Feb. 17, 1959 J. H. ZITOMER 2,873,828

ILLUMINATED ELECTRIC CEILING FIXTURE CONSTRUCTION

Filed Jan. 27, 1955 3 Sheets-Sheet 1

Fig. 1.

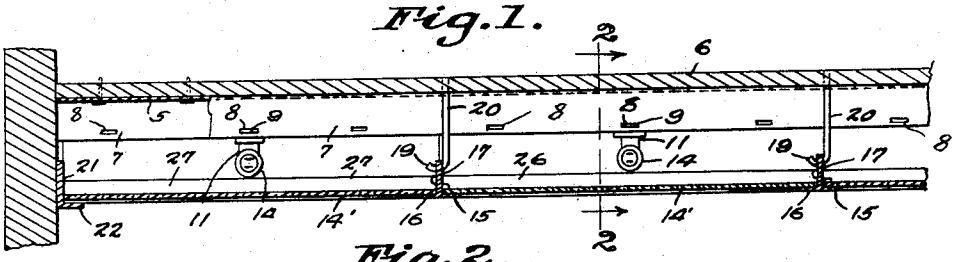


Fig. 2.

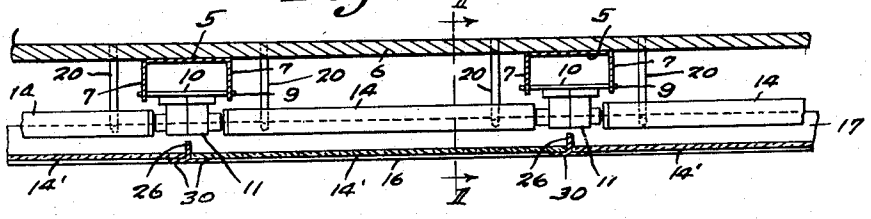


Fig. 8.

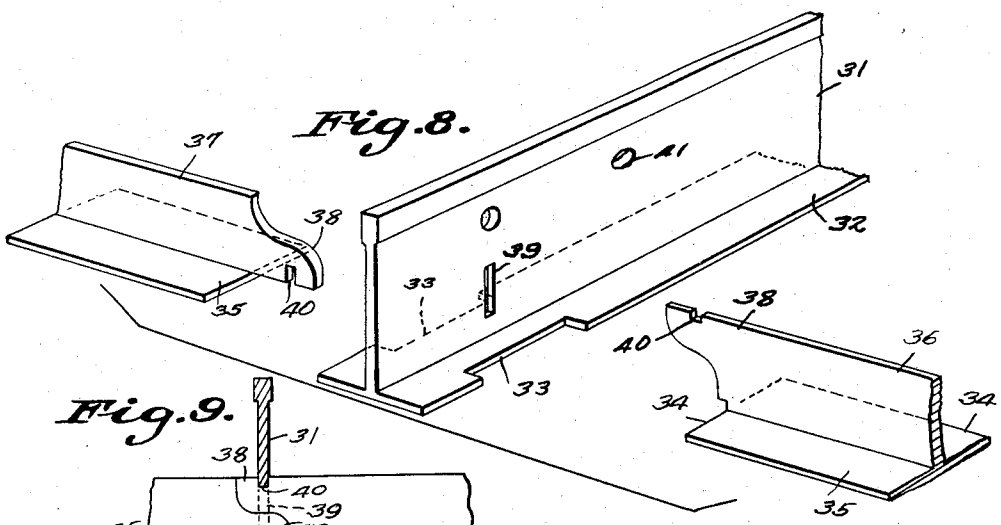
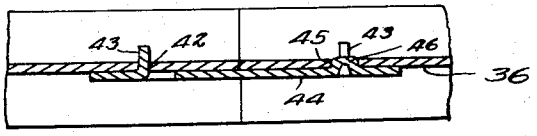


Fig. 9.

Fig. 11.



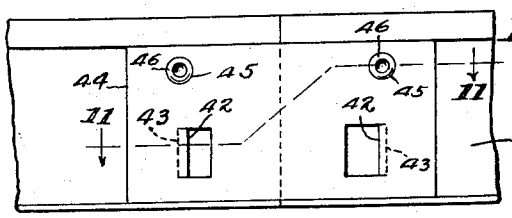


Fig. 10.

