Sept. 9, 1958 M. BODIAN ET AL 2,851,588

SPRING-LATCH FOR A LIGHTING FIXTURE

Filed Jan. 14, 1957

FIG. 1.

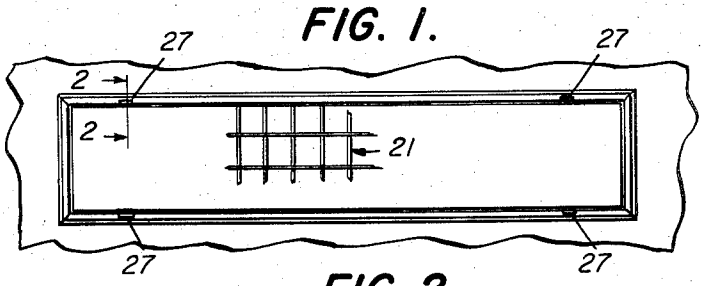


FIG. 2.

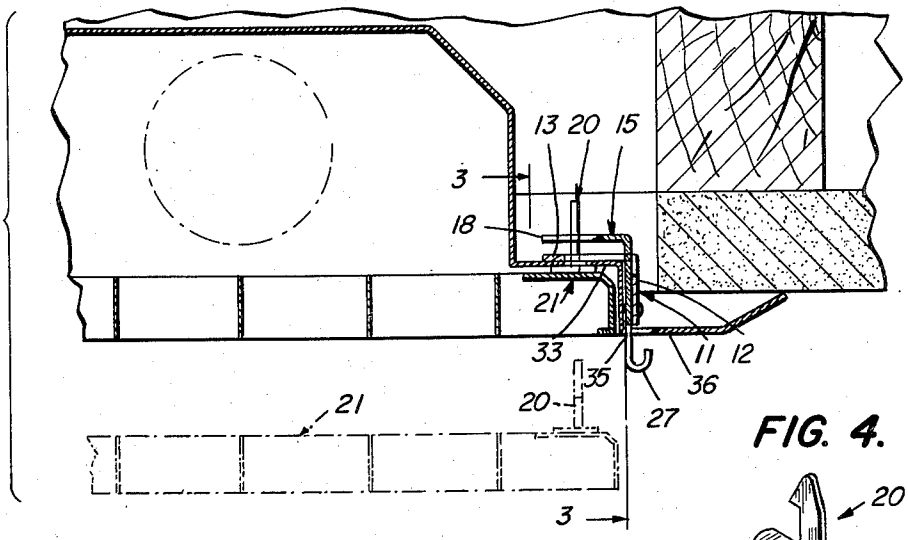


FIG. 4.

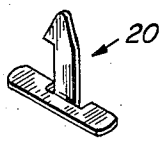
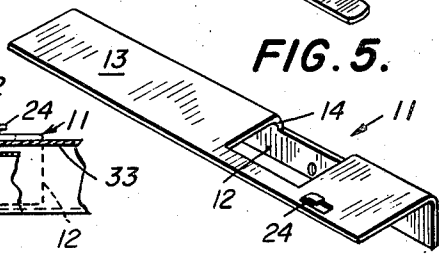


FIG. 3.

FIG. 5.



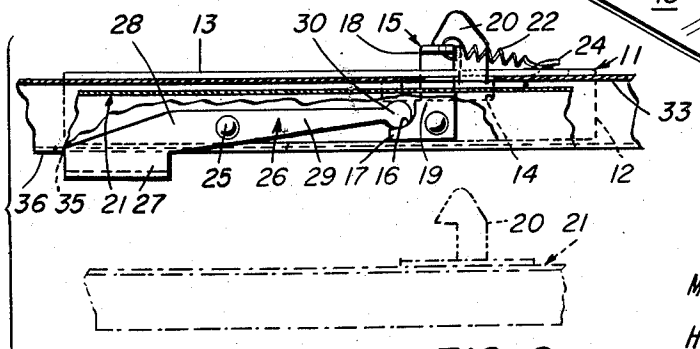


FIG. 7.

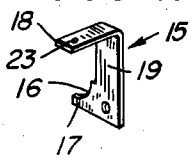
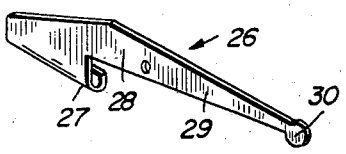


FIG. 6.



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SPRING-LATCH FOR A LIGHTING FIXTURE

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2 Claims. (Cl. 240—78)

This invention relates to a concealed spring-latch device and in particular to a latching device for removably holding a diffusion unit to a fluorescent ceiling light fixture.

One object of the invention is to provide a substantially concealed latching device for holding the diffusion unit on a recessed fluorescent ceiling light fixture. Another object is to provide a spring latch device which is easily operated by finger pressure to remove a diffusion unit from a ceiling light fixture. A further object is to provide a spring latch unit which is vibration proof and securely holds a diffusion unit or the like on a fluorescent ceiling light fixture.

These and other objects are attained by my invention which will be understood from the following description, reference being made to the accompanying drawings in which:

Fig. 1 is a fluorescent ceiling light fixture viewed from the diffuser unit face illustrating the manner of using my spring latches;

Fig. 2 is a cross-sectional view taken on the line 2—2 of Fig. 1 showing the diffuser unit in place as held by the latch, and in broken lines in unlatched vertically displaced position;

Fig. 3 is a side elevational view partly in section from the position 3—3 of Fig. 2;

Fig. 4 is a perspective view of the catch hook;

Fig. 5 is a perspective view of the frame of the device;

Fig. 6 is a perspective view showing the button lever; and

Fig. 7 is a perspective view showing an integral rocker arm and catch hook engaging bar.

