# United States Patent

[11] **3,589,083**


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[21] Appl. No. **808,862**
[22] Filed **Mar. 20, 1969**
[45] Patented **June 29, 1971**



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[54] **WALL SYSTEM**
**7 Claims, 3 Drawing Figs.**


[52] **U.S. Cl.** ..... **52/27,** 52/282, 52/495, 339/21
[51] **Int. Cl.** ..... **E04b 2/78**
[50] **Field of Search** ..... 52/495, 27, 28, 239, 282; 339/21



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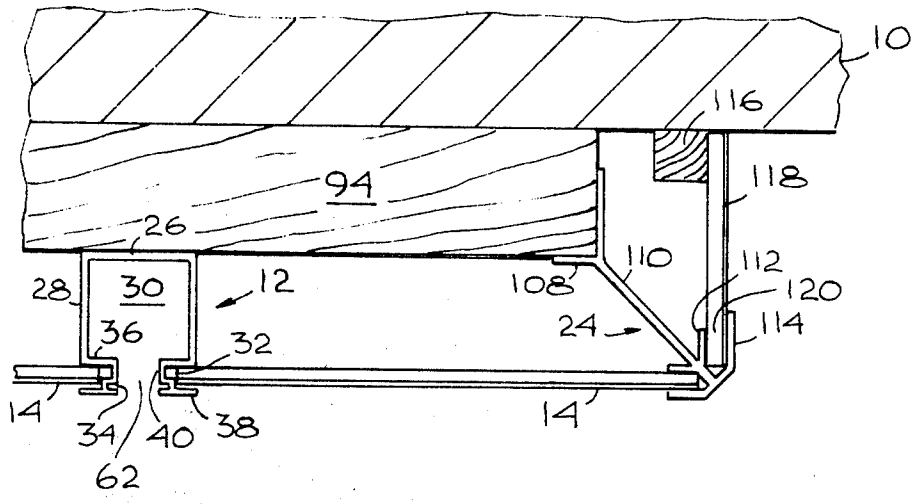
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**ABSTRACT:** A system for erecting and electrifying walls is disclosed. The system includes a hollow box channel having outwardly disposed side tracks for receiving wall panels and an internal groove for receiving electrical outlets and switch units mounted on a strap. An electrical appliance such as a lighting fixture is secured to the strap and plugged into the outlet. The system is mounted in front of walls containing service wiring and access to the service wiring is provided by sliding the wall panels upward and pulling a cord and plug through an aperture in the bottom of the sidewall of the channel.