Joseph H. Zitomer
INVENTOR

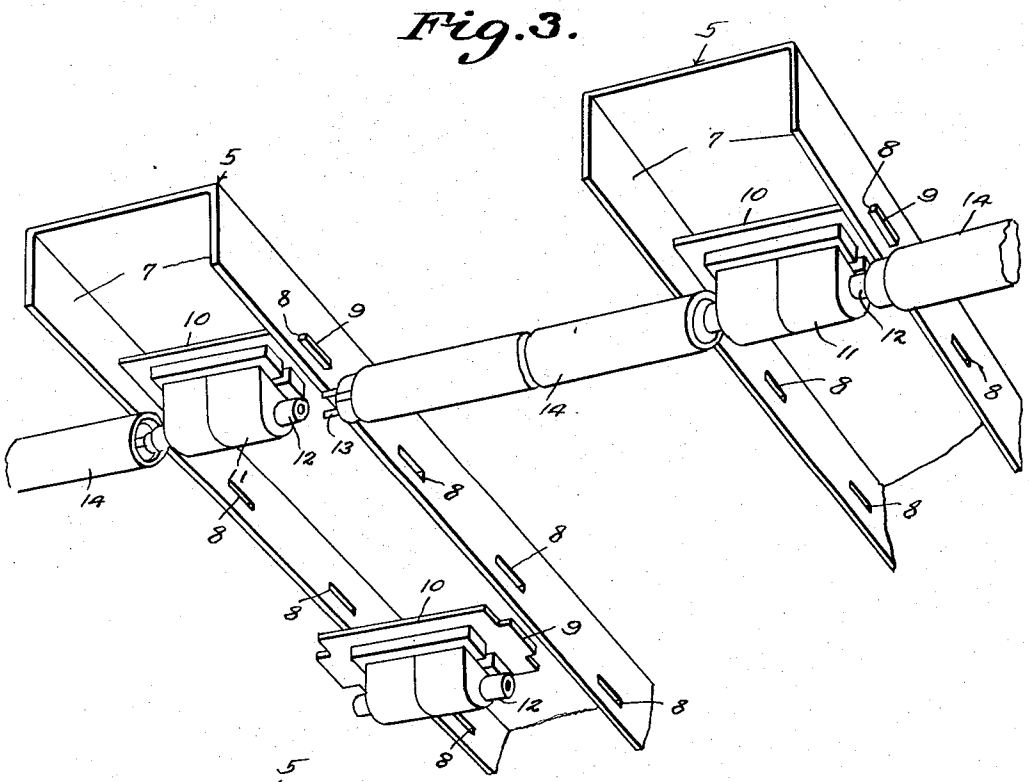
BY C. A. Snow & Co.
ATTORNEYS.

Feb. 17, 1959 J. H. ZITOMER 2,873,828

ILLUMINATED ELECTRIC CEILING FIXTURE CONSTRUCTION

Filed Jan. 27, 1955 3 Sheets-Sheet 2

Fig. 3.



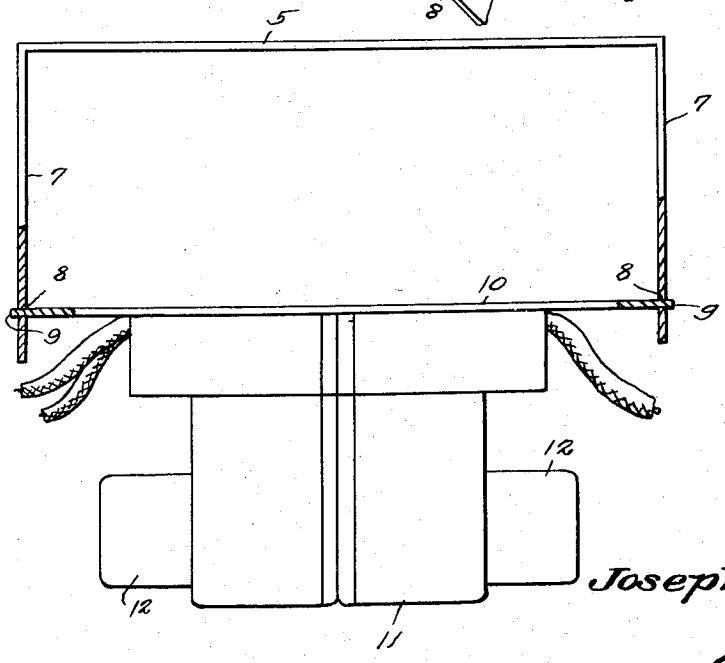


Fig. 4.

