Jan. 7, 1969 B. P. DUNCKEL 3,420,995

SELF-LOCKING LATCH

Filed Oct. 22, 1965 Sheet 1 of 2

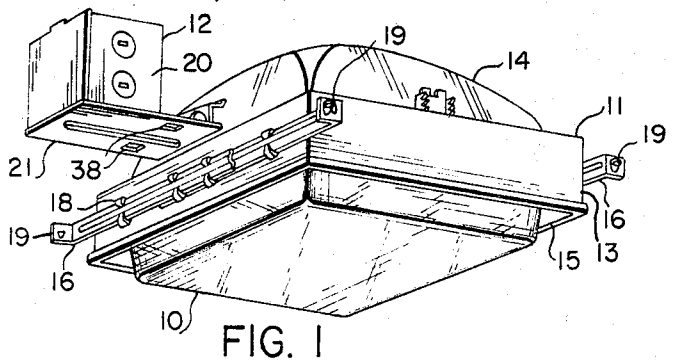
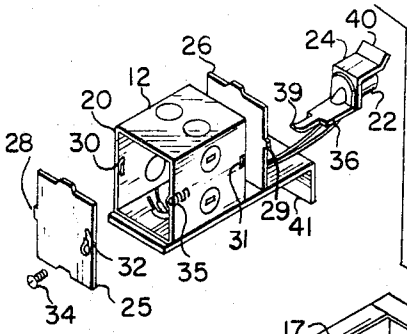


FIG. 1



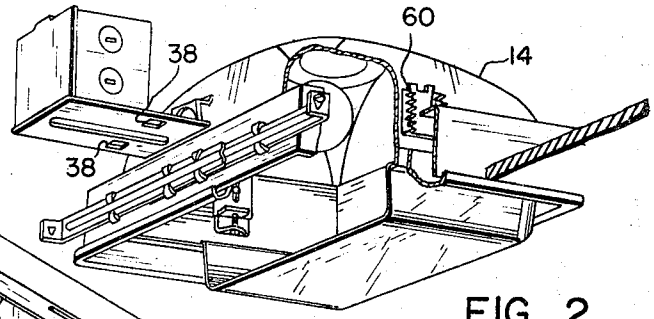
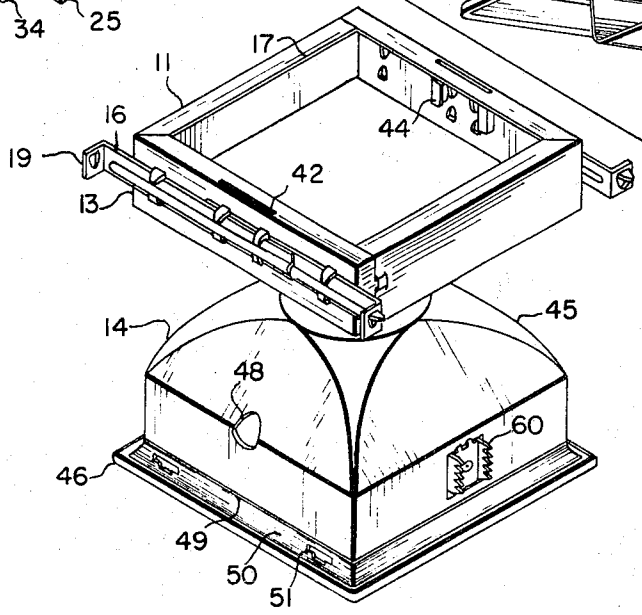


