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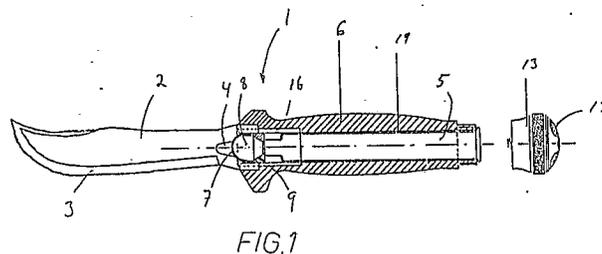
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54 **Tool having a built-in light source.**

57 The present invention relates to a tool (1), such as a knife, having a built-in light generating unit (8). The tool consists of a blade or bit member (2) and a handle (6). The blade member (2) has a tubular holder (16) for the blade member and the handle (6) comprises a cavity (5). Within the tubular holder (16) there are placed a lens (7) and a reflector (9) having an orifice (20). The lens (7) and the reflector (9) constitute one part of the light generating unit (8), the other part of which consists of a light bulb (10) mounted outermost of an insert which is inserted into the cavity (5) of the handle (6), and in which, in assembling, the bulb is inserted through the orifice (20) of the reflector (9).



EP 0 306 461 A1

Description**TOOL HAVING A BUILT-IN LIGHT SOURCE****FIELD OF THE INVENTION**

The present invention relates to a tool, such as a knife, having a built-in light source, intended for use in hunting, fishing etc. The invention also relates to a blade cover for the tool, having a reflector, translucent from the inside.

TECHNICAL BACKGROUND

Tools, such as knives of different kinds and different makes, are manufactured and have been manufactured from time immemorial. Those knives, especially being of interest in the present connection, are knives having fixed hand grips, such as poniards, case-knives and certain bayonet models. The handles of the above mentioned knife models are often made in different shapes and a great number of them disclose completely artistic shapes. Lately, manufacturers have begun manufacturing the handles for more practical purposes, e.g. there are cork handles for fish-knives so that they rise to the surface, and for hunting purpose there are strongly red and yellow coloured handles so that they are easily discovered in grass and leaves.

There is a big problem in e.g. hunting, viz, when the hunting is done in darkness or in dusk, it can be very difficult to find the knife put away. There is an apparent risk of grabbing the knife blade part instead of the handle which results in cutting oneself, since knives utilized in e.g. hunting have to be very sharp-edged. Another problem arises in hunting, when in the darkness a carcass is to be opened and gutted, especially bigger animals, such as elk and deer. In gutting, when e.g. the diaphragm is to be removed, you must simultaneously flash a torch on the carcass, and it is clearly realized that cutting by one hand and simultaneously holding a torch by the other hand is rather troublesome.

Thus, there is a need for a knife that is practical and easy to use in the above-mentioned connections.

Also in using other tools than knives, e.g. screw-drivers or box-spanners, in work out of doors or where the space is limited there is often a need for an extra light source to illuminate the actual working-area. When working where the space is limited you often happen to stand in the way of the light source, but with the light source placed in the tool, there is a less risk of shading it.

Thus, there is a need for tools, also other types than knives, provided with a light source.

From GB-A-2 176 731 a knife provided with a light bulb is previously known. The bulb is here not placed at the centre of the blade but is underneath it. By this placement the reflective effect of the blade is not

utilized for improving the light, but instead the blade shades the light in certain directions, resulting in that, when using it, you cannot be sure to have the desired place illuminated. Since the light is in the handle instead of in the blade holder as according to our invention there is a risk of oneself shading the light when using it.

SUMMARY OF THE INVENTION

Thus, an object of the present invention is to provide a tool, such as a knife, which is practically designed for use in working, hunting, fishing etc., especially for using during the dark hours of the day, at dawn or at dusk, or when working where the space is limited.

