

June 14, 1938.

A. VANDERVELD

2,120,449

LIGHTING FIXTURE

Filed Jan. 11, 1937

2 Sheets-Sheet 1

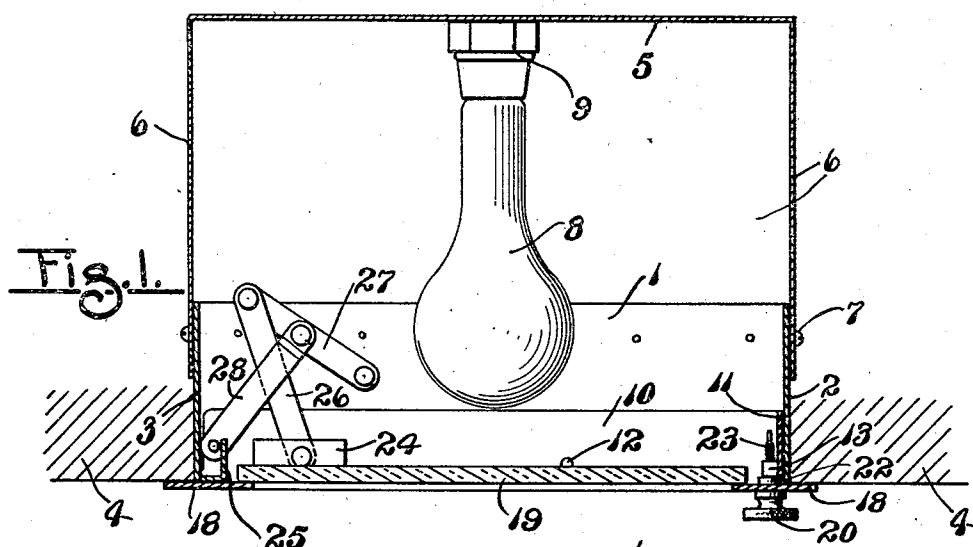
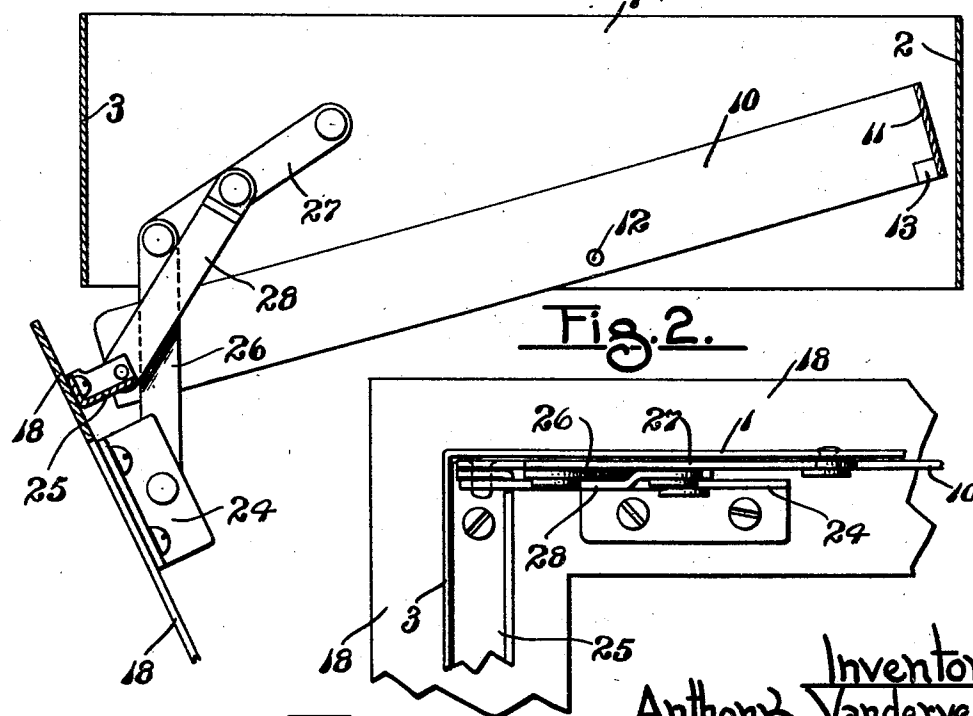


Fig. 3.