FIG. 2



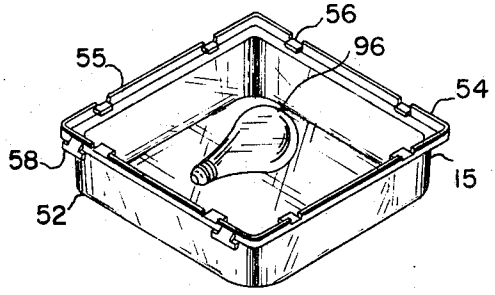


FIG. 3

INVENTOR.
BRUCE PATTEN DUNCKEL

BY Newton, Hopkins, Jones & Ormsby

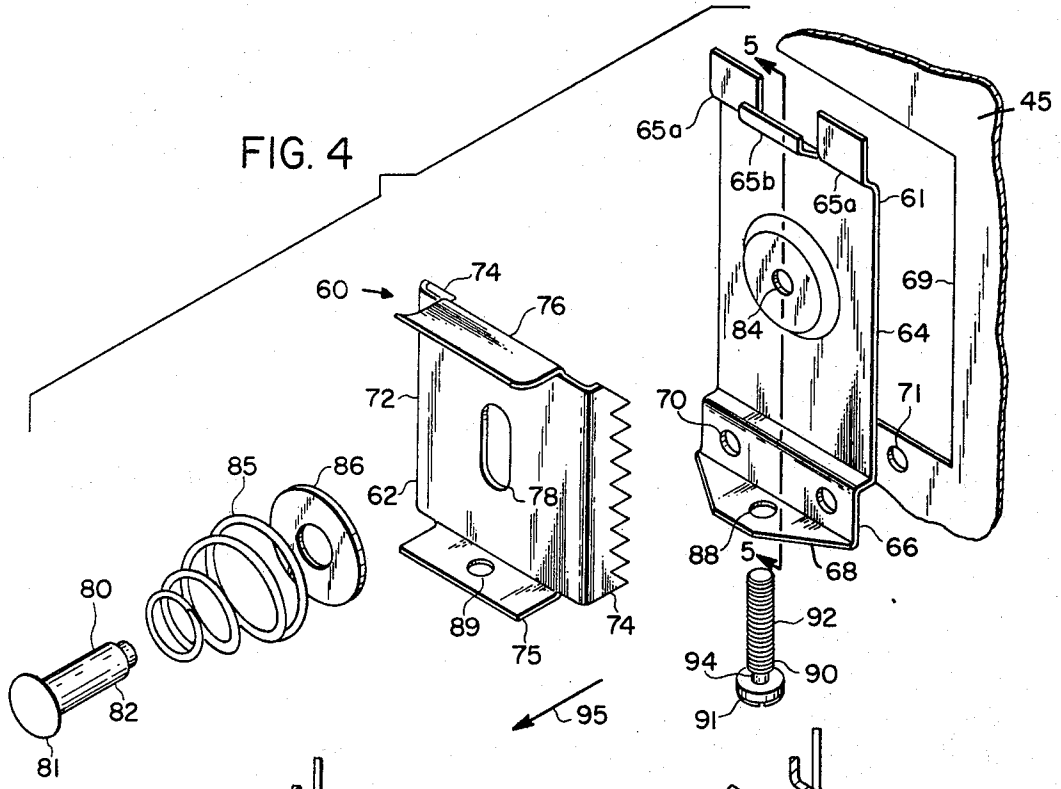
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SELF-LOCKING LATCH

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FIG. 4



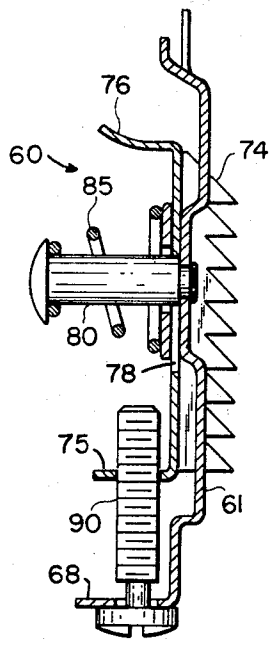


FIG. 6

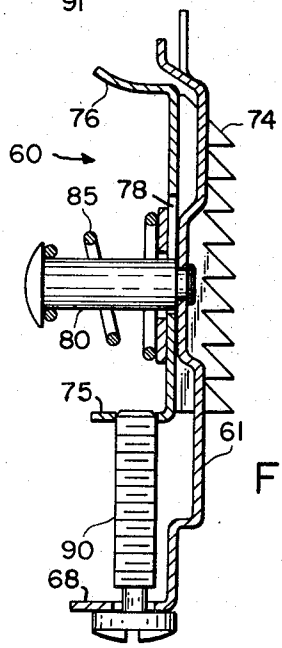


FIG. 5

INVENTOR
BRUCE PATTEN DUNCKEL

BY Newton, Hopkins, Jones & Ormsby

ATTORNEYS

United States Patent Office

3,420,995
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SELF-LOCKING LATCH

Bruce Patten Dunckel, Stone Mountain, Ga., assignor, by mesne assignments, to Lithonia Lighting, Inc., Atlanta, Ga.

