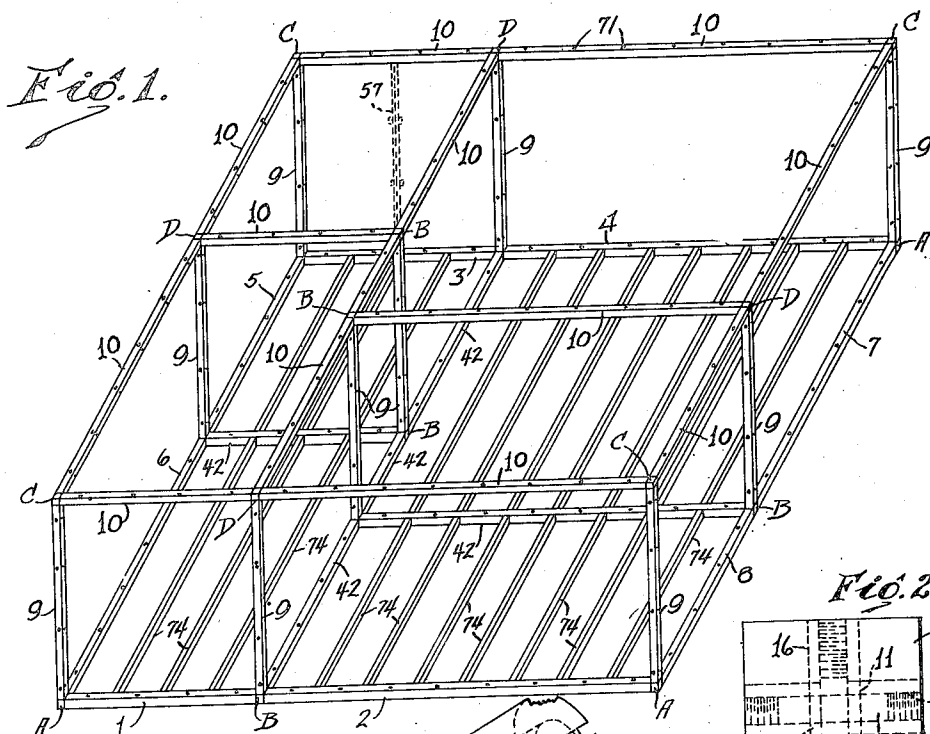
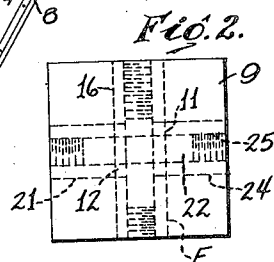
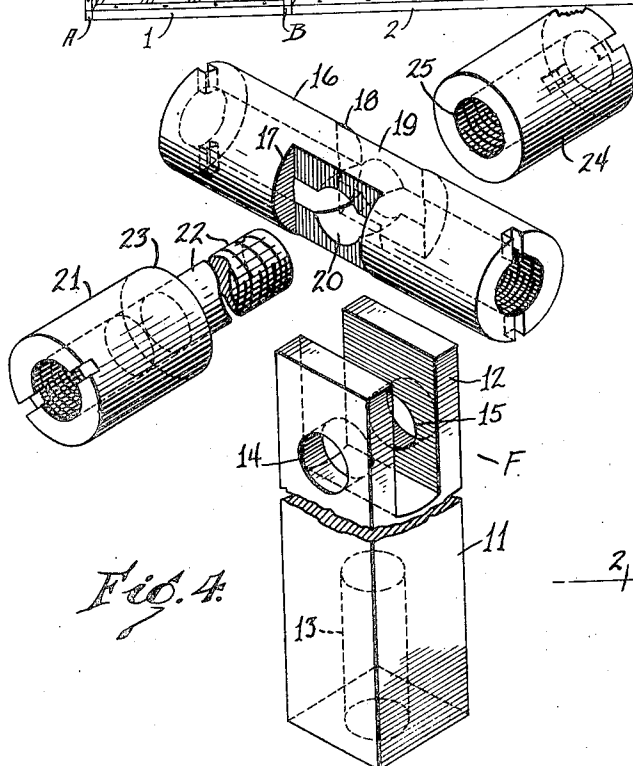
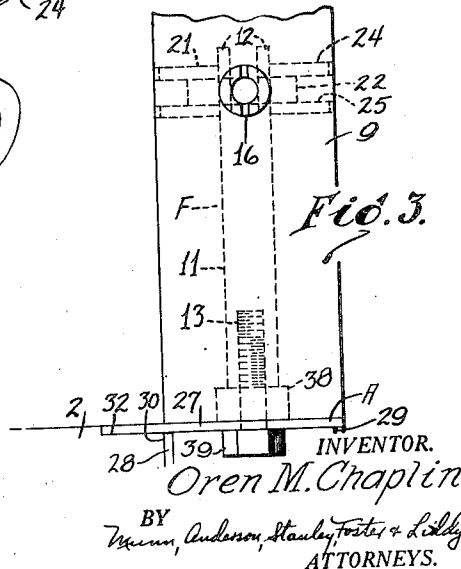


Sept. 8, 1936.

