June 20, 1933. W. J. HOULIHAN ET AL 1,914,429

LUMINOUS HEADGEAR

Filed Dec. 3, 1931

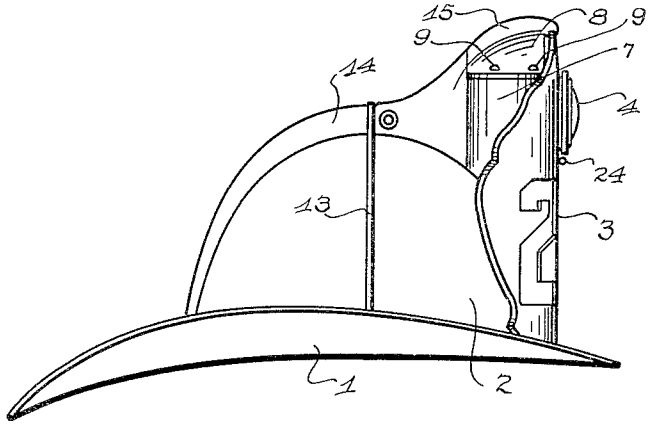

Fig. 1

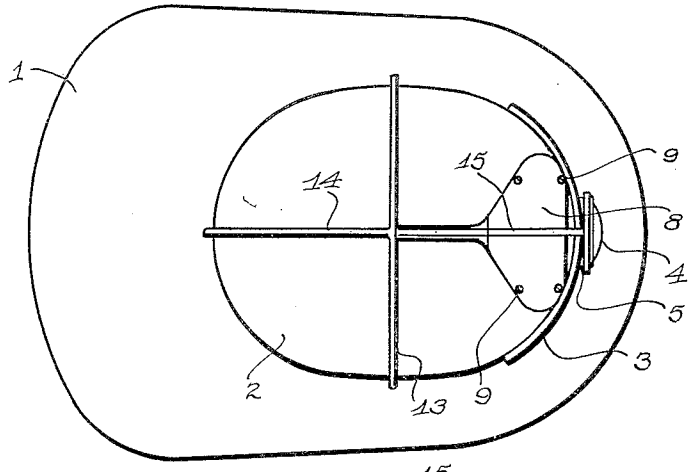

Fig. 2

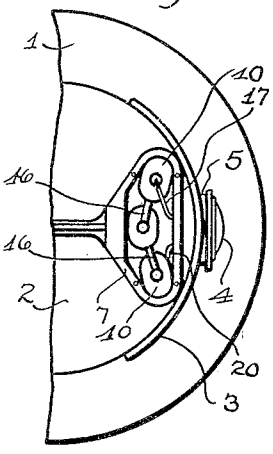

Fig. 3

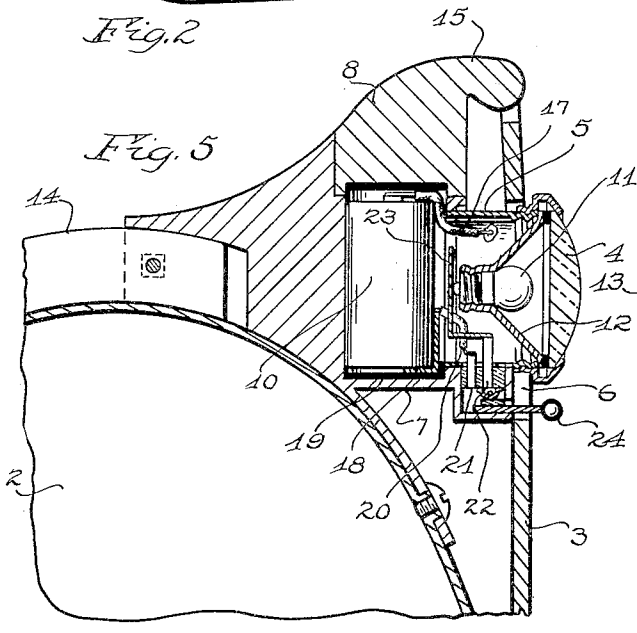

Fig. 5

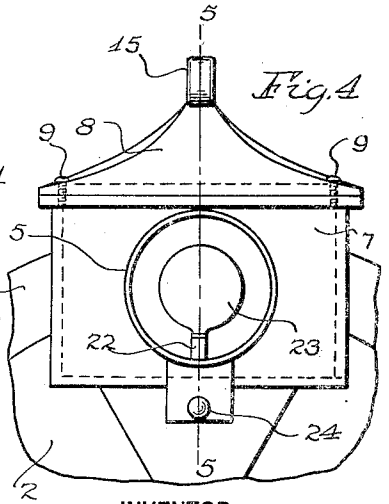

Fig. 4

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UNITED STATES PATENT OFFICE

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LUMINOUS HEADGEAR

Application filed December 3, 1931. Serial No. 578,734.

Our present invention relates to wearing apparel and more particularly to head gear, and it has for its general object to provide a simple, light and serviceable helmet construction provided with an electric light projecting means useful, for instance, to firemen in exploring burning buildings or smoke-filled areas. The improvements are directed in part toward fitting the usual helmet with such a light projecting means so disposed that it will not add materially to the bulk of the helmet or the weight thereof; will be pleasing in appearance and will be readily accessible for the interchange of the batteries by means of which the light is produced. They are further directed toward fitting the helmet with an electric lamp so controlled as to insure a constant beam.

