Oct. 5, 1937. M. P. PARKER 2,094,958

SHIELD FOR ARC LAMP REFLECTORS

Filed June 22, 1936 2 Sheets-Sheet 1

Fig. 1.

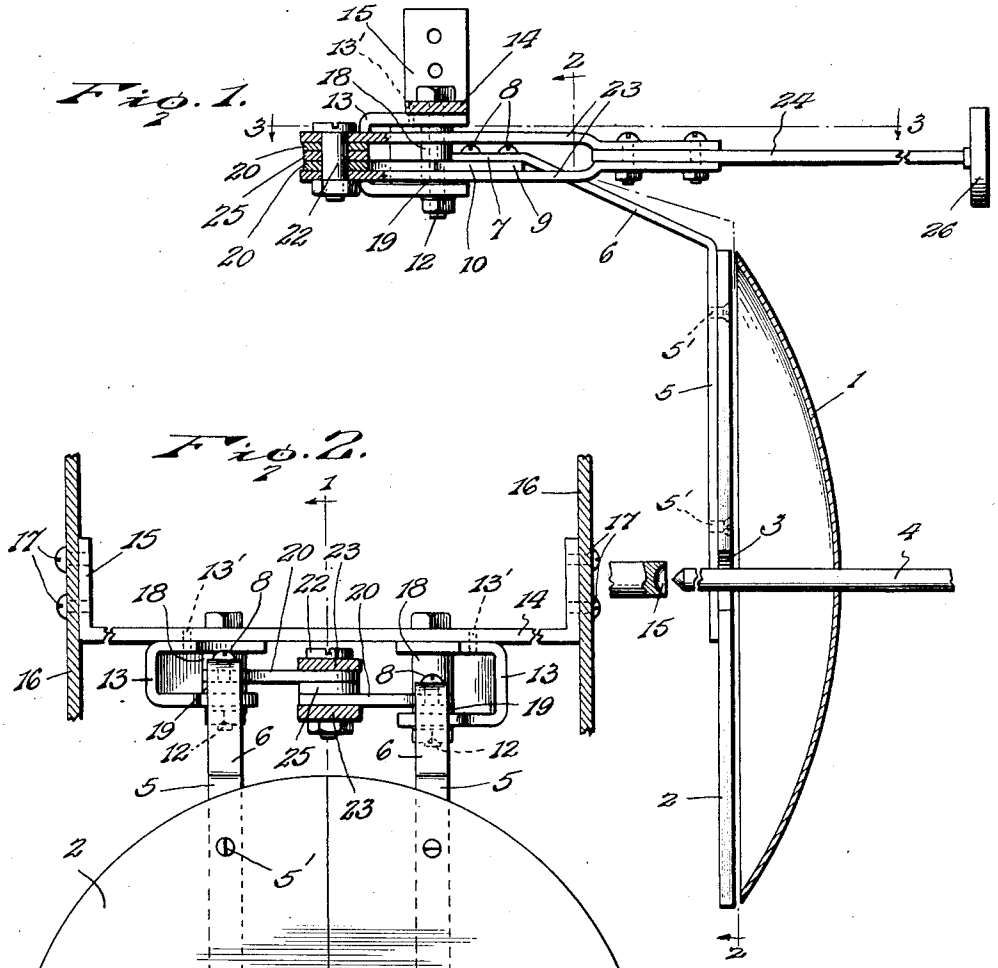
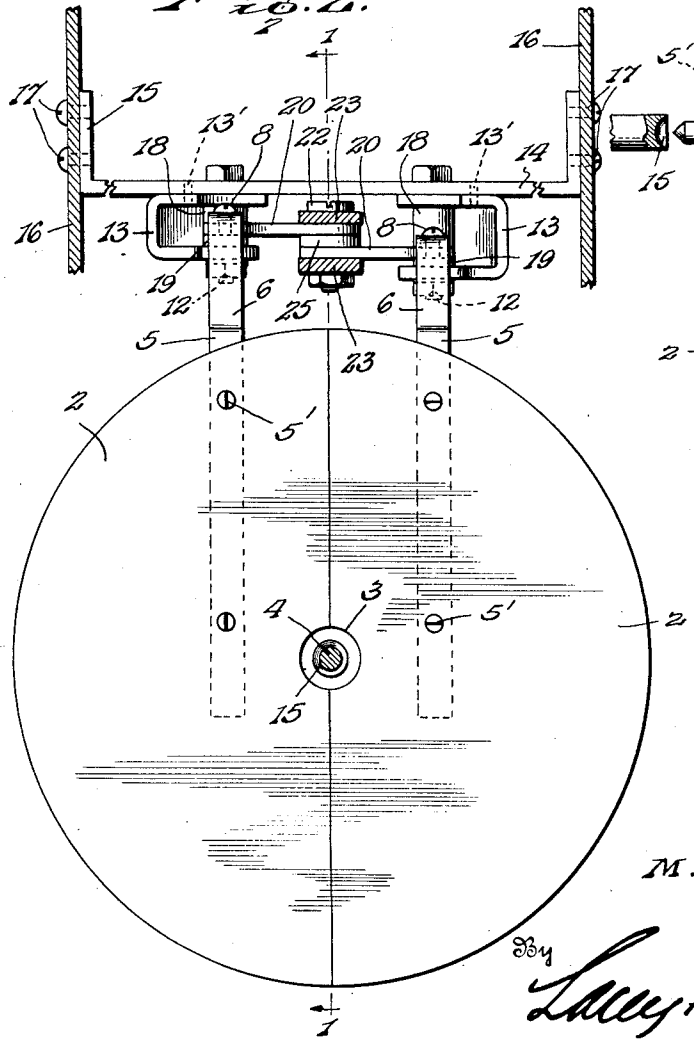