O. M. CHAPLIN
SECTIONAL BUILDING
Filed Sept. 11, 1933

2,053,462

3 Sheets-Sheet 1



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2,053,462

Filed Sept. 11, 1933

3 Sheets-Sheet 2

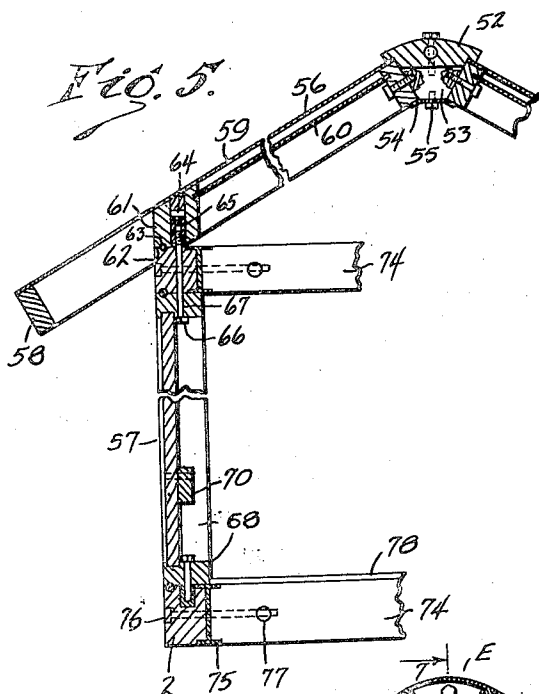
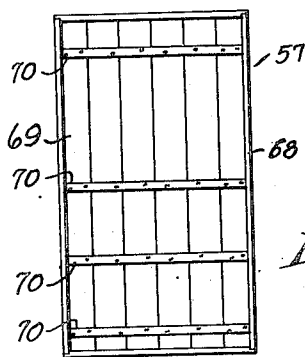
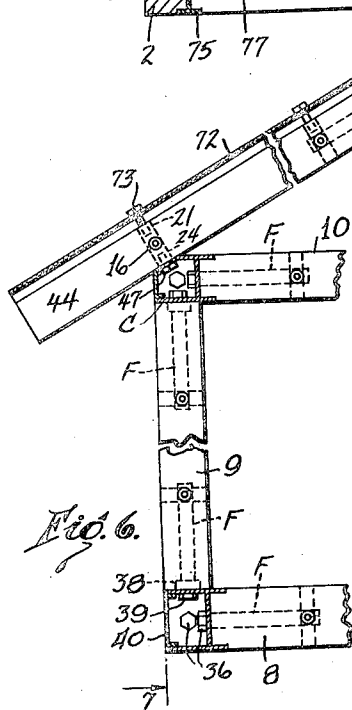
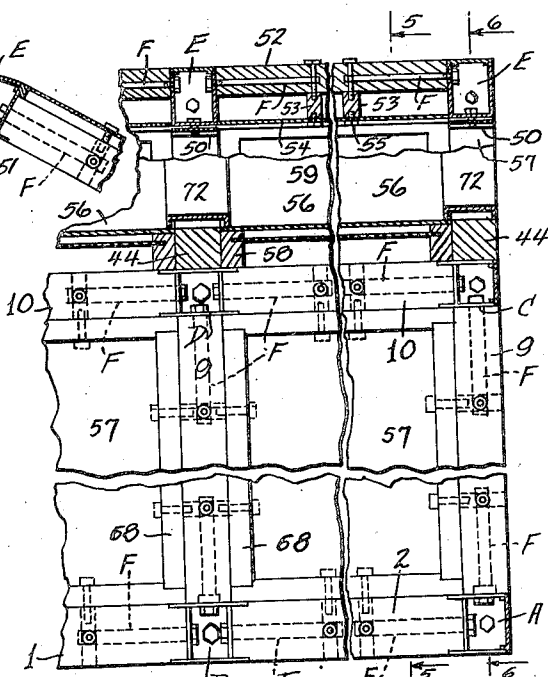


Fig. 7.