For this purpose there is provided a tool, such as a knife, comprising a blade having a blade holder and a handle having a back, the handle comprising a cavity, in which there is a part of a light source and a current source, and in which the remaining part of the light source is in the blade holder which is in shape of a tube. The tool is preferably of the fixed hand grip type. The tool can also comprise a blade cover, provided with a translucent reflector.

The advantage of placing the light source in the blade holder is that the light comes in the working area of the tool and consequently no other light source is needed, e.g. a torch. In hunting and also fishing, the tool is used in the form of a knife, generally at dawn or at dusk, when it is comparatively dark and hence, the present invention is a great help. The problem in gutting carcasses of big animals is solved by the present invention in that the light source is built-in in the knife. When put aside or dropped in leaves or grass, the knife is easily found, thanks to the built-in light source, and besides, the knife is easily grabbed in a correct manner, since the knife handle is grabbed behind the light beam. If used together with the blade cover having a translucent reflector, the knife can also be used as a torch, helping to find the way. Without the blade cover, walking with a sharp forwarded knife can be somewhat hazardous, since other hunting participants can easily be hurt.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows in cross-section a tool in the form of a knife having a built-in light source according to the present invention.

Fig. 2 shows the attachment of the light source to the blade of the embodiment according to Fig. 1.

Fig. 3 shows an insert intended to be inserted into the handle in assembling the tool.

Figs. 4 and 5 show examples of different

accessories, to be attached to the handle according to the present invention, instead of the knife blade previously disclosed.

Fig. 6 shows an example of a blade cover for the tool according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a tool having a built-in light source.

In the description and the drawings there is used a knife, as an example of a tool, but it is understood that also other types of tool blades or bits can be used, such as screw-drivers or box-spanners.

Referring to Figs. 1 - 3, a tool 1, comprising a handle 6 and a tool blade 2, is shown here in the form of a knife blade having a suitably shaped knife edge 3 and a bevel 4. The blade 2 has furthermore a tube-shaped holder 16 for attachment to the handle 6, serving as a tool holder. Within the blade holder 16 a part of a light generating unit 8 is provided, consisting of a lens 7 directed towards the blade and a reflector 9 having an orifice 20 directed towards the handle 6. In the handle 6 is a cavity 5 to receive an insert 19, provided with the remaining part of the light generating unit 8 in the form of a light bulb 10 and a current source 11, here in the form of a halogen lamp and two batteries. Rearmost of the handle 6 is a removable back 13 having buttons 12 for switching on and off the current.

The blade 2 is preferably removably mounted to the handle 6, but since this is not part of the present invention it is not shown in more detail how this mounting is arranged.

When the tool 1 is assembled and has all parts in place, the light generating unit 8 is formed, consisting of the lens 7, the reflector 9 and the light bulb 10, receiving its current supply from the current source 11. By the light generating unit 8 being positioned centrally in the tube-shaped blade holder 16, both sides of the blade 2 are illuminated, furthermore serving as an additional reflector due to its shiny surfaces. To promote the diffusion of the light cone from the light generating unit 8 the blade 2, on both sides, is provided with bevels 4 adjacent to the blade holder 16.

After the blade 2 has been fixed to the handle 6, the insert 19, the front portion of which consists of the light bulb 10, is pushed into the cavity 5 of the handle 6. Then batteries, or any other current source, are pushed into the insert, and rearmost of the handle end the back 13 is attached with associated switch buttons 12. The switch buttons 12 can also be fixed for example to the side of the handle 6. Of course, the current supply can also be arranged in another way, for example through accumulators or solar cells, charging an accumulator. The cord of an accumulator can e.g. be connected to a car. A sealing (not shown) is arranged between the handle 6 and the knife blade 2 to waterproof the tool. The sealing can be done in many well known ways, for example by means of an O-ring or by applying a rubber or plastic coating. The

light bulb 10 in the shown embodiment is a halogen lamp, but also other types of lamps can be used.

By centrally placing the light source 8 the light is always where needed, namely in the working area of the tool 1 and on both sides of the blade 2.

