

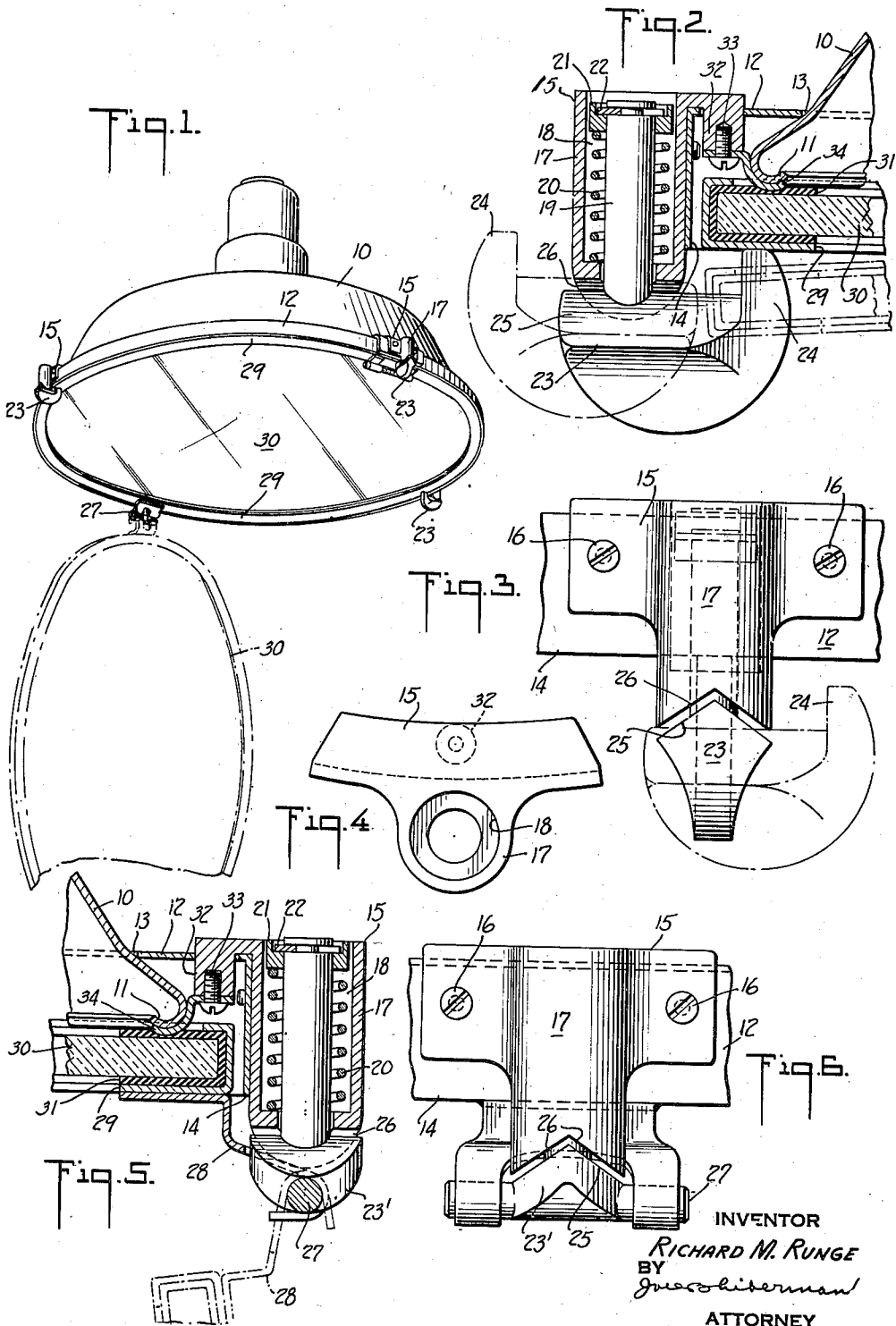
March 14, 1944.

R. M. RUNGE

2,344,327

CLOSURE

Filed Sept. 26, 1940



## UNITED STATES PATENT OFFICE

2,344,327

## CLOSURE

Richard M. Runge, Meriden, Conn., assignor to  
The Miller Company, Meriden, Conn., a corporation of Connecticut

Application September 26, 1940, Serial No. 358,412

9 Claims. (Cl. 220-55)

The present invention relates to closures.

