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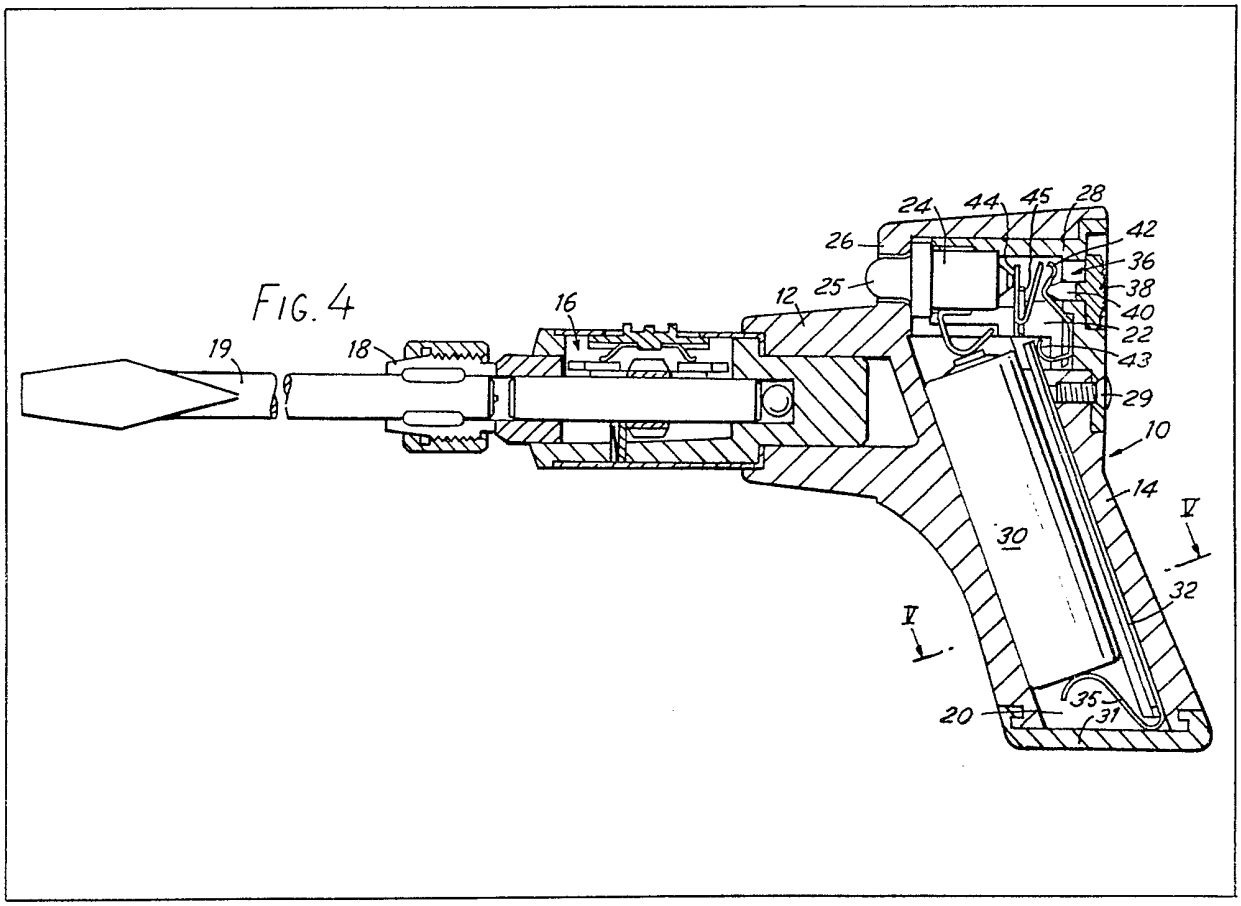
(54) Illuminated ratchet screwdriver

(57) The cross-bar portion 14 of the handle includes a first cavity 22 in which is mounted a lamp 24 for illuminating the region of the blade tip, and a second cavity 20 for receiving a battery 30 and communicating at its inner end with the first cavity. A switch comprising a fixed contact 44 and a movable contact member 42 is mounted in a switch casing 28. A removable cover 31 which closes the second cavity 20 causes a first battery contact member 32 to be resiliently biassed into engagement with the terminal at one end of the battery and the terminal at the other end of the battery to be pressed into engagement with a lamp contact member.



