Jan. 12, 1943. A. C. OLSEN 2,307,898

BUILDING STRUCTURE

Filed July 24, 1941

FIG. 1.

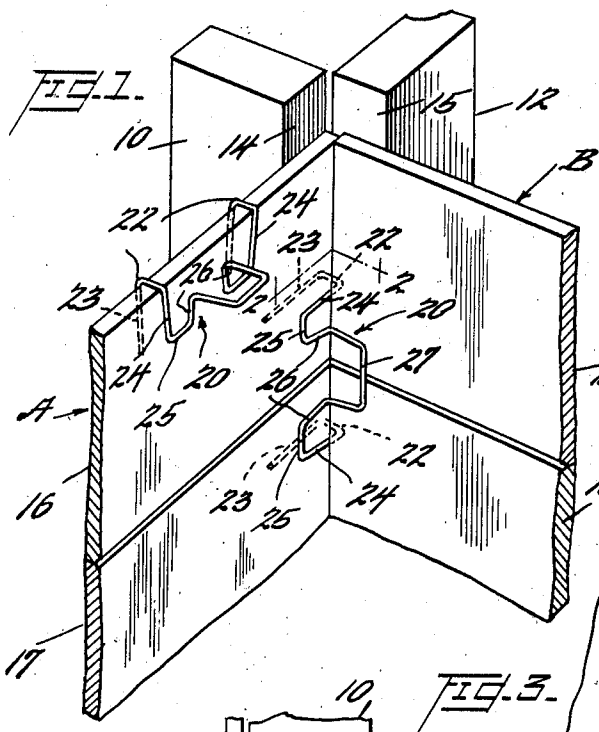


FIG. 2.

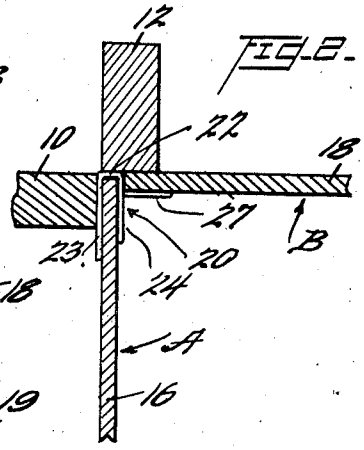


FIG. 3.

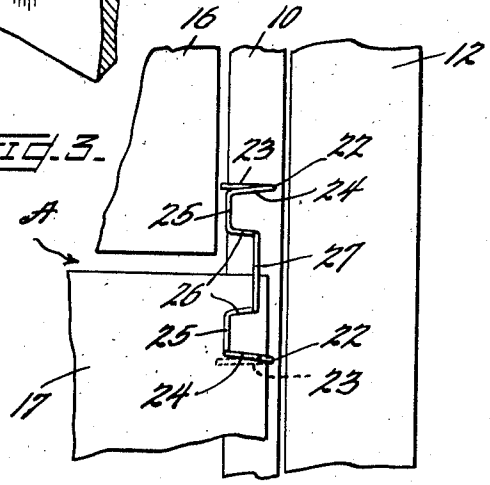


FIG. 4.

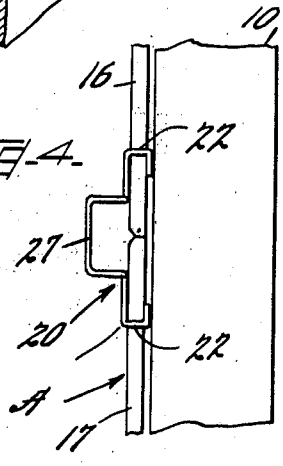


FIG. 5.

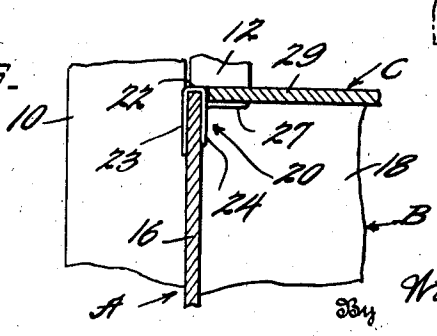
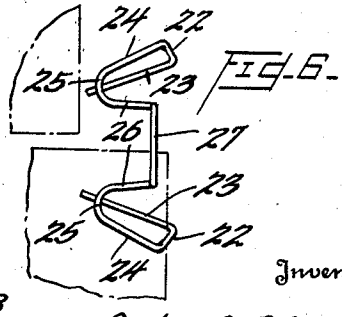


FIG. 6.



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2,307,898

BUILDING STRUCTURE

Anders C. Olsen, Stamford, Conn.

Application July 24, 1941, Serial No. 403,921

11 Claims. (Cl. 72—118)

This invention relates to building structures and particularly to wall and ceiling constructions.

In the interior constructions of modern buildings, the use of both wooden laths and metal lathing of various types is being rapidly superseded by the employment of panelling,—such as panelling composed of plaster board known as gypsum lath and of relatively soft and porous fiberboard, known as insulating lath,—as a base for the application of the plaster to the wall and ceiling surfaces of the rooms. Such panelling lath has been found superior to the old wood lathing in ease of installation, in the elimination of excess plaster, and in permanence and durability. Although panelling lath may obviously be used in connection with metallic supporting structures or framework,—and the novel features of the invention are adapted thereto,—the invention is illustrated and described herein as applied to an interior construction comprising wooden framing.

Because it is readily available, adaptable, and economical, wood has been and will probably long remain the most common material for the framing of dwelling houses, such framing, of course, including the studs, joists, rafters, and other supporting members. Advantage may thus be taken of the wooden frames and a more fire-retarding dwelling also ensured, by the application of gypsum lath or panelling, before applying the plaster to the interior walls and ceilings of such structures. Similarly, where the panelling consists of fiberboard of the character described, a desired degree of heat insulation is obtained.

In order to make the use of this panelling or lathing more convenient, economical, and permanent, the present invention contemplates the provision of certain novel and improved joints and connections between the panels or laths of the surfaces of the interior structure which meet at an angle, especially at the corners of a room between intersecting walls or partitions, or at the line of intersection of a wall with the ceiling of the room. More particularly, it is an object of the invention to provide a novel clip or securing element which is adapted to engage the adjacent margins of the panelling or lathing elements at such corners, and to firmly but resiliently hold them in proper position without the necessity of providing any rigid connection, such as driven fasteners, between the lathing and the studs at these particular points. The corner clips or connections are full-floating and resilient, and the elimination of nailing of the lath to the studs at the room corners tends to reduce cracking of the applied plaster. By thus eliminating rigid securing means, the joists or stud is free to shrink, warp, or twist without setting up any strains in the lathing which would cause the plaster to crack.

Other objects and features of novelty will be apparent from the following specification when read in connection with the accompanying drawing in which one embodiment of the invention is illustrated by way of example.

In the drawing:

Figure 1 is a fragmentary view in perspective of an interior corner of a room, during the application of the lath panelling to the framework;

Figure 2 is a view in horizontal cross-section taken substantially on line 2—2 of Figure 1;

Figure 3 is a view in side elevation looking at right angles toward the plane of the left hand wall shown in Figure 1;

Figure 4 is a view in end elevation of the same wall, looking from right to left as viewed in Figure 3;

Figure 5 is a vertical sectional view through the same wall showing the application of a ceiling panel; and

Figure 6 is a view showing a modified form of clip embodying the invention.

The view in Figure 1 of the drawing shows the corner of an interior construction in which the walls A and B meet at right angles, these walls being represented here by the panels or lathing to which the plaster or other finishing material is later applied. Adjacent the point of intersection of the panelling are positioned the studs 10 and 12, the short faces 14 and 15 of these studs being disposed substantially at right angles and serving to brace the rear surfaces of the panels which respectively make up the walls A and B at the corner. In the illustrated embodiment, the several constructional units of the wall A are designated 16 and 17, and the two adjacent units of wall B are marked 18 and 19. Generically, these units may be of any desired flat stiff materials, but for the specific purposes of disclosure herein they may be considered as panels of gypsum lath which form the base or reinforcing structure of the walls, to which the plaster is applied.

The panels comprising the several wall structures are secured, preferably, by floating attachment means to other studs intermediate the length of the wall, but are free from any rigid attachment with the studs. As already explained, this permits any shrinking or warping of the studs, due to ageing or variations in conditions

of temperature and humidity, to take place without straining the lathing and giving rise to cracks in the plaster. Clips adapted for such floating attachment of the panels to studs intermediate the studs at the corners are described and claimed in my co-pending application Serial No. 254,588 filed February 4, 1939.

In order to maintain the proper angular position of the panels at the intersection of the walls they are resiliently but firmly attached or secured by means of the novel corner clip designated generally by the numeral 20. The clip 20 is equally applicable to abutting panels at the corners of the room between two walls or between the panels of any of the walls and the ceiling, the latter being designated C in Figure 5. As applied to the wall panels the clip is best shown in the perspective view of Figure 1. The clip 20 is made of stiff wire and each end is provided with a squared return bend portion 22 providing a leg 23 at each of the extreme ends of the clip and a substantially parallel portion 24 between which the marginal portions of the panels 16 and 17 are clamped or gripped. From the portions 24 extend inwardly the lengths 25 and from these lengths further extensions 26 are directed outwardly toward but not quite as far as the bends 22. The portions 25 may be curved if desired. The portions 24, 25 and 26 occupy the same plane and each of the loops or bends comprised by these portions constitutes one jaw of the terminal clamping means, to lie snugly against the outer surfaces of the panels 16 and 17, the other jaw being provided by the hooked ends 23 which grip the inner surfaces of the panels. From the ends of the portions 26 a central three-sided loop portion 27 extends in a plane at substantially a right angle to the plane of the loops comprised by the portions 24, 25, and 26, and this loop 27 is adapted to press against the outer i. e., the room side, faces of the edge portions of the panels or laths 18 and 19 of the intersecting wall B.

As seen in Figures 2 and 3, the panelling of the wall A does not extend entirely into abutting relationship with the stud 12 but is spaced therefrom for a distance substantially equal to the thickness of the wire forming the clip 20. However, the distance between the extreme end of the loop portions 22 and the plane of the loop portion 27 should not exceed, although it may be somewhat less than, the thickness of a panel so that the portion 27 may press the panels of wall B firmly against the face of the stud 12. For facilitating the engagement of the terminal clamping portions of the clip with the margins of the panels, the legs 23 are preferably of a length such that the free outer ends thereof lie somewhat beyond the portions 25. In Figure 3 the clip is shown applied to the panel 17, the upper panel 16 about to be applied to the upper clamp of the clip. In Figures 1 and 3, the clip is shown applied along the intersection of walls A and B at a position such that the loop portion 27 straddles the horizontal joint between the vertically adjacent panels 18, 19 thereby to exert the pressing effect on both these panels, while each of the loops comprised by the portions 24, 25 and 26 grips one corner of the adjacent panels 16, 17 of the wall A. It will be understood, however, that if desired the clips may be applied at any position along the intersection, intermediate the joints between the panels of the intersecting wall.

As very clearly shown in Figure 3, the bends of the clip which form the loop 27 and the other loop portions comprising the parts 24, 25 and 26 are not necessarily bent at right angles but may form obtuse-angled junctures and thereby spread over a somewhat greater area of the panels. The bends forming the loops 22 are such that the portions 23 and 24 will become slightly stressed when they are applied to the margins of the panels so as thereby to exert the required clamping action on the panel.

It will be noted that the clip is of a full-floating character, no rigid connections being made between the panels and the studs or other supporting members, such as would be produced by nailing the panels to the studs or other supporting members. This feature, together with the inherent resilience of the material of which the clip is made, produces a corner joint which possesses all of the advantages set forth above.

The application of the clip to the juncture between a wall and a ceiling is clearly shown in Figure 5 of the drawing. The clamping loops 22 adjacent the ends of the clip are clearly shown in Figures 1 and 5 of the drawing, as gripping the upper marginal portion of the panel 16 of the wall A and the intermediate loop portion 27 extends at right angle to the panel adjacent the edge, so as to underlie and exert an upward pressure upon the margin of the panel 29 which forms a part of the ceiling C. If desired, however, the clips may be positioned with clamping loops 22 gripping the marginal portion of the panel 29, so that the intermediate loop portion will extend downwardly at substantially a right angle to the ceiling panel and exert pressure on the outer i. e., the room side, face of the panel 16. The ceiling panel laths may be secured at other portions along the length thereof to the joists of the framework by means of clips of the type shown in my co-pending application above-identified.

In Figure 6, I have shown a modified form of the clip, differing from the form shown in the other figures in that the terminal clamping loops are bent in a direction such that each of these loops, comprised by the bend 22, leg portion 23 and portion 24, will lie in a plane extending at an acute angle with respect to the adjacent loop comprised by the portions 24, 25 and 26, and preferably so that the outer ends of the legs 23 will be aligned approximately with the center of the portions 25. This formation of the terminal clamping loops serves to permit each terminal clamping loop to exert a firm gripping action on the panel independently of the other terminal clamping loop, and also by reason of the resiliency of the loops permit them to be used with panels of varying thicknesses, within reasonable limits.

For brevity herein, the term "corner" as used in the claims is intended to refer to intersections between vertical walls as well as between a ceiling and a wall.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In an interior construction for buildings, in combination, supporting framework disposed adjacent a corner of a room and facing in directions at an angle to each other, panels comprising the wall structures which meet at the corner, said panels disposed in braced contact with the respective framework, and wire clips resiliently holding the said panels at said corners independently of said framework, each of said clips comprising clamping portions extending in generally parallel planes and straddling the marginal portion of the panels of one of said walls, and a

portion intermediate said clamping portions extending in a plane substantially at a right angle thereto and bearing against the outer surface of the panels of the other of said walls.

2. In an interior construction for buildings, a corner arrangement comprising a pair of panels meeting at an angle, and a floating clip for resiliently holding the adjacent marginal portions of the panels, said clip having a part clamping the marginal portion of one of said panels and another part bearing against the room side of the other of said panels without clamping the latter.

3. In an interior construction for buildings, a corner arrangement comprising a pair of panels meeting at an angle, and a floating clip for resiliently holding the adjacent marginal portions of the panels, said clip having each of its ends return bent to clamp the marginal portion of one of said panels and its mid-portion provided with an extension bearing against the room side of the other of said panels without clamping the latter.

4. In an interior structure for buildings, a corner construction comprising a pair of panels the planes of which intersect, and the edges of which are disposed adjacent each other, and a floating clip resiliently holding the adjacent marginal portions of said panels, said clip comprising a wire bent to provide spaced clamping portions at the ends thereof for straddling and gripping the marginal portion of one of the panels, and a looped middle portion bearing against the room side of the marginal portion of the other panel without clamping the latter.

5. In an interior structure for buildings, a corner construction comprising a pair of panels the planes of which intersect, and the edges of which are disposed adjacent each other, and a floating clip resiliently holding the adjacent edge portions of said panels, said clip comprising a wire bent to provide spaced clamping portions at the ends thereof straddling and gripping the marginal portion of one of the panels, said spaced clamping portions each comprising a projecting leg and an open loop portion disposed in spaced relation and receiving between them the margin of one of the panels, and a looped middle portion for bearing against the room side of the marginal portion of the other panel without clamping the latter.

6. As an article of manufacture, a clip for use in floatingly holding panels at the corners in building structures or the like, said clip comprising a somewhat resilient wire bent to provide hooked ends, a looped central portion, and looped intermediate portions, the plane of the latter being disposed substantially at right angles to the plane of the central looped portion, and the intermediate looped portions each comprising one jaw of terminal clamping means of which the hooked end forms the other jaw.

7. As an article of manufacture, a clip for use in floatingly holding panels at the corners in building structures or the like, said clip comprising a somewhat resilient wire bent to provide intermediate spaced open looped portions occupying a common plane and comprising the body portion of the device, a central open looped portion connecting said first named looped portions and occupying a plane at substantially a right angle to that of the first looped portions, the ends of the wire being bent to form hooks the planes of which are substantially at right angles to both the planes of the intermediate and central looped portions.

8. As an article of manufacture, a clip for use in floatingly holding panels at the corners in building structures or the like, said clip comprising a somewhat resilient wire bent to provide intermediate spaced open looped portions occupying a common plane and comprising the body portion of the device, a central open looped portion connecting said first named looped portions and occupying a plane at substantially a right angle to that of the first looped portions, the ends of the wire being bent to form hooks the planes of which are substantially at a right angle to the plane of the intermediate looped portions.

9. As an article of manufacture, a clip for use in floatingly holding panels at the corners in building structures or the like, said clip comprising a somewhat resilient wire bent to provide intermediate spaced open looped portions occupying a common plane and comprising the body portion of the device, a central open looped portion connecting said first named looped portions and occupying a plane at substantially a right angle to that of the first looped portions, the ends of the wire being bent to form hooks lying on the side of the intermediate loops opposite the central loop.

10. As an article of manufacture, a clip for use in floatingly holding panels at the corners in building structures or the like, said clip comprising a somewhat resilient wire bent to provide intermediate spaced open looped portions occupying a common plane and comprising the body portion of the device, a central open looped portion connecting said first named loop portions and occupying a plane at substantially a right angle to that of the first looped portions, the ends of the wire being bent to form hooks, the outer ends of which extend inwardly to approximately the center of the respective intermediate loops.

11. As an article of manufacture, a clip for use in floatingly holding panels at the corners in building structures or the like, said clip comprising a portion bent to provide a clamping portion having jaws for embracing the margin of a panel, and a portion extending laterally in a plane substantially at a right angle to the planes of said jaws, said laterally extending portion being arranged to bear against one side only of the margin of a panel meeting the first-named panel at said corner without embracing the edge of said meeting panel.

ANDERS C. OLSEN.