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Combination Electric Torch

This invention relates to a combination electric torch of the type which includes a headlamp for projecting
5 light and a hazard warning lamp.

Battery operated torches are known which include a facility for selectively providing a warning signal, such as the torch disclosed in European Patent No.

10 0157356. In that patent, the torch is of cylindrical shape and the torch head is slidable in the direction of the torch beam to a position in which the reflector is moved away from the bulb and the bulb is therefore exposed. In this region of the torch a translucent collar
15 is provided which is coloured amber, so that when the bulb is exposed the torch can also act as a warning lamp. In this way, only one electric bulb is required, even though the torch can selectively carry out two functions by acting as a conventional torch or a hazard warning lamp.
20 Other known combination torches include two lamps, one for illuminating the headlamp portion and the other for illuminating a coloured translucent lens which acts as the warning lamp.

25 A disadvantage with such conventional torches, including known combination electric torches, lies in the fact that they are often susceptible to damage because the lenses are usually exposed, particularly the headlamp lens

which is normally disposed at the extreme forward end of the torch. Objects of the present invention are to provide a combination electric torch which is able to be selectively used either as a conventional torch having an exposed headlamp portion, or as a warning lamp, and which torch may also be stored in the position corresponding to the latter, in which position the headlamp portion is generally protected from damage.

In accordance with the invention there is provided a combination electric torch comprising a body portion for receiving battery power means, a headlamp portion for projecting light and a warning reflector on the body portion for selectively providing a warning signal, wherein the headlamp portion is swivellable between a first position in which it can project light forward of the body portion and a second position in which it can project light onto the warning reflector, in which second position the torch may be used as a warning lamp. This arrangement has the advantage in that it is able to perform the function of a combination electric torch of the type described using only one bulb, and is also able to ensure that the headlamp reflector is not exposed to accidental damage when in its stored position corresponding to the second position referred to above.

Conveniently, the torch has a body portion which also includes an arm, at or near the free end of which is swivellably mounted the headlamp portion, and the arm may be generally cylindrical. The arm may further include an openable cover, such as a swivellable cover, within which is disposed an auxiliary lamp such as a fluorescent lamp so that an additional light source may be available if desired. The cover may include or be connected to switch means so that when in its closed position the auxiliary lamp is switch off and when open the lamp is switched on.

Preferably, the warning reflector is disposed between the headlamp portion and the body portion of the torch such that when the headlamp portion is moved to its second position it projects light onto the warning reflector to thereby provide a warning lamp without the need for an additional bulb. The warning reflector may be generally conical in shape with the apex pointing towards the headlamp portion when in its second position so that light may be reflected from the headlamp outwards to act as a warning. The warning reflector is preferably surrounded by a coloured translucent collar, which colour is preferably amber, so that in its operative position the torch will be recognised as serving a warning function.

Preferably, the body portion, the collar and the headlamp portion are generally cylindrical and of corresponding diameter, and the collar may be rotatable and cooperable with switch means to selectively permit the headlamp to be switched on and off, either manually or intermittently.

Preferably, the torch also includes a flat base at the end of the body portion remote from the headlamp portion so that the headlamp portion can be held upright relative to the body portion and may be swivelled to any position at or between its first and second positions. In this embodiment, it will be readily appreciated that the torch may then also act as an adjustable reading light since the headlamp portion can be swivelled to any convenient angle.

The invention thus provides a torch which can be used for a variety of functions but which also incorporates the ability to be stored with less risk of damage for the headlamp lens.

The invention will now be described, by way of example only, with reference to the accompanying drawings

in which:-

Figure 1 is a side view of a combination torch according to the invention,

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Figure 2 is a view of the torch of Figure 1 from the direction marked in A,

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Figure 3 is a side elevation of the torch of Figure 1 from the direction marked B,

Figure 4 is a further elevation corresponding to that of Figure 3 but showing the headlamp portion in its first position and

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Figure 5 is a perspective view of the torch of Figure 1 showing the auxiliary lamp in its exposed position.

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Referring to the drawings, there is shown in Figure 1 a combination torch comprising a body portion shown generally at 1, a headlamp portion 2 and a warning lamp shown generally at 3. The body portion 1 is generally cylindrical, as can be seen from Figure 2, and includes a screw-on cap 4 by which batteries may be

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inserted or removed.

A generally cylindrical arm 5 is fixed to the side of the body portion 1 and near to the free end thereof the headlamp portion 2 is swivellably mounted on a pivot (not shown). In the position shown the headlamp reflector (not shown) is pointing towards the warning lamp 3 and is retained in place by a screw-on cap 6 of conventional form.