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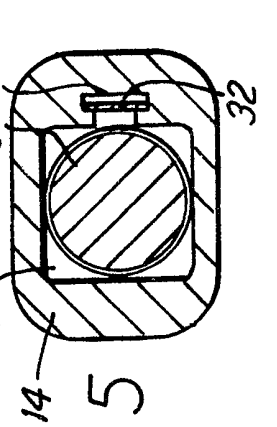
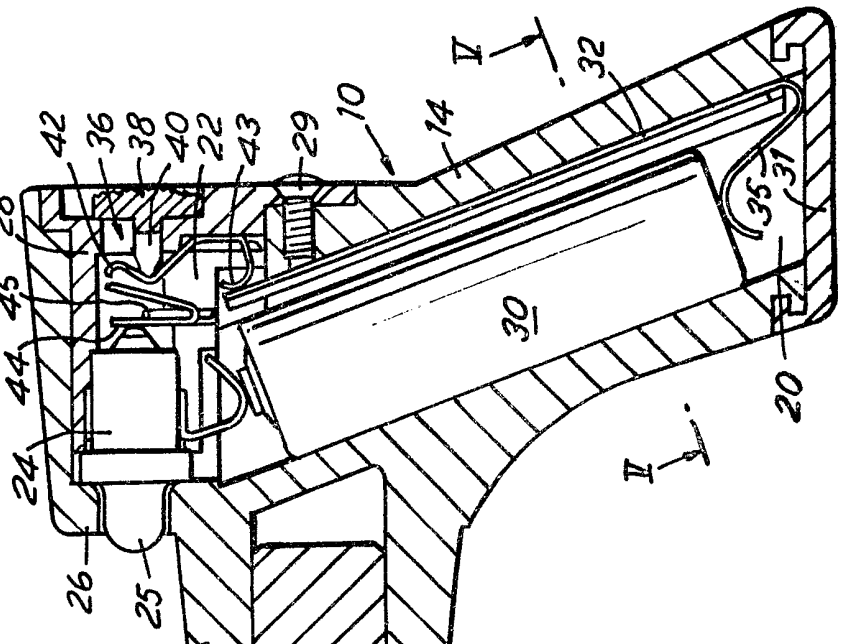