Filed Oct. 22, 1965, Ser. No. 502,038
U.S. Cl. 240—78 6 Claims
Int. Cl. F21s 1/06; E05c 5/00

ABSTRACT OF THE DISCLOSURE

A self-locking latch for holding a lighting fixture within a mounting frame. Serrated or saw-toothed edges on the latch are biased to project through slots in the fixture for engaging a flange on the mounting frame. After the fixture is inserted into the mounting frame, a screw extending through a flange on the fixture and threaded into the latch is turned to pull the fixture tightly into the frame to make the latch difficult to release.

This invention relates to a self-locking latch, and more particularly to a self-locking latch of the type adapted to be used to insert a reflector of a lighting fixture into a mounting frame therefor that is positioned inside the ceiling of a building.

Recently it has become desirable to construct homes and buildings with acoustical tile ceilings, or ceiling material similar thereto, portions of which are easily removed or replaceable. The manner in which acoustical tile is attached to a ceiling is generally that support means are suspended from the ceiling or adjacent walls and run across the ceiling, and the acoustical tile is attached to the support means. This manner of construction creates a space between the original ceiling of the building and the acoustical tile which can be utilized, if desired, to run heat ducts, electrical wires, plumbing, and other items necessary to the construction of the building.

Because of the space created between the original ceiling of a building and an acoustical tile ceiling, it has become convenient to install ceiling light fixtures in the acoustical tile ceiling so that light fixtures are recessed into the acoustical tile ceiling and only a small portion of the fixture extends below the acoustical tile ceiling level. This method of installation is desirable since the light fixture is not noticeable when it is not illuminated, and it does not hang down a distance below the acoustical tile ceiling so that it might interfere with other furniture or fixtures in the room, or hang down low enough so that a person walking through the room would inadvertently bump into the dangling fixture. Of course, the lower the ceiling, the more desirable it is to have the light fixture recessed into the ceiling.

In the past, fixtures suitable for mounting in acoustical tile ceilings have been available, but have been troublesome and annoying to install. Some of these fixtures must be installed when the ceiling is being installed, and the elements utilized in positioning the fixture in the ceiling are awkward and difficult to manipulate, and are constructed in a manner so that the portion of the fixture extending into the room below the ceiling is not easily aligned and leveled with the surface of the ceiling.

Accordingly, the present invention relates to a self-locking latch which is adapted to be connected to the reflector of a lighting fixture and engage a mounting frame mounted between the original ceiling and an acoustical tile ceiling so that the mounting frame can be positioned inside the acoustical tile ceiling, connected to a junction box, and the reflector can be inserted into the mounting frame, through the acoustical tile ceiling from below the ceiling, so that the self-locking latch locks the reflector to the mounting frame. With this arrangement it can be seen that the junction box, its associated wiring, and the mounting frame can be positioned between the acoustical tile ceiling and the original ceiling of the building while the acoustical tile ceiling is being constructed, and after the completion of the acoustical tile ceiling the reflector can be inserted through the hole in the ceiling, engaging the mounting frame, a light bulb screwed into the electrical connection, and the appropriate glass placed over the bulb.

Accordingly, it is an object of this invention to provide self-locking latch for connecting a reflector of a light fixture to its mounting frame whereby the reflector can be inserted varying distances into the mounting frame.

Another object of this invention is to provide a self-locking latch adapted to be connected to the reflector of a lighting fixture, whereby the reflector can be inserted into a mounting frame therefor a varying distance, and latch can be adjusted so that the mounting frame and the reflector are adjusted toward each other so that the reflecor can be perfectly aligned with its surroundings.

Another object of this invention is to provide a lighting fixture of the type recessed into the ceiling of a building, wherein the fixture is easily assembled and adjusted.

Another object of this invention is to provide a latching means adapted to lock an element to a mounting frame, wherein the mounting frame is positioned interiorly of the surface of the ceiling, wall or floor, and the element is adapted to project slightly outwardly of the ceiling, wall or floor.