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2 Sheets-Sheet 2

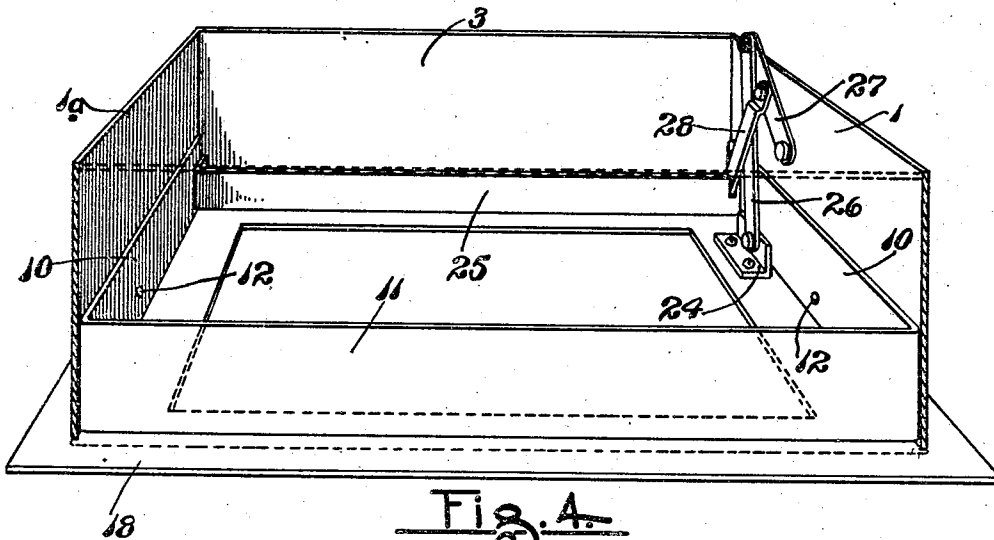


Fig. 4.

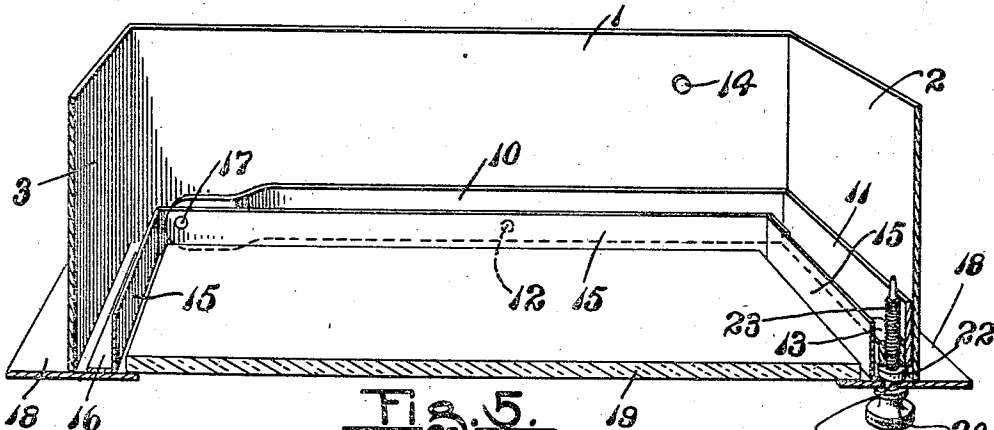


Fig. 5.