FIG. 5



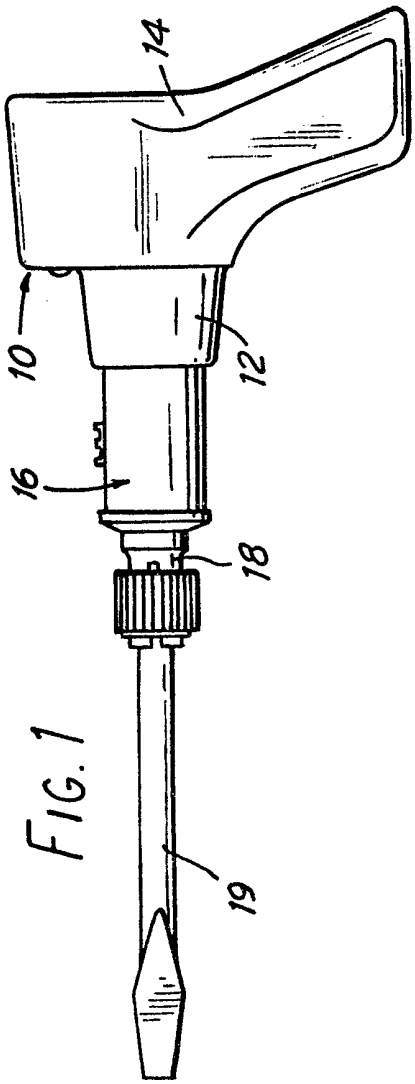


FIG. 1

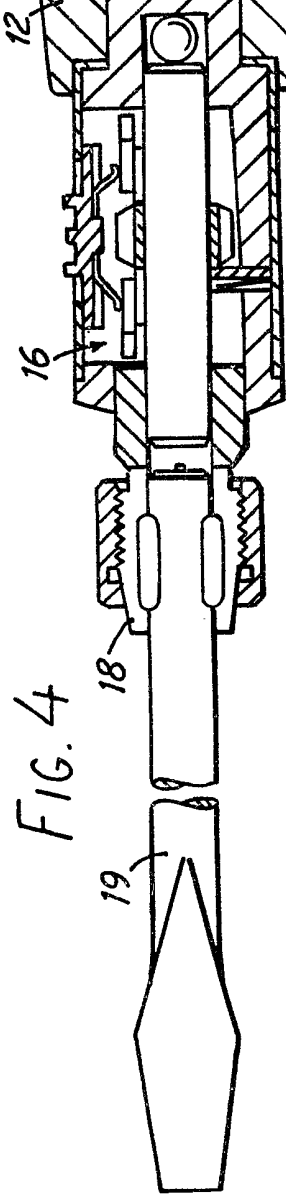


FIG. 4

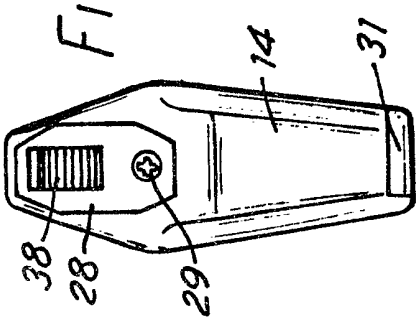


FIG. 3

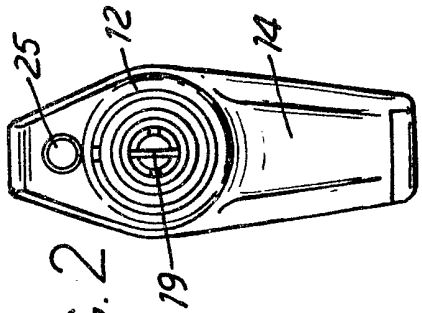


FIG. 2

SPECIFICATION

Illuminated ratchet screwdriver

This invention relates to a screwdriver provided with means for illuminating the region of the blade tip.

A screwdriver according to the invention comprises a ratchet screwdriver which comprises a handle having a stem portion and a cross-bar portion, a ratchet drive mechanism mounted in the stem portion and carrying a chuck for mounting an interchangeable blade, wherein the cross-bar portion of the handle includes a first cavity in which is mounted a lamp for illuminating the region of the blade tip, a second cavity for receiving a battery and communicating at its inner end with the first cavity, a switch casing closing the first cavity and a switch comprising a fixed contact and a movable contact member mounted in the switch casing, a battery contact member extending longitudinally within the second cavity for contacting a terminal of a battery at one end thereof and connecting such terminal to a contact of the switch, and a removable cover for closing the second cavity and engaging the battery contact member to resiliently bias the contact member longitudinally of the cavity so that a portion thereof engages the battery terminal and presses a second terminal at the other end of the battery into engagement with a lamp contact member at the inner end of the cavity.

A preferred embodiment of a screwdriver according to the invention is illustrated by way of example in the accompanying drawings, in which:—

Figure 1 is a side elevation of the screwdriver,

Figure 2 is an end view looking from the blade tip,

Figure 3 is an end view looking from the handle,

Figure 4 is an enlarged longitudinal cross-sectional elevation of the screwdriver, and

Figure 5 is a cross-section on the line V—V in Figure 4.

Referring to the drawings, the screwdriver comprises a T-bar or piston type handle 10 comprising a stem portion 12 and a transverse cross-bar portion 14. Mounted in the stem portion 12 is a conventional ratchet drive mechanism 16 carrying a chuck 18 in which can be mounted one of a number of interchangeable blades. A blade 19 having a conventional chisel end is shown in the drawings.