Another object of this invention is to provide a self-locking latching means that is easily manipulated adjustable, and well designed to meet the demands of economic manufacture.

Other objects, features and advantages of the present invention will become apparent upon reading the following specification, taken in conjunction with the accompanying drawing, in which:

FIG. 1 is a perspective view of an assembled light fixture.

FIG. 2 is a perspective view of an assembled light fixture, with parts broken away to show the interior.

FIG. 3 is an exploded perspective view of a light fixture, showing its manner of assembly.

FIG. 4 is an exploded perspective view of a self-locking adjustable latch.

FIG. 5 is a side elevational view, partially in cross section, of the self-locking adjustable latch taken along lines **5**—**5** of FIG. 4.

FIG. 6 is a side elevational view of the self-locking adjustable latch, smilar to FIG. 5, but showing the latch in its locked position.

Referring more particularly to the drawings, in which like numerals indicate like parts throughout several views, FIG. 1 shows an assembled light fixture **10** having a mounting frame **11**, a junction box **12**, reflector **14**, and door **15**. As shown in FIGURE 3, the mounting frame **11** is generally rectangular in shape and has a vertical side wall portion **13** and an inwardly projecting rim **17**. The hanger bars **16** are slideably attached to opposite sides of the mounting frame **11** on its vertical side wall portion by means of the tabs **18**. The hanger bars **16** are slid along the edge of the mounting frame **11**, between the mounting frame and the tabs **18**, so that the tabs slideably receive the hanger bars **16**. Since the hanger bars **16** are slid into the tabs **18** from opposite directions, they can be positioned so that their ends **19** do not project beyond the side of the mounting frame perpendicular to the side to which they are attached. Of course, the hanger bars can be slid outwardly of the mounting frame, as shown in

FIGS. 1–3, and still be securely fastened to the mounting frame because of the close spacing of the tabs **18**.

The junction box assembly **12** comprises a junction box **20**, a junction box support **21**, and an electric light bulb socket **22**, and a socket support **24**. The junction box **20** comprises doors **25** and **26** which are connected to the box **20** by fitting tabs **28** and **29** into the cut-out portions **30** and **31** of the box **20**, and attaching screws **34** through hole **32** to the box **20** at **35** (not shown for the door **26**). The socket support **24** comprises a runner **36** adapted to be positioned parallel to the junction box support **21** and slideably held thereby in the tabs **38**. The runner **36** terminates in a tab **39** disposed vertically to the runner **36**, and the junction box door **26** is arranged so that it closes over the runner **36** so that the tab **39** is positioned inside the junction box **20**. The socket support **24** has an angle support portion **40** positioned above the light socket **22**, which is adapted to hold the light socket away from the reflector **14**.

With this arrangement, it can be seen that the electrician, upon installing the light fixture, can connect the building wiring to the wiring of the light socket **22**, connect the light socket **22** and its support **24** to the junction box support **21**, position the door **26** on the junction box which would lock the light socket **22** to the junction box, and close the rear of the junction box **20** with its door **25**.

The support **21** of the junction box assembly **12** has a connecting piece **41** disposed perpendicular thereto. The connecting piece **41** is arranged so that it fits through an elongated aperture **42** and is engaged by the tabs **44** in the mounting frame **11**. An aperture **42** and tabs **44** are located on opposite sides of the mounting frame **11**, adjacent the hanger bars **16** so that the junction box assembly can be mounted on either side of the mounting frame **11**.

A reflector **14** has a main body portion **45** and a flanged portion **46**. The main body portion **45** is dimensioned slightly smaller than the interior perimeter of the mounting frame **11**, while the flanged portion **46** is dimensioned so that its perimeter is substantially larger than the perimeter of the mounting frame **11**. Since the mounting frame **11** comprises a generally vertical side wall portion **13** and an inwardly projecting rim **17**, the interior perimeter of the mounting frame is defined by the interior perimeter of the inwardly projecting rim **17**, and the exterior perimeter is defined by the outer surface of the vertical side wall portion **13**. Thus, the main body portion **45** of the reflector **14** is smaller than the inner perimeter of the inwardly projecting rim **17**, while the exterior perimeter of the flange portion **46** of the reflector is larger than the exterior perimeter of the vertical portion of the mounting frame. With this arrangement, it can be seen that the reflector can be slipped into the mounting frame so that the main body portion extends above the mounting frame, while the flanged portion **46** limits the movement of the reflector **14** through the mounting frame **11**.

