

Jan. 17, 1950

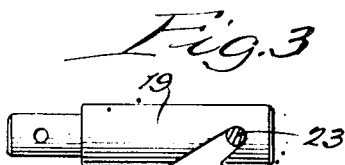
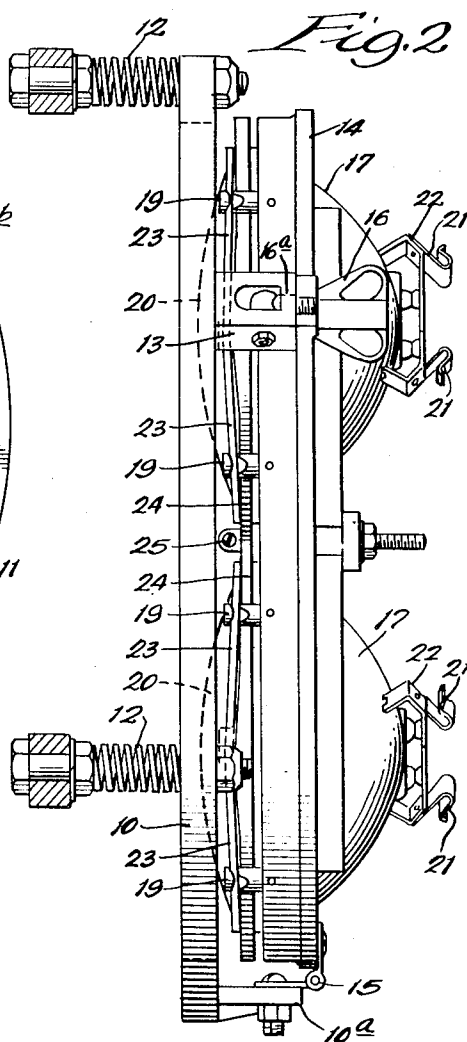
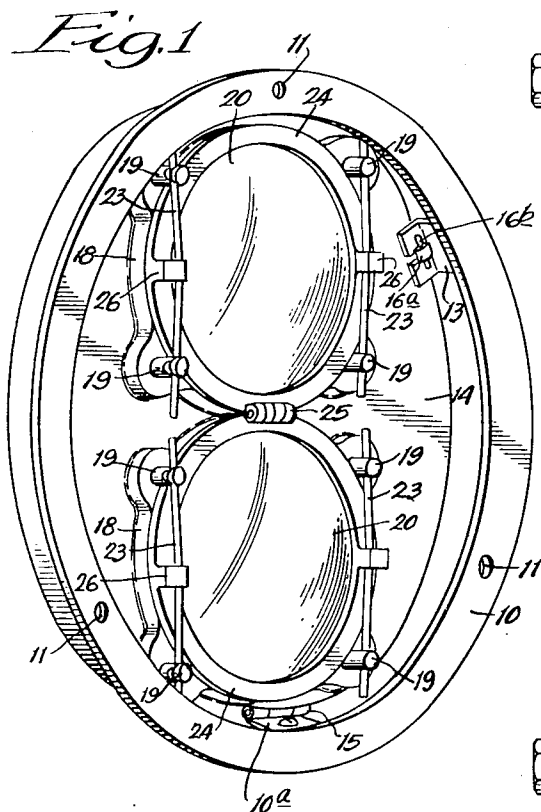
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2,494,652

