

Dec. 15, 1931.

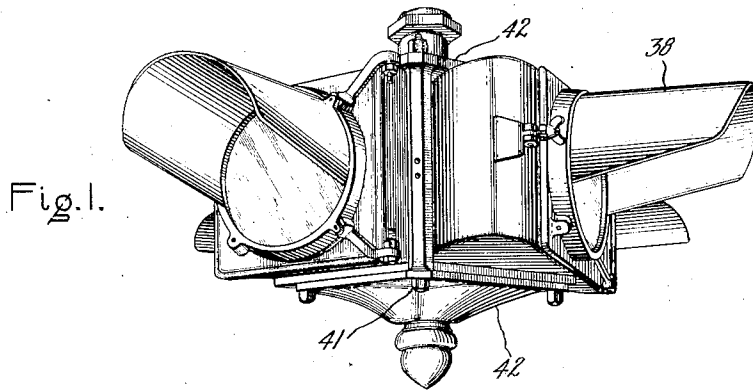
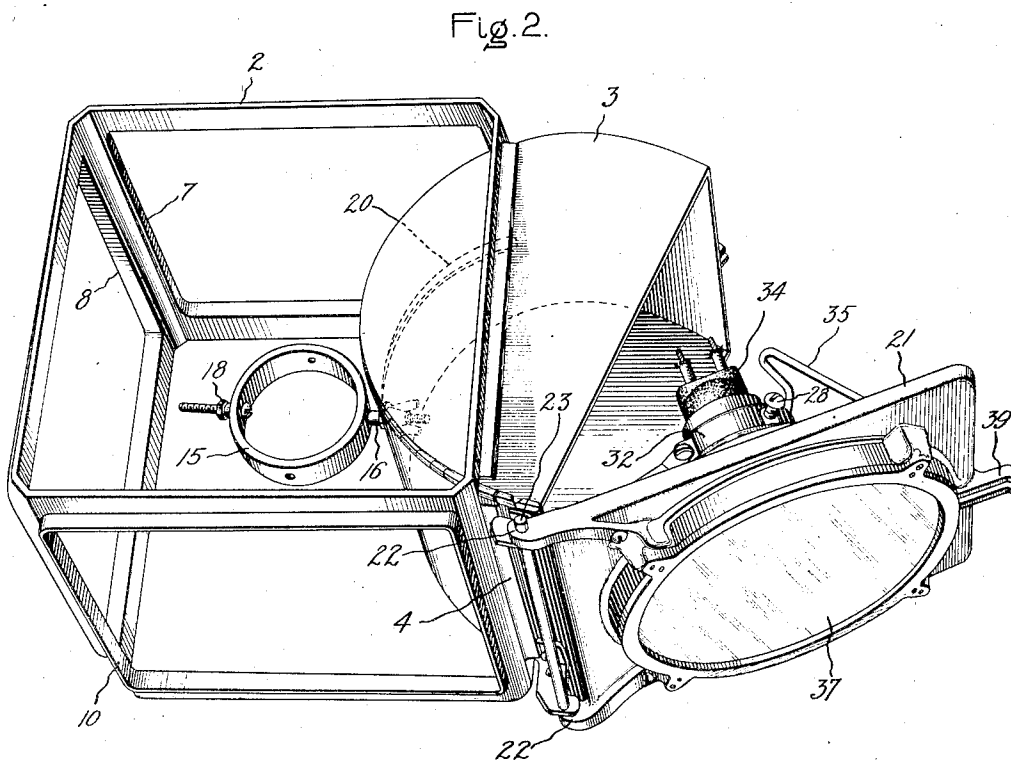
C. A. B. HALVORSON, JR

1,836,845

LIGHT PROJECTOR

Filed Dec. 7, 1927

2 Sheets-Sheet 1



Inventor:
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2 Sheets-Sheet 2

Fig.3.

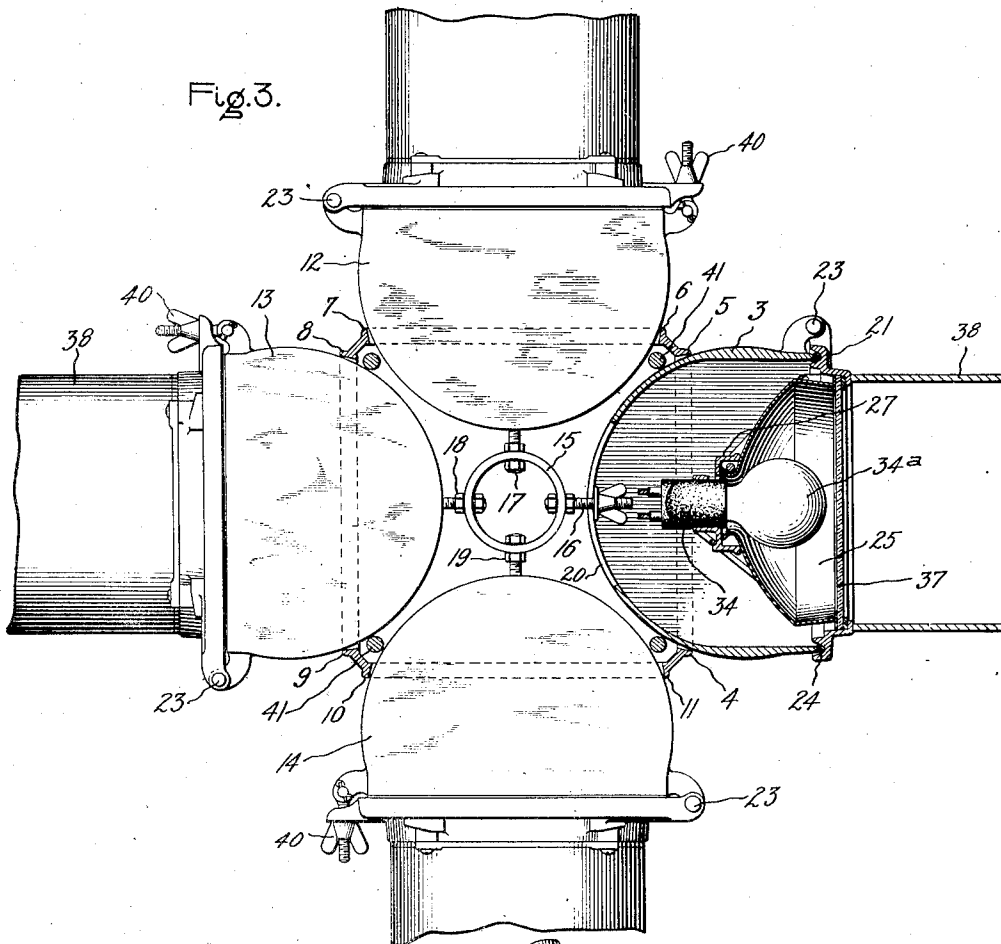
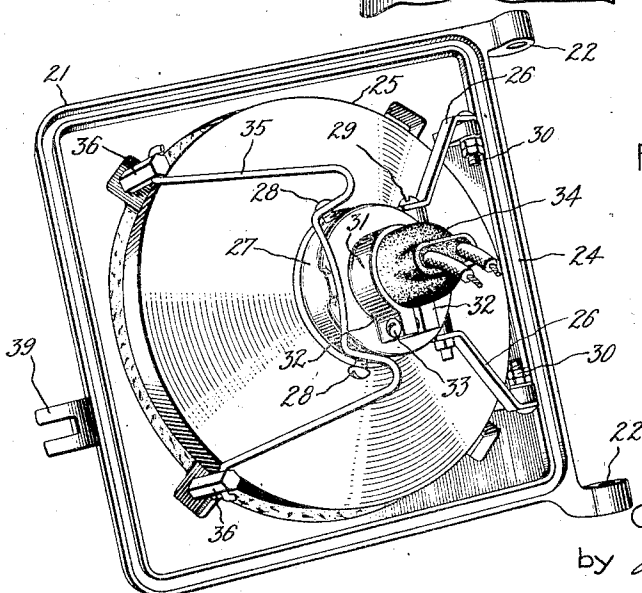


Fig.4.



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UNITED STATES PATENT OFFICE

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LIGHT PROJECTOR

Application filed December 7, 1927. Serial No. 238,430.

My invention relates to light projectors. More particularly it relates to projectors of the type which are especially adapted for use as signalling devices, such as traffic signals.

Among the objects of my invention are the following:

To provide a light projector comprising a frame provided with one or more doors, the door being provided with a lens or cover glass, said door being hinged so that it may be opened and access had to the light source and the reflector element, the door being provided with means for making the projector dust-proof;

To provide in combination with a door of the foregoing character a reflector hinged behind the lens, as for example, on the frame work of the device or on the frame work of the door in order that the reflector may be swung in and out of the casing of the device;

To mount the reflector and the light source as well on the same hinged support, the light source being preferably in the form of an electric light supported in a socket, the socket being secured to the said frame work and the light source projecting from the socket through an opening in said frame work and through an opening in said reflector;

To provide a latch for latching the reflector and the door structure together: in order to protect the projector and the lens a gasket is provided between the lens and the reflector, the latch operating to hold the reflector tightly against the gasket;

To provide a device of the foregoing character in which each door constitutes a unit projector including the light source, the socket, the reflector and the lens, making it possible to remove the unit by removing the door and by substituting one type of unit for another by merely substituting a new door unit;

To provide a projector of the foregoing character in which the various units may be readily adjusted so that the beams may be adjusted with respect to each other; in other words, it is an object of the invention to provide a signalling device comprising a plu-

rality of units, the units being so supported that the beams may be each adjusted horizontally.

