of a screw driver shank 19. The screw driver shank is removable by disengaging the nut 16 from the threads 15 on the shaft and slipping the square end 18 out of the square socket or orifice 17. The shank 19 has an external flange 20 formed thereon above the square end 18 and is adapted to be engaged by an internal shoulder 21 formed on the nut 16, which latter when rotated on the threads 15, causes the shoulder 21 to come in contact with the flange 20 and urge the square end 18 on the shank 19 into the socket 17. The shank 19 of the tool is cylindrical in cross section and has a wedge-shaped blade 22 secured in its outer end which is adapted to be inserted into the slots or screws for removal or placement of the latter. Near the wedge-shaped blades, a plurality of vents 23 are formed at spaced-apart positions on the shaft 22. These vents are adapted to pass the rays of a relatively small incandescent lamp 24 outwardly around the lower end of the shank so as to illuminate the area around the wedge-shaped blade 22. This incandescent lamp is mounted within a shell 25 which is slipped into the shank 19 and is fixed therein by a screw 26. Said shell 25 has a flange at the end opposite to the lamp 24 on which an insulating washer 27 is mounted, and on this insulating washer, a terminal 28 is secured. This terminal is electrically connected to one terminal of the lamp by a lead wire 29.

The shaft 14, which is mounted in the neck end of the handle body 10, has an opening passing entirely therethru from the socket 17 to its opposite end. Both ends of this opening are capped by terminals 30 which are mutually connected by a lead wire 31. One of the terminals 30, which is farthest removed from the socket 17, projects somewhat into a chamber 32 in which a plurality of dry cells 33, placed end to end, are stored. The dry cell which lies at the upper end of the chamber 32 is preferably provided with a relatively large annular plate 34 which is of greater dimension than the pe-

riphery of the dry cell. A larger chamber 35 is formed at the extreme upper end of the handle body 10 and communicates with the chamber 32, having mounted therein a ring 36 on which a plate 37 is normally seated. The ring is fixed in place by a screw 38 which forms a terminal for a lead wire 39, the opposite end of said lead wire being rigidly connected to a terminal screw 40 whose location and purpose will be more fully hereinafter described. The plate 37 forms a rigid portion of a reflector shell 41 and has a plurality of guide sleeves 42 thereon. Within these guide sleeves, plungers 43 are slidably mounted, said plungers being urged outwardly into normal contact with the dry cell plate 34 by springs located in the guide sleeves 42. The reflector shell has a threaded socket which passes thru the shell and the plate 37 and is adapted to receive the screw socket 44 of a filament lamp 45. The entire reflector shell 41, plate 37, and filament lamp 45, may be removable as a unit from the end of the handle body and are secured in place on a threaded ring 46 in which a glass lens 47 is mounted. A lead wire 48 is connected to a metallic ring 49 which is fixed in the upper end of the handle body 10 and forms a terminal which passes current into a reflector shell 41. The opposite end of this lead wire 48 is connected to a terminal screw 50.

The opposite ends of the tool are adapted to be illuminated by either the lamp 24 at one end or the lamp 45 at the opposite end. These lamps are selectively illuminated by a switch comprising a slidable carriage 51 which is mounted upon an upwardly extending hollow housing 52, said housing being secured on the shell 13. Within the shell and mounted on the neck end of the handle body 10 are secured the terminal screws 40 and 50. The terminal screw 50 and another terminal screw 53 serve as a fixing means for resilient blades 54 and 55. The resilient blade 55 is adapted to be urged into contact with the terminal screw 40 when a spring lifted plunger 56 is depressed and by such action, closes a circuit thru the lead wires 39, thru the ring 36, and into the dry cells 33 thru the plate 37, threaded socket 44, and plate 34. The current flows from the dry cells thru a screw 57 which lies in contact with the terminal 30 and thence to the terminal screw 53, finally passing thru the resilient blade 55, completing and closing a circuit thru the lamp 45. The additional resilient blade 54 is normally urged into contact with the terminal screw 58 by a normally lifted spring plunger 59 and closes a circuit which courses thru a lead wire 60 connected to the terminal screw 58 and the shell 13, passing from the shell 13 into the shaft 14 which lies in electrical contact with the shank 19, the latter also being in contact with the sleeve 25. This sleeve 25 has a screw socket of the lamp in threaded and electrical contact therewith and the current passes thru the lamp and out thereof thru the lead wire 29 and thru the terminal 28 into the lead wire 31 and terminal 30, thence thru the dry cells 33 to finally pass thru the plate 37 and reflector shell 41 thru the ring 49, and thence thru lead wire 48 to the terminal screw 50 and resilient blade 54, which completes a circuit thru the filament lamp 24.

The plungers 56 are adapted to be alternately depressed so that the alternate resilient blades 54 and 55 may be selectively brought into contact with their opposing terminal screws 58 and 40. By sliding the carriage 51 in either direction, one or the other end of said carriage contacts with the balled upper ends of the spring lifted plunger 59 and depresses the latter so that said spring plunger urges its particular resilient blade either 54 or 55 into contact with its terminal screw. The shell 25, which is mounted in the shank 19 of the tool, is adapted to be entirely removed and replaced by another when the filament lamp becomes inoperative. In this manner, the entire connection may be removed by simply detaching the screw 26. This shell 25, as described, has mounted therein an entire electrical unit including the terminal 28, the wire 29, and the filament lamp 24, which are all removed as a unit when extracting the shell 25.

I claim:—

1. In a screw driver having a handle body, a shank and filament lamps at opposite ends of said screw driver, means for illuminating said lamps selectively comprising a switch having a pair of plungers, flexible blades contacting with said plungers, terminal screws beneath said flexible blades, wires connecting the filament lamps with said terminal screws, and slidable means mounted on said switch for selectively depressing either of said plungers to selectively close the circuit thru either of said filament lamps.

2. In a screw driver having a handle body, a shank and filament lamps at opposite ends of said screw driver, means for illuminating said lamps selectively comprising a switch having a pair of plungers, flexible blades contacting with said plungers, terminal screws beneath said flexible blades, wires connecting the filament lamps with said terminal screws, a housing forming part of said switch enclosing said plungers, said plungers protruding partly from the housing, a carriage slidable on said housing between the plungers, said carriage being adapted to ride over either of said plungers to depress the same and close contact between the resilient blades and the terminal screws.

3. In a screw driver having a handle body,

a shank and filament lamps at opposite ends of said screw driver, means for illuminating said lamps selectively comprising a single switch adapted to selectively close each circuit, a shell in said body being in grounded circuit with said body, a filament lamp mounted in said body, a terminal at one end of said body, a lead wire connecting the terminal and filament lamp for passing circuit from said terminal thru the body back thru the dry cells thru the switches.

In testimony whereof I affix my signature.

JULIUS ROSENBERG.