To these and other ends, the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a side elevation of a fireman's helmet constructed in accordance with and illustrating one embodiment of our invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is a fragmentary view of a portion of Fig. 2, but with the cover plate of the battery casing removed;

Fig. 4 is an enlarged fragmentary front elevation of the light bearing portion of the helmet, and

Fig. 5 is a further enlarged section taken on the line 5—5 of Fig. 4.

Similar reference numerals throughout the several views indicate the same parts.

In the accompanying drawing, we have illustrated a conventional style of fireman's helmet embodying a brim 1, a generally semi-spherical crown 2, and an erect but rearwardly curved front plate 3, which usually bears the number of the engine or fire company to which the wearer belongs.

In the practice of our invention, we provide a projecting lens 4 at the front of the plate 3 carried on a tube 5 that extends through the plate, which latter is provided with an opening 6 for the purpose. This tube 5 communicates with and is fastened to a battery casing or housing 7, which casing is of such proportions and so disposed that it occupies the space provided between the receding front portion of the crown 2 of the helmet and the upstanding front plate 3, which region is otherwise and normally a dead space. The said casing is so shaped as to take full advantage of this space, to which end, as shown best in Fig. 3, it is wider from side to side than it is deep from front to rear.

The casing is provided with a top or cover plate 8 fastened thereto, in the present instance, by means of screws 9. Upon removal of this cover plate, access is had to the interior of the casing, as shown in Fig. 3, and in this manner the batteries 10 for charging the electric lamp bulb 11 fastened in a reflector 12 suitably secured in the tube 5 are inserted and removed as occasion requires the substitution of fresh batteries. In the present instance, three cells are shown connected in series but it is obvious that a single cell of appropriate shape could be devised to best fill the limited space.

Fire helmets, such as that illustrated, are usually provided with transverse and longitudinal strengthening and protecting ribs, indicated at 13 and 14, respectively, and in the practice of our invention, we prefer to form the battery casing 7 as a continuation of the rib 14, as shown in Figs. 1 and 5. Also, the cover 8 of the casing is provided with an upstanding central rib 15 that forms a continuation of the curve of the rib 14 extending to the front plate 3, which not only contributes a pleasing appearance but takes the shock of falling ceilings and other débris, in the presence of which a fireman conducts his labors. In other words, the presence of the battery in the location described in reality reenforces the helmet.

The circuit connections between the batteries 10 and the lamp 11 are not important, but a simple arrangement that we have contrived is shown in Fig. 5. The three cells are connected in series by the wires 16. The plus terminal on one of them is grounded to

the lamp tube 5 by the wire 17. The minus terminal or case of the opposite cell rests upon a plate 18 insulated from the casing at 19. This plate is provided with a wire 20 that leads to an insulated contact 21. An associated insulated contact 22 is connected to a plate 23 taking the central contact of the lamp bulb 11. The other terminal of the lamp bulb is grounded in the reflector socket 12.

A sliding plunger switch having an operating knob 24 projecting forwardly of the front plate 3 beneath the lens 4 is guided in an extension of the casing 7 to make and break the circuit through the contacts 21 and 22, as will be understood from an inspection of the figure referred to. It is shown in "off" position, that is, it is drawn out. It is pressed in to operative position. The reason for this arrangement and disposal of the switch, rather than the reverse, is that should a fireman wearing the helmet fall unconscious, for instance, in a smoke-filled room, the contact of his helmet with the floor or other object would not tend to throw off the light, if on, but on the contrary would tend to throw the switch on were the light initially off. In this way, the illuminated helmet provides a guide or marker by which rescuing companions may locate the person.

We claim as our invention:

1. In a fireman's helmet or the like, the combination with a crown having a contour receding from front to rear and an upright number plate arranged at the front of the crown providing a space between it and the latter, of a battery casing arranged in such space forwardly of the crown and in rear of the plate and opening upwardly for access from the top, and a lamp tube connected to the casing and projecting through the front plate.

2. In a fireman's helmet or the like, the combination with a crown having a contour receding from front to rear and an upright number plate arranged at the front of the crown providing a space between it and the latter, of a battery casing arranged in such space forwardly of the crown and in rear of the plate, said casing comprising a removable top through which an electric battery cell may be inserted in or removed from the casing, and a lamp tube connected to the casing and projecting through the front plate.

3. In a fireman's helmet or the like, the combination with a crown having a contour receding from front to rear and an upright number plate arranged at the front of the crown providing a space between it and the latter, of a battery casing arranged in such space forwardly of the crown and in rear of the plate, a lamp tube connected to the casing and projecting through the front plate, a battery in the casing in circuit with the lamp, and a switch in said circuit embodying an operating plunger associated with the lamp tube forwardly of the number plate and having a forward off position and a rearward in circuit position.

4. In a fireman's helmet or the like, the combination with a crown having a contour receding from front to rear and an upright number plate arranged at the front of the crown providing a space between it and the latter, of a battery casing arranged in such space forwardly of the crown and in rear of the plate and opening upwardly for access from the top, a lamp tube connected to the casing and projecting through the front plate, and a reenforcing rib on the crown connected with the battery casing.

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