Joseph H. Zitomer

INVENTOR

BY C. A. Snow & Co.

ATTORNEYS.

Feb. 17, 1959 J. H. ZITOMER 2,873,828

ILLUMINATED ELECTRIC CEILING FIXTURE CONSTRUCTION

Filed Jan. 27, 1955 3 Sheets-Sheet 3

Fig. 5.

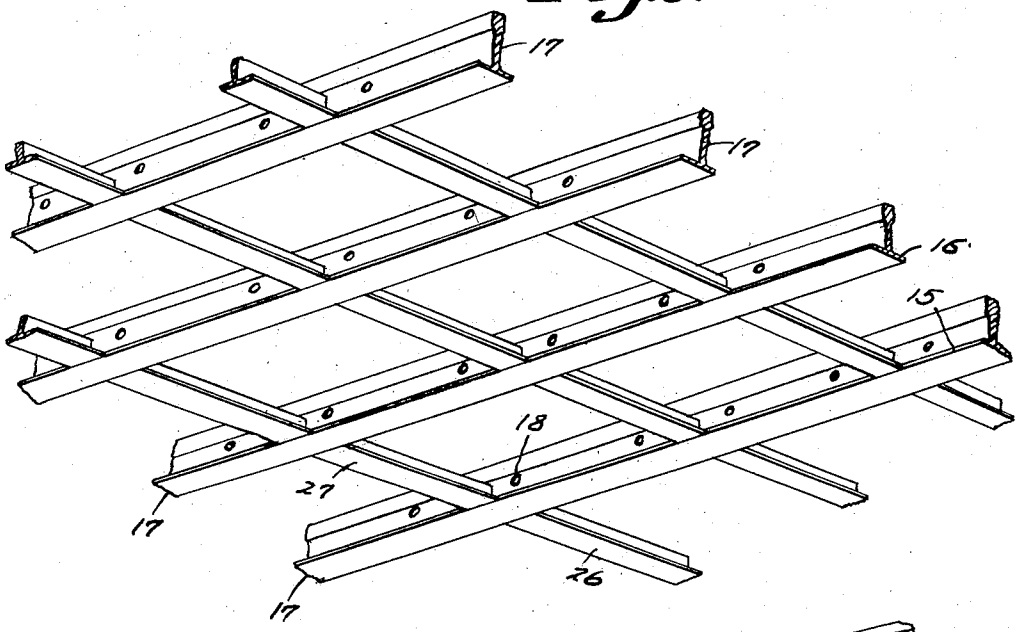
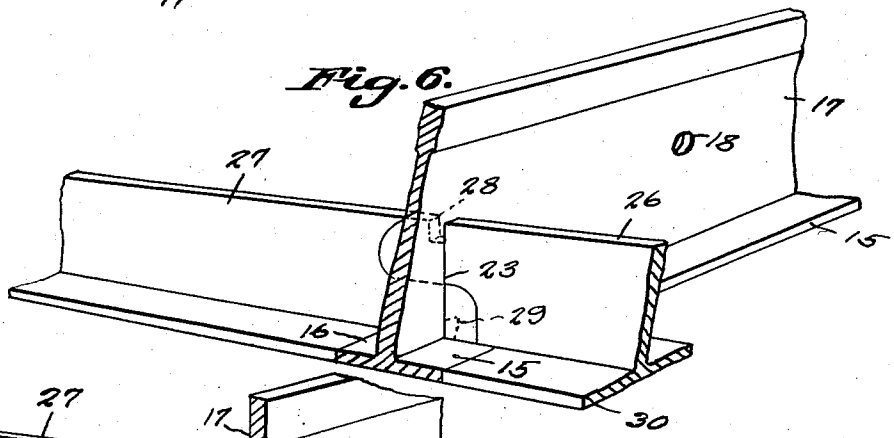


Fig. 6.



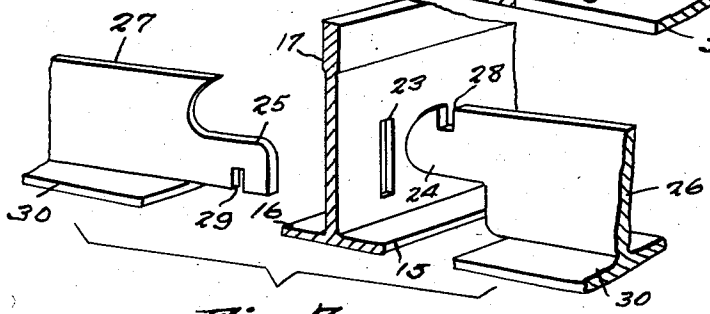


Fig. 7.