The reflector **14** has an aperture **48** in its main body portion that is sized to receive the light socket **22** of the junction box assembly. The flanged portion **46** of the reflector **14** has a stepped portion **49** and an outwardly extending flange **50**. The stepped portion **49** has T-shaped apertures **51** along one side thereof and a bendable tab (not shown) on the side opposite to the side defining the T-shaped apertures. The door **15** comprises a lens **52** and a frame **54**. The frame **54** receives the lens **52** and firmly holds it in place by means of the continuous inwardly-extending flange **55** disposed on one side of the lens and the plurality of tabs **56** disposed around the frame on the other side of the lens. The frame **54** also has a pair of outwardly-extending T-shaped tabs **58** attached to one side thereof and spaced apart a distance equal to the spacing between the T-shaped apertures **51**. The door **15** is attached to the reflector **14** by slipping the T-shaped tabs **58** into the T-shaped apertures **51**, and pivoting the door up parallel to the face of the reflector so that it fits snugly within the stepped portion **49** of the flanged portion **46** of the reflector, whereupon the bendable tab (not shown) on the side of the reflector opposite to the T-shaped apertures **51** receives the door and firmly holds it in this position.

The reflector **14** has a pair of latches **60** mounted in its main body portion, on opposite sides thereof. As is shown in FIGS. 4–6, the latches **60** comprise generally a mounting piece **61** and a latching element **62**. The mounting piece **61** has a rectangular base portion **64**, support tabs **65**, attaching flange **66** and an adjusting flange **68**. The reflector **14** defines rectangular holes **69** on opposite sides thereof of sizes slightly larger than the rectangular base portion **64** of the latches **60**. The latches **60** are connected to the reflector **14** by positioning each latch inside the main body portion **45**, positioning the tab **65***a* outwardly of the main body portion **45**, while keeping the tab **65***b* inwardly of the main body portion **45**, and sliding the latch upwardly so that the supporting tabs **65** grip the main body portion **45** of the reflector **14**. The rectangular base portion **64** is then pivoted so that it is contained within the rectangular hole **69** and the attaching flange **66** comes to rest against the side of the main body portion **45** of the reflector. The attaching flange is then connected to the main body portion **45** by inserting appropriate rivets or screws through the mating apertures **70** and **71** of the attaching flange **66** and the main body portion of **45**, respectively.

A latching element **62** is positioned adjacent the rectangular base portion **64** of the latch **60**. The latching element **62** comprises a body portion **72**, wing pieces **74** disposed perpendicular to the body portion **72** and along opposite edges thereof, an adjusting flange **75** attached to the bottom edge of the body portion **72**, and a finger catch **76** disposed perpendicular to the body portion **72** and along the edge thereof opposite from the adjusting flange **75**. The body portion **72** is centrally apertured with an elongate aperture **78** disposed horizontal to the wing pieces **74**.

A pin **80** having a cap **81** and a shank **82** is adapted to be inserted through the elongated aperture **78**. The rectangular base portion **64** is centrally apertured at **84** and a coiled spring **85** and an annular washer **86**, of conventional design, are slipped over the shank **82** of the pin **80**, the shank inserted through the elongate aperture **78**, and through the aperture **84** of the rectangular base portion **64**, and the pin securely attached to the rectagular base portion, as by brading or screw connection. Of course, connecting the pin **80** to the mounting piece **61** in this fashion causes the spring **85** to be compressed between the cap **81** and the mounting piece **61**. The washer **86** and latching element **62** are biased toward the mounting piece **61** so that the wing pieces **74** of the latching element **62** project outwardly of the reflector **14**, between the rectangular base portion **64** of the mounting piece **61** and the edges of the aperture **69** of the reflector **14**.

