Nov. 11, 1924. 1,514,637

J. TEIPEL

ELECTRIC HEADLIGHT

Filed Oct. 11, 1922

Fig. 1.

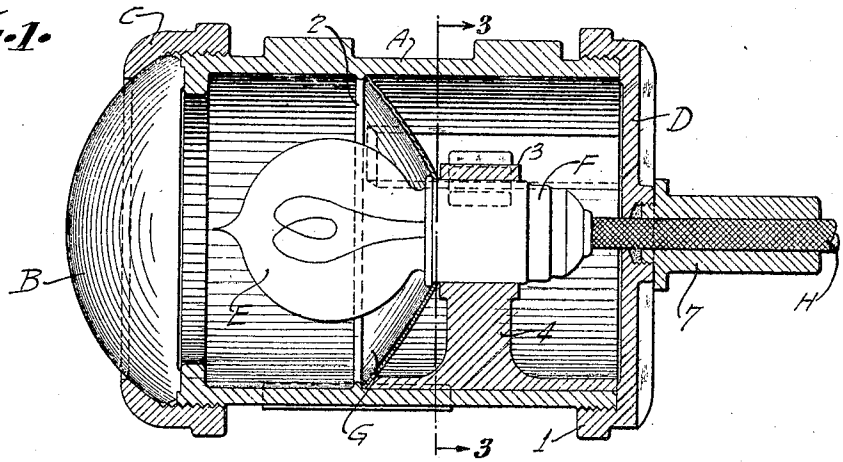


Fig. 2.

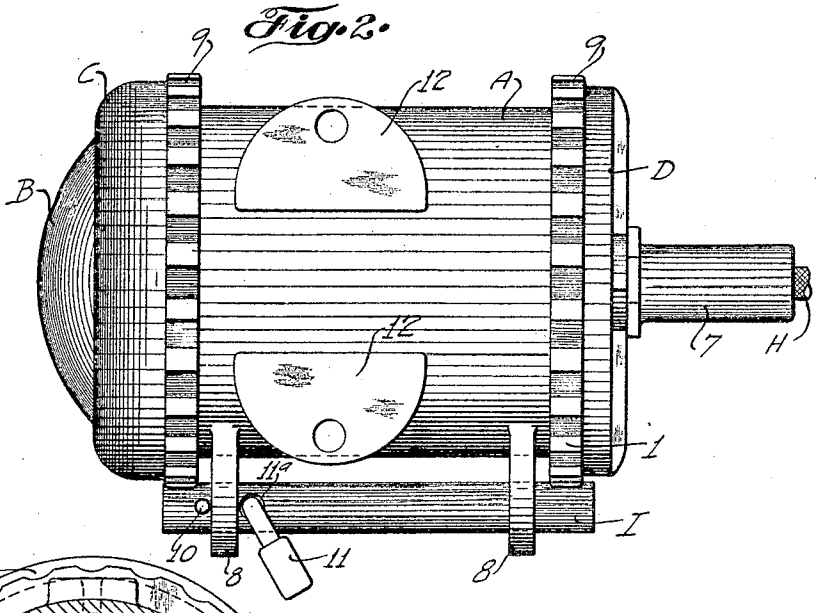
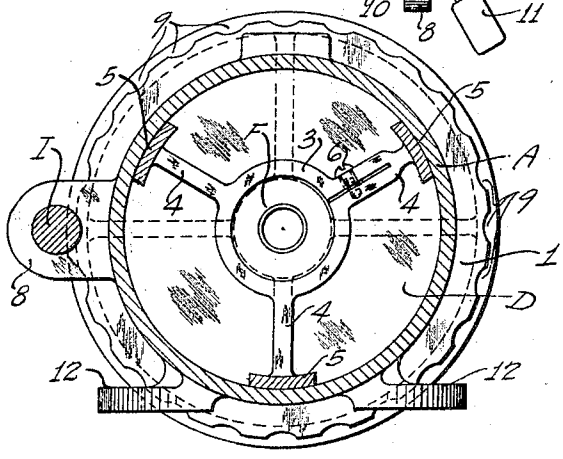


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRIC HEADLIGHT.

Application filed October 11, 1922. Serial No. 593,765.