Fig. 2.



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Fig. 3.

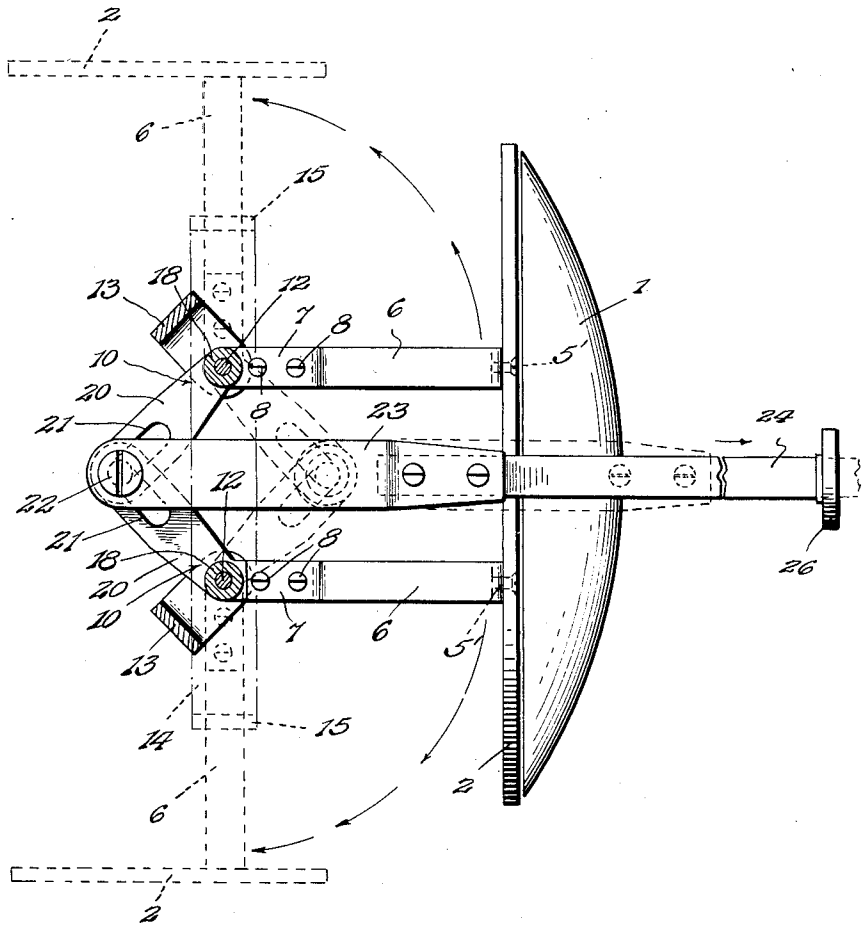
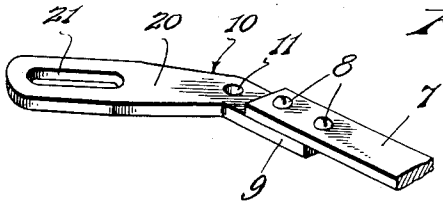


Fig. 4.



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SHIELD FOR ARC LAMP REFLECTORS

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Application June 22, 1936, Serial No. 86,663

6 Claims. (Cl. 176—115)

This invention relates to an improved shield for the reflector of an arc lamp which in the present illustration is the arc lamp of a motion picture projecting machine, and one object of the invention is to provide a reflector shield of such construction that it may be mounted in the housing of a motion picture projecting machine and very easily moved into or out of shielding relation to the reflector. It is to be understood that a shield constructed in accordance with this invention may be used as a shield for the reflector of a search light, or any arc lamp having associated therewith a reflector which should be protected from damage by bits of hot carbon thrown off carbon sticks of the lamp.