The adjusting flange **68** of the mounting piece **61** and the adjusting flange **75** of the latching element **62** are centrally apertured at **88** and **89**, respectively, and when the latching element **62** is biased against the mounting piece **61** these apertures are in alignment with each other. The apertures **88** and **89** are threaded and the screw **90** is threaded therethrough. The screw **90** has a cap **91**, a threaded portion **92**, and a reduced neck portion **94**. The screw **90** is threaded through the aperture **88** of the adjusting flange **68** until the reduced neck portion is located in the vicinity of the aperture **88**, whereupon the screw is loosely held by the adjusting flange **68**. The screw **90** is then threaded through the aperture **89** of the adjusting flange **75**. As is shown in FIGS. 5 and 6, when the screw **90** is initially threaded into the aperture **89** of the adjusting flange **75**, the adjusting flanges **68** and **75** are held apart a substantial distance so that the pin **80** extends

through the lower portion of the elongated aperture **78** and the latching element **62** is in its upward position. When the screw **90** is further rotated, the adjusting flange **75** of the latching element **62** will be moved downwardly thereof so that the adjusting flange **75** is brought closer to the adjusting flange **68**, and the latching element **62** gradually approaches its downward position. Of course, the wing pieces **74** also move in a similar manner. The latching element **62** will move the distance as limited by the dimensions of the elongated hole **78**.

OPERATION

When the lighting fixture is to be mounted into an acoustical tile ceiling, the junction box assembly is connected to the wiring of the building, between the acoustical tile ceiling and the original ceiling of the building, connected to the mounting frame **11** by sliding the connecting piece **41** thereof through the aperture **42** and into the slots **44** of the mounting piece, the mounting piece and the junction box inserted through the hole left by a missing piece of acoustical tile in the ceiling, and the hanger bars **16** spread so that they extend beyond the limits of the mounting frame and will rest on the inside surface of adjacent acoustical tile. Of course, the hanger bars are constructed so that they are attachable to various types of installations, as by stapling, nailing, wiring, etc. After the mounting frame has been placed in position the reflector **14** is inserted through the mounting frame so that the main body portion **45** of the reflector extends through the mounting frame, as shown in FIG. 2. As the main body portion **45** of the reflector **14** passes through the mounting frame **11**, the serrated wing pieces **74** of the latch **60** engage the inwardly-projecting rim **17** of the mounting frame. Since the latching element **62** of the latch **60** is spring biased outwardly of the reflector by the spring **85**, further movement of the reflector **14** inwardly of the mounting frame **11** causes the latching element **62** to retract inwardly of the reflector **14** and the serrations of the wing pieces engage the inwardly projecting rim **17** of the mounting frame **11**. Of course, as the reflector **14** is further moved inwardly of the mounting frame **11** subsequent ones of the teeth of the wing pieces **74** engage the inwardly-projecting rim **17** of the mounting frame **11**, until the outwardly-extending flange **50** of the reflector **14** is adjacent the ceiling, as shown in FIG. 2. Of course, it is difficult to place the outwardly extending flange **50** exactly adjacent the acoustical tile ceiling in this manner since there is some play between the elements of the lighting fixture. In other words, in the majority of instances only a loose fit can be attained in this manner.

Subsequent to inserting the reflector **14** through the mounting frame **11**, the screws **90** of the latches **60** are rotated so that they draw the latching element **62** downwardly on the mounting piece **61**. Of course, these serrated wing pieces **74** move downwardly with the lacthing element **62** so that the latching element **62**, by way of its serrated wing pieces **74**, draws the inwardly projecting rim **17** of the mounting frame closer to the outwardly extending flange **50** of the reflector **14**. Therefore, while only a loose fit might have been attained by inserting the reflector **14** through the mounting frame **11**, rotation of the screws **90** of the latches **60** tightens the assembly as it is mounted in the acoustical tile ceiling so that there are no gaps between the outwardly extending flange **50** of the reflector and the surface of the acoustical tile ceiling. Also, the mounting frame **11** is drawn uniformly toward the outwardly extending flange **50** of the reflector **14** so that the pieces of acoustical tile surrounding the lighting fixture become compressed and aligned with each other as the mounting frame and reflector are drawn toward each other.