To all whom it may concern:

Be it known that I, JOSEPH TEIPEL, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Electric Headlights, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to electric headlights.

One object of the invention is to provide an electric headlight that is practically gas and flame proof, thereby making it particularly well adapted for use on electric storage battery mine locomotives, due to the fact that there is no possibility of a flame or spark escaping from the interior of the casing of the headlight and igniting a gas leak in a mine.

Another object is to provide an electric headlight having the desirable characteristics above mentioned that can be opened quickly and easily to inspect or renew the incandescent lamp arranged inside of the casing of the headlight.

And still another object is to provide a novel means for preventing an unauthorized person from tampering with the incandescent lamp of an electric headlight or removing the lens of the headlight. Other objects and desirable characteristics of my invention will be hereinafter pointed out.

Figure 1 is a vertical longitudinal sectional view of an electric headlight constructed in accordance with my invention.

Figure 2 is a bottom plan view of said headlight, and

Figure 3 is a vertical transverse sectional view, taken on the line 3—3 of Figure 1, looking in the direction indicated by the arrows.

Referring to the drawings, A designates the casing of my improved headlight which preferably consists of a cast metal shell of substantially cylindrical shape in cross section, open at its opposite ends. The front end of said casing is closed by the lens B of the headlight which is clamped tightly against the front edge of said casing A by a removable clamping ring C provided with internal screw threads that co-operate with external screw threads on the front end portion of the casing, as shown in Figure 1, said clamping ring being so shaped that the inner side of same conforms substantially to the curvature of the lens B. The rear end of the shell or casing A is closed by a removable cap D provided with an internally screw-threaded flange 1 that is screwed onto an externally screw-threaded portion at the rear end of the casing.

The incandescent lamp E that constitutes the lighting unit of the headlight is mounted in a socket F arranged inside of the casing A, and a reflector G of substantially frusto-conical form is also arranged inside of the casing. In order that the lamp and reflector may be removed easily, I mount the socket F in a removable spider or skeleton-like supporting device which is also used to clamp the reflector G against a stop, preferably an annular rib 2 on the inside of the casing A. In the form of my invention herein illustrated said spider or skeleton-like supporting device comprises a split hub portion 3 that embraces the socket F, arms 4 projecting radially from said hub portion and clamping devices 5 at the outer ends of said arms that extend longitudinally of the casing A with their front ends bearing against the rear side of the reflector G so as to clamp and hold the same against the rib 2, and their rear ends bearing against the inner side of the removable cap or closure D at the rear end of the casing A, said cap being adapted to be screwed up tight so as to exert pressure on the devices 5 in a direction to clamp the reflector against the rib 2 on the interior of the casing. The split in the hub portion 3 of the spider is preferably extended into one of the arms 4, as shown in Figure 3, and said arm is provided with an adjusting screw 6 that is adapted to be tightened so as to cause the hub portion 3 to clamp the lamp socket F and securely hold it in proper position. The electric cable H that is connected to the lamp socket is preferably led into the casing through a packing device 7 in the cap D which produces a tight joint around said cable and the cap D through which it passes.

Due to the fact that the casing of the headlight is composed of a cylindrical-shaped member whose opposite ends are closed by closures that are screwed onto the casing, it is practically impossible for a flame or spark produced inside of the casing to escape therefrom. Consequently, such a headlight is particularly well adapted for use on electric

storage battery mine locomotives, because it eliminates the possibility of a gas leak in a mine being ignited by a spark or flame produced on the interior of the casing of the headlight; it is of such simple design that it can be manufactured at a low cost; it is rugged enough to successfully withstand the rough usage to which the headlights of mine locomotives are subjected, and notwithstanding the fact that the casing of the headlight is substantially flame and gas proof, the casing can be opened easily to provide access to the incandescent lamp E by simply removing the end cap D. The lens B can be renewed easily, due to the fact that it is retained in position and clamped against the front end of the casing by a screw-threaded clamping ring C. After the end clamp D has been removed the incandescent lamp E, the reflector G and the spider which carries the socket F can be removed as a single unit by withdrawing said spider endwise out of the rear end of the casing. To replace said parts it is only necessary to insert the spider in the casing and move it forwardly until the reflector G comes in contact with the annular rib 2 on the inside of the casing, and then screw the end cap D onto the casing, the pressure which said end cap exerts on the clamping devices 5 of the spider causing said devices to clamp the edge portion of the reflector tightly against the rib 2.