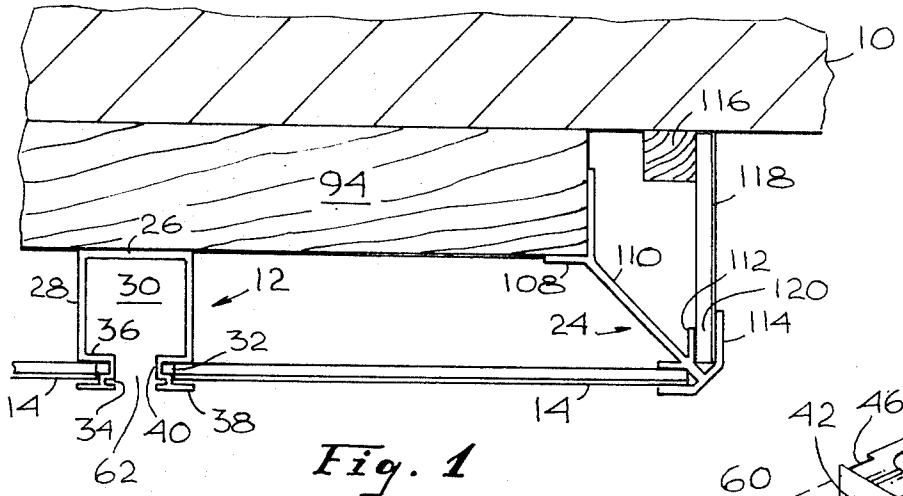



Fig. 1

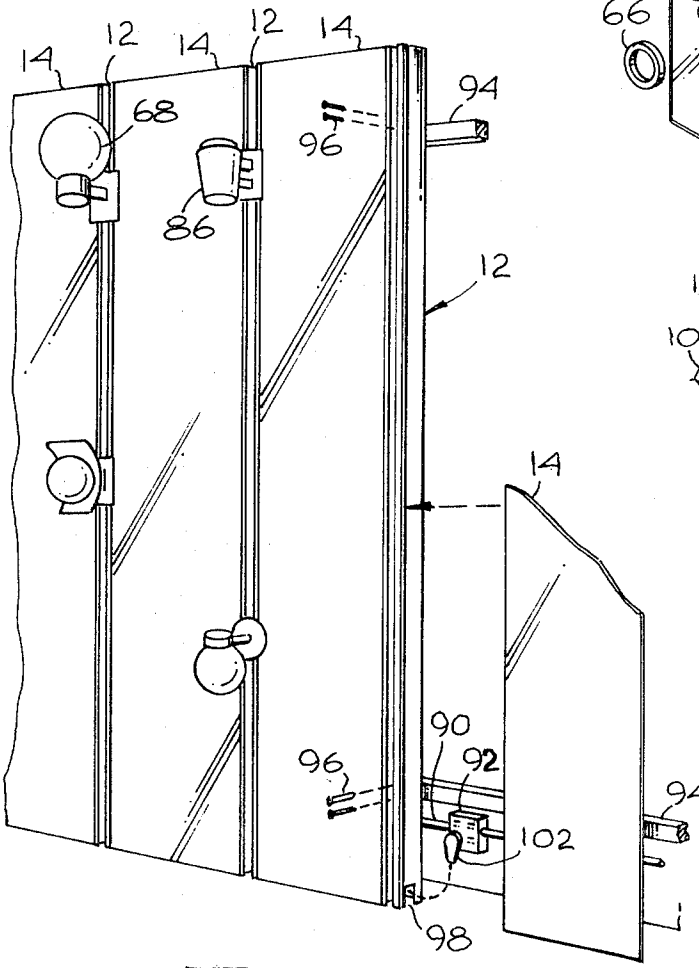



Fig. 2

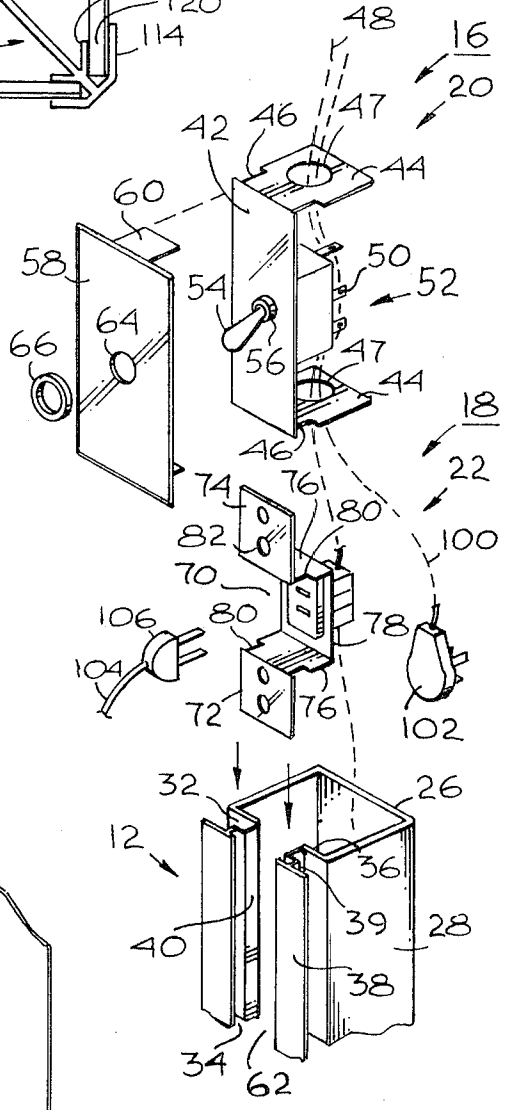



Fig. 3

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# WALL SYSTEM

## BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a unique system for installing and electrifying walls and more particularly this invention relates to a wall system including wall panels mounted on spaced channel members readily adapted to receive electrical connectors.

2. Description of the Prior Art

In the construction of installations requiring multiple electrical outlets such as showrooms for display of electrical appliances or fixtures or in a working area of a repair shop or manufacturing plant, the usual approach is to pre-estimate the requirements and to permanently install surface mounted junction boxes or flush mounted plug molds. These installations are permanent and must be left with the building as fixtures if the occupant decides to move. Furthermore, there is no flexibility with such an installation and should the requirements increase or it become desirable to relocate the display considerable expense is involved in pulling a circuit and installing further junction boxes or plug molds. It is also very difficult to provide such a system in an attractive manner without substantial cost.

## OBJECTS AND SUMMARY OF THE INVENTION

It is therefore an object of this invention to provide an easily erectable wall system including a unique wiring assembly adapted for quickly changing or adding electrical connectors.

A further object of the invention is the provision of an attractive and practical wall bracket system for mounting electrical appliances such as light fixtures.

Yet another object of the invention is to provide a wall channel bracket adapted for attachment to existing wall installations and which slidingly receives decorative wall panels therebetween and a multiplicity of electrical outlets and switches therein.