In Figs. 4 and 5 there are shown as examples two different types of blades 14, 15, which can be used instead of the knife blade 2 described in connection with the preceding figures. These blades too have bevels 4. The blade 14 in Fig. 4 is a saw blade and the blade 15 in Fig. 5 is a game belly opener. The blade 2 is not limited to comprising only an edged blade, but the blade can also be a screw-driver, a box-spanner or the like.

Fig. 6 shows an example of a blade cover 17 provided with a translucent reflector 18. The reflector 18 transmits an amount of light sufficient for the tool 1 to be used as a torch and also in this case the blade 2 serves as an extra reflector, giving a fine light effect. The blade cover 17 is principally intended for a blade 2 having an edge 3 but similar means can also be used for other types of tool blades or bits.

Even if we have here described a tool 1 having a removable blade 2, it is of course possible in a corresponding way to place a light source in a tool, such as a knife, in which the blade is fixedly mounted.

Claims

1. A tool (1), such as a knife, comprising a blade or bit member (2), a holder (16) therefor, and a handle (6), **characterized** in that the holder (16) is tubular and that a light generating unit (8) is placed centrally within the tubular holder (16) in such a way that it simultaneously emits light at both sides of the blade member (2).

2. A tool according to claim 1, **characterized** in that the handle (6) has a cavity (5).

3. A tool according to claim 2, **characterized** in that the light generating unit (8), comprises a lens (7) and a reflector (9) having an orifice (20) directed backwards to the handle (6) arranged within the tubular holder (16), and a light bulb (10) inserted through the orifice (20) of the reflector (9), and that the blade member (2) has bevels (4) on both sides, adjacent to the holder (16).

4. A tool according to claim 3, **characterized** in that the light bulb (10) is placed in an insert (19), insertable into the cavity (5).

5. A tool according to claim 4, **characterized** in that a current source (11) for the light bulb (10) is arranged within the insert (19).

6. A tool according to any one of the preceding claims, **characterized** in that the blade member (2) is a knife blade.

7. A tool according to any one of claims 1 - 5, **characterized** in that the blade member (2) is a screw-driver or a box-spanner.

8. A tool according to any one of claims 3 - 7,

characterized in that the light bulb is a halogen lamp.

9. A tool according to any one of claims 5 - 8, **characterized** in that the current source consists of electric batteries, solar cells with an accumulator or an accumulator only.

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10. A blade or bit cover (17) for a tool according to any one of the preceding claims, **characterized** in that it has a translucent reflector (18) arranged in an opening.