Various means may be used for preventing an unauthorized person from removing the end cap D and the clamping ring C from the lens B, but I prefer to provide the casing A with a pair of laterally-projecting lugs 8 through which a locking bar I can be inserted lengthwise of the casing A, so as to co-operate with ribs or notches 9 in the clamping ring C and in the end cap D to prevent said parts from being rotated in a direction to remove them from the casing A, said locking bar I being retained in operative position by means of a pin 10 in same that bears against one side of one of the lugs 8, and a padlock 11 whose hasp is adapted to be inserted through a hole in said locking bar at the other side of said lug, as shown in Figure 2. The ring C and the end cap D are each provided with a plurality of notches, lugs or recesses 9, as shown in Figure 2, so as to compensate for wear of the screw threads on the casing and on the cap D and clamping ring C, and the casing A is provided on its underside with supporting feet 12 that are adapted to rest upon the supporting structure to which the headlight is connected. After the end cap D and lens retaining ring C have been screwed onto the casing tightly the locking bar I is slipped endwise through the lugs 8 on the casing, so as to cause the end portions of said bar to enter longitudinally-aligned notches 9 in said end cap D and ring C, it being necessary to insert the rear end of the locking bar in the front lug on the casing and move said locking bar rearwardly so as to position the pin 10 in said bar in front of said front lug. Thereafter, the hasp of a padlock 11 is inserted through a hole 11ª in the locking bar I arranged at the rear of the front lug 8 on the casing so as to lock the bar I and prevent it from being moved endwise to disengage the end portions of same from the end cap D and lens clamping ring C. This method of locking the removable parts of the casing of the headlight effectively prevents an unauthorized person from tampering with the incandescent lamp in the casing of the headlight or from removing the lens; it is exceptionally rugged and strong and it can be operated quickly to release or lock the removable portions of the casing of the headlight.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An electric headlight, comprising a casing provided on its inner side with a stop, a removable closure for one end of said casing, a removable supporting structure arranged inside of said casing between said stop and closure and provided with portions on which said closure exerts pressure in a direction to move said supporting structure towards said stop, a lamp socket clamped in said supporting structure, and a reflector combined with said lamp socket and arranged so that its peripheral edge portion is held pressed tightly against the stop on the inner side of the casing.

2. An electric headlight, comprising a casing provided on its inner side with a stop, a removable closure arranged at one end of said casing, a lamp socket and a reflector arranged inside of the casing, a removable supporting means for said socket and reflector consisting of a spider having a hub portion in which the socket is clamped and arms that project radially from said hub portion and bear against the casing, and devices at the ends of said arms positioned between the reflector and the removable closure so as to hold the reflector in engagement with said stop.

3. An electric headlight, comprising a casing, removable closures at the opposite ends of said casing, a bar on the exterior of the casing removably mounted in a stationary part of the casing and arranged in engagement with both of said closures so as to prevent them from being removed from the casing, and means for retaining said bar in operative position.

4. An electric headlight, comprising a cylindrical casing provided with lugs, removable closures screwed onto the opposite ends

of said casing, and a locking bar arranged longitudinally of the casing in the lugs on the casing and positioned in grooves or openings in the removable closures on the casing.

5. An electric headlight, comprising a cylindrical casing provided with lugs, removable closures screwed onto the opposite ends of said casing, a locking bar arranged longitudinally of the casing in the lugs on the casing and positioned in grooves or openings in the removable closures on the casing, and means for preventing an unauthorized person from disengaging said locking bar from said closures.

6. An electric headlight, comprising a cylindrical casing provided on its interior with a stop, a lens arranged at one end of said casing, a clamping ring for said lens screwed onto the casing, a removable cap screwed onto the other end of the casing, an electric lamp socket and a reflector arranged inside of the casing, a supporting device for said socket and reflector removably mounted inside of said casing between said cap and the stop on the inside of the casing, a locking bar arranged longitudinally of the casing in engagement with said clamping ring and cap for preventing the same from being unscrewed, and means for preventing an unauthorized person from disengaging said locking bar from said ring and cap.

JOSEPH TEIPEL.