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MINER'S ELECTRIC LAMP.

APPLICATION FILED AUG. 11, 1919.

1,352,636. Patented Sept. 14, 1920.

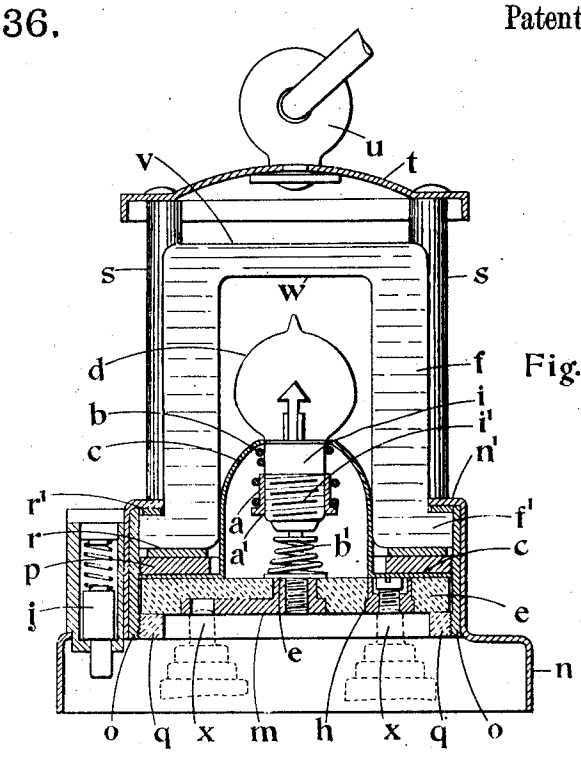
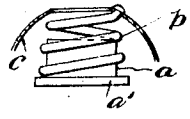


Fig.1.

Fig.3.



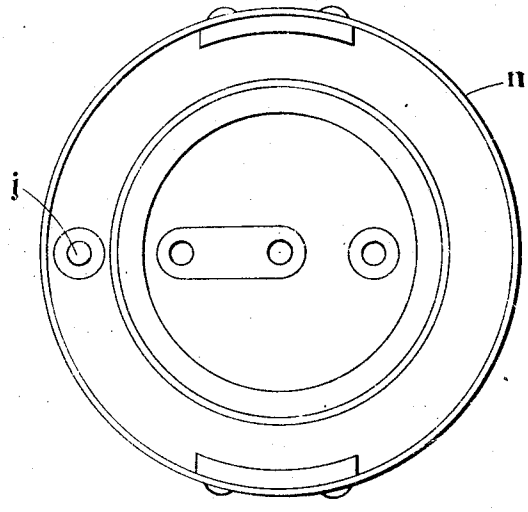


Fig.2.

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MINER'S ELECTRIC LAMP.

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To all whom it may concern:

Be it known that we, THEODORE STRETTON and JOHN WILLIAM JONES, subjects of the King of Great Britain and Ireland, residing, respectively, at 11 Windsor Place, Cardiff, Wales, and Wave Crest, Blackfords, Cannock, Staffordshire, England, have invented certain new and useful Improvements Relating to Miners' Electric Lamps, of which the following is a specification.

This invention relates to miners' safety electric lamps of the kind in which the casing carrying the cell is detachable from the top part carrying the incandescent lamp.

According to the invention simple and effective means are provided for mounting the lamp so as to avoid shocks being imparted to it and simple and effective means are provided for mounting the well glass cover in position and for also mounting the contact plate in position in the lower part of the lamp top.

The invention comprises the features which are hereinafter described.

The invention is illustrated in the accompanying drawing in which

Figure 1 is a sectional elevation of a lamp constructed according to the invention, while

Fig. 2 is an under plan corresponding thereto.

Fig. 3 is a detail sectional view.

In the drawings the lower part of the lamp being the container for the battery is not illustrated. This and the battery may take the form described in the specification of a co-pending application.

In carrying the invention into effect as illustrated in the accompanying drawings, the electric lamp is fitted within a socket *a* which is mounted between two counteracting springs one of which *b* is applied between the socket *a* and the underside of a cap or socket inclosure *c* disposed beneath and supporting the bulb *d* of the lamp, and the other b^1 between the end of the lamp plug *i* and the contact plate *e* beneath it, so that thus the lamp and filament may withstand shock, to which the lamp itself may be subjected, without being broken. For this purpose the cap or socket inclosure *c* may extend upwardly into the central cavity or well in the glass cover *f* and at its lower end the cap or socket inclosure *c* may be provided with an outwardly extending flange c^1. The cap or socket inclosure *c* is connected with the negative contact *h* upon the contact plate *e*. The plug *i* of the lamp has a plain cylindrical surface at the part adjoining the bulb *d*, while its lower end i^1 is screw threaded for screwing into the socket *a*. The spiral spring *b* has one of its ends sweated or otherwise secured to the underside of the cap or socket inclosure *c* at the top as illustrated in Fig. 3, while the other end of the spiral spring *b* is sweated to the lower end of the socket *a*, or to an outwardly extending flange a^1 provided at the lower end of the socket. It will be understood that the cap or socket inclosure *c* itself may be of dome or other similar shape and that its external face may be coated with nickel or silver for use as a reflector. A hole is provided centrally at its upper end through which the plain part of the lamp plug *i* passes, and in which it freely slides under shock.

