

July 31, 1945.

T. I. RESS

2,380,613

LENS ASSEMBLY

Filed July 19, 1944

2 Sheets-Sheet 1

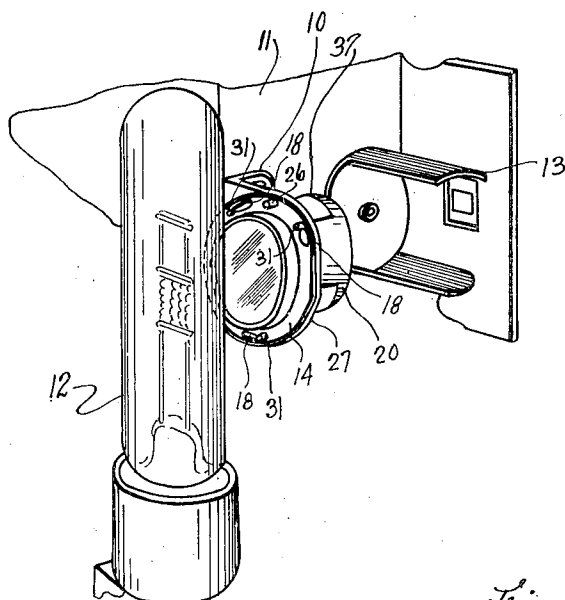


Fig. 1

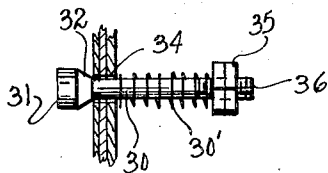


Fig. 6

INVENTOR.

Thomas I. Ress
BY *Charles E. Moody*
His Attorney

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2 Sheets-Sheet 2

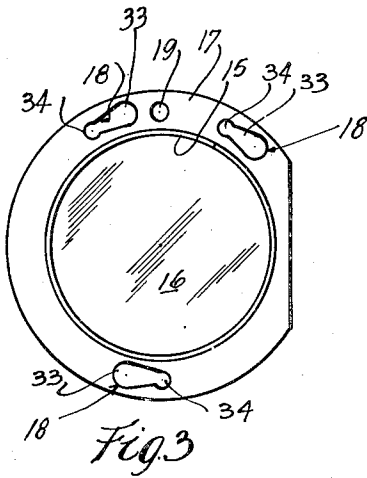
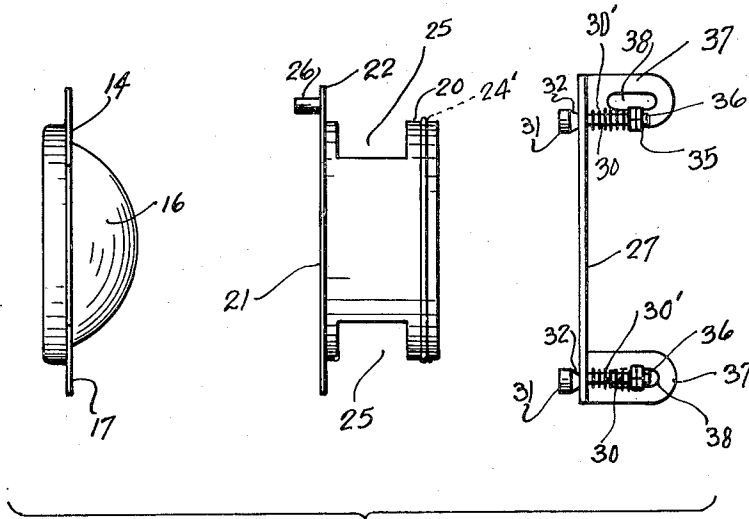