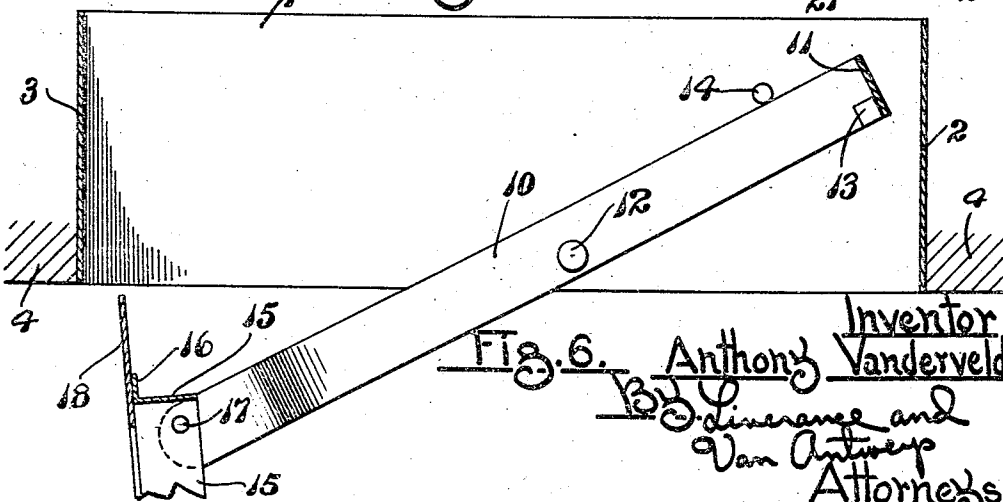


Fig. 6.

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UNITED STATES PATENT OFFICE

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LIGHTING FIXTURE

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8 Claims. (Cl. 240—78)

This invention relates to a lighting fixture of the type which is designed to be installed in and above the ceiling of a room, presenting to the room only a surrounding border and a glass within the border through which the light passes. It is an object and purpose of the present invention to produce a novel and efficient structure, and one which can be simply and easily operated for the removal and replacement of electric light bulbs when the same are burned out or for any other reason require changing or replacement.

In devices of this character the glass plate which is carried by the border frame and which lies directly against the underside of the ceiling wall is either bodily removed or is movably mounted so as to uncover the electric light bulb and gain access thereto for its removal. Because of the overhead position it is very desirable that such uncovering and access to the electric light bulb shall be as easily accomplished as possible, and without danger of marring the ceiling, breaking its finish and the like. The present invention accomplishes these results by novel structure in a very practical manner so that the change of electric lighting bulbs is very quickly, readily and efficiently attained with full assurance of no damage to the ceiling.

For an understanding of the structures embodying the invention and the operation of said structures for the attainment of the objects stated, as well as many others not at this time enumerated, reference may be had to the following description, taken in connection with the accompanying drawings, in which,

Fig. 1 is a vertical section through one form of structure embodying my invention.

Fig. 2 is an enlarged vertical section similar to the section shown in Fig. 1 and showing the apparatus operated for gaining access to the light bulb for inspection or changing.

Fig. 3 is a fragmentary plan view at one corner of the structure shown in Fig. 1.

Fig. 4 is a fragmentary perspective view partly in section illustrating the apparatus which is shown in Figs. 1 and 2.

Fig. 5 is a section and perspective of a different and in some respects simpler construction embodying the invention, and

Fig. 6 is a similar section showing the same operated for access to the light bulb.

Like reference characters refer to like parts in the different figures of the drawings.

In both forms of structure embodying the invention an open housing member is used, substantially square in outline, though not necessarily so, having opposed parallel sides 1 and 1a and other sides 2 and 3, the first of which, for purposes of description, may be called the front side and the latter the rear side. This housing is of sheet metal and in use is inserted upwardly in a suitable opening in the ceiling and may be secured in place to any frame structure of the ceiling such as joists or other parts of the ceiling frame structure. The lower edges of the housing, as shown in Figs. 1 and 6, are flush with the lower side of the ceiling opening and with the lower surface of the plaster or other finish of the ceiling, as indicated at 4, so that the electric light bulb is disposed above the lower side of the ceiling. Over the housing member a sheet metal supporting dome is placed having, as shown in Fig. 1, a top 5 and depending vertical sides 6 which may be telescoped over the sides 1, 1a, 2 and 3 of the housing member and secured in place, for example, by screws as at 7. The light bulb 8 is suspended from the top 5 of the dome, screwing into any suitable socket 9 which is carried directly by the top 5, the light bulb being removed by unscrewing the same in the usual manner that electric light bulbs are removed from holding sockets therefor.

