

July 28, 1936.

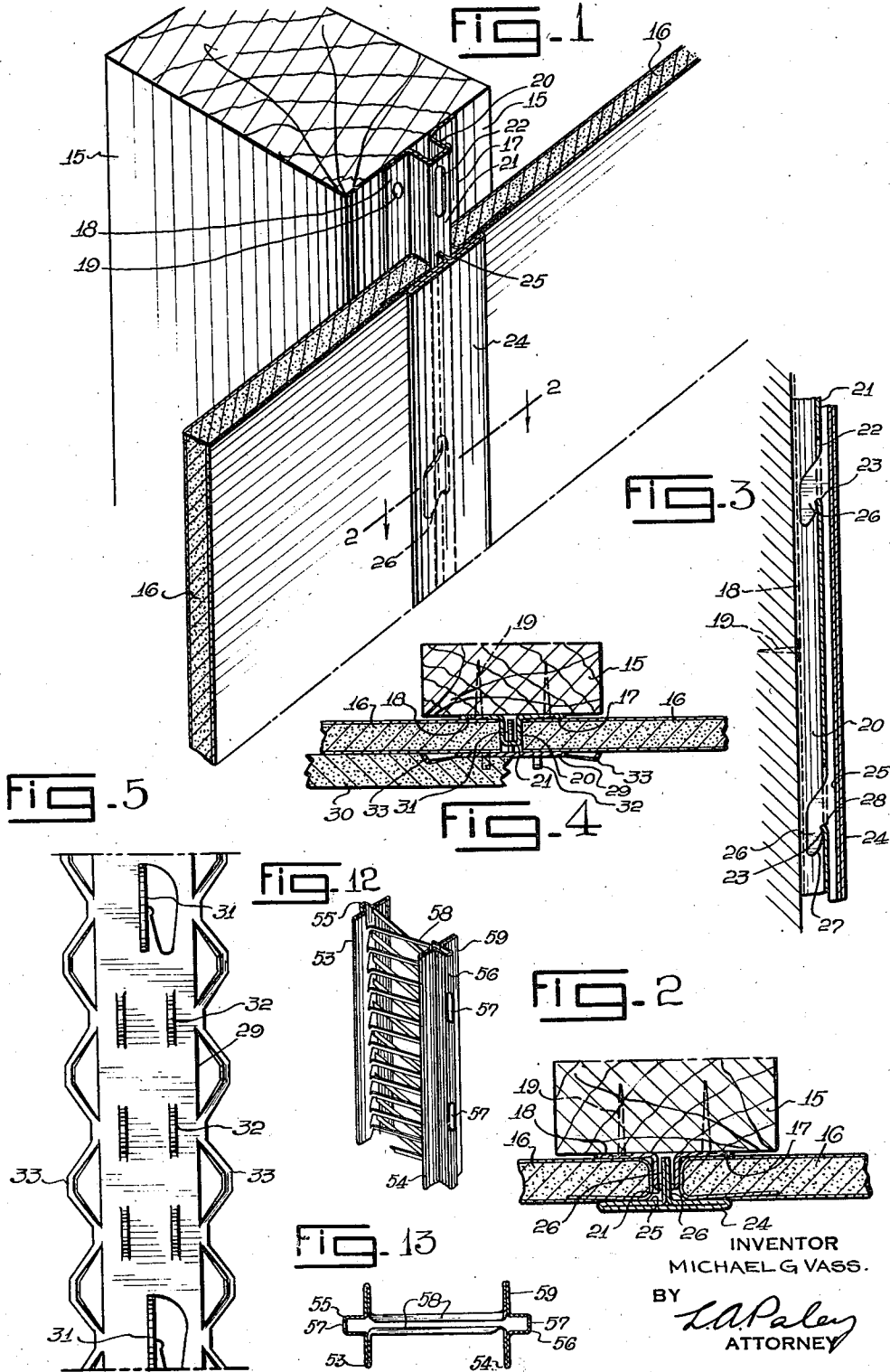
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2,048,981

SUPPORTING DEVICE FOR WALL PANELS

Filed Dec. 14, 1932

2 Sheets-Sheet 1



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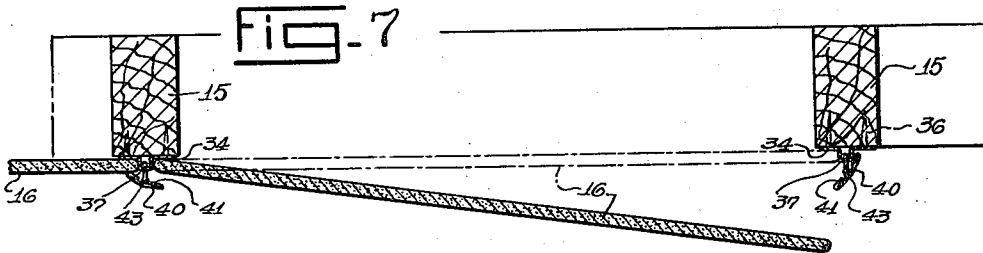


FIG. 9

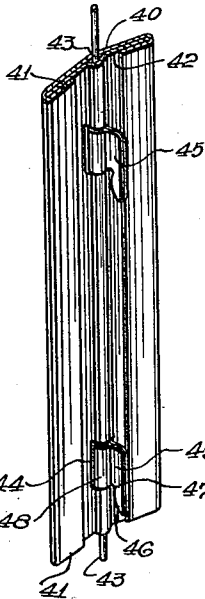


FIG. 10

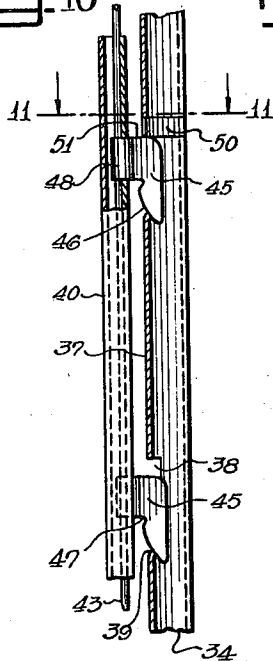


FIG. 8

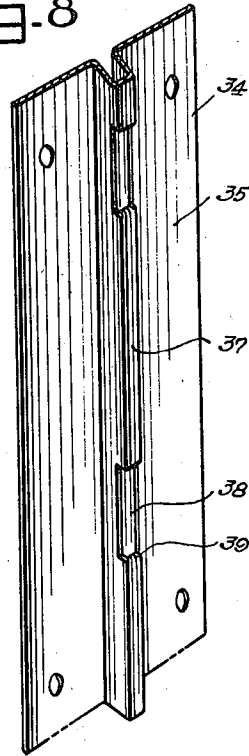


FIG. 6

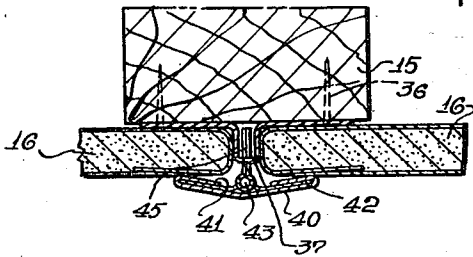
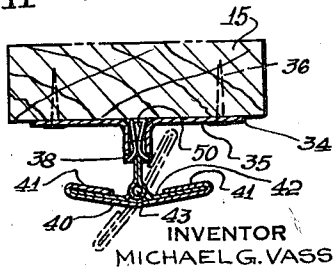


FIG. 11



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UNITED STATES PATENT OFFICE

2,048,981

SUPPORTING DEVICE FOR WALL PANELS

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Application December 14, 1932, Serial No. 647,075

12 Claims. (Cl. 72—118)

This invention relates to building constructions, and has reference more particularly to building constructions in which wall panels are secured to studs by means of elongated strips.

In the construction of building walls and portable partitions, it is desirable to have a means of quickly attaching wall panels to wooden or steel studs. These wall panels may consist of plaster board, fiber board, or any other building material in sheet form suitable for forming the walls of a building. It is also desirable to have the panels quickly removable from the studding if it is desired to remove a partition, and transfer it to another location, utilizing the same wall panels in an undamaged condition.

An object of this invention, therefore, is to provide an attaching strip or device for removably securing the wall panels to the studding of a building.

Another object of this invention is to provide a panel attaching device which is simple in construction, and is easily operated during the erection of a partition; also to improve building constructions in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which

Fig. 1 is a perspective view, partly in section, showing a form of my improved wall construction,

Fig. 2 is a transverse sectional view through the wall construction, taken on line 2—2 of Fig. 1,

Fig. 3 is a central, sectional elevation through the wall construction,

Fig. 4 is a transverse sectional view through a modified form of the attaching device to be used when a plaster coat is to be applied to a wall,

Fig. 5 is an elevation of the attaching clip shown in Fig. 4,

Fig. 6 is a transverse sectional view through a second modified form of the attaching device,

Fig. 7 is a transverse sectional view through a building wall during erection, and employing the attaching device shown in Fig. 6,

Fig. 8 is a perspective sectional view of the base strip used in the attaching device shown in Fig. 6,

Fig. 9 is a sectional perspective view of the attaching strip to be used in connection with the base strip shown in Fig. 8,

Fig. 10 is a sectional elevation through the attaching device shown in Fig. 6,

Fig. 11 is a transverse sectional view through the attaching device taken on line 11—11 of Fig. 10,

Fig. 12 is a perspective view of a steel stud suitable for receiving one of the forms of panel attaching strips, and

Fig. 13 is a transverse sectional view through the stud shown in Fig. 12.

In constructing a building, such as a residence, or an office building, it is customary to use wooden studs 15 secured at the top and bottom to the frame work of the building. The studs 15 are also commonly used for portable partitions, such as those dividing the space in an office building into individual rooms, where it may be necessary to shift the location of a partition from time to time without destroying or damaging wall panels 16. The panels 16 may consist of the standard wall-board or plater board formed in a gypsum core material, with paper cover sheets, or said panels may consist of fiber board, or other building material in sheet-like form.

The base strip 17 is provided with a pair of opposed outstanding flanges 18, each of which is secured to the edge of the stud 15 by nails 19. The central portion of the base strip 17 is folded to form a channel having legs 20 connected by a face web 21. The face web 21 is provided with a plurality of spaced slots or openings 22. One end of each slot is pressed slightly inwardly to form a locking flange 23.

An attaching strip or runner 24 is formed preferably of a single piece of metal, folded longitudinally to form inwardly extending flanges 25 which lie in face abutting relation to the strip 24. The inner edges of flanges 25 are bent outwardly to form an extension of these flanges forming hooks 26, each of said hooks have an interlocking cam surface 27 terminating in a recess 28 adapted to receive the locking flange 23. When erecting the wall, the panels 16 are placed in edge adjoining relation against the legs 20 of the base strip, and then the hooks 26 are caused to enter into the slots 22. By longitudinal movement of the attaching strip 24, the said attaching strip is drawn inwardly with the flanges 25 tightly abutting the adjoining edges of the panels 16 until the strip 24 is locked in position with the flanges 23 entering into the recesses 28. However, the recesses 28 are comparatively shallow so that the wall may be dismantled quickly by reversing the longitudinal movement of the attaching strip 24 and removing the hooks 26 from the slots 22. The attaching strips 24 may be given an exterior dec-

orative surface, such as chromium plating or an enamel finish, and serve to give an attractive panel effect to a wall.

In the modified form of construction shown in Figs. 4 and 5, a base strip 17, identical to that shown in Figs. 1, 2, and 3, is used. However, a modified form of attaching strip 29 is used, which is adapted to the construction in which a layer of plaster 30 is applied to the outer face of the wall panel 16. Attaching hooks 31 are struck out at right angles to the attaching strip 29, said hooks being similar in shape to the hooks 26, and operating in the same way to secure the attaching strip 29 to the base strip 17. The attaching strip 29 is preferably somewhat wider than the attaching strip 24, and is provided with pressed out loops 32 for the purpose of bonding the layer of plaster 30 to said attaching strips 29. The edges of the strip 29 are formed into expanded metal loops 33, which lie in the plane of strip 29 and become embedded in the plaster layer 30 so as to prevent cracking of the plaster adjacent the junction of the wall panels 16. This form of attaching strip, therefore, serves not only to secure the panels 16 to the walls and studding 17, but also to reinforce the plaster so as to prevent cracking of the plaster adjacent the panel joints.

In the form of the device shown in Figs. 6-11, provision is made for slightly greater flexibility in the erection of a wall. A base strip 34 has outstanding flanges 35 secured to the studs 15 by nails 36. A channel shaped rib 37 is formed between the flanges 35 and is provided with slots 38, with a locking flange 39 similar to the device shown in Figs. 1-5. An attaching strip 40 is preferably folded at a slight angle in a longitudinal direction and has its outer edges turned inwardly to form spaced, parallel flanges 41. A hinge strip plate 42 is positioned along the attaching strip 40 with its edges engaged tightly between the attaching strip 40 and the flanges 41. A hinge pin 43 extends longitudinally of the attaching strip 40 below the hinge plate 42. An opening 44 is provided at intervals along the hinge strip 42 so as to expose the hinge pin 43. An attaching hook 45 is formed of double metal with a cam surface 46 and a locking recess 47. The hook 45 is also provided with a hub 48 which embraces the hinge pin 43 to permit pivotal movement about said hinge pin.

In erecting a wall employing this type of device, the hooks 45 are inserted in the slot 38 with just the tips of the cam surfaces 46 engaging the locking flange 39. A U-shaped resilient clip 50 is then inserted in place in one of the slots 38 adjacent the rear side 51 of one of the hooks 45 so as to prevent the inadvertent removal of the hooks 45 from the slots 38. The attaching strips 40 are then placed in position for pivotal movement (Fig. 7) so that the panels 16 may be moved into erected position by a pivotal movement, after which the attaching strips 40 are moved endwise to place the hooks 45 in locking position with the locking flanges 39 engaging the locking recesses 47. After a panel 16 is moved into erected position, the attaching strip 40 is moved about its pivot so that one edge of said attaching strip rests on the erected panel with the opposite edge of the attaching strip 40 still extending outwardly at an angle to the face of the partition so that another panel can be easily and freely inserted under the attaching strip. In this manner a wall can be built up with little or no difficulty in placing the panels in position after the attaching strips

40 have all been placed in loose connection with the locking flanges 39.

It should be understood that any suitable type of steel stud may be used instead of the wooden studs 15. An improved form of steel stud is shown in Figs. 12 and 13. In this improved form of stud, I preferably form the stud of a single piece of metal folded in such a way as to provide double thickness flanges 53 and 54, each of which has an outstanding U-shaped flange 55 and 56. Slots 57 are formed in the webs of flanges 55 and 56 for the reception of hooks 26, 31 or 45 of the corresponding attaching strips. The flanges 53 and 54 are preferably connected by a pair of integral webs formed of expanded, diagonal 15 strands 58, the strands of one web extending at an angle opposite to the strands of the other web so as to impart maximum rigidity to the stud. The free edges 59 of the stud are preferably spot welded together on the flange 54.

I would state in conclusion that while the illustrated examples constitute practical embodiments of my invention, I do not wish to limit myself precisely to these details, since manifestly, the same may be considerably varied without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a wall construction, a stud, wall panels positioned adjacent said stud with the edges thereof in adjoining relation, locking means secured to said stud, and an attaching strip having inwardly and longitudinally extending hooks engaging said locking means and adapted to be locked by longitudinal movement of said attaching strip.

2. In a wall construction, a stud, a base strip having spaced slots, said strip being secured to said stud, and an attaching strip having inwardly and longitudinally extending hooks having locking recesses and arranged to lock to said base strip within said slots so as to attach wall panels to said stud.

3. In a structural device, a metallic base strip having outstanding flanges secured to a wooden stud, a U-shaped rib associated with said strip, said rib having a plurality of spaced openings, and an attaching strip having outstanding hooks adapted to engage in said openings, said hooks having cam surfaces adapted to lock said strips together with a wedging action upon wall panels upon the longitudinal movement of said attaching strip.

4. In a wall construction, a stud member having a plurality of openings, an attaching strip having a plurality of spaced outstanding hooks having cam surfaces adapted to engage in said openings with a wedging action, and wall panels having adjoining edges confined between said stud member and attaching strip.

5. In a wall construction, a stud member having a plurality of openings, an attaching strip having a plurality of spaced outstanding hooks adapted to engage in said openings with a wedging action, wall panels having adjoining edges confined between said stud member and attaching strip, outstanding bonding loops formed on said attaching strip, and a layer of cementitious material over said panels and attaching strip, said cementitious material embedding said bonding loops.

6. In a device of the class described, an attaching strip, and a plurality of spaced hooks pivotally mounted on said attaching strip, said hooks

having wedge surfaces arranged to engage a stud member with a wedging action.

7. In a device of the class described, a metallic stud member having spaced openings formed therein, an attaching strip having a plurality of spaced hooks pivotally mounted thereon and adapted to engage in the openings of said stud member, and a retaining member positioned in one of said openings to prevent the inadvertent removal of said hooks from said openings.

8. A metallic stud having a pair of elongated face plates in spaced, parallel relation, and a pair of parallel webs composed of expanded metal, angularly extending strands connecting said face plates, the strands of one web extending in a direction opposite to that of the strands of the adjoining web, both edges of said plates being secured together in integral relation.

9. In a device of the class described, a metallic stud having a pair of elongated face plates in spaced, parallel relation, a pair of parallel webs composed of expanded metal, angularly extending strands connecting said face plates, the strands of one web extending in a direction opposite to that of the strands of the adjoining web, both edges of said plates being secured together in integral relation, one of said face plates having spaced openings, and an attaching strip having hooks engaging within the openings of said face plate.

10. In a device of the class described a metallic stud member having a plurality of spaced slots,

a locking flange formed at one end of each slot, and an attaching strip having a plurality of outstanding hooks, each of said hooks having a wedge surface terminating in a locking recess, said attaching strip being adapted to be moved longitudinally into locking position with said locking flanges engaging in said recesses so as to confine the adjoining edges of wall panels between said stud member and attaching strip.

11. In a structural device, the combination with a stud, of a locking strip secured to said stud, said strip having a plurality of longitudinally extending slots, and a panel attaching strip having inwardly and longitudinally extending hooks adapted to register with and engaging in said slots, said hooks being adapted to be moved into panel locking position by longitudinal movement of said attaching strip.

12. In a structure of the class described, a pair of elongated members in parallel relation, a series of hooks on one of said members, said hooks having tapered surfaces, the other member being provided with a series of slots registering with said hooks, coplanar wall panels having adjacent edges engaged between said members, said members being arranged for relative longitudinal and transverse movement so as to cause said hooks and tapered surfaces to draw said members together into clamping engagement with the edges of said boards.

MICHAEL G. VASS.