Fig. 2

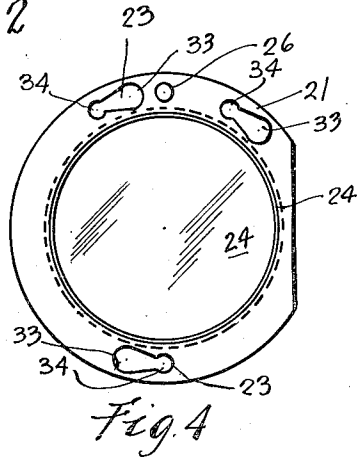


Fig. 4

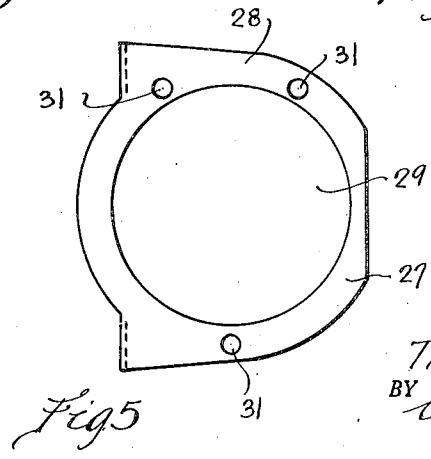


Fig. 5

INVENTOR.
Thomas I. Ress
BY *Charles E. Shurdy*
His Attorney

UNITED STATES PATENT OFFICE

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LENS ASSEMBLY

Thomas I. Ress, Chicago, Ill., assignor to De Vry Corporation, Chicago, Ill., a corporation of Illinois

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5 Claims. (Cl. 88-24)

This invention relates to certain novel improvements in a lens assembly, especially designed and constructed for use in motion picture projecting machines and commonly referred to as a condenser lens.

The invention has for its principal object the provision of an assembly of this character, the parts of which may be readily and expeditiously taken apart to enable cleaning the lens or replacements thereof.

Another object of the invention is the provision of an improved construction of the character hereinafter described and which will be highly efficient in use and economical in manufacture.

A still further object of the invention is a lens assembly which comprises a minimum of parts, thereby facilitating the assembly and disassembly of the same.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a perspective view of parts of a motion picture projecting machine showing my improved condenser lens assembly associated therewith;

Figs. 2 are side elevational views of the lens assembly in disassembled relation with respect to each other;

Fig. 3 is a face elevational view of a frame embodied in the invention;

Fig. 4 is a face elevational view of a housing embodied in the invention;

Fig. 5 is a face elevational view of a mounting block embodied in the invention;

Fig. 6 is a fragmentary sectional detail view of the assembly connecting means embodied in the invention.

Referring particularly to Fig. 1, the condenser lens assembly is indicated at 10, and this condenser lens assembly is mounted upon a wall 11 of the projecting apparatus between a lamp 12 and a revolving shutter 13.

The condenser lens assembly, as more particularly shown in Figs. 2 to 5 inclusive, comprises a frame 14 having mounted therein in any suitable manner, as by means of a bezel ring 15, a lens 16. This frame 14 provides a peripheral flange 17 having formed therein, at predetermined points, bayonet slots 18. Also formed in

this flange 17 is an opening 19, for reasons hereinafter set forth.

The condenser lens assembly further includes a housing 20 having opposite open ends. The open end 21 provides a peripheral flange 22. This flange, like the flange 17 of the frame 14, provides bayonet slots 23 which are adapted to register with the bayonet slots 18 of the flange 17 when the latter flange is arranged in flat abutting relation with respect to the flange 22, in the manner shown in Fig. 1.

The opposite open end of this housing 20 is closed by a lens 24. Portions of the housing, as indicated at 25, are removed to provide vent openings to prevent condensation within the housing.

The lens 24 is held in place by a suitable bezel ring 24'.

The housing 20 carries a locking pin 26 adapted to project through the opening 19 when the flange 17 is arranged in flat abutting relation with respect to the flange 22 whereby to properly register the bayonet slots 23 of the housing with the bayonet slots 18 of the frame 14.

The mounting bracket is indicated at 27 and comprises a flat plate 28 having an opening 29 formed therein. Through this opening 29 is adapted to be projected the housing 20 when the flange 21 thereof is arranged in flat abutting relation with respect to the plate 28. This plate 28 carries spring-controlled pins 30 having heads 31 provided with tapered neck portions 32. These heads 31 are adapted to pass through the enlarged portions 33 of the bayonet slots 18 and 23, and when the assembly is shifted the tapered neck portions 32 are then confined in the reduced openings 34 of the bayonet slots 18 and 23 whereby to effect connection between the frame and housing with respect to the bracket 27. By providing the tapered necks 32, the pins 31 can be urged outwardly against the springs 30' to permit the necessary rotation of the frame 14 and housing 20 relative to the bracket 27 whereby to position the tapered necks in the openings 34. These springs 30' are adjusted upon the pins 30 by suitable nuts 35 threaded upon the threaded portions 36 of the pins 30.