Joseph H. Zitomer
INVENTOR

BY Cathow & Co.
ATTORNEYS.

United States Patent Office 2,873,828 Patented Feb. 17, 1959

2,873,828

ILLUMINATED ELECTRIC CEILING FIXTURE CONSTRUCTION

Joseph H. Zitomer, New Haven, Conn.

Application January 27, 1955, Serial No. 484,494

1 Claim. (Cl. 189—82)

This invention relates to wall-to-wall electric fixture construction, including translucent panels to provide for such surfaces as sound control, air diffusion, fire protection, power outlets, intercommunication telephone systems, etc.

An important object of the invention is to provide an inexpensive and practical means for modernizing a building by lowering the ceilings thereof to cover unsightly, objectionable ducts, pipes, wall cracks, or the like.

Another object of the invention is to provide a construction of this character wherein indirect and shadowless lighting is provided, at the minimum cost with the translucent panels used being so constructed that they may be readily dismantled or removed to facilitate the cleaning and repair of such panels.

Still another object of the invention is to provide a fixture embodying a plurality of interlocking members, such as beams, which may be retained in their connected positions without the necessity of using securing arms or similar securing devices that are usually difficult to manipulate in restricted areas.

A still further object of the invention is to provide a supporting means for the ceiling lighting elements which will permit the lighting elements to be snapped in place and secured without the necessity of using securing bolts or the like.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings:

Figure 1 is a sectional view through a wall-to-wall electric ceiling fixture supporting device, constructed in accordance with the invention, and taken on line 1—1 of Fig. 2.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a perspective view illustrating the fluorescent light fixture supporting means.

Fig. 4 is an elevational view of an electric ceiling light fixture and support.

Fig. 5 is a fragmental perspective view of a ceiling fixture supporting frame assembled.

Fig. 6 is a fragmental perspective view illustrating cross beams of the frame as connected with the webs of the main supporting beams of the frame.

Fig. 7 is a fragmental perspective exploded view, illustrating the cooperating ends of the cross beams as separated from the web of a main beam.

Fig. 8 is an exploded perspective view illustrating a modified form of ceiling fixture supporting frame.

Fig. 9 is a fragmental elevational view partly in section, illustrating the connection between the cross beams of the frame and main supporting beams thereof.

Fig. 10 is a fragmental elevational view illustrating

the means for connecting adjacent ends of the main fixture frame beams.

Fig. 11 is a sectional view taken on line 11—11 of Fig. 10.

Referring to the drawings in detail, the reference character 5 indicates the electric ceiling fixture supports which are arranged in parallel spaced relation with respect to each other, as better shown by Fig. 2 of the drawings, and secured to a ceiling 6.

Each of these electric ceiling fixture supports is of channel construction and is constructed preferably of sheet metal material of a yieldable character, so that the longitudinal side walls 7 thereof may bend laterally, for purposes to be hereinafter more fully described. The side walls 7 are provided with aligning slots 8 elongated longitudinally of the side walls as shown by Fig. 3 of the drawings, the slots being designed to receive the extensions 9 formed on the ends of the base plates 10 of the fluorescent light fixtures 11, which light fixtures 11 are of constructions to extend beyond the free edges of the side walls 7.

The ends of the light fixtures 11 are formed with sockets 12 into which the contact fingers 13 are positioned, providing a circuit between the sockets 12 and fluorescent lamp tubes 14.

Due to this construction it will be seen that by placing the base plates 10 in position over the free edges of the side walls 7 and slightly flexing the side walls laterally, the extensions 9 will slip into the slots 8, securely fastening the fluorescent light fixtures to the electric ceiling fixture supports, without the necessity of using securing screws, clamps or the like. This structure also insures ready and easy removal of the fluorescent light fixtures 11, should it be desired to repair or replace the same.

The fluorescent light fixtures and tubes are protected by means of the translucent members 14', that rest on the flanges 15 and 16 of the frame which supports the translucent members. This frame which provides the support for the translucent members comprises main supporting beams 17 which are arranged in parallel spaced relation with respect to each other under the ceiling of the room in which the fluorescent light fixtures are installed. The main supporting beams are formed with openings 18 through which the hooks 19 formed in the lower ends of arms 20 extend, the arms 20 being secured to the ceiling and suspended therefrom.

