

H. C. HUBBELL.
ELECTRIC SAFETY LANTERN.
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1,056,683.

Patented Mar. 18, 1913.

Fig. 2.

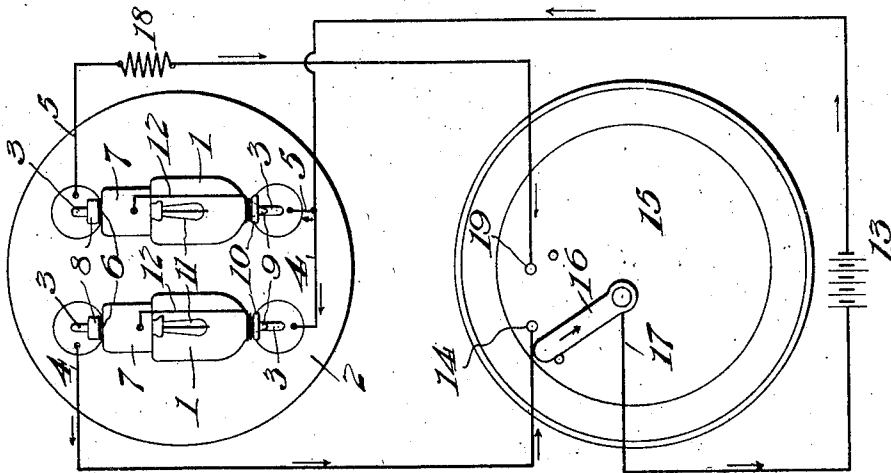
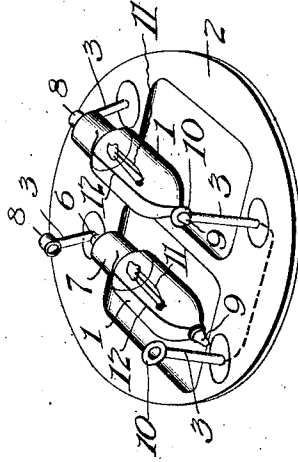


Fig. 1.

WITNESSES

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ELECTRIC SAFETY-LANTERN.

1,056,683.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY C. HUBBELL, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Electric Safety-Lanterns, of which the following is a specification.

This invention relates to incandescent electric lights and has especial reference to their use with electric safety lanterns for mines, gas houses, etc.

The object of the invention is to provide an electric safety lantern having means whereby if an incandescent electric lamp bulb is accidentally struck it will be knocked from its support, and the electric circuit broken thereby permitting the incandescent filament to cool before the blow crushes the bulb.

A further object of the invention is to provide an electric safety lantern having a number of incandescent lamp bulbs with means whereby if one of the lights becomes extinguished, or burns out, another incandescent lamp may be readily lighted.

In electric safety lanterns if the incandescent lamp bulb should be crushed by an accidental blow the incandescent filament would be apt to ignite the gas in a mine and thereby cause an explosion. It is the object of the invention to avoid this. So also if one of the lamps of an electric safety lantern should burn out while the person carrying it was in the dark, he could not find his way in the dark, as for instance in a mine, and therefore by means of this invention provision is made for partly relighting the lantern, so that the bearer may find his way out of the mine.

Referring to the accompanying drawing in which similar figures of reference indicate like parts, Figure 1 is a plan view of the incandescent lamp bulbs of a safety electric lantern mounted on their base, and a portion of a safety electric lantern showing the electric circuits connected with the lamps. Fig. 2 is a detail view showing an incandescent lamp bulb dislodged from its support.

In carrying out the invention a pair of incandescent electric lamp bulbs 1 are mounted on a base 2, which consists of a metal disk covered with some insulating material, such as porcelain, and adapted to be secured in the bull's eye portion of an electric safety lantern. The bulbs 1 are detachably

mounted in supports which will permit of their being dislodged from their supports in case they accidentally receive a blow. As here shown they are preferably mounted on flexible arms 3, which in the present instance are the projecting insulated ends of the conducting wires 4, 4, and 5, 5, of two independent electric lighting circuits. The bulbs 1 are detachably mounted on the arms 3, by having the contact projection 6 of the brass threaded cap 7 resting in a contact metallic cap 8 mounted on the end of an arm 3, and the tip 9 of the bulb resting in a loop 10 of the conducting wire at the end of an arm 3. It will thus be seen that if a bulb 1 receives a blow its ends will be dislodged from their supports. In order to complete the electric circuit to the filament 11 of the lamp, a wire 12 extends down on the outside of the bulb, and is connected at one end to the brass cap 7 and has its other end wound around the tip 9 forming a contact for the contacting loop 10 of the conducting wire. By means of this construction, if the bulb is dislodged from its support by a blow, the electric circuit will instantly be broken and the filament 11 permitted to cool before the bulb is shattered. One of the conducting wires 4 is connected with a battery 13, located in the electric safety lantern, and the other conducting wire 4 is connected with a contact 14 mounted on the portion 15 of an electric safety lantern.

Mounted on the portion 15 of the lantern is a switch lever 16, which is connected by a wire 17 with the battery 13, and is adapted to contact with the contact 14. One of the conducting wires 5 is connected with one of the conducting wires 4, and the other conducting wire 5, in which there is a resistance 18 is connected with a contact 19 on the portion 15 of the lantern.

It will be seen that by means of the foregoing arrangement of conducting wires, and contacts and the switch lever 16, when the latter is moved into contact with the contact 14, that an electric circuit will be closed from the battery 13 through one of the conductors 4, one of the lamps, through the other conductor 4, switch 16 and wire 17 to battery 13. When the switch lever 16 is moved into contact with contact 19, an electric circuit will be closed from battery 13 through one of the conducting wires 14, wire 5, one of the lamps, wire 5, switch 16 and wire 17 to battery.

It will be seen by the foregoing construction that the lamps are each connected with an independent circuit, and that when the switch 16 is out of contact with the contacts 14 and 19 both circuits will be broken and neither lamp lighted. When the switch is in contact with the contact 14 the first lamp will be lighted with full candle power, and when the switch is in contact with contact 16 the second lamp, owing to the resistance 18, will only give a subdued light, so that if the first lamp burns out and the bearer of the lantern is left in the dark, he has only to move the switch 16 in contact with contact 19 when the second lamp, which may be called the auxiliary lamp, will emit a subdued light sufficient to enable the bearer of the lantern to find his way.

Having described the invention what I claim is:—

1. In an electric safety lantern, an incandescent lamp, flexible supporting means for said lamp, said means consisting of the upwardly projecting insulated ends of the circuit conducting wires, each end having an electric contact formed thereon and flexibly and detachably holding the lamp in posi-

tion and permitting it to be knocked out of its support, and a conducting wire extending from a contact at one end of the lamp bulb over the outer surface of said bulb, and its other end wound around the tip of the bulb and forming a contact with the upper end of one of said flexible supports.

2. In an electric safety lantern, a base, an incandescent lamp supported above said base, flexible supporting means for said lamp, said means comprising the upwardly projecting insulated ends of the circuit conducting wires, one of said ends having a cup-shaped contact and the other end provided with a loop contact and flexibly and detachably holding the lamp in position, and a conducting wire extending from a contact at one end of the lamp bulb over the outer surface of said bulb, and its other end wound around the tip of the bulb and forming a contact with the looped upper end of one of the flexible supports.

HARRY C. HUBBELL.

In presence of—

CHAS. E. RIORDON,
MAY M. PLYER.