These and other objects and many attendant advantages of the invention will become apparent as the description proceeds.

The wall system in accordance with the invention comprises in combination an elongated hollow box channel member which acts as a bracket to mount the system to the wall and as a support for the wall panels and electrical connectors. The channel member has a backwall joined by a pair of forwardly extending sidewalls. Means are mounted on the outside surface of each sidewall for engaging adjacent wall panels and means are provided for mounting electrical connector within said channel member.

The invention will now become better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top view of the assembled wall system of the invention;

FIG. 2 is a perspective view of the assembled wall system; and

FIG. 3 is a perspective view of one form of electrical assembly insertable into the box channel member of the invention.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIGS. 1 and 2 it is seen that the wall system of the invention is adapted for installation to existing walls 10. The wall system includes box channel members 12, wall panels 14 and electrical connectors such as a switch 16 and an outlet 18 and their respective mounting straps 20 and 22. In the case of an outside corner installation the system may further include an outside corner channel member 24.



The box channel 12 includes a backwall 26 joined to two sidewalls 28. An "S" shaped portion is attached to the end surface of each sidewall 28 to form a pair of outwardly facing wall panel receiving tracks 32 and a set of inwardly facing mounting strap receiving grooves 34. Track 32 is formed on each side of the channel 12 by means of a partial front wall 36 and a spaced parallel outward lip member 38. Lip 38 is joined to a slotted portion 39 containing the groove 34 which in turn is joined through an extension 40 to the partial front wall 36.

The wall panels 14 are slidably engageable in the track 32 formed between the partial front wall 36 and the front lip 38. The inner grooves 34 in combination with the extensions 40 and the back face of the wall portions 36 form surfaces engageable by the mounting straps 20 or 22. Referring now particularly to FIG. 3, each mounting strap has a front plate adapted to be inserted in groove 34 and a pair of plates connected thereto having portions adapted to engage the extensions 40 and the back face of the partial front wall 36. For example, strap 20 has a front plate 42 of a width and thickness slightly less than that of groove 34. Front plate 42 is joined to end plates 44. Each end plate 44 has a U-shaped cutout 46 removed from the front two corners thereof having a length at least equal to that of extension 40. Each end plate 44 further includes an aperture 47 for receiving wires 48 which are connected to the terminals 50 of a double-pole, single-throw toggle switch 52 mounted on the back face of the front plate 42 with the switch lever 54 extending through the front face thereof.

Lever 54 is surrounded with a threaded bolt 56 extending outwardly from the front face of the plate 42. A cover member 58 may be provided having a width larger than the opening 62 between extensions 40. Cover member 58 further includes end flaps 60 adapted to be inserted into the opening 62 formed between the extensions 40 and has an aperture 64 insertable over threaded bolt 56 and may be secured to the front plate 42 by means of a nut 66.

Strap 22 has a slightly different configuration and is designed to recess outlet 18 so that a plug and short wire extension from a hanging fixture 68 may be received within the recess 70. Mounting strap 22 contains spaced front plates 72 and 74 joined by two side plates 76 to a back plate 78. Outlet 18 is mounted in back plate 78. The front corners of each side plate 76 have cutouts 80 of a length at least equal to that of extension 40. Front plates 74 and 72 further include a plurality of threaded apertures 82 adapted for connection to standard mounting members for wall mounted fixture backings 86.

A construction of the wall system of the invention will now be described in relation to erecting a wall display for a showroom. The system will be described in reference to a room having a ceiling of 8 feet 6 inches minimum height and have preinstalled walls. The system of the invention could as readily be installed to unfinished wall surfaces such as concrete or cinder block or directly to a wooden frame wall or to a curtain wall construction.

In an installation in which flush mounted outlets are provided, the channel members 12 could be installed directly to the existing walls surface 10. However, when service wiring 90 has been installed with surface mounted junction boxes 92 and further to satisfy the usual construction code requirements, the system is mounted to firring strips 94 located horizontally from the floor. The box channels 12 are provided with screw holes, not shown, at a height corresponding to the location of the firring strips, 94 and screws 96 are inserted into the predrilled holes to secure the channel 12 to the wall.

The channels 12 are spaced a distance apart such that the distance from the back edge of the slotted portion 39 to the back face of the slotted portion 39 of the adjacent channel 12 is slightly greater than the width of a wall panel 14. The wall panel 14 enters a set of tracks 32 and is sufficiently loosely held to slide upwardly to expose the junction box 92 and the cutout 98 along the bottom face of the sidewall 28 of the channel 12.

After the display wall has been completely erected a plurality of outlet strap units **22** are slid into the hollow interior **30** of the box channel with the front plates **42** received in groove **34**. A switch mounting strap unit **20** is then slid in followed by a few more outlet units **22**. The outlets **18** are electrically connected in series and are then connected to a set of terminals **50** of the single throw switch **52**. A cord **100** is attached to the other set of terminals **50**.

