

Dec. 13, 1966

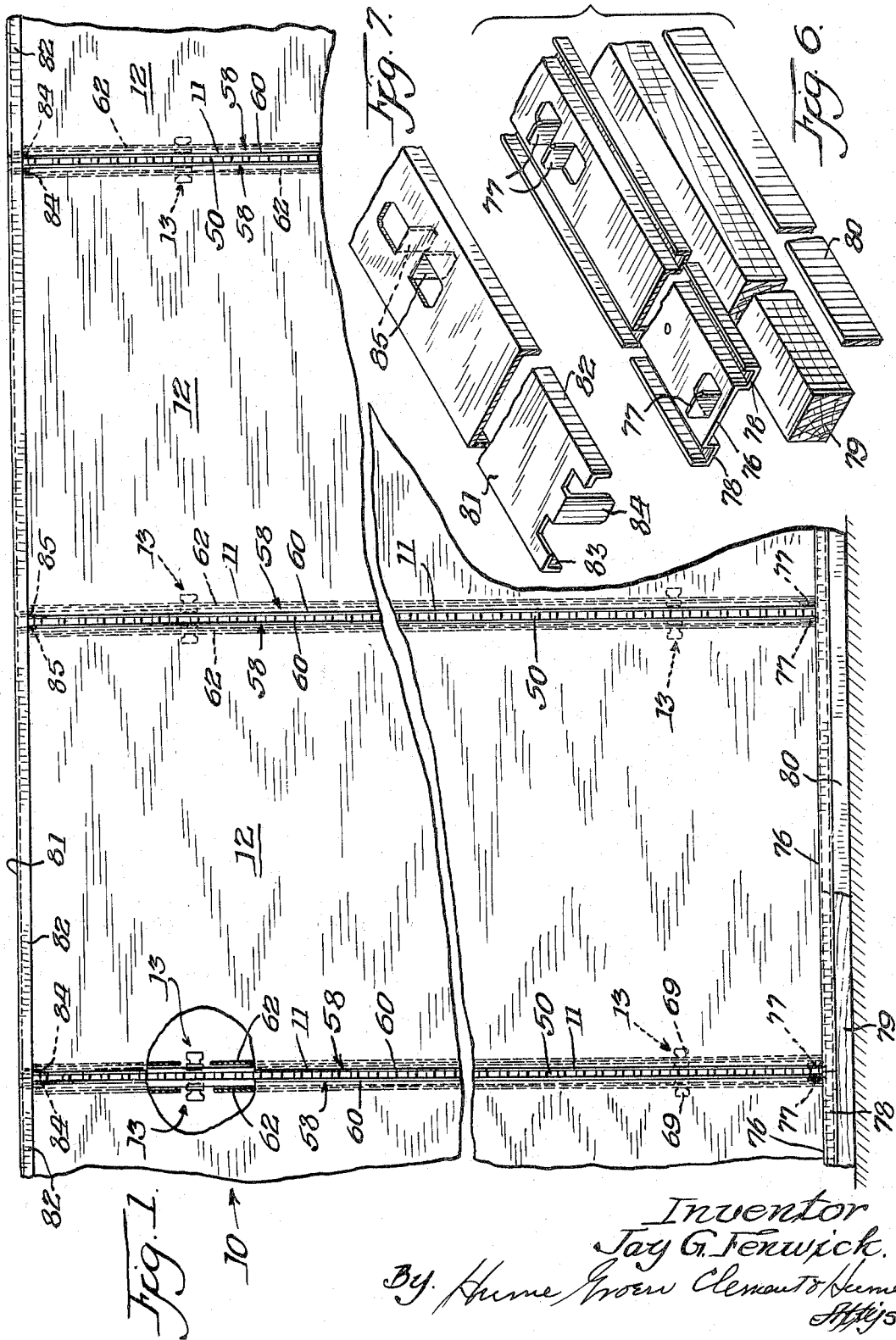
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3,290,847

WALL CONSTRUCTION

Filed March 2, 1964

2 Sheets-Sheet 1



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Fig. 2.