LOCOMOTIVE HEADLIGHT ASSEMBLY

Filed May 27, 1949

2 Sheets-Sheet 1



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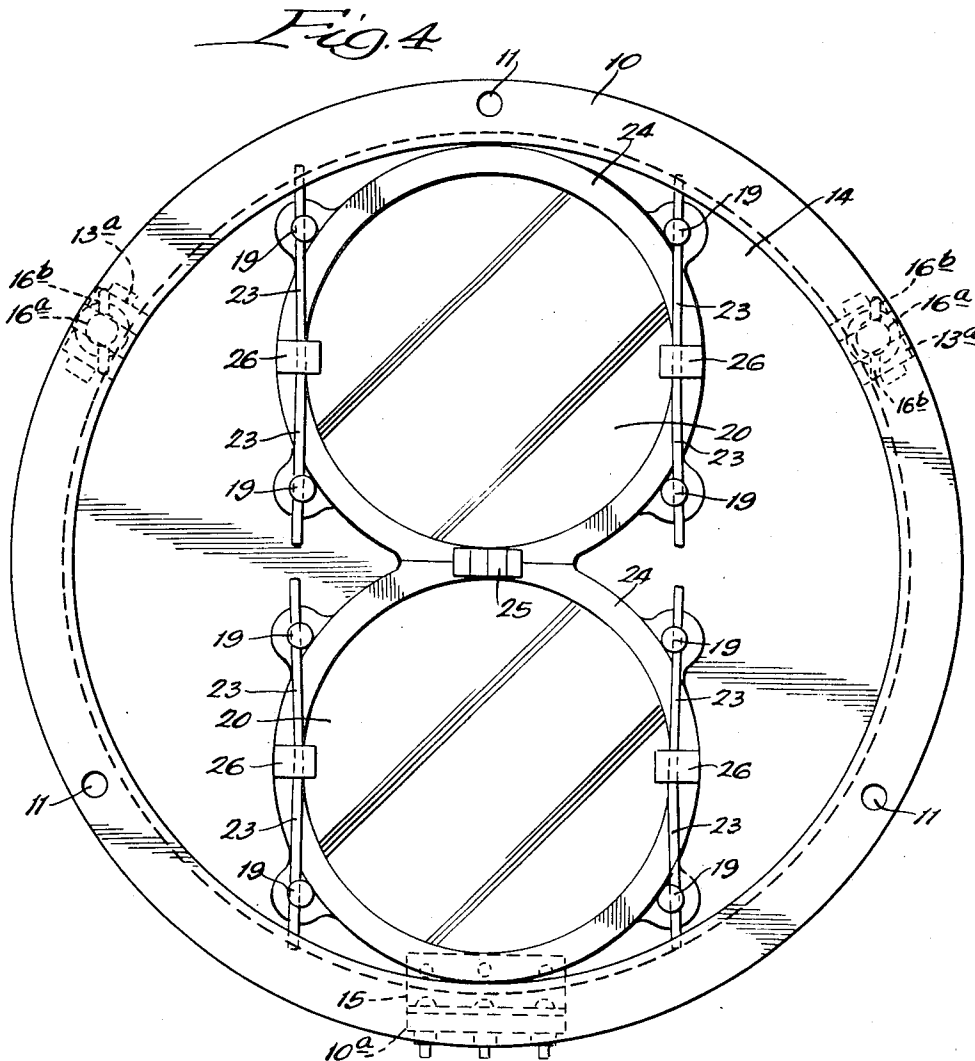
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LOCOMOTIVE HEADLIGHT ASSEMBLY

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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LOCOMOTIVE HEADLIGHT ASSEMBLY

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3 Claims. (Cl. 240-41)

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This invention relates to locomotive headlights; in particular it concerns a novel headlight assembly incorporating lighting units of the sealed-beam type.

An object of my invention is to provide a headlight assembly having a pair of sealed-beam lighting units wherein the lights are securely held in proper position during operation but in which means are provided for removal and replacement of such units without the use of tools.

Another object of my invention is to provide a headlight assembly adapted for use with cab-in-front locomotives, such as the well-known electric or Diesel types, whereby removal and replacement of sealed-beam lighting units, and other service on the assembly, can be conveniently accomplished from within the cab without the use of tools.

Still another object of my invention is to provide a locomotive headlight assembly which can be "knocked down" for service or replacement of sealed-beam units without the use of tools and without freeing small parts likely to be dropped or lost.