The wall panel **14** in front of the junction box **92** is raised and the cord **100** is pulled through the cutout **98** and a **three-pronged plug** 102 **is attached to the cord** 90 **and plugged into the junction box** 92. **Alternatively, the plug** 102 **may be attached to the cord** 100 **before insertion of the straps. In this case, the plug** 102 **should enter the channel first.**

The front plate **42** of the switch mounting strap **20** is held in position by placing the cover **58** over the plate and by securing nut **66** to the threaded bolt **56**. Lighting fixtures **68** are then displayed on the assembled wall system by attaching the fixture backing **86** to the threaded holes **82** on the mounting straps **22**. When the backs are mounted to the straps **22** the engagement of the mechanical connectors binds the straps in position and prevents any further sliding. A short cord portion **104** having a plug **106** can be utilized to electrically connect the fixture to the outlet **18**. The short cord portion and plug **106** can be inserted into the recess **70** and will be hidden from view.

When it is desired to extend the wall display around at outside corner or to form a wall end, outside channel member **24** may be utilized. Outside member **24** includes an inside right angle bracket **108**. A rib **110** is joined to the exposed corner of the bracket **108** at an angle of 135°. A pair of orthogonally disposed wall panel receiving tracks are formed at the outer end of rib **110** by means of a first inside right angle member **112** and a second outside right angle member **114**. The outside corner of the member **114** may be removed to form a three-sided corner. To finish the construction of the inside corner a piece of molding **116** may be secured to backwall **10** and a short panel member **118** secured to the molding **116** and slid into the track **120** formed between members **112** and **114**.

Although particular embodiments of the invention have been described and illustrated herein, it is recognized that modifications and variations may readily occur to those skilled in the art and consequently it is intended that the claims be interpreted to cover such modifications and equivalents.

What I claim is:

**1.** A wall system for flush mounted display of electrical fixtures comprising in combination:

an elongated, hollow, box channel including:

a backwall;

a forwardly extending, orthogonal first sidewall joined to each edge of said backwall defining an elongated recess between said backwall and said first sidewalls;

a partial, intermediate, inwardly extending second wall joined to the forward end of each of said first walls, parallel to said backwall, defining an opening to said recess between the inner ends of said second walls;

a forwardly extending third wall parallel to said first walls joined to the inner end of each of said second walls;

an outwardly extending fourth wall attached to the forward terminus of each of said third walls, said fourth walls having a length less than said second walls;

a forwardly extending fifth wall joined to the outer end of each of said fourth walls, said fifth walls having a length less than said third walls;

a sixth wall parallel to said backwall joined at an intermediate point of its interior surface to the forward end of each of said fifth walls to define adjacent the interior surface of each of said sixth walls and on opposite side of each of said fifth walls an inwardly facing, thin, electrical receptacle mounting plate receiving groove formed between said sixth, fifth and fourth walls and an outwardly facing, thicker, wall panel receiving track formed between said sixth, fifth and second walls, said grooves and tracks being opposed and parallel to said backwall and said fifth wall forming the inner stop for said panel and said plate;

a wall panel dimensioned to be a substantially the thickness of said track and having one side edge slidingly received in said track substantially flush with the interior surface of said sixth front wall and abutting said fifth wall;

at least one electrical fixture mounting member including a mounting plate dimensioned to have a thickness substantially of the dimension of said groove and a width substantially of the dimension between said opposed fifth walls so as to be slidingly received in said pair of inwardly facing grooves, said plate having an aperture; and

electrical receptacle means disposed within said recess and having the front surface of said receptacle received through said aperture.

**2.** A wall system according to claim **1** in which said mounting member includes a pair of vertical spaced mounting plates received within said grooves a vertical rear mounting plate including said aperture and a pair of horizontal plate members joining the said rear plate to said front plates, said horizontal plates having a rearward extension at least equal to the dimension of an electrical plug and said front plates having fastener receiving apertures for mounting a lighting fixture.

**3.** A wall system according to claim **2** including a plurality of said mounting members received in said grooves.

**4.** A system according to claim **1** further including means on said mounting plate for supporting a light fixture.

**5.** A system according to claim **1** including at least two of said channels mounted in a fixed spaced relation with a track from each channel facing an opposed track from the opposite channel and a wall panel slidingly received in said opposed tracks.

**6.** A wall system according to claim **5** further including an outside corner channel having a pair of spaced, forward and rearward orthogonally disposed wall panel receiving track members and a rearwardly extending bracket member joined to said track members.

**7.** A wall system according to claim **5** further including aperture means disposed along the bottom of one of said first sidewalls for access to the hollow interior recess of the channel.