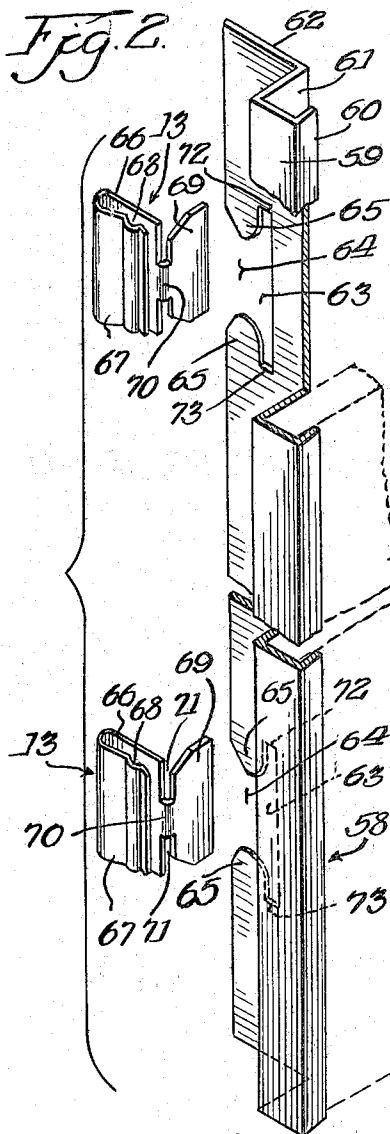


Fig. 3.

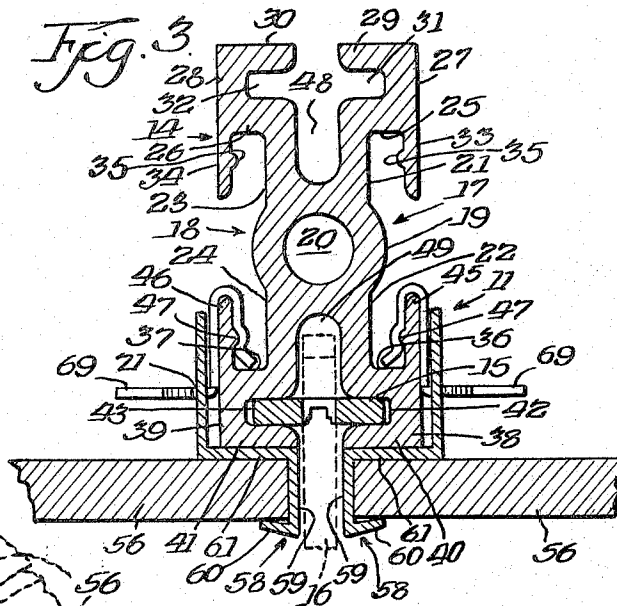
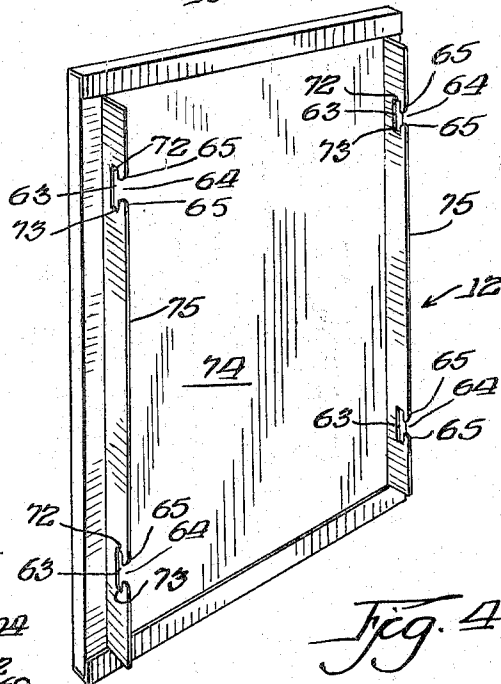


Fig. 4.

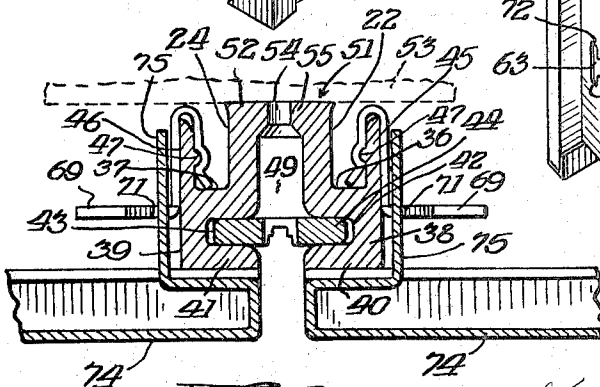


Fig. 5.

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3,290,847

WALL CONSTRUCTION

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7 Claims. (Cl. 52—489)

My invention relates to wall construction and has particular reference to a wall performing the function a room divider for separation of room space into a plurality of compartments, or acting as a room separator for a combined sales and storeroom, or may be used as a rear enclosure wall for shelving or as a wall shell for application to a permanent wall in which panels are used for decorative and ornamental purposes in the arrangement of sales rooms for example, and for many other purposes in which a built-up wall may be desired.

Another and further object of my invention is the provision of a built-up wall which can be taken apart and rebuilt at a different location if desired without changing the parts and which can be used in erecting the wall in a new or different location to meet the needs of the user or the architect in the design and arrangement of sales and office space in a building.

Another and further object of my invention is the provision of wall panels or sections of various types and colors which can be removed and replaced with sections of different colors thereby providing an entirely new decor for appearance of the room or of the walls enclosing such a room or space as may be provided.

Another and further object of my invention is the provision of wall structures consisting of a plurality of preformed parts which can be secured together to form a partition wall converting such space to rooms of varying sizes and wall heights thereby dividing the room space into areas of varying sizes to fit the needs of the particular users for varying purposes including residences as well as business properties and the like.

These and other objects of my invention will be more fully and better understood by reference to the accompanying drawings in which:

FIGURE 1 is an elevational view of one face of a wall embodying my invention;

FIGURE 2 is a perspective view of a panel retainer and holding clips therefor forming a component of my improved wall structure;

FIGURE 3 is a cross-sectional view through a combination slotted structural stud with wall sections secured on one edge thereof;

FIGURE 4 is a perspective view of a wall panel forming a part of my improved wall construction;

FIGURE 5 is a cross-sectional view of a combination slotted stud of modified form;

FIGURE 6 is a perspective view of one form of floor anchoring means for the vertical studs; and

FIGURE 7 is a perspective view of a portion of a cap rail for the upper edge of the wall.

Referring now specifically to the drawings, a wall 10 is shown which is typical of the form of wall of my invention and which consists of three essential elements—a combination slotted standard or post 11, a panel 12 and clips 13, 13. The preferred form of combination standard is shown by FIGURE 3 in cross-section for use in a two faced wall structure and consists of a basic slotted post 14 and a bracket supporting trip 15 incorporated therewith with a portion of a bracket 16 secured thereto for the support of shelves, bulkheads for drawers, and the like, when a back wall is provided in such structure and for other purposes pertinent to the display and storage of merchandise if desirable.

The post 14 is integrally formed preferably of extruded aluminum and comprises channel portions 17 and 18 connected at their centers by a portion 19 with a conduit 20 extending the length thereof and having web portions 21, 22, 23, and 24 extending outward of the central portion 19 in spaced back-to-back relation with each other, which conduit 20 may be used as a wiring conduit, if desired, or may have a leveling foot fitted therein. If the leveling plug is fitted into the conduit 20 in the foot and opening through the side wall of the post above the plug through which wires could be passed or a hollow foot could be provided for the passage of wires therethrough. The post 14 may be used in a free standing position (FIGURE 1) or may be supported by a floor at its lower end and by a ceiling at its upper end. In some installations some of the posts may terminate short of the ceiling, while others are attached thereto at their upper ends.

The web portions 21 and 23 have flange portions 25 and 26 thereon with L-shaped portions 27 and 28 integrally formed with the flanges 25 and 26 with inwardly extending side portions 29 and 30 spaced outward of the flange portions 25 and 26 whereby channels 31 and 32 are formed for purposes hereinafter described. Wing portions 33 and 34 are integrally formed with the flanges 25 and 26 at their outer end and extend inwardly therefrom spaced from the web portions 21 and 23 and have ribs 35, 35 on the inner faces thereof which wing portions 33 and 34 serve as holding members for the spring clips 13 which are attached thereto for holding the panels 12, 12 in place described more in detail hereinafter.

The webs 22 and 24 have outwardly turned flanges 36 and 37 thereon with L-shaped extension 38 and 39 formed therewith with inwardly extending side portions 40 and 41 spaced outward of the flange portions 36 and 37 whereby channels 42 and 43 are formed which are the same width and depth as are the channels 31 and 32 and are open toward each other as are channels 31 and 32 to form complete channels in each instance to receive bracket strips 15 and extend the entire length of the slotted post 14.

Wing portions 45 and 46 are integrally formed with the flanges 36 and 37 at their outer ends and extend inwardly therefrom spaced from the web portions 22 and 24 and have ribs 47, 47 in their inner faces which wing portions 45 and 46 perform the same function as do the wings 33 and 34 as holding means for the spring clips 13 which are attached to the wing portions 45 and 46 for holding the panels 12, 12 in position upon the posts 14, 14.

The center 19 of the post 14 acts as a spacer for the channel sections 17 and 18 thereby forming a channel 48 between the webs 21 and 23 with a similar channel 49 being formed between the webs 22 and 24 which channels extend the length of the post 17 to receive the inner ends of brackets 16 when assembled in a final structure such as a shelf. The edges of the side portions 29 and 30 and 40 and 41 are spaced apart a distance equal to the width of the channels 48 and 49 whereby open channels are formed between the edges of the portions 29 and 30 and between the edges 30 and 40 which extend the length of the post 17 and are in register with the channels 48 and 49 and through which the brackets 16 extend and which are secured in the bracket strips 15.

The bracket strips 15 are preferably made of steel or any other metal having high shear strength and is approximately 3/4" wide and 1/8" in thickness in the form shown and has spaced openings 50, 50 therein through which the inner ends of the brackets 16, 16 are adapted to extend in assembled relation of the composite structure. Web portions are provided throughout the length of the bracket strip 44 in spaced relation with each other be-

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tween each of the openings 47, 47, over which the brackets 16 are hooked when such brackets are used with the wall structure.

A modified form of composite post for a single faced wall is shown in FIGURE 5 which is substantially identical in form as is the lower half of the structure illustrated in FIGURE 3 and is described accordingly. This form is adapted for use in the placing of a wall structure of my invention in position against a fixed wall and in which a base member is provided which consists of a main post 51 of general U-shape in cross-section having a flat side portion 52 adapted to be fitted against a permanent wall 53 and secured thereto by a plurality of screws which pass through openings 54 which extend through the central portion 55 of the side portion 52 and into the permanent wall 53. The leg portions 22 and 24 forming the U-shape portion of the post 51 have flange portions 36 and 37 integrally formed therewith with L-shaped extensions 38 and 39 thereon having leg portions 40 and 41 thereon extending inwardly toward each other but spaced apart the same distance as is the width of the channel 49, and which extend the length of the post 11 so the brackets 16, 16 may be secured to the bracket strip 44, mounted on the post 51. The leg portions 40 and 41 are spaced outward of the flanges 36 and 37 to form the channels 42 and 43 open at their inner ends adjacent the channel 49 in juxtaposition with each other and extend the length of the post 11, and which have the bracket strip 44 mounted therein. Wing portions 45 and 46 are provided having ribs 47, 47 thereon over which the clips 13 are fitted as hereinafter described.

The panels 12 may be made of various wall materials such as plastic material, composition wall board such as is illustrated in FIGURES 2 and 3, or may be made of sheet material as shown in FIGURES 4 and 5, such as steel, aluminum, fiber glass or the like, both forms of which are self-locking and easily detachable from the supporting posts 11, 11. The panels 12 may be vinyl coated in a variety of colors or may be painted in any color desired, or combined in a wall of various colors for decorative purposes to suit the desires of users or of decorators.

The panel shown in FIGURE 3 consists of a section 56 of plastic material preferably having a plastic coating 57 such as vinyl on the outer face thereof which is cut to desired size and shape and to which panel retaining strips 58, 58 are applied to each side edge of the section 56 which serve as fastening means for the panels 12 to the posts 11. These retaining strips 58 are in the form of a channel section 59 with a narrow flange 60 on the outer edge thereof and a wider inside flange 61 on the inner edge of the section 59 which flange 61 has a fastening strip 62 integrally formed therewith as a part of the retaining strip 58 and is bent at right angles to the flange 61 and has a plurality of two-way bayonet openings 63, 63 therein having entrance openings 64, 64 centrally thereof with tongues 65, 65 formed on the fastening strip 62 projecting inward toward each other on each side of the entrance openings 64, 64 and on each side thereof. The reason the double bayonet openings 64, 64 are used is because a strip so formed can be used as either a right or left at the side of the panel by reversing the ends of the strip, and thus simplicity of use is provided as well as ease of application for the workman in applying the strips 58 to the panels 56 and with which the spring clip 13 hereinafter described can be fitted.

The spring clips 13 consist of a U-shaped body member having two spring leg portions 66 and 67 with the leg portion 67 having a groove 68 therein into which the ribs 47, 47 on the wings 44 and 45 are fitted when the clips 13, 13 are attached to the wing portions 44 and 45 forming a part of the post 11. The leg portion 66 of the clip 13 has a wing portion 69 connected thereto by a web 70 with slots 71, 71 above and below the web 70 between the inner edge of the leg portion 66 and the

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inner edge of the wing portion 69 into which either the edge portion 72 of the fastening strip 62 is fitted, or if the fastening strip 62 has its ends reversed as it would be on the opposite side of the panel 12, the edge 73 at the opposite end of the slot 63 would be fitted into the slot 71 above the web 70 with the inner edge of one of the fingers 65 engaging the web 70 thereby holding the panel 12 in place.

Another form of panel 12 made of steel sections 74, 74 or other sheet material as shown in FIGURES 4 and 5 may be used instead of the plastic board panel hereinabove described and may be vinyl coated or painted as desired. The panels 74 are integrally formed of sheet material with the strips such as 58, 58 omitted therefrom but the side of the panels 74 on their side edges are fashioned in the same contour as are the retainer strips 58, 58 with the wing portions 75, 75 thereon slotted and dimensioned in the same fashion as are the strips 56 and are secured to either the posts 14 or 51 by the clips 13 the wing portions 69 of which clips 13 extend into slots of bayonet 63, 63 in the wing portions 75, 75 of the sections 74, 74.

A channel section 76 is provided as a base member for mounting the slotted standards 11, 11 to a floor and has upturned struck out spaced ears 77, 77 thereon which extend into the channels 17 and 18 in the post 11 thereby holding the post 11 against sidewise movement in the channel section 76, and also act as spacers for the posts 11, 11. The section 76 has channels 78, 78 on each of its sides to receive the lower ends of the panel sections 56, 56 of the finished wall. A base member 79 may be used if desired which is a form of a studding or the like and may be nailed to the floor with the channel section 76 fitted thereover so the base member 81 is fitted between the channel sections 78, 78 in each side of the channel section 76. A baseboard member 79 is provided which can be fitted against the side of the base member 79 and under one or both of the channel sections 78, 78, if desired, to provide a more finished appearance to the wall.

A channel cap rail 81 is provided which is of sufficient length to span a single wall section between each pair of posts 11, 11 or may be of a length to span a plurality of sections as erected in a wall and has flanges 82 and 83 thereof adapted to be fitted on the upper ends of the panels 56, 56 to form a finished appearance to the wall. A tongue portion 84 is provided at the end of the cap 81 which is fitted into one of the channels 17 or 18 at the sides of the post 11 after the clips are in position. Other pieces such as 84 are struck out of the openings 85, 85 which extend into the openings 17 or 18 at the sides of the posts 11, 11 to prevent spreading of the wall after it is set up, and may be plugged into two or more of the posts 11, 11.

The erection of the wall is preferably performed by making it in sections, in which case the bottom foundation is laid in position and a pair of posts 11 placed in the channel section 76, which channel section 76 has previously been prepared and the ears 77, 77 provided therein in spaced relation so that the distance between the posts is determined and the posts are erected and a plurality of clips 13 applied to the posts and thereafter the panels can be placed in position by centering the wing portions 69 of the clips 13 within the slots in the holding strips which position will be slightly above the normal position of the panel when in position on the wall. The panel is thereupon allowed to drop, in which position the upper edge of the panel would be in alignment with the upper end of the posts 11 and caps 81 placed in position and the wall is complete. A wall such as described is generally known as a perimeter wall and is placed in a room in spaced relation from the fixed walls to provide a storage space between the perimeter wall and the permanent wall forming a part of the building. In such case it is customary to provide transverse bracing of the upper

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end of the perimeter wall to the fixed wall to prevent swaying or movement of vibration of the perimeter wall.

In other cases the posts 11 are of sufficient length to be secured to a floor and anchored to a ceiling, in which case, of course, lateral bracing is not required. Ordinarily, every other post could be anchored to the ceiling in this position and provide stability to the perimeter wall thus erected.

In the case where partitions are used to divide an expanded space, then the lower end of the post 11 can be securely anchored to the floor as hereinabove described, the wall built in sections as heretofore described, and finished with the capping rails thereby providing a substantially built wall for partitioning purposes which will remain stable in use.

The panels 12 are so dimensioned that they are spaced from each other on their adjacent edges as shown in FIGURES 3 and 5 of the drawings to permit the attachment of brackets 16 to the bracket supporting strips 15 and 44 where a shelf may be produced upon a wall and where a backing may be desired for shelves in the form of open cabinets, files, and display cabinets, and the like. If such bracket space is not desired, the adjacent panels may be placed in abutting arrangement with each other thereby presenting a closed surface in front of the posts. In such case, the bracket strips could be omitted from the posts thereby slightly reducing the use of such installation.

While I have described more or less precisely the method employed and the apparatus used therewith, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit or scope of my invention.

What is claimed is:

1. A wall structure consisting of a plurality of posts having wing portions at each of their sides, bracket supporting strips in said posts, spring clips secured to the wing portions of the said posts and having wing portions thereon and wall panels having bayonet slots in their side edges into which the wings on the clips are fitted whereby the panels are secured to and supported by the said clips, the panels being spaced apart at the said posts to permit attachment of support brackets to the bracket supporting strips.

2. A wall structure consisting of a plurality of posts having wing portions at each of their sides, bracket supporting strips in said posts, spring clips secured to the wing portions of the said posts and having wing portions thereon and wall panels having bayonet slots in their side edges into which the wings on the clips are fitted whereby the panels are secured to and supported by the said clips, the panels being spaced apart at the said posts to permit attachment of support brackets to the bracket supporting strips.

3. A wall structure consisting of a plurality of posts having wing portions at each of their sides, bracket sup-

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porting strips in said posts, spring clips secured to the wing portions of the said posts and having wing portions thereon and double wall panels having bayonet slots in their side edges into which the wings on the clips are fitted whereby the panels are secured to and supported by the said clips.

4. A wall structure consisting of a plurality of posts having wing portions at each of their sides, bracket supporting strips in said posts, spring clips having a V-shaped spring portion and a wing portion secured thereto by a web portion of less length than is the wing portion, and wall panels having bayonet slots in their side edges into which the wings on the clips are fitted whereby the panels are secured to and supported by the said clips.

5. A wall structure consisting of a plurality of posts having wing portions on each side thereof, wall panel sections having a plurality of aligned elongated slots in the side edges thereof and having side entrance openings into the slots centrally thereof with tongue portions on each side of the entrance opening and a plurality of spring clips secured to the wing portions of the said posts having wing portions secured thereto of lesser length than are the slots whereby the said panels are secured to and supported by the said posts.

6. A wall structure consisting of a plurality of posts having wing portions on each side thereof, wall panel sections having a plurality of aligned elongated slots in the side edges thereof and having side entrance openings into the slots centrally thereof with tongue portions on each side of the entrance opening and a plurality of spring clips secured to the wing portions of the said posts and having wing portions secured thereto of lesser length than are the slots, and of slightly lesser length than are the entrance openings in the panels in communication with the said slots.

7. A wall structure consisting of a plurality of posts having wing portions on each side thereof, wall panel sections having a plurality of aligned elongated slots in the side edges thereof and having entrance openings into the slots centrally thereof with tongue portions on each side of the entrance opening and a plurality of spring clips secured to the wing portions of said post having U-shaped gripping portions and wing portions connected thereto by means of webs, whereby the said clips are secured to and supported by the said posts, the said tongues being in engagement with the web portions of the clips thereby securing the panels to the said posts.

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