Other objects and advantages of my invention will appear as the specification proceeds.

My invention has been portrayed, in an illustrative embodiment, in the appended drawing, of which Figure 1 is a perspective view of a locomotive headlight assembly embodying my invention; Fig. 2 is a side elevation view of the same headlight assembly; Fig. 3 is a detail view of one of the locking studs employed in the embodiment of Fig. 1; and Fig. 4 is a front elevation view of the headlight assembly shown in Fig. 1.

Referring to the figures, my headlight assembly is carried by a master mounting ring 10, which is provided with apertures 11 adapted to permit its being mounted within the headlight casing of a locomotive. If desired, such mounting may be accomplished by the use of alignment springs 12, which provide a shock mount for the headlight assembly and at the same time permit its convenient adjustment to insure the beam's being transmitted in the desired direction.

The master mounting ring 10 is provided at its bottom portion with a backwardly extending shelf projection 10a on which one leaf of a hinge 15 is bolted. Around the rim of ring 10 from shelf 10a, and spaced symmetrically therewith, are a pair of bracket members 13. Members 13 also extend backwardly from ring 10 and are bent inwardly at their rear ends and slotted to provide latch members 13a.

Securely bolted to the other leaf of hinge 15

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is the main supporting frame 14, which normally will be a casting of aluminum, magnesium, or some other light metal. It will be understood, of course, that any suitable material may be employed for supporting frame 14. Frame 14 is generally circular in shape, conforming to the shape of ring 10, and when frame 14 is swung up and forward toward ring 10, frame 14 reaches a position coaxial to ring 10, as shown in Fig. 2. On the rim of frame 14, at the proper points for co-operation with latch members 13a, are mounted a pair of thumb-screw captive bolts 16. As may be seen from Fig. 2, captive bolts 16 are provided with a shoulder member 16a which is substantially larger in diameter than the aperture in frame 14 within which bolt 16 is carried. Thus, while bolt 16 is free to turn, it cannot be removed from frame 14.

Member 16a is provided with a pair of projecting pins 16b which extend outward at right angles to the shank of shoulder member 16a. Member 16a, with its pins 16b, will pass through the slot in latch member 13a if the pins are aligned with the slot. Thus, when frame 14 is swung inward to abut on bracket members 13, the frame can be locked in that position by manual rotation of bolt 16 through one-quarter turn to the position shown in Fig. 1. When, on the other hand, frame 14 is to be swung downward and to the rear of ring 10, a one-quarter turn on bolt 16 will release them from latch members 13a and leave the frame 14 free to swing downwardly on hinge 15.

Frame 14 is provided with a pair of light receptacles 17 adapted to receive sealed-beam lighting units. Each of the receptacles 17 is provided with a rim 18, raised above the flat surface of frame 14 but normally formed as an integral part of the casting 14.

In the form of the invention shown in the drawing, each of the rims 18 is provided with four notched studs 19. One of the studs 19 is shown in larger scale in Fig. 3, and its structure may readily be noted from that figure, especially when taken in connection with Fig. 1. As may be seen from Fig. 3, the notch in stud 19 is shaped to provide an opening a substantial distance downward along the shank of the stud, the notch extending inward and upward toward the top of the stud. The width of the notch is formed to accommodate the shank of spring members 23, to be described in more detail hereinafter.

Within each of the light receptacles 17 a sealed-beam light unit 20 is normally carried. As is well known in the art, these units consist

of integrally formed units comprising a reflector, a focusing lens, and an incandescent electrical lighting filament. They are normally manufactured with a conventional connecting plug or base; the rear portions of receptacles 17 carry sockets for the reception of the plugs or bases on the sealed-beam units, and electrical connections to such sockets may be made through Fahnestock clips 21, mounted on an insulated bracket 22 on the back of each of the receptacles 17.

The diameter of the fore portion of the receptacles 17 is somewhat greater than the diameter of the sealed-beam lighting unit, so as to accommodate the registration flange of receptacle cover 24. Covers 24, one for each of the receptacles 17, are flanged rings adapted to co-operate with rims 18 of receptacles 17 to hold the sealed-beam units 20 securely in their proper positions; the covers 20 are hinged together by hinge 25.

Each of the covers 24 carries a pair of studs 26 in each of which a bar spring 23 is carried, by crimping, welding, or other secure means; the stud 26 holds spring 23 at substantially its mid-point in each case. As may be seen from Fig. 1 or Fig. 4, the arrangement of the studs 19 and 26, and the bar springs 23 is such that when each of the covers 24 is properly in position to secure beam units 20, the covers 20 may themselves be secured against movement by hooking the springs 23 into the slots in studs 19.

Operation

In the operation of my invention, the covers 24 may be removed by releasing the springs 23 from the studs 19. When the covers 24 are removed from light receptacles 17, sealed-beam units 20 can be inserted in the conventional manner. Ring covers 24 are then placed back in position where they secure sealed-beam units 20 against movement or vibration, and covers 24 are then locked in place by placing the springs 23 under tension and slipping them into the slots in studs 19. This spring tension, combined with the action of the registration flange on the inner face of cover 24 in fitting snugly within the opening of receptacle 17, securely holds cover 24 against movement of any kind. The frame 14 can then be swung upward and forward into the operating position shown in Fig. 1 or Fig. 2, and thumb-screws 16 can then be given a one-quarter turn to lock the frame in operating position.

It should be noted from the foregoing description of the steps leading to the placing of my invention in service at either original or replacement installation of sealed-beam lighting units can be made from the inside of the locomotive cab when, as is customarily the case, the unit has been mounted in a cab-in-front locomotive. Moreover, complete "knock-down" of the apparatus or service or replacement of light units can be accomplished without the use of any tools, since both springs 23 and thumb-screws 16 can be easily manipulated with the fingers.

A still further advantage, of very great practical importance, is the fact that at no stage in the operation of my invention do any parts be-

come physically detached from the assembly. This permits convenient service of the assembly under conditions of poor lighting, etc., which would normally, with prior-art apparatus, almost certainly lead to lost screws and bolts, and consequent irritation and delay.

It will, of course, be understood that a flexible electrical cable can be run to the Fahnestock clips 21 in order to permit convenient access to the receptacles 17 by loosening thumb-screws 16 and swinging the frame 14 inward.

While I have in this specification described in detail for purposes of illustration one embodiment of my invention, it will be understood that numerous modifications in detail can be made therein without departing from the spirit of my invention.

I claim:

1. In a locomotive headlight assembly, a master mounting ring provided with means for attaching the same to a locomotive, said ring having also a stud on its rear side modified to receive a hinge and another stud modified to function as a latch member, a support frame having a pair of receptacles therein for receiving sealed-beam lights and being hinged to the master ring so as to permit its being swung to the rear thereof, finger-operable means co-operating with the latch member releasably to secure the frame in position coaxial with the master link, and covers for the light receptacles hinged together, each of said covers being provided with locking means for releasably securing said cover to the frame independently of the other cover, the rims of said light receptacles being modified for co-operation with said locking means.

2. Apparatus according to claim 1 wherein said locking means comprises a bar spring secured at its mid-point to the cover, the rim of the light receptacle being provided with notched studs for receiving the respective ends of the bar spring, whereby the cover is secured to the light receptacle by spring tension when the spring ends are stressed for insertion within the notches.

3. Apparatus according to claim 1 wherein said locking means comprises a bar spring secured at its mid-point to the cover, the rim of the light receptacle being provided with notched studs for receiving the respective ends of the bar spring, and wherein the finger-operable means co-operating with the latch member on the master mounting ring is permanently affixed to the support frame, whereby the apparatus can be knocked down for service or replacement of sealed-beam units without the use of tools and without releasing any parts from the assembly.

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