Referring to the drawings, my spring latch device consists of an elongated frame **11** having a vertical side member and an adjoining horizontal top member joined together along the long edges, said frame preferably being a stamping from sheet metal with the side and top members arranged generally at right angles. The frame has a cut-out window **14** in the horizontal top member **13**, the window being disposed near one end of the elongated frame. A rocker **15** is pivotally mounted on the inside of the vertical member **12** beneath said window **14**, the rocker being provided with a cylindrical socket **16** on the horizontal portion **17**, said socket being adapted to operatively engage an operating lever, to be described. A hook engaging bar **18**, preferably integral with the vertical arm **19** of the rocker **15** is provided to extend through the window **14**. The hook engaging bar **18** is bent to a horizontal position above the surface of the top member **13**, and is movable arcuately by the rocker to engage the catch hook **20**. The catch hook **20** is rigidly attached in vertical position to a top surface of the diffusion unit **21**. A coiled tension spring **22** is attached at one end to the hole **23** in the bar **18**, the other end of the spring being attached to a punched-out tab **24** on the horizontal member **13** of the frame **11**. The spring **22** is arranged to keep the hook engaging bar **18** in engaged position relative to the catch hook. A button lever **26** is pivoted

by the pivot **25** to the inside vertical side member **12** of the frame **11**, disposed at a distance away from said rocker **15**. The button lever **26** consists of a finger operable button **27** mounted at the end of the shorter portion **28** of the button lever **26**, the longer portion **29** being provided at its end with socket-engaging means **30** arranged to operatively engage the socket **16** on the rocker **15**. As shown, the socket **16** consists of a cylindrical notch and the socket engaging means **30** consists of a cylindrical knob at the end of the longer portion **29** of the button lever **26**.

The latch device is particularly designed for holding a diffusion unit **21** on to the fluorescent light fixture, which is normally mounted on the ceiling. In the particular unit shown, four of these latch devices are arranged adjacent the four corners of a fluorescent ceiling fixture, each being spot welded to a horizontal recess-forming flange **33**, with the button **27** of the latch device protruding for a short distance through a hole **35** in the horizontal finish flange **36** of the fixture. The diffusion unit **21** fits into the recess between the recess-forming flange **33** and the finish flange **36**. The catch hook **20** is attached as by spot welding to an upper face of the diffusion unit at positions aligned with the positions of the windows **14** of each of the mounted latch devices. The diffuser unit is thus easily installed merely by pushing the catch hooks through the aligned windows, the spring-biased hook-engaging bars **18** engaging the catch hooks **20**. The diffuser unit is easily released by merely pressing the four buttons **27** so that the catch hooks **20** become disengaged.

The advantages of my invention will be apparent. No portion of the spring-latch device shows when the diffuser is installed except the small buttons adjacent the four corners. The spring tension prevents the hooks from becoming accidentally disengaged by vibration or the like, so that the diffuser unit is maintained safely in place on the ceiling fixture. The diffuser unit is easily removed without the use of any tools by merely pressing the inconspicuous buttons.

We claim:

1. In combination a ceiling light fixture having a recessed face and an out-turned finish flange, a diffuser unit adapted to fit into said recessed face, and means for removably holding said diffuser unit on said fixture, said holding means comprising one or more spring-latch devices each consisting of an elongated frame having a vertical side member and an edge-connected adjoining horizontal top member, said frame having a window near one end extending through said top member; a rocker pivoted on said side member under said window, said rocker having a socket adapted to operatively connect with a button lever; a catch hook-engaging bar extending upwardly from said rocker through said window, and then across said frame over said window, said bar being adapted to engage a catch hook on said diffuser unit extending through said window; spring means between said frame and said catch hook-engaging bar arranged to hold said bar in latching position; and a button lever pivotally mounted on said side member at a distance from said rocker arm socket, the pivotal axis being nearer one end than the other, said lever having a finger-operable button extending from its shorter portion, and having socket engaging means at the end of its longer portion; said diffuser unit being provided with vertically disposed catch hooks at positions corresponding to the windows of said latch devices, said catch hooks being releasably held by said spring-biased bars above said windows; said out-turned finish flange of said fixture being provided with apertures to receive said finger-operable buttons.

2. In combination, a ceiling light fixture having a recessed face and an out-turned finish flange, a diffuser

unit adapted to fit into said recessed face, and means for removably holding said diffuser unit on said fixture, said holding means comprising one or more spring latch devices each consisting of an elongated frame having top and side members, said frame having a window in the top member near one end; a rocker pivoted on said frame adjacent said window, said rocker having an operative connection to a button lever; a hook-engaging bar attached to said rocker and extending across said window, said bar being adapted to engage a catch hook extending from a diffusion unit through said window; spring means between said frame and said hook-engaging bar arranged to hold said bar in latching position; a button lever pivotally mounted on said frame at a distance from said rocker arm, the pivotal axis being nearer one end than the other, said lever having a finger-operable button extending from its shorter end, and being operatively connected at its other end to said rocker; said out-turned finish flange of said fixture being provided with an aperture to receive said finger-operable button.

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