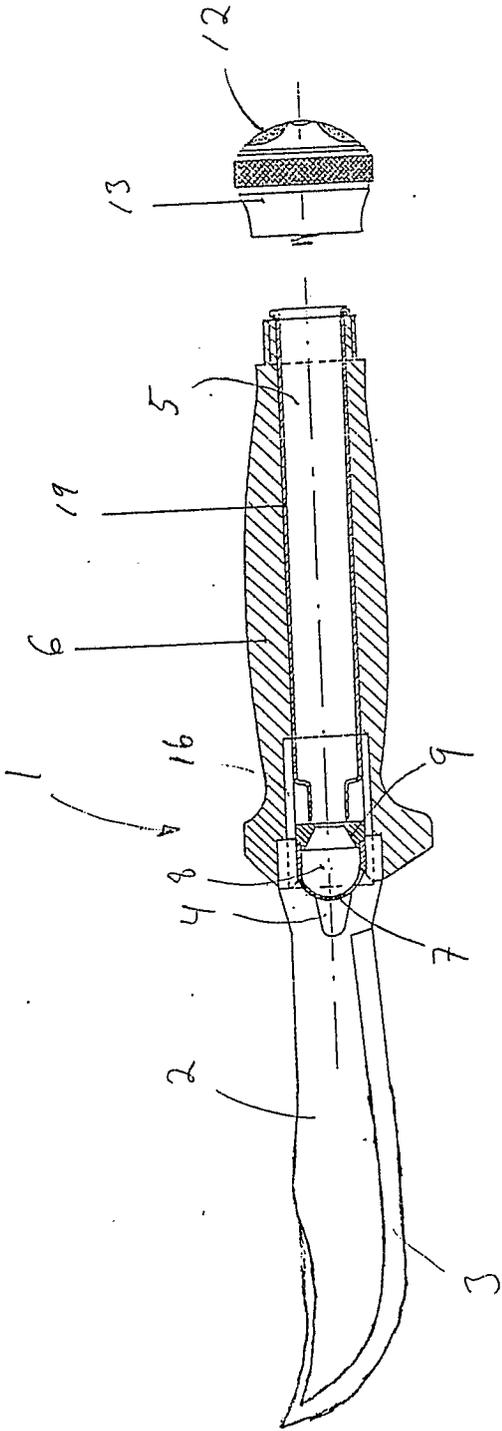


FIG. 1

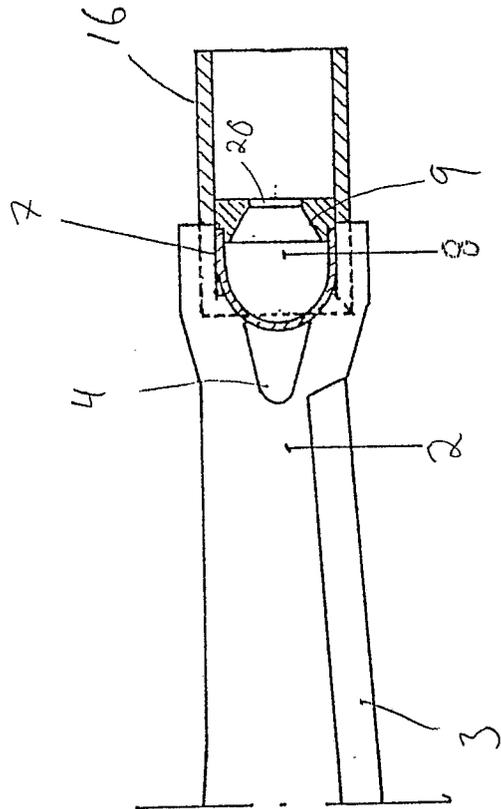


FIG. 2

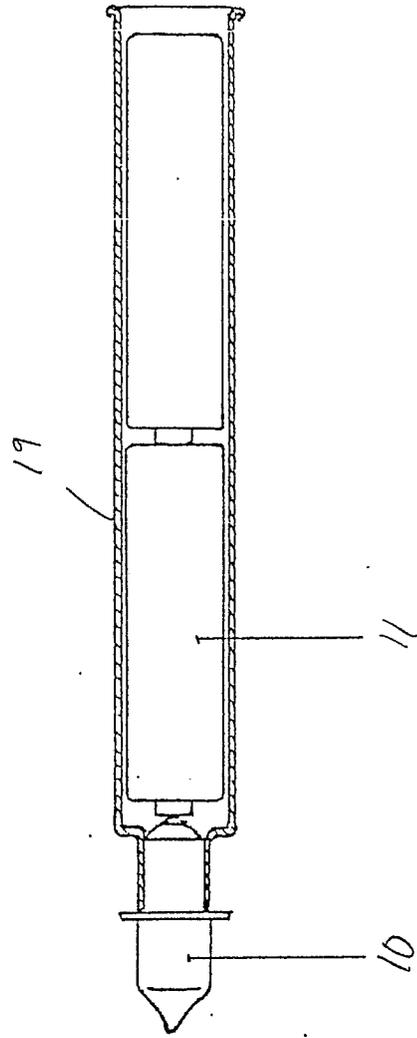


FIG. 3

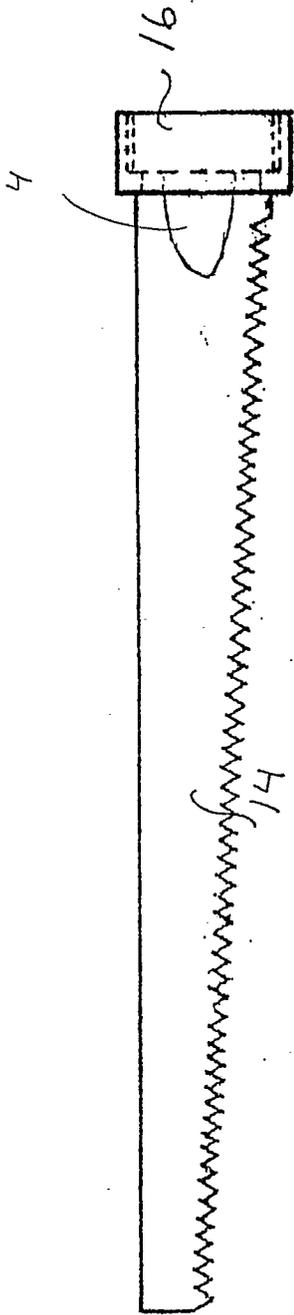


FIG. 4

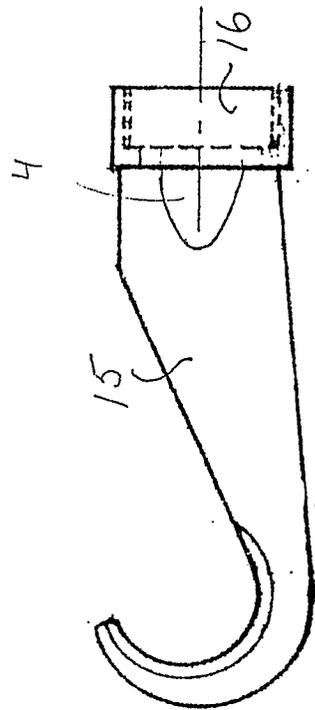


FIG. 5

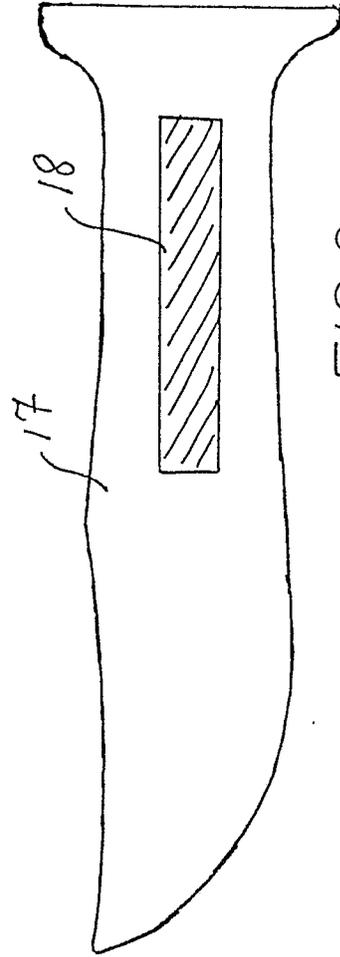


FIG. 6



DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	US-A-3 185 832 (T. NAGAMORI) * Column 1, lines 34-69; figures 1-4 * ---	1-5,7,9 ,10
A	FR-A- 807 012 (DUROUX-THOLY) * Pages 1, lines 15-45; figures 1,2 * ---	1
X	US-A-1 868 778 (C.C. TOMNEY) * Page 1, figures 1,2 * ---	1-5,7,9
Y		6,10
Y	FR-A-2 139 304 (AMF MARES SUB S.p.A.) * Pages 1,2; figure * ---	6,10
A	US-A-1 890 841 (R.D. BROWN) * Pages 1, lines 49-100; figures 1,2 * -----	2,4,5,6 ,9
The present search report has been drawn up for all claims		
Place of search	Date of completion of the search	Examiner
THE HAGUE	07-10-1988	WOHLRAPP R.G.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document

CLASSIFICATION OF THE APPLICATION (Int. Cl.4)

B 26 B 11/00
B 25 B 23/18

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

B 26 B
B 25 B

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