The present invention contemplates closures having a fixed supporting frame adapted to be secured about the mouth of an article, for example, a reflector and a cover plate with supporting frame detachably secured to the fixed frame.

According to the present invention the fixed frame is provided with rotatably mounted latch or presser members each adapted to be turned so as to bring a portion of the latch member opposite the second frame and the latch member is under the control of a spring which presses the second frame and cover plate toward the mouth of the article.

The present invention also contemplates the provision of camming elements effective when the latch member is swung away from the cover to further tension the spring and hold the latch member in the position to which it is turned.

Other and further objects will appear as the description proceeds.

The accompanying drawing shows, for purposes of illustrating the present invention, an embodiment in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In this drawing:

Figure 1 is a prospective view of an annular reflector with an annular closure;

Figure 2 is an enlarged view taken through one of the latch members and supporting bracket;

Figure 3 is a side elevational view of the same;

Figure 4 is a top plan view of a bracket used for supporting the latch member;

Figure 5 is a transverse sectional view through a hinge support; and

Figure 6 is a side elevational view of a hinge support.

In the drawing 10 illustrates an article having an annular mouth such as a reflector. This mouth terminates in a bead 11. A sheet metal ring 12 has an upper flange with an opening 13 smaller than the outside diameter of the article and adapted to fit against the back side of the article, as indicated. This frame 12 has a skirt portion 14 of slightly larger diameter than the outside of the article and extending some distance beyond its mouth.

A number of brackets 15 are secured to the frame ring 12 by screws 16. Each bracket has a boss 17 provided with a counterbored opening 18 parallel with the frame axis adapted to re-

ceive a shaft 19 and coiled spring 20. The spring is held under compression by a ring 21 secured to the end of the shaft by a washer 22. The lower end of the shaft 19 carries a head or larger member 23 with a laterally extending pressure finger or presser element 24 adapted to be turned from a position opposite the mouth of the reflector, as indicated in full lines in Figure 2, to the dot and dash line positions of Figures 2 and 3. The head 23 is V-shaped, as indicated at 25, and is received in a V-shaped notch 26 formed in the boss 17.

As shown in Figures 5 and 6, the shaft 19 is carried in the same form of bracket as above described, but this shaft 19, instead of being connected to a head of the type shown in Figures 2 and 3, is provided with a head 23' having a hinge pin 27 and this hinge pin carries an arm 28. This arm is secured to a ring 29, which receives a light transmitting cover plate 30, preferably having a gasket 31 about the edge.

The brackets 15 extend inwardly over the top of the ring 12 and have lugs 32 extending downwardly and tapped to receive screws 33 by which clips 34 may be secured in place. These clips engage the periphery of the reflector and keep the upper ring fixed to the reflector.

When the closure is in use all of the latch members 24 are swung to the position shown in Figures 1 and 2. The parts are so designed that the springs 20 are under tension and this causes the three latch heads of the type shown in Figure 2 and the hinge member of the device shown in Figures 5 and 6 to press the cover plate toward the mouth of the reflector. The clips 34 are so thin that the gasket yields sufficiently to imbed them and the gasket is held tightly against the mouth of the reflector.

To release the ring 29 it is merely necessary to give the presser elements a quarter turn, which will move them clear of the ring 29. Each will then be moved down as indicated in dot and dash line position of Figure 3. If given a further quarter revolution the V-shaped elements are opposite one another and the spring moves a latch member to the dot and dash line position of Figure 2. The cover may then be swung down to the dot and dash line position as indicated in Figure 1.

