A. E. THOMPSON & J. CAMERON.

LAMP.

APPLICATION FILED JAN. 13, 1912.

1,040,056. Patented Oct. 1, 1912.

Fig 1

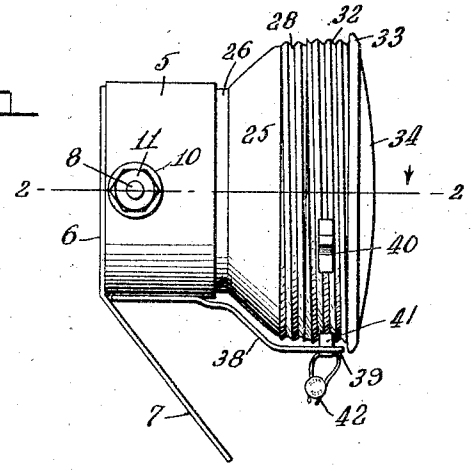


Fig 2

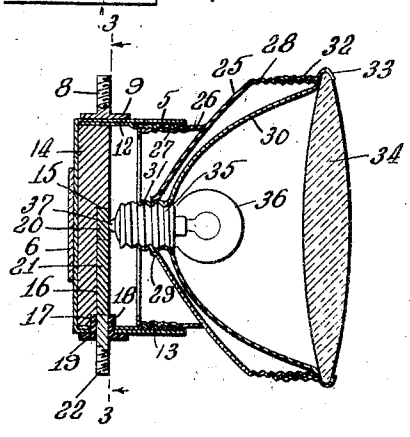


Fig 3

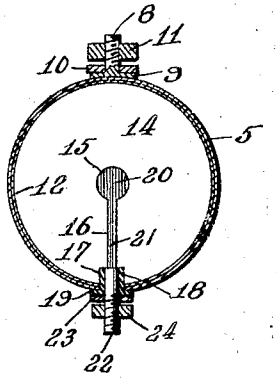
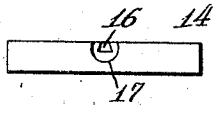


Fig 4



Witnesses
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UNITED STATES PATENT OFFICE.

ALVA E. THOMPSON AND JAMES CAMERON, OF HASTINGS, COLORADO, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE MINERS ELECTRIC SAFETY LAMP MANFG. CO., OF TRINIDAD, COLORADO, A CORPORATION OF COLORADO.

LAMP.

1,040,056. Specification of Letters Patent. Patented Oct. 1, 1912.

Application filed January 13, 1912. Serial No. 671,059.

To all whom it may concern:

Be it known that we, ALVA E. THOMPSON and JAMES CAMERON, citizens of the United States, residing at Hastings, in the county of Las Animas and State of Colorado, have invented new and useful Improvements in Lamps, of which the following is a specification.

Our invention relates to electric lamps, and especially to those of a kind used in connection with mining and adapted to be mounted upon the caps or hats worn by operatives.

More particularly stated our invention comprehends a lamp structure provided with a casing and with means for preventing the ready access to the interior of the casing, and also for facilitating the detection of any attempt made to open the casing.

Our invention further contemplates a number of specific improvements in the lamp for the purpose of increasing the general efficiency of the latter.

Reference is made to the accompanying drawing forming a part of this specification, and in which like letters indicate like parts.

Figure 1 is a side elevation showing our improved lamp complete and ready for use. Fig. 2 is a substantially central section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2, looking in the direction of the arrow. Fig. 4 is a detail showing the construction of a disk of insulating material forming a part of the lamp.

A sleeve 5 having the form of a cylindrical cup contains several other portions of the lamp as hereinafter described. Secured upon the sleeve 5 is a strip 6 of metal, which is provided with a portion 7 extending at an angle relatively to the general plane of the sleeve. A threaded stem 8 is provided with a base 9, the latter being secured directly upon the outside of the sleeve 5. A washer 10 encircles the threaded stem 8 and fitted upon this stem is a nut 11 of annular form and provided internally with a thread mating the thread of the stem 8. The threaded stem together with the washer 10 and nut 11 constitute a binding post.

Mounted within the sleeve 5 is a metallic ring 12 having a portion 13 formed into a thread, as will be understood from Fig. 2. A disk 14 of insulating material fits into the ring 12 and is provided centrally with a compartment 15 having the form shown in Fig. 3. The disk 14 is further provided with a channel 16 merging into the compartment 15, and also with a recess 17 having the form indicated in Fig. 4 and merging into the channel 16 at the end thereof opposite the compartment 15. A sleeve 18 of insulating material is provided with a head 19 of annular form, and extends into the recess 17. A filling 20 of lead or other soft metal is disposed within the compartment 15 and is provided with a portion 21 of the same metal extending through the channel 16. A threaded stem 22 of brass or other hard metal is connected directly with the adjacent end of the portion 21. Encircling the threaded stem 22 is a washer 23, and revolubly fitted upon this stem is a nut 24. The stem, washer and nut together constitute a binding post which is insulated from the sleeve 5, as will be understood from Fig. 3.

A sleeve 25 having substantially the form of a cone frustum carries a ring 26 of metal, this ring being provided with a portion 27 formed into threads and adapted to fit the threaded portion 13 of the ring 12. The sleeve 25 is further provided with an annular portion 28 formed into threads, and with a portion 29 of reduced diameter and formed into a thread which may, if desired, consist of only one turn. Fitted upon the annular portion 28 is a ring 32 upon the interior of which threads are formed. This ring is provided with a bead 33, and by aid of the latter carries a lens 34.

A reflector 30, which in this instance is parabolic, is mounted within the sleeve 25. This reflector carries a neck 31 formed into threads, and by aid of this neck may be secured relatively to the sleeve 25.

An electric incandescent lamp bulb 36 is provided with a threaded stem 35 constituting an outside contact, and is further provided with a boss 37 constituting an inner contact, the bulb being of the usual construction.

A leaf spring 38 is mounted upon the sleeve 5 and is provided with a slotted end 39. Mounted upon the ring 32 are eyes 40, 41 which are each adapted to extend through the slotted end 39 of the spring 38. We employ any desired number of these eyes, and preferably secure them by soldering

them directly upon the ring 32. When this ring is screwed into position, carrying with it the lens 34, some one of the eyes 40, 41 is brought into registry with the slotted end 39 of the spring 38, so that the eye in question is caused to extend through the slotted end of the spring. A suitable seal 42 is then applied to the eye. This being done the ring 32 cannot be turned relatively to the sleeve 25, and the sleeve 25 cannot be turned relatively to the sleeve 5 without breaking the seal, and any effort to unscrew the different parts of the lamp is sure to lead to detection.

Our purpose in forming the filling 20 of lead is to insure a good electrical connection between this filling and the inner contact 37, the lead being soft the inner contact 37 when forced against it is brought into such relation to it that the current can readily pass through the connection thus formed.

The parts are assembled as indicated in Fig. 2, the threaded portion 27 of the ring 26 being screwed into the ring 12, and the ring 32 being screwed upon the outside of the threaded portion 28.

We have noticed that the lamps are sometimes tampered with, and occasionally injured by being taken apart. Sometimes miners take lamps apart from sheer curiosity, and at other times do so for the purpose of tinkering with the parts disposed inside. Indeed it has occasionally happened that if the reflector was not as bright as desired the lamp has been taken apart and sand paper used upon the reflector. Manifestly it is desired to prevent things of this kind from occurring, and this is the purpose of the seal. The spring 38 even without the seal acts to some extent as a lock, in that it prevents the ring 32 from turning accidentally. In connection with the seal it serves effectively as a check for preventing access to the interior of the lamp as above explained.

A circuit through the lamp may be traced as follows: a source of electricity (not shown), stem 8 of binding post, base 9, sleeve 5, ring 12, ring 27, part of sleeve 25, outer contact 31 of incandescent bulb 35, through the bulb to inner contact 37, filling 20 of lead, portion 21 of same material, stem 22 of binding post, thence back to source of electricity.

We do not limit ourselves to the precise construction shown, as the invention may be varied within reasonable limits, the scope of our invention being commensurate with our claims.

We claim:—

1. In a lamp, the combination of a sleeve provided with a threaded portion, a second sleeve provided with a threaded portion mating said threaded portion of said first mentioned sleeve, a ring provided with a portion fitting said second mentioned sleeve, a lens carried by said ring, and means for locking said ring and said first mentioned sleeve together.

2. An electric lamp comprising a sleeve, a ring connected therewith and provided with a threaded portion, a second sleeve, a ring carried thereby and provided with a threaded portion mating said first mentioned threaded portion, a second ring carried by said second mentioned sleeve, and means for preventing relative movement between said first mentioned sleeve and said last mentioned ring.

3. In a lamp, the combination of a sleeve, a second sleeve fitting said first mentioned sleeve, a ring carried by said second mentioned sleeve, a lens carried by said ring, and means for locking said ring and said first mentioned sleeve together.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ALVA E. THOMPSON.
JAMES CAMERON.

Witnesses.
ED MCMULLEN,
W. P. HOLMAN.