The warning lamp 3 comprises a warning reflector 7 of conical shape, the apex of which points towards the central axis of the headlamp portion 2. The reflector 7 has a reflective surface so that when light from the headlamp portion 2 impinges thereon, it is reflected generally outwardly in the manner shown. The reflector 7 is housed within a cylindrical translucent collar 8 which includes an upper window 9 to permit light from the headlamp portion 2 to strike the reflector 7. The collar 8 is preferably coloured amber so that a warning signal may be perceived by a viewer.

The arm 5 serves the purpose of permitting the headlamp portion 2 to be swivelled and is also provided with a rigid semi-cylindrical cover 10 which is slidably openable about the longitudinal axis of the arm 5 in a

manner to be described with reference to Figure 5.

In the position shown in Figure 1 it will be seen that with the exception of the warning lamp 3, the optical parts of the torch are generally protected from damage and in this position the torch may be selectively turned on or off. By virtue of the generally flat configuration of the cap 4 the torch is able to stand upright and the warning lamp, if illuminated by the headlamp portion 2, can act as a free-standing warning beacon.

In Figure 3 there is shown a side view in the direction of arrow B of the torch of Figure 1 in which it will be seen that the headlamp portion 2 has been partially swivelled by approximately 45 degrees. In this position, if the headlamp portion 2 is switched on a beam of light will not strike the warning reflector 7 but will instead be projected outwardly at a principal axis of approximately 45 degrees.

In Figure 4 there is shown a view corresponding to that of Figure 3 but in which the headlamp portion 2 has been swivelled to its fullest extent, corresponding to the first position referred to above and in which light

emitting from the headlamp portion 2 is projected forwardly of the torch in a conventional manner.

Turning now to Figure 5, there is shown a perspective view of the torch of Figure 1 but in which the cover 10 has been rotated or swivelled about the longitudinal axis of the arm 5 to expose an auxiliary lamp in the form of a fluorescent tube 11 housed within a clear plastics cover 12 of shape corresponding to the cover 10. Switch means 13 are provided on the outer surface of the body portion 1 to selectively activate the auxiliary lamp 11, or the headlamp portion 2, whichever is desired.

It will therefore be apparent that the torch according to this embodiment of the invention is extremely versatile and can be used for general lighting purposes at very low power levels by utilisation of the auxiliary lamp 11, or as a warning light, in which case a separate illumination source is not necessary since the headlamp portion can be utilised for such purpose. The headlamp portion itself it may be moved to the position shown in Figure 4 for conventional use, or may be used as a reading lamp with the headlamp portion 2 being swivelled to any desired position between its first and second positions. When the torch is not required for use the cover 10 can be

moved to the position shown in Figure 1 and the headlamp portion 2 can be rotated to its second position, such that the torch is generally compact and rugged and less likely to be accidentally damaged.



Claims

1. A combination electric torch comprising a body portion for receiving battery power means, a headlamp portion for projecting light and a warning reflector on the body portion for selectively providing a warning signal, CHARACTERISED IN THAT the headlamp portion is swivellable between a first position in which it can project light forward of the body portion and a second position in which it can project light onto the warning reflector, in which second position the torch may be used as a warning lamp.
2. A torch according to claim 1 in which the body portion also includes an arm, at or near the free end of which is swivellably mounted the headlamp portion.
3. A torch according to claim 2 in which the arm is generally cylindrical and lies on a plane coincident with the longitudinal axis of the body portion.
4. A torch according to claim 2 or claim 3 in which the arm further includes an openable cover within which is disposed a supplementary lamp such as a fluorescent lamp.



5. A torch according to claim 4 in which when the cover is in the closed position the lamp is switched off and when the cover is moved to its open position the lamp is switched on.

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6. A torch according to any preceding claim further characterised in that the warning reflector is disposed between the headlamp portion and the body portion such that when the head lamp portion is moved to its second position it can project light onto the warning reflector to thereby provide a warning lamp.

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7. A torch according to claim 6 in which the warning reflector is generally conical in shape with the apex pointing towards the headlamp portion when the headlamp portion is in its second position.

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8. A torch according to claim 6 or claim 7 in which the warning reflector is surrounded by a translucent collar.

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9. A torch according to claim 8 in which the collar is coloured.

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10. A torch according to claim 8 or claim 9 in which



the body portion and the collar are of generally cylindrical section of corresponding diameter.

12. A torch according to claim 8, 9 or 10 in which the collar is rotatable and cooperable with switch means to selectively permit the headlamp be switched on and off.

13. A torch according to any preceding claim in which the end of the body portion remote from the headlamp portion has a flat base to permit the head lamp portion to be held upright whilst in any position at or between its first and second positions.

14. A torch substantially hereinbefore described with reference to and as shown in the drawings.