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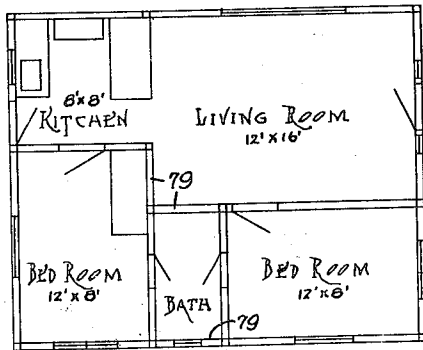
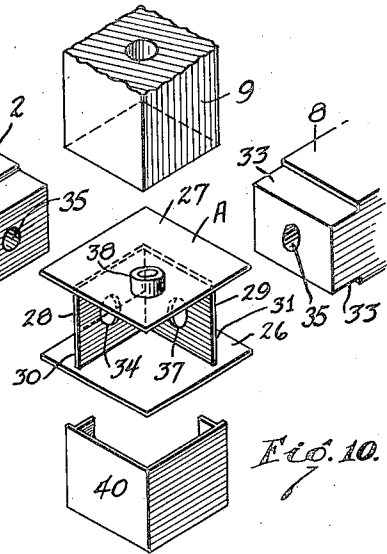
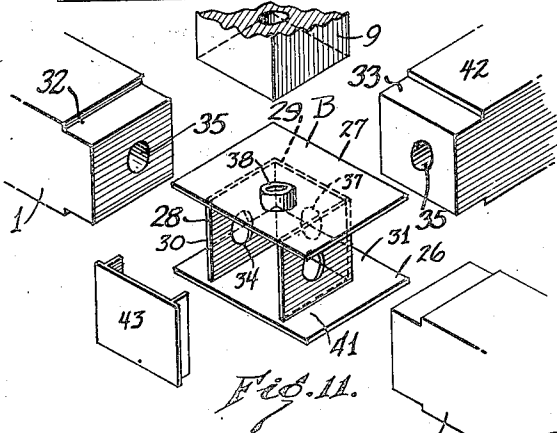
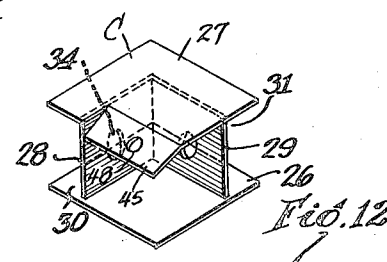
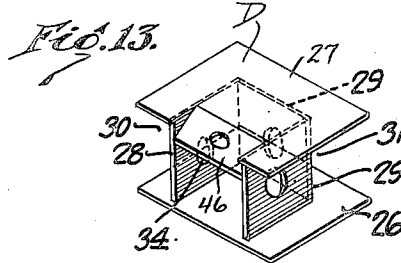
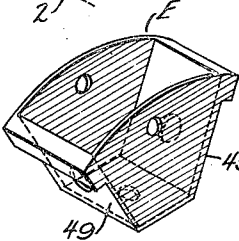
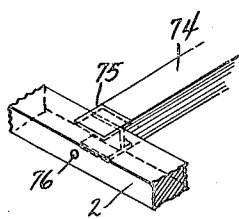
Sept. 8, 1936.

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Filed Sept. 11, 1933

2,053,462

3 Sheets-Sheet 3

Fig. 9.



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2,053,462

SECTIONAL BUILDING

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Application September 11, 1933, Serial No. 689,036

17 Claims. (Cl. 20—1)

My invention relates to improvements in sectional buildings, and it consists of the combinations, constructions and arrangements hereinafter described and claimed.

5 An object of my invention is to provide a sectional building in which the rooms are bounded by structural members, these members defining walls which are covered by panels or sections. One of the principal features of the invention is to provide structural members of predetermined sizes and lengths with anchorages, thus permitting these members to be fabricated at a manufacturing plant and to be shipped to the place of erection. These members are secured together by 15 bolts or other suitable fastening means.

I prefer to use members which are either four, eight, twelve, sixteen, etc., feet long. The entire house is constructed from these members and the various rooms are given any desired size within 20 limits of conservative design, which are multiples of four. In case a room wall has a wall extending at right angles thereto, but from only one side thereof, a post would be placed at the juncture of the two walls, and a second post would be placed 25 in the wall paralleling the first wall so that the inside length of the two parallel walls would be equal.

A further object of my invention is to provide a form for securing the structural members together, this form being of different shapes for use at the corners of the building, or at contiguous wall sections of the building, or at the roof of the building. In addition I provide a novel ridge form for use in the roof.