A U-shaped member having parallel sides 10 connected by a cross connecting member 11 is located within the housing member with the sides 10 pivotally mounted between their ends at 12 on the two opposed sides 1 and 1a and with the connecting member 11 disposed adjacent the front side 2. It is located within the housing member except at those times when the light bulb is to be inspected or changed. At the inner side of the connecting member 11 a block 13 is permanently secured having a vertical interiorly threaded opening therethrough. So far as described the structure is the same in both structural embodiments of the invention shown in all of the drawings. In the form shown in Figs. 5 and 6 the pivotal movement of this U-shaped member is limited by a stop 14 carried by one of the sides 1 as shown, so that the forward end of the member and the connecting bar 11 may be swung upwardly about the pivots 12 only to the extent shown in Fig. 6, the pin 14 stopping any further upward movement.

Between the free ends of the sides 10 of the U-shaped member an open frame is mounted, made of sides having vertically extending flanges 15 and outwardly extending flanges 16; opposite sides of this frame having their vertical flanges 15 pivoted near the ends of the sides 10 of the

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U-shaped member at 17. A border frame 18 of rectangular or square shape, to conform to the general shape of the open frame and housing member, is welded to the horizontal flanges 16 and passes underneath the lower edges of the sides 1, 1a, 2 and 3 of the housing member and also extends inwardly beyond the lower edges of the vertical flanges 15 of the open interior frame carried by the sides 10 of the U-shaped member. These inwardly extending portions of the border frame 18 serve as a support for a panel 19 of glass or equivalent light passing material. Usually the glass is not transparent but is of a translucent character so that the light is softened and diffused when it comes from the light bulb and passes therethrough.

With this structure the horizontal border plate 18 and the frame above it to which it is connected may be swung about the pivots 17 and at the same time the U-shaped member turned about the pivots 12 to take the position shown in Fig. 6. With such movement the outer edges of the border plate 18 do not engage against the under surface of the ceiling so as to mar or deface it, but are lowered and carried away from the ceiling, and at the same time the glass plate 19 carried thereby is swung to a position such that there is free access to the electric light bulb for inspection, removal or changing. To hold the parts in their usual and normal position such as they have when they are in use, a screw having a head 20, a short shank 21 which passes through one side of the border plate 18, a collar 22 to hold the screw in place thereon and a screw threaded part 23 is mounted on one side of the border plate 18, as shown in Fig. 5, in a position that it may be threaded upwardly through the block 13 previously described, holding the light passing and diffusing plate 19 in horizontal position, the border plate or frame 18 around it likewise in horizontal position and snugly against the lower side of the ceiling; and only these parts of the structure are exposed to be seen from the room.

When the light bulb is to be changed the screw described is operated to disconnect it from the block 13 and the parts swing to the position shown in Fig. 6. After the bulb has been changed the parts are returned to position and using one hand to screw the screw threaded member 23 through the block 13 and the other to hold the opposed side of the frame 18 in closed position the parts may be very readily returned to and held in the normal position which they occupy such as shown in Fig. 5.

In Figs. 1 to 4, inclusive, the structure is modified in certain particulars. The open border plate or frame 18 upon which the light passing plate 19 is carried does not have any open frame with angular frame members having flanges such as 15 and 16 associated therewith. Instead a bracket 24 is connected to one side of the border frame 18 and an angle bar 25 to the adjacent rear side. A link 26 is pivotally connected at one end to the bracket 24 and has a pivotal connection at its other end to one end of a second link 27 which, at its opposite end, is pivotally connected to the side 1. A second link 28 is pivoted to the end of the bar 25 and the free end of the adjacent side 10 of the U-shaped member and has a pivotal connection at its opposite end to the link 27 substantially midway between its ends as shown in Fig. 2.