Another object of the invention is to so construct and mount the shield that when it is in an operative position in front of the reflector, it will entirely cover the reflector and thus prevent the surface of the reflector from becoming pitted or otherwise damaged by small particles of carbon thrown off during adjustment of the carbon.

Another object of the invention is to so construct the means by which sections of the shield are mounted that they may be very easily and quickly swung from a position in front of the reflector to a position at opposite sides thereof where they are disposed in advance of the reflector and will be entirely out of the way.

The invention is illustrated in the accompanying drawings, wherein

Figure 1 is a view taken vertically through the improved shield and a reflector, the view being along the line 1—1 of Figure 2.

Figure 2 is a view showing the reflector partially in rear elevation and partially in section.

Figure 3 is a view taken along the line 3—3 of Figure 1.

Figure 4 is a fragmentary perspective view of one of the arms by means of which the shield sections are movably mounted.

The improved shield constituting the subject-matter of this invention is employed as means for protecting the polished surface of a reflector 1 of a moving picture projecting machine. The shield has companion sections 2 formed of heat-resisting material. These companion sections 2 are semi-circular in shape, as shown clearly in Figure 2, and referring to this figure it will be seen that abutting edges of the two sections are recessed to form an opening 3 through which the carbon 4 extends when the two sections are swung to the operative position in front of the reflector. Therefore, when the current is first turned on, small particles of cut carbon which are thrown off until the arc reaches its maximum degree of intensity will be prevented from striking the polished surface of the reflector and the reflector will not become pitted or otherwise damaged. The shield may also be swung to the operative position when adjusting the carbon.

In order to mount the shield sections for movement from the shielding position shown in Figure 2 by full lines to the inoperative position indicated by dotted lines in this figure, there has been provided mechanism by means of which the two shield sections are suspended and movably mounted. Each of the shield sections is secured to a bracket 5 having a vertically extending arm to which the shield section is secured by screws or bolts 5' and an upper arm 6. The arms 6 of the two brackets extend forwardly at an upward incline from the vertically extending arms and have their upper end portions 7 bent to extend horizontally and provide attaching portions which are secured by screws or equivalent fasteners 8 against the upper faces of the rearwardly extending arms 9 of bell crank levers 10. These bell crank levers are formed with openings 11 to receive the pivot pins or bolts 12 and extend through the brackets 13 between upper and lower arms thereof. Rivets or equivalent fasteners 13' are provided for securing the brackets 13 against the under face of the bridge portion of a main bracket or hanger 14. This hanger is an elongated bracket which extends transversely in the housing of a moving picture projecting machine and has its arms 15 extending upwardly in order that they may be secured in an overhead position within the projector housing against side walls 16 thereof by screws or equivalent fasteners 17. Upper and lower spacers 18 and 19 are provided upon the bolts 12 to maintain the bell-crank levers in proper spaced relation to upper and lower arms of the brackets 13 which may be referred to as auxiliary brackets and these brackets are disposed diagonally with respect to the main bracket or hanger 14, as clearly shown in Figure 3 in order that ample room will be provided between these two brackets to permit unobstructed movement by the bell crank levers. The arms 20 of the bell crank levers are formed with longitudinally extending slots 21 through which extends a pivot pin or bolt 22 carried by the fork 23 of an operating bar or handle 24. A spacer 25 fits upon the bolt 22 between the bell crank levers and, therefore, the bell crank levers may have free sliding and pivotal movement relative to the bolt 22 when the bar or handle 24 is shifted longitudinally of itself. A knob 26 is provided at the rear end of the bar in

order that it may be easily grasped and shifted longitudinally and it will be understood that this bar is of sufficient length to project rearwardly from the housing or casing of the motion picture projecting machine.

When this device is in use, it is mounted in the casing or housing of the moving picture projecting machine and the hanger 14 secured to an overhead support which may be the side walls 16 of the housing or any other convenient overhead support in the housing of the moving picture projecting machine. The hanger is so mounted in the housing of the moving picture projecting machine that when the sections 2 of the shield are in the operative position shown in full lines in Figure 3, they will be disposed immediately in front of the reflector 1 in close proximity thereto. The shield forming sections are of such dimensions that the shield is slightly larger than the diameter of the reflector and, therefore, when the shield is in the operative position, it will entirely cover the reflector and eliminate all danger of cut particles of carbon thrown off by the carbon scratching the polished surface of the reflector. When the arc has reached such an intensity that particles of carbon are no longer thrown off and it is burning with a steady flame, the knob 26 is grasped and the bar or handle 24 brought rearwardly. This movement of the handle causes the bell crank levers to turn about the pivot pins or bolts 12 and the bracket to which the shield sections are secured will be swung forwardly towards sides of the housing of the moving picture projecting machine until they reach the position indicated by dotted lines in Figure 3. In this position, the shield sections will be disposed forwardly of the reflector and in such spaced relation to each other transversely of the housing that they will be out of the way and not constitute an obstruction which would prevent light from being properly projected forwardly by the reflector. When the shield is again needed, it is merely necessary to thrust the handle or bar forwardly to turn the bell crank levers about their pivots to the position shown in full lines in Figure 3 and the shield sections will be returned to the operative position in front of the reflector where they will entirely cover the reflector and form a small opening through which the carbon 4 extends.

Having thus described the invention, what is claimed as new is:

1. A shield for arc lamp reflectors comprising a mounting supported in advance of a reflector, levers pivotally carried by said mounting for swinging movement in a horizontal plane, shield sections carried by said levers and movable therewith from an operative position in front of a reflector about a carbon to an inoperative position in advance of the reflector at opposite sides of the reflector and the carbon, and means for simultaneously imparting movement to said levers and shifting the shield sections into and out of an operative position.

2. A shield for arc lamp reflectors comprising a hanger having means for mounting the same in an elevated position in advance of a reflector and transversely of the carbon, bearing brackets carried by and depending from said hanger in spaced relation to each other laterally thereof at opposite sides of the carbon, shield sections adapted to fit about a carbon in front of a reflector and having meeting edges formed with registering recesses providing a passage to accommodate the carbon, supports for said shield sections extending forwardly from the upper ends thereof at opposite sides of the carbon and pivotally mounted in said bearing brackets and having lever arms extending toward each other and overlapped, and an actuating element pivotally and slidably connected with the overlapped portions of the lever arms and movable to impart pivotal movement to the lever arms and supports and shift the shield sections forwardly from an operative position in front of a reflector to an inoperative position in advance of the reflector at opposite sides thereof.

3. A shield for arc lamp reflectors comprising a hanger having means for mounting the same horizontally in an elevated position in advance of a reflector and transversely of a carbon, bearing brackets carried by said hanger in spaced relation to each other, shield sections adapted to fit about the carbon in edge to edge engagement with each other in front of a reflector, supports for the shield sections extending forwardly therefrom and pivotally mounted in the bearing brackets and having arms extending towards each other transversely of the carbon between the bearing brackets and having overlapped portions formed with longitudinally extending slots, and an actuating member having a portion engaged through the slots of said arms and shiftable longitudinally of the carbon to impart movement to the arms and supports and shift the shield sections from an operative position in front of a reflector to an inoperative position in advance of opposite sides thereof.

4. A shield for arc lamp reflectors comprising a hanger having means for mounting the same in an elevated position in front of a reflector, bearing brackets carried by said hanger in spaced relation to each other, shield sections for fitting about a carbon in front of a reflector, supports for the shield sections each having a vertically disposed arm secured to a shield section and an arm projecting forwardly therefrom, bell crank levers pivotally mounted in the bearing brackets and having rearwardly extending arms secured to the forwardly extending arms of the supports, the bell crank levers also having forwardly extending arms slotted longitudinally and extending towards each other and overlapped, an actuating member shiftable longitudinally, and forks at one end of the actuating member carrying a pin extending through the slots of the bell crank levers whereby shifting of the actuating member longitudinally in one direction will impart pivotal movement to the bell crank levers and swing the supports in a direction to move the shield sections from an operative position in front of a reflector to an inoperative position in advance of the reflector at opposite sides thereof.

5. A shield for arc lamp reflectors comprising a hanger having means for mounting the same in an elevated position in front of a reflector, bearing members carried by said hanger in spaced relation to each other, shield sections for fitting about a carbon in front of a reflector, supports for the shield sections each having an arm projecting forwardly from a shield section, bell crank levers pivoted to the bearing members and having rearwardly extending arms secured to the forwardly extending arms of the supports and forwardly extending arms slotted longitudinally and extending towards each other and overlapped, an actuating member shiftable longitudinally, and a pin carried by said actuating member and extending through the slots of the bell crank levers whereby shifting of the actuating member

longitudinally in one direction will impart pivotal movement to the bell crank levers and swing the supports in a direction to move the shield sections from an operative position in front of a reflector to an inoperative position.

6. A shield for an arc lamp reflector comprising a support, coacting shield sections adapted to fit about a carbon in front of a reflector and constituting a guard between the reflector and the arc producing end of the carbon, arms for said shield sections extending therefrom and pivotally connected with said support and provided with extensions projecting towards each other, and an actuating member having a portion pivotally and slidably connected with the extensions of the arms and being shiftable longitudinally of the carbon between the arms to impart pivotal movements to the arms and shift the shield sections laterally of the carbon from an operative position in front of the reflector to an inoperative position in advance of the reflector.

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