As is best shown in FIG. 5 of the drawing, it can be seen that when the latching element **62** is in its upward position a person can wedge his finger over the finger catch **76** and pull the latching element **62** away from the mounting piece **61**, against the bias of spring **85** in a manner that tends to pivot the latching element about reduced neck portion **94** of the screw **90**. Furthermore, the spring **85** biases the washer **86** against the lower portion of the elongated aperture **78** of the latching element **62** so that the force exerted on the latching element that urges it toward the mounting piece **61** is displaced, to some degree, from the finger catch **76**. This displacement creates a lever arm between the finger latch **76** and the spring **85**, the fulcrum of the lever being at the reduced neck portion **94** of the screw **90**. This amount of lever arm enables a person to move the latching element **62** in the direction as indicated by the arrow **95**, thereby withdrawing the wing pieces **74** of the latching element from the slot created between the mounting piece **61** and the sides of the apertures **69** in the reflector **14**. Of course, this allows the person installing the reflector to remove it from the mounting frame **11** in case some adjustment is needed after the reflector has been installed.

After the reflector has been installed and it is desired to finish the installation of the fixture, the screws **90** are rotated so that the latching elements **62** are drawn to the position shown in FIG. 6. Of course the finger catch **76** is drawn closer to the spring **85** so that the displacement therebetween is much shorter than that shown in FIG. 5. Furthermore, the upper portion of the elongated aperture **78** of the latching element **62** is drawn tightly down onto the upper surface of the pin **80** so that these elements are wedged together. Of course, it is possible that the wing pieces **74** will have drawn the mounting frame **11** and the outwardly extending flange **50** of the reflector close together before the upper portion of the elongated slots **78** reaches the pin **80**. In either case, however, the screw **90** will urge the adjusting flanges **68** and **75** of the mounting piece **61** and latching element **62**, respectively, toward each other so that the cap **91** of the screw **90** is urged toward the adjusting flange **68** of the mounting piece **61**. With cap **91** of the screw **90** in this condition, and with the finger catch **76** being disposed closely adjacent the spring **85**, it will be noted that the movement of the latching element **62** in the direction as indicated by the arrow **95** will cause the latching element **62** to pivot about the edge of the cap **91** of the screw **90**, as opposed to the reduced neck portion **94** as shown in FIG. 5, and the force of the spring **85** must be overcome with a shorter lever arm. In other words, it is much more difficult to move the latching element **62** inwardly of the reflector **14** when the latching element **62** is in its downward position than when it is in its upward position. This condition, of course, insures that the latching elements **62** will not be inadvertently displaced away from the mounting piece **61**, and inwardly of the reflector **14**, after it has been installed in the ceiling. This firm mounting allows the person installing the lighting fixture to make whatever adjustments he might desire without fear of jarring the reflector from the mounting frame **11**.

After the reflector, mounting frame and junction box have been assembled in this manner, a conventional light bulb **96** is threaded into the light socket **22**, the door **15** connected to the reflector **14** by inserting the T-shaped tabs **58** into the T-shaped apertures **51** of the reflector **14**, and then the door **15** is pivoted into place and held by the bendable tab (not shown).

While the self locking latch has been shown as connecting the reflector of a lighting fixture to its mounting means in the ceiling of an acoustical tile ceiling, it should be understood that the latch finds various other uses. For instance, the latch can be utilized with air ducting of a building such as the heating or air conditioning air ducting. In this occasion the ducting can be installed in the walls, floors or ceilings of the building, the building substantially finished by constructing the floors, walls and ceilings thereof, and eventually the grill of the ducting can be put into proper position in a manner similar to placing

the reflector of a light fixture in its position. Of course, since the latch holds the exposed piece firmly against the mounting frame, be it a light fixture or air conditioning ducting, the latch is useful in installing fixtures into the wall or floor of a building, and is not limited to being used only with the ceiling fixtures of a building.

Furthermore, while the latch has been disclosed as being used with an acoustical tile ceiling, it should be understood that it can be used with any type ceiling having a small space into which the mounting frame can be installed. In other words, only a hole in the wall or ceiling, etc., approximately the size of the mounting frame is necessary, regardless of whether it is created by the missing piece of acoustic tile in an acoustic tile ceiling, or whether it is cut through a solid surface.