With this construction no stop 14 is required. Operating the screws to unscrew the threaded portion 23 from block 13 releases the parts to take

the position shown in Fig. 2, and they are automatically stopped substantially in such position. After the bulb has been changed it is necessary merely to turn the border frame 18 to its upper position, start the screw through the block 13 and as the screw is tightened the entire border frame or plate 18 is brought snugly against the lower edges of the sides 1, 1a, 2 and 3 of the main supporting and first described open housing member of the structure. One hand only is required for lifting the parts from the position shown in Fig. 2 to that shown in Fig. 1 and then after the screw has been started through the block 13 one hand only is required to tighten the screw. This latter structure, while having perhaps more parts and being slightly more expensive to manufacture than the other, is in some respects a preferred form because of its even greater ease of operation than that shown in Figs. 5 and 6. But in both forms of structure there is simple and easy operation for access to the light bulbs and complete assurance that no unsightly defacement of the ceiling underneath or around the border frame plate 18 will take place.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a construction of the class described, a housing having an open lower side, a member of U-shaped form having the sides thereof pivotally connected between their ends to the sides of said housing, said member being located within the housing and with its lower edges substantially flush with the lower edges of the sides of the housing in one position thereof, an open frame of flat metal pivotally connected adjacent one of its sides to the free end portions of the sides of said U-shaped member, a light passing plate located upon said open frame at its upper side and covering the opening therein, and detachable means for connecting said U-shaped member with said open frame whereby said open frame may be moved to a horizontal position at and in close engagement with the lower end of the housing, or may be swung and simultaneously lowered to an open position, as specified.

2. A construction containing the elements in combination defined in claim 1, said releasable connecting means between the open frame and the U-shaped member comprising, a manually operable element carried by the open frame at the side thereof opposite the side having a pivotal connection to the sides of the U-shaped frame, and a means on the U-shaped frame between the sides thereof with which said manually operable member may be connected and disconnected.

3. A construction containing the elements in combination defined in claim 1 wherein said means for releasably connecting the U-shaped member and said open frame comprises, a block having a vertically threaded opening there-through secured to the U-shaped member and a rotatably mounted screw carried by the open frame for threading through said block, the lower end of said screw having a manually engageable head for turning the same.

4. A lighting fixture comprising, a housing having an open lower side, an open frame adapted to be positioned at the lower open side of the housing and against the lower edges of the sides thereof, bars pivotally mounted between their ends within said housing and upon opposed sides

thereof, means pivotally connecting said bars at one end to said open frame, means for releasably connecting said open frame to said bars, said means being carried by the open frame at the side thereof opposite the side which is pivotally connected to said bars, and a plate of light passing material located at the upper side of said flat open frame and over the opening therein, substantially as and for the purposes specified.

5. A lighting fixture comprising, a housing having an open lower side, an open frame adapted to be positioned horizontally at the lower side of the housing and against the lower edges of the sides thereof, bars pivotally mounted between their ends within said housing and upon opposed sides thereof, said bars at their lower edges being substantially flush with the lower edges of the sides of the housing upon which they are mounted when said bars are horizontally positioned, a bar permanently secured at the upper side of one side of said open frame, pivotal connections between one end of said first mentioned bars and said last named bar, means for releasably connecting the open frame to said first bars at the side of the frame opposite its pivotal connection to said bars, and a plate of light passing material located at the upper side of and covering the opening in said flat open frame.

6. A construction containing the elements in combination defined in claim 5, combined with a

bracket secured at the upper side of said open frame adjacent one end of the bar secured to said open frame, a link pivotally mounted at one end on a pivot which connects said first and second bars, a second link pivotally connected at one end to said bracket, and a third link pivotally connected at one end to the adjacent side of the open frame at a point above said first mentioned bars, said first link having pivotal connection to the third link between its ends and said second link having a pivotal connection at its other end to the other end of the third link, as and for the purposes specified.

7. A lighting fixture comprising a casing having an open lower side, a closure for said open lower side, a bar pivoted between its ends to said casing and pivotally connected at one of its ends to the closure and a contractible, disconnectible connection between said closure and the end of the bar opposite to that end which is pivotally connected to the closure.

8. A lighting fixture comprising a casing having an open lower side, a closure for said open lower side, a U-shaped bar pivoted between its ends to said casing and pivotally connected at one of its ends to the closure and a contractible, disconnectible connection between said closure and the end of the bar opposite to that end which is pivotally connected to the closure.

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