While the closure shown in the drawing is adapted for use in annular reflectors, it is obvious that the same latch elements, hinge parts, brackets and associated parts could be employed in a device having a rectilinear reflector and a rectilinear closure.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claims, I wish it to be understood that the particular form shown is but one of these forms, and various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. In a closure, a generally flat frame shaped to form a closed figure and adapted to receive from its front face the open mouth of an article and to be secured to said article with the article protruding into said frame a predetermined distance, the frame having a plurality of openings spaced outside its inner margin and having their axes substantially normal to the plane of the frame, a shaft slidably and rotatably carried in each opening, each shaft carrying a laterally extending pressure finger spaced forwardly of the inner edge of the frame and of the protruding portion of the received article and movable from an inner position opposite the inner edge of the frame and of the received article to an outer position, a spring acting on each shaft to move it axially and urge the finger thereon rearwardly toward the frame and article, a second frame of similar contour to the first receivable between the shafts and carrying a closure plate, the second frame being disposed behind the fingers when in their inner positions and adapted to be pressed thereby against the lower face of said article, the dimensions of the parts being such that the springs create pressure between the frames and mouth of the article, the adjacent surfaces of the first frame and each pressure finger being formed to provide cooperating cam surfaces effective on turning the pressure finger to swing it outwardly to move the said finger forwardly and separate it from the second frame.

2. A closure such as claimed in claim 1, wherein one of the pressure fingers is hingedly secured to the second frame and is fixedly secured to the corresponding shaft.

3. A closure such as claimed in claim 1, wherein the frames are annular and the first frame includes a sheet metal ring of L-shaped cross section and a plurality of lugs, each lug providing an opening for one of the shafts and being exterior of the ring.

4. A closure such as claimed in claim 1, wherein the frames are annular and the first frame includes a sheet metal ring of L-shaped cross section and a plurality of lugs, each lug providing an opening for one of the shafts and being exterior of the ring, and wherein the lugs have cam surfaces of the first frame.

5. A closure comprising a normally fixed ring, a closure plate, a closure plate supporting ring disposed in front of the first ring, a plurality of latch members pivotally secured to the first ring to turn about axes parallel to the ring axis, said axes being disposed at a greater radius than the periphery of the supporting ring, and springs urging the latch members rearwardly, the latch members having eccentrically located heads bearing on the second ring to press the ring rearwardly, the adjacent surfaces of the latch members and first ring having cooperative cam surfaces which effect spring compression when the

corresponding latch member is turned to swing the head thereof outwardly, the latch member being revolvable to clear the second ring so that the ring may be moved downwardly below the latch members.

6. In a device of the class described, a sheet metal ring of L-shaped cross section having a flat flange and a peripheral band, a body secured to the flange and protruding part way into the ring, lugs secured to the outer face of the band and having holes of stepped diameters normal to the plane of the flange with the smaller diameter hole more remote from the flange, V-shaped notches in the ends of the lugs remote from the flange, a shaft extending through each hole and carrying a spring and abutting washer in the end within the large diameter part of the hole, an arm carried by the end of the shaft protruding through the smaller diameter hole, said arm having a V-shaped key urged into one of the notches by the spring when in alignment therewith, and a cover for the end of the body pressed against the body by the arms, the thickness of the cover being sufficient to keep the spring under tension so that they do not completely enter the notches.

7. A closure such as claimed in claim 1, wherein the said article is the reflector of a direct lighting luminaire including a light source and the closure plate is a light transmitting plate.

8. A device such as claimed in claim 6, wherein the said body is in the form of a luminaire having a light source and a reflector and the cover is in the form of a light transmitting plate.

9. In a closure, a generally flat frame shaped to form a closed figure and adapted to receive from its front face the open mouth of an article and to be secured to said article with the article protruding into said frame a predetermined distance, the frame having a plurality of openings spaced outside its inner margin and having their axes substantially normal to the plane of the frame, a shaft slidably and rotatably carried in each opening, each shaft carrying a laterally extending pressure finger spaced forwardly of the inner edge of the frame and of the protruding portion of the received article and movable from an inner position opposite the inner edge of the frame and of the received article to an outer position, a spring acting on each shaft to move it axially and urge the finger thereon rearwardly toward the frame and article, a second frame of similar contour to the first receivable between the shafts and carrying a closure plate, the second frame being disposed behind the fingers when in their inner positions and adapted to be pressed thereby against the lower face of said article, the dimensions of the parts being such that the springs create pressure between the frames and mouth of the article, the first frame having V-shaped grooves extending across the shaft axes and each rotatable pressure finger being provided with a V-shaped element adapted to register with one of the grooves when the pressure finger is in the inner position and engageable with the sides of said groove to move the finger forwardly and separate it from the second frame when the shaft is rotated.

RICHARD M. RUNGE.