It should be further pointed out that when the latch is utilized with a lighting fixture only a very small portion, if any, of the light emanating from the bulb of the fixture is lost due to the presence of the latch. As is shown in the drawing, the latch substantially fills the whole area of the aperture **69** of the reflector **14** so that the light that might pass through the aperture **69** is reflected back to the interior of the reflector **14**. Of course, this feature is also desirable in the use of heating or air-conditioning since a minimum amount of air, if any, is lost due to the presence of the latch.

Of course, while the latch has been shown with a square fixture, it should be understood that it can be used with other shaped fixtures, such as round, or rectangular fixtures.

At this point it can be seen that the self locking latch enables a workman to install the lighting fixture with a minimum amount of time, using a minimum amount of skill, and in every instance of installation the reflector can be perfectly aligned with the ceiling, or other supporting surroundings. Furthermore, the simplicity of construction provides a latch that is economical to manufacture, and will firmly support the element to be mounted into the mounting frame.

It will be obvious to those skilled in the art that many variations may be made in the embodiments chosen for the purpose of illustrating the present invention without departing from the scope thereof as defined by the appended claims.

What is claimed as invention is:

1. A lighting fixture comprising, in combination, a mounting frame having a vertically disposed continuous side wall and a rim extending horizontally inwardly from an upper portion of said side wall, a reflector having a main body received within said frame with exterior body portions in proximate, spaced relationship with the inner perimeter of said side wall and said rim, a latching element mounted on a side of said reflector for limited movement between an extended position and a withdrawn position, said latching element having a wing portion extending generally perpendicular to the side and lockably engaged with said rim, and means biasing said latching element in a direction to maintain locked engagement between said wing portion and said rim.

2. A lighting fixture as claimed in claim **1** wherein said rim is continuous around said continuous side wall.

3. A lighting fixture as claimed in claim **1**, including, means for moving said latching element in a predetermined direction parallel to the side of said reflector, whereby, when said latching element is lockably engaged with said rim, movement of said latching element in the predetermined direction draws said reflector into said frame.

4. A latching mechanism comprising: a mounting piece for attachment to the exterior portion of a fixture, said mounting piece having a rectangular base portion, a latching element pinned to said mounting piece for limited movement toward and away from said mounting piece and for limited movement in a plane generally parallel to said mounting piece, said latching element having a substantially flat rectangular body portion, and a pair of wing pieces disposed generally perpendicular to and extending from the sides of said body portion and around said mounting piece, a spring biasing said latching element into contact with said mounting piece, an apertured adjusting flange disposed perpendicular to said base portion and extending from said base portion, and screw means extending through said apertured adjusting flange and threadably engaged with said latching element for moving said latching element parallel to said mounting piece.

5. A latching device for holding a fixture within a mounting frame, said device comprising, a substantially flat latching element mounted on an interior side of said fixture for limited movement perpendicular to the side, spring means biasing said latching element against the side, said latching element having a wing portion extending substantially perpendicular to and through an opening in the side, said wing portion having a saw-toothed edge for lockably engaging said mounting frame, and means operable when said saw-toothed edge is lockably engaged with the mounting frame for moving said latching element in a predetermined direction along the side to pull the fixture into the mounting frame.

6. A latching device for holding a fixture within a mounting frame, as claimed in claim **5**, wherein said latching element has at least two wing portions extending substantially perpendicular to and through the side, each of said wing portions having a saw-toothed edge for lockably engaging said mounting frame.

References Cited

UNITED STATES PATENTS

2,965,747	12/1960	Secofsky	240—1.3
3,189,740	6/1965	Wince	240—78
768,177	8/1904	Hettinger	292—64
1,792,292	2/1931	Flaherty.	
3,091,687	5/1963	Papsdorf.	
3,294,967	12/1966	Pascucci	240—78

FOREIGN PATENTS

230,619	9/1960	Australia.

NORTON ANSHER, *Primary Examiner.*

M. H. HAYES, *Assistant Examiner.*

U.S. Cl. X.R.

292—64, 68

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,420,995 January 7, 1969

Bruce Patten Dunckel

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading to the printed specification, line 4, "Atlanta" should read -- Conyers --.

Signed and sealed this 6th day of October 1970.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents