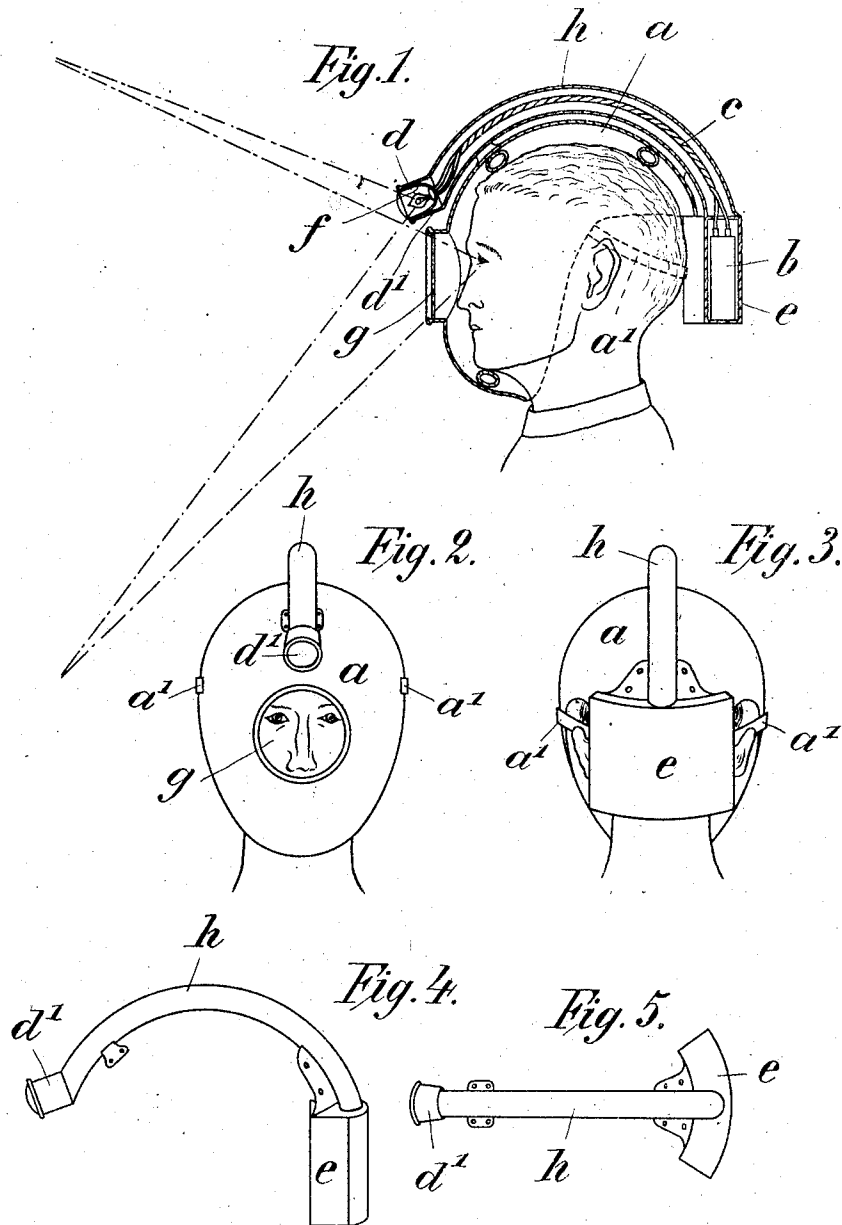


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ELECTRIC LAMP FOR HELMETS AND SIMILAR HEAD COVERINGS.
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Patented Oct. 27, 1908.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHANN HEINRICH DRÄGER, OF LÜBECK, GERMANY.

ELECTRIC LAMP FOR HELMETS AND SIMILAR HEAD-COVERINGS.

No. 902,216.

Specification of Letters Patent.

Patented Oct. 27, 1908.

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To all whom it may concern:

Be it known that I, JOHANN HEINRICH DRÄGER, a subject of the Emperor of Germany, and resident of Lübeck, in the German Empire, have invented certain new and useful Improvements in Electric Lamps for Helmets and Similar Head-Coverings, of which the following is a specification.

The present invention relates to improvements in electric lamps for helmets known as miners' or firemen's helmets and similar head coverings such as are usually worn in mines and other places wherein the atmosphere is charged with noxious gases.

Before Davy's safety lamp was used in mines it was the custom for the miners to attach their lamps on the head. The safety lamp however had to be carried by the hand, since it was necessary to constantly watch it. Since that time it became quite general to carry the miner's lamp in the hand and this custom has now also been conferred to electric lamps. Though it has been suggested to attach the lamp to the cap over the forehead and to wear the electric battery somewhere on the body, yet it has been found that the electric wire or cable generally was in the way, a hindrance in handling and therefore was a constant source of trouble.

In extinguishing fires or in life-saving by aid of respirating or inhaling apparatus the electric lamp is an inconvenient implement, since both hands are first engaged with the lamp before any work can be done. Therefore I have provided means to carry the lamp on the head without the drawbacks above pointed out. This task is solved by attaching not only the electric lamp but also its battery to the helmet, cap or mask or the like. The electric lamps used in mines heretofore and carried by the hand, are much too heavy for this purpose. I have therefore taken in consideration that respirating or life saving apparatus are constructed so that they can be used for two hours and that it is therefore not necessary to construct the lamps as has been done heretofore to give light for eight hours. The size and weight of the battery also can be reduced to a great extent. My invention moreover provides for the special arrangement of the parts of the lamps and the battery.

Reference is had to the accompanying drawing in which:

Figure 1 is a vertical section of a helmet having my improvement attached thereto placed on the head of a person; Fig. 2 a front view of Fig. 1; Fig. 3 a back of the same helmet. Fig. 4 a detail elevation of the lamp and battery separated from the helmet and Fig. 5 a plan of Fig. 4.

The helmet as *a* may be of any usual construction and may be replaced by a cap or a simple mask to suit the requirements. At the back of the helmet a receptacle *e* for the battery or accumulator *b* is arranged to hang down, preferably in a somewhat oblique position, so as to serve as a protection to the neck. The weight of the battery is more of an advantage than disadvantage because it serves to balance the weight of the helmet, which has itself the tendency to pull the head down in front. The weight of the battery and its receptacle may be such that the complete apparatus does not weigh heavier in front than in the back, and the consequence of this favorable distribution of the complete weight is, that the neckbelt *a'* of the helmet does not press against the veins of the head, to such an extent as is the case with helmets heretofore. It is not necessary that the parts of the lamp be firmly attached to the helmet, but it is rather of advantage to construct the lamp *d*; the conductor *c*, the contact breaker and the receptacle *e* for the battery all together as an integral apparatus, which can be placed on the helmet, when needed. To this end as is shown in Fig. 1 the conductor is arranged within a tubular casing *h* which is made integral with the receptacle *e* and lamp-casing *d'*. This apparatus, Figs. 4 and 5, may be provided with lugs *i* for detachably securing it to the helmet *a*.

The lamp is preferably provided with a reflector *f*, which together with the electric light itself when properly positioned illuminates only so much as can be seen through the opening or window *g* of the mask or helmet *a*, so that the complete space, in which the wearer of the helmet is working appears to him to be illuminated, no matter which way he turns his head, whether to one side or upward or downward.

I claim:

1. A device of the character described comprising a head covering having a receptacle thereon, a battery mounted in the receptacle, a casing integral with the receptacle,

cle detachably connected to the covering, a lamp in the casing, and a conductor in the latter connecting the battery and lamp.

2. An electric lamp for head-coverings in combination with a battery and a conductor connecting the lamp with the battery the lamp being attached to the head covering on its front part and the battery in such posi-

tion on the hinder part of the head-covering that it covers the neck of the wearer and 10 serves as a protection to the same.

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Witnesses:

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