The invention also comprises other features herein more fully set forth and claimed. However, the invention will be more readily understood from the following specification, reference being had to the accompanying drawings, in which Fig. 1 shows in perspective a projector embodying the features of my invention and consisting of four units; Fig. 2 is an enlarged perspective view of another form of the device with only one unit shown in position; Fig. 3 is a top view partly in section of the device of the invention showing four units; Fig. 4 is a perspective rear view of one of the units.

Referring more in detail to the drawings and in particular Fig. 2, the projector there shown comprises a square frame 2 having an opening in each one of the four faces, said faces being at right angles, of course, to the top and bottom planes of the frame. With the type of unit shown in Fig. 2 I provide an adjustable drum 3. This drum is seated in bearings in the right hand opening of the frame in Fig. 2. One of the bearings 4 is shown in Figs. 2 and 3. The opposite bearing 5 is shown in Fig. 3. Each of the other windows is provided with corresponding bearings 6 and 7, 8 and 9, 10 and 11, as indicated in Fig. 3. Three additional drums 12, 13 and 14 are provided, one in each of the remaining windows. These four drums 3, 12, 13, and 14 are held together by means of a ring 15 and bolts 16, 17, 18 and 19. As clearly indicated in Figs. 2 and 3, each of the drums is provided with a slot such as the slot 20 which enables the drum to be adjusted in its bearing with respect to the ring 15. It will be seen that by means of the bolts 16, 17, 18 and 19 the drums may be tightly drawn against their respective bearings after the units have been adjusted with respect to the beam.

In the form of device shown in Figs. 2 and 3 it will be seen that each unit comprises a door such as the door 21 also shown in Fig. 4. This door is provided with suitable hinges 22, the door being hinged to the drum 3 by means of a pin 23. Around the rim of the door there

is provided a gasket element 24 in order to render the unit dust-proof and to protect the device against injurious jar. Each unit comprises also a reflector element 25, the reflector being supported on a hinge structure secured to the frame of the door. This hinge structure comprises arms 26 and a central holder element 27, the latter being provided with means for securing the reflector in position as indicated in Figs. 3 and 4. This means may comprise screws 28. The holder 27 is secured to the arms 26 by means of the hinge comprising a bolt 29. Obviously therefor the reflector may be swung about an axis extending through the bolts 30 and may also be rotated about an axis through the bolt 29.

The holder 27 is further provided with a collar 31, the rear portion of which is integral with the element 27, but the forward portions 32 of which are cut away from the body 27 in order to render the forward portion of the collar resilient. The forward portions 32 of the collar are under the control of a screw 33, the arrangement being such that the socket 34 for holding the electric lamp may be inserted in the collar 31 and then clamped in position by means of the screw 33.

Referring to Fig. 3, it will be seen that the socket 34 projects through an opening in the holder 27 and that beyond the socket the electric lamp 34a projects through an opening in the central portion of the reflector element 25.

In order to latch the reflector in position as indicated in Fig. 4 I provide a bail latch 35 which is pivoted at the pins 36, the pins 36 being secured to the door frame.

The lens 37 is held in the door between two gasket elements in order to protect the lens or cover glass from the frame of the door and from the rim of the reflector, and to effect a tight joint, one of the gaskets being located in front of the lens and the other gasket being located behind the lens. It will be seen that each of the units may be provided with a hood 38. For the purpose of latching the unit in closed position with respect to the drum 3, I provide a suitable latch comprising a prong element 39 on the door and a hinged bolt and wind nut element 40.

It will be understood that in the event that a unit is desired consisting of a number of frames such as shown in Figs. 2 and 3 stacked one above the other as is customary, such units may be stacked one above the other and clamped together as for example by means of bolts 41. The unit may be provided with any suitable form of cover and bottom such as a plate 42, see Fig. 1.

It will be understood that while I have disclosed my invention in connection with the specific form of device shown in the drawings, I do not wish to be limited to this particular form inasmuch as in view of the disclosure those versed in the art will readily perceive that modifications may be made of

the character clearly within the spirit of the invention and the scope of the claims contained herein.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. In a lighting unit, the combination of a casing adapted to occupy a fixed position, a door hinged to the casing at one edge whereby it is free to swing away from the casing, said door having an opening, a lens mounted on said door over said opening, a supporting means pivoted along one edge of and at the rear of the door, said supporting means being adapted to project toward the center of the door, a reflector and lamp unit hinged adjacent to its central portion to the supporting means, and means for fastening the reflector and lamp unit to the door, with the reflector in position behind the lens.

2. In a lighting unit, the combination of a casing adapted to occupy a fixed position, a door hinged to the casing at one edge whereby it is free to swing away from the casing, said door having an opening, a lens mounted on said door over said opening, supporting arms pivoted at one end adjacent to one edge of and at the rear of the door, said arms projecting toward the center of the door, a reflector and lamp unit hinged adjacent to its central portion on the other ends of said arms, and a latch for fastening the reflector and lamp unit to the door, with the reflector in position behind the lens.

In witness whereof, I have hereunto set my hand this fifth day of December, 1927.

CROMWELL A. B. HALVORSON, Jr.