The contact plate *e* mounted beneath the lamp and socket has the positive contact *m* extended to a central position, and the second or contact spiral spring b^1 extends from this position to the lower end of the lamp plug *i*. The second spring b^1 is thus disposed beneath the lamp while the first surrounds the socket *a* and plug *i* of the lamp.

The top part of the lamp casing *n* is provided as is usual for a pressed metal plate with an inwardly extending flange n^1 at its upper end, which engages the outwardly extending flange f^1 at the lower end of the well glass cover *f*, and at its lower end the top part of the lamp casing is provided with known means for the reception and magnetic lock of the upper end of the cell casing whose terminals *x x* are indicated in dotted lines.

The top part of the lamp casing *n* has secured within it a brass or other lining or cylinder *o*, within which the outwardly extending flange f^1 of the well glass cover *f* is retained by means of a metal ring *p* screwed into position within the lining or cylinder *o*. The contact plate *e* of insulating material is loosely fitted into position beneath this ring *p*, and the contact plate is securely retained in position by another ring *q* screwed into the lining or cylinder *o*. Thus on the magnetic lock *j* being unfastened, the top may be separated from the casing of the battery as a whole, or the con-

tact plate e may be removed without the necessary removal of the glass cover.

Rubber rings or washers r r^1, may be interposed between the metal ring p and the underface of the glass cover f and between the top face of the outwardly extending flange f^1 of the glass cover, and the inwardly-extending flange n^1 at the upper end of the top part of the lamp casing.

It will be understood that the top part of the lamp casing n may be connected by a number of rods s to a crown t surmounting the well glass cover f, to which crown a hook or loop u may be centrally connected for carrying the lamp. The well glass cover f thus extends between the top part of the lamp and the crown.

The well glass cover f may be provided on its outer top face at v or on its inner top face at w with a reflecting surface, and its form may be modified for this purpose.

We claim:

1. An electric lamp comprising in combination an incandescent lamp, a socket within which the plug of the said lamp is fitted, a cap or socket inclosure within which the plug of the said lamp is freely mounted, a spiral spring surrounding the socket and connecting the socket to the upper end of the said cap or socket inclosure, a contact plate beneath the said cap or socket inclosure and the socket, a spring disposed between one of the contacts upon the said contact plate and the end of the lamp plug, and means for connecting the cap or socket inclosure to the other of the contacts upon the contact plate, substantially as described.

2. An electric lamp comprising in combination an incandescent lamp provided with a screw threaded plug, a socket within which the said screw threaded plug of the lamp is fitted, a cap or socket inclosure within which the plug of the said lamp is freely mounted, a spiral spring surrounding the socket and connecting the socket to the upper end of the said cap or socket inclosure, a contact plate beneath the said cap or socket inclosure and the socket, a spring disposed between one of the contacts upon the said contact plate and the end of the lamp plug, and means for connecting the cap or socket inclosure to the other of the contacts upon the contact plate, substantially as described.

3. An electric lamp comprising in combination an incandescent lamp having the part of the plug adjoining the lamp of a plain cylindrical form, a socket within which the end of the said plug of the lamp is fitted, a cap or socket inclosure within which the plug of the said lamp is freely mounted, a spiral spring surrounding the socket and connecting the socket to the upper end of the said cap or socket inclosure, a contact plate beneath the said cap or socket inclosure and the socket, a spring disposed between one of the contacts upon the said contact plate and the end of the lamp plug, and means for connecting the cap or socket inclosure to the other of the contacts upon the contact plate, substantially as described.

4. A miner's electric lamp consisting in combination of the top part of the lamp casing, a well glass cover mounted therein and having at its lower end an outwardly protruding flange engaged by an inwardly protruding flange at the lower end of the top part of the lamp casing, an incandescent lamp mounted within the said well glass cover, a fitting upon which the said incandescent lamp is mounted, a retaining ring screwed from below into the lower end of the top part of the lamp casing, a loosely fitting contact plate and a second retaining ring for retaining the contact plate beneath the lower end of the well glass cover, substantially as described.

5. A miner's electric lamp, comprising in combination the top part of the lamp casing, a well glass cover mounted therein and having an outwardly protruding flange at its lower end engaged by an inwardly protruding flange at the lower end of the top part of the lamp casing, a liner within the lower end of the top part of the lamp casing, a retaining ring screwed into the said liner from beneath the lower part of the lamp casing to support the well glass cover from below, a loosely fitting contact plate beneath the well glass cover and a second retaining ring for retaining the said contact plate in position, substantially as described.

6. A miner's electric lamp consisting in combination of an incandescent lamp, a socket within which the plug of the said lamp is fitted, a cap or socket inclosure within which the plug of the said lamp is freely mounted, a spiral spring surrounding the socket and connecting the socket to the upper end of the cap or socket inclosure, a contact plate beneath the cap or socket inclosure and beneath the socket, a spring disposed between one of the contacts upon said contact plate and the end of the lamp plug, means for connecting the cap or socket inclosure to the other of the contacts upon the said contact plate, a well glass cover for the said incandescent lamp, a retaining ring for supporting the said well glass cover from below within the lower end of the top part of the lamp casing, and a separate retaining ring for supporting the contact plate within the lower end of the top part of the lamp casing, substantially as described.

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