Secured to the side walls of the room in which the fixture is to be installed, are angle bars 21, that have lower horizontal flanges 22 extending inwardly therefrom providing supports for the ends of the main supporting beams 17.

Vertical slots 23 are formed in the webs of the main supporting beams 17 and receive the ends 24 and 25 of the cross beams 26 and 27, respectively, the ends 24 and 25 being so formed that when they have been inserted within a slot 23, they will overlie and provide a continuous cross beam.

In the upper edge of the extension 24 is a notch 28 that accommodates the upper edge of the slot 23, while the end 25 of the cross bar 27 is formed with a notch 29 that accommodates the lower edge of the slot 23, anchoring the adjacent ends of the cross beams to the main supporting beams and at the same time providing a connection which will permit the cross beams to be readily connected and disconnected from the main supporting means.

With this construction, the flanges 30 of the cross beams and the flanges 15 of the main supporting beams provide supports for the translucent members 14' that are rectangular in shape, to closely fit within the square openings formed by connecting the cross beams within the slots of the main supporting beams.

In the form of the invention as shown by Fig. 8 of the drawings, the main beams **31** have their horizontal laterally extended flanges **32** formed with notches **33** to accommodate the ends **34** of the flanges **35** of the cross beams **36** and **37**, respectively, thereby to hold the cross beams **36** against lateral or twisting movement with respect to the main beams **31**. These cross beams **36** and **37** are formed with extensions **38** which are oppositely disposed, the extensions having curved cooperating edges that permit the cross bars to interengage and completely fill the slot **39** of the main supporting beam associated therewith. Notches **40** are formed in the extensions **38** and accommodate the adjacent edges of the slot **39** in which the extensions **38** are disposed, securing the cross beams against movement longitudinally with respect to each other.

In this form of the invention the main supporting beams **31** are formed with openings **41** to receive the hooks of supporting arms, in the same manner as shown by Fig. 1 of the drawings.

In the event that the frame is used in exceptionally large rooms and it becomes necessary to splice the main beams, the adjacent ends of the main beams are provided with vertical slots **42** to accommodate the tongues **43** of the splice plate **44**, there being provided openings **45** above the slots **42** to accommodate the heads **46** of the plates **44**. Since the widths of the plates **44** are equal to the width of the web or central portion of the main beam to which it is connected, the spliced ends of the main beams will be held against vertical movement with respect to each other.

From the foregoing it will be seen that due to the construction shown and described, I have provided an electric ceiling fixture construction, wherein the fluorescent light fixtures may be readily and easily snapped into position or removed for repair.

It will also be seen that due to the construction of the ceiling fixture frame, the fluorescent light tubes will be protected by the translucent plates or members **14'**, so that the light fixtures are invisible and have effective and complete indirect lighting provided at a minimum cost.

In view of the foregoing it will also be seen that since the translucent members **14'** are shaped to exactly fit within the square openings provided between the main beams and cross beams of the light fixture frame, these translucent members may be positioned by slightly bending the members and placing them within the frames formed by the beams **31**, **36** and **37** so that when they are released they will spring into flat shape and be in close contact with the beams of the frame.

Having thus described the invention, what is claimed is:

In a fluorescent lighting fixture, main supporting beams having vertical elongated openings and laterally extended flanges formed along the lower edges thereof, opposed cross beams having interengaging vertically aligned extensions having arcuate extremities formed at the ends thereof, each cross beam having a cutaway portion conforming in configuration to the extension of the opposed cross beam fitted within said elongated openings of said main supporting beams, said extensions having notches fitting over the edges of said openings at the ends thereof locking said cross beams to said main supporting beams providing a series of adjacent lighting areas, said lighting areas being adapted for the reception of horizontally supported fluorescent lighting members.

References Cited in the file of this patent

UNITED STATES PATENTS

1,341,259	Champeau	May 25, 1920
1,652,347	Champeau	Dec. 13, 1927
2,134,491	Sibbert	Oct. 25, 1938
2,232,543	Logan	Feb. 18, 1941
2,659,808	Beckwith	Nov. 17, 1953
2,665,784	Lacy	Jan. 12, 1954
2,680,805	Macdonald	June 8, 1954
2,698,071	Lee	Dec. 28, 1954
2,752,017	Segil	June 26, 1956
2,772,742	Sprankle	Dec. 4, 1956