The cross-bar portion 14 of the handle comprises a battery receiving cavity 20 extending generally longitudinally of the cross-bar portion from one end thereof and the inner end of the cavity 20 communicates with lamp cavity 22 extending in the cross-bar portion 14 generally parallel with the stem portion 12. A lamp 24 is supported by a contact member 26 in the lamp cavity 22 and has a lens end 25 for directing a beam of light into the region of the tip of the blade 19. The lamp cavity 22 has a bottom wall 26 having an aperture through which the lens end 25 of the lamp protrudes. The lamp 24 is wedged against the bottom wall 26 by a switch casing 28 which is secured to the handle by a screw 29.

The battery cavity 20 is sized to receive a standard battery 30 size AA or similar and is closed by a sliding cover 31. A battery contact member 32 is housed within a channel 34 extending longitudinally along a side of the battery cavity 20. The battery contact member 32 is reversely bent at its end 35 adjacent the battery cover 31, and the cover 31 presses against the contact member 32 so as to resiliently bias the portion 35 in engagement with the battery terminal at one end of the battery 30, as well as ensuring that the other terminal at the inner end of the battery is urged into engagement with the lamp contact member 26 which projects into the cavity 20 at the inner end thereof.

A switch 36 is mounted in the casing 28 and includes a slidable operating member having an exteriorly accessible head 38 and a depending stem 40 in engagement with a movable switch contact member 42 mounted to the casing 28. One end 43 of the movable contact member 42 is in rubbing engagement with the inner end of the battery contact member 32. A V-shaped fixed contact member 44 is mounted on a flange 45 in the casing 28. One arm of the fixed contact member 44 engages the second contact of the lamp 24, and the other arm is adjacent the movable switch contact member 42. When the head 38 of the switch is actuated by sliding it upwardly from the position shown in Figure 4, the stem 40 deflects the movable switch member 42 engages the fixed contact member 44, thus completing the circuit from the battery to the lamp and lighting the lamp.

Replacement of the lamp 24 is accomplished by releasing the screw 29 and removing the switch casing 28 complete with the lamp. The lamp 24 is then pulled out of the casing 28 and the contact member 24, a replacement lamp is then fitted and the casing 28 is then reassembled with the handle.

Battery replacement is accomplished by sliding off the battery cover 31, withdrawing the battery contact member 32 and the expended battery 30, inserting a fresh battery and then replacing the battery contact member 32 and the cover 31.

CLAIMS

1. A ratchet screwdriver which comprises a handle having a stem portion and a cross-bar portion, a ratchet drive mechanism mounted in the stem portion and carrying a chuck for mounting an interchangeable blade, wherein the cross-bar portion of the handle includes a first cavity in which is mounted lamp for illuminating the region of the blade tip, a second cavity for receiving a battery and communicating at its inner end with the first cavity, a switch casing closing the first cavity and a switch comprising a fixed contact and a movable contact member mounted in the switch casing, a battery contact member extending longitudinally within the second cavity for contacting a terminal of a battery at one end

thereof and connecting such terminal to a contact of the switch, and a removable cover for closing the second cavity and engaging the battery contact member to resiliently bias the contact member longitudinally of the cavity so that a portion thereof engages the battery terminal and presses a second terminal at the other end of the battery into engagement with a lamp contact member at the inner end of the cavity.

2. A ratchet screwdriver according to Claim 1, wherein the first cavity has an aperture in its bottom, inner end wall, and wherein the lamp projects through the aperture to illuminate the region of the blade tip, is mounted in the lamp contact member and is wedged against the bottom wall by engagement with the fixed switch contact member.

3. A ratchet screwdriver according to Claim 1 or Claim 2, wherein the switch casing is secured to the handle by a screw, and the switch includes a slidable member having an exteriorly accessible head for operating the movable contact member.

4. A ratchet screwdriver according to any one of the preceding claims wherein the removable cover closing the second cavity is slidably mounted in the handle.

5. A ratchet screwdriver according to any one of the preceding claims, wherein the battery contact member is slidably received in a channel extending along a side wall of the second cavity and the inner end of the battery contact member is in rubbing engagement with the movable switch contact member.

6. A ratchet screwdriver according to any one of the preceding claims, wherein the battery contact member is reversely bent at its end adjacent the cover.

7. A ratchet screwdriver substantially as hereinbefore described with reference to the accompanying drawings.

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