To complete the invention I provide lateral lugs 37 having elongated openings 38 formed therein through which suitable mounting screws (not shown) are adapted to be passed.

To disassemble the parts to clean the lens or to replace broken lens, all that is necessary to do is to rotate the frame 14 and housing 20 relative to the bracket 27 to dispose the heads 31

of the pins 30 in the enlarged portions 33 of the bayonet slots 18 and 23 whereupon both the frame 14 and the housing 20 may be disassembled from the bracket 27.

The simplicity of construction is obvious from the foregoing description. It is also obvious that I provide a simple structure enabling the condenser lens assembly to be disassembled for any purpose whatsoever.

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

1. A condenser lens assembly comprising a frame having a peripheral flange provided with bayonet slots therein, a lens mounted in the frame, a housing having at one open end a peripheral flange provided with bayonet slots adapted to register with the slots of the flange of the frame when said flange is disposed in flat abutting relation with the flange of the housing, a mounting bracket having a central opening through which the housing is adapted to be projected, with the flange of the housing disposed against the bracket, a lens mounted in the opposite open end of said housing, and means on said bracket and engageable in said bayonet slots for releasably connecting said frame and said housing in assembled relation with respect to each other to said bracket.

2. A condenser lens assembly comprising a frame having a peripheral flange provided with bayonet slots therein, a lens mounted in the frame, a housing having at one open end a peripheral flange provided with bayonet slots adapted to register with the slots of the flange of the frame when said flange is disposed in flat abutting relation with the flange of the housing, a mounting bracket having a central opening through which the housing is adapted to be projected, with the flange of the housing disposed against the bracket, a lens mounted in the opposite open end of said housing, and means on said bracket and engageable in said bayonet slots for releasably connecting said frame and said housing in assembled relation with respect to each other to said bracket, said last-named means comprising spring-resisted bolts having heads provided with tapered neck portions adapted to engage said bayonet slots.

3. A condenser lens assembly comprising a frame having a peripheral flange provided with bayonet slots therein, a lens mounted in the frame, a housing having at one open end a peripheral flange provided with bayonet slots

adapted to register with the slots of the flange of the frame when said flange is disposed in flat abutting relation with the flange of the housing, a mounting bracket having a central opening through which the housing is adapted to be projected, with the flange of the housing disposed against the bracket, a lens mounted in the opposite open end of said housing, means on said bracket and engageable in said bayonet slots for releasably connecting said frame and said housing in assembled relation with respect to each other to said bracket, and a slot and pin connection between the frame and the housing for locating the slots of the flange of the frame in proper coincidental relation with the slots in the flange of the housing.

4. A condenser lens assembly comprising a frame having a peripheral flange provided with bayonet slots therein, a lens mounted in the frame, a housing having at one open end a peripheral flange provided with bayonet slots adapted to register with the slots of the flange of the frame when said flange is disposed in flat abutting relation with the flange of the housing, a mounting bracket having a central opening through which the housing is adapted to be projected, with the flange of the housing disposed against the bracket, a lens mounted in the opposite open end of said housing, means on said bracket and engageable in said bayonet slots for releasably connecting said frame and said housing in assembled relation with respect to each other to said bracket, said last-named means comprising spring-resisted bolts having heads provided with tapered neck portions adapted to engage said bayonet slots, and a slot and pin connection between the frame and the housing for locating the slots of the flange of the frame in proper coincidental relation with the slots in the flange of the housing.

5. A lens assembly comprising a frame having bayonet slots formed therein, a lens mounted in the frame, a cylindrical housing open at both ends and provided with bayonet slots adapted to register with the slots of said frame, a mounting bracket having an opening formed therein for the reception of said housing, a lens mounted in said housing, and means carried by the bracket and having tapered portions engageable in said bayonet slots when said slots are arranged in registration with each other for releasably connecting the frame and housing in assembled relation upon said bracket.

THOMAS I. RESE.