35 The parts are interchangeable and buildings of various shapes can be readily constructed, and all that is necessary is the provision of the right number of structural members of proper size and length and the required number of forms for securing the structural members together.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

45 My invention is illustrated in the accompanying drawings forming a part of this application, in which

Figure 1 is an isometric view of a building showing the structural members disposed in place;

50 Figure 2 is a top plan view of one of the structural members illustrating how a fastening member is secured to the structural member;

Figure 3 is a side elevation of Figure 2;

Figure 4 shows a fastening member disassembled;

Figure 5 is a section along the line 5—5 of Figure 7;

Figure 6 is a section along the line 6—6 of Figure 7;

Figure 7 is a section along the line 7—7 of Figure 6;

Figure 8 is an inside plan view of a panel;

Figure 9 shows a floor plan of the building shown in Figure 1;

Figure 10 shows a corner form and associated 10 parts;

Figure 11 shows a side wall form with associated parts;

Figure 12 shows a roof corner form;

Figure 13 shows a roof wall form;

Figure 14 shows a roof ridge form; and

Figure 15 shows a joist connected with one of the structural members.

In carrying out my invention, I provide a plurality of structural members of various lengths, 20 the lengths being multiples of four. For example, the front of the building is formed of two front sills 1 and 2, one being eight feet in length and the other being sixteen feet in length. The same is true of the back sills 3 and 4, the sill 3 25 being equal in length to the sill 1, and the sill 4 being equal in length to the sill 2. The left-hand side of the building is composed of two side sills, a sill 5, eight feet in length, and a sill 6, twelve feet in length. The right-hand side of the building 30 comprises a sill 7, twelve feet in length, and a sill 8, eight feet in length. The end sills 1 and 2 are connected to each other by a wall form B to be hereinafter described, and the sills 1 and 2 are provided with corner forms A of a form also to be described hereinafter. In like manner the sills 3 and 4 are connected to each other by the wall form B, and the free ends of the sills 3 and 4 are connected to the side sills 5 and 7 by corner forms 35 A. It will be seen that the sills can be of any length desired, preferably in four feet lengths or a multiple of four, and that these sills are connected to each other by wall forms B and the corners are inter-connected by corner forms A.

Vertical members similar to the horizontal 45 members already described are placed at the corner forms A and have a length preferably eight feet long. These vertical members or posts 9 are secured to the corner forms A and to the wall forms B in the manner hereinafter described. 50 Top plates 10 similar to the sills 1 to 8 inclusive connect the upper edges of the posts 9 with each other, and the plates and posts are secured together by roof corner forms C and roof wall forms D. The entire building is so constructed that the 55

inside measurements of each room will be four feet or a multiple of four feet. It is obvious that this length can be changed without departing from the spirit and scope of my invention.

5 I will now describe how the sills, posts and top plates are inter-connected together by fastening members of the shape shown in Figures 2, 3 and 4. In Figure 4 I show the fastening member disassembled and it will be noted that an anchoring member 11 has a bifurcated end 12, and has a threaded longitudinally extending bore 13 at its opposite end. The bifurcated end is provided with aligned openings 14 and 15. A cylindrical member 16 is cut away at 17 and 18 for providing a portion 19 that is snugly received between the sides of the bifurcated end 12. The portion 19 has a transverse opening 20 therein that aligns with the openings 14 and 15. A cylindrical member 21 of the same diameter as the cylinder 16 has a reduced cylindrical threaded portion 22 of the same diameter as the openings 14 and 15, and the opening 20. In assembling the cylindrical members 16 and 21 to the member 11 I first move the portion 19 down between the bifurcated end 12, and after the opening 20 is aligned with the openings 14 and 15, I move the cylindrical portion 22 through the aligned openings 14, 20 and 15, until the shoulder 23 abuts the face of the member 11. A cylindrical nut 24 is provided with a threaded bore 25 that is designed to be screwed on to the portion 22 that projects beyond the opening 15. It will thus be seen that I provide an anchoring member having a shank portion 11 and four cylindrical portions anchored to the shank and lying in the same plane, this plane extending at right angles to the axis of the shank.

In Figure 2 I show the anchoring member placed in one of the structural members which may be one of the posts 9, or any of the sills or top plates. In Figure 3 I show the same anchoring member in side elevation disposed in one of the structural members, for example the post 9. The structural member is hollowed out for receiving the anchoring member and the cylinders 16, 21 and 24 may have a length which will cause them to lie flush with the faces of the structural member 9, or to extend beyond the faces if desired. It is also apparent that the cylinders may be of such a length as to be disposed within the post 9 and to therefore provide a recess.

The purpose of the cylinders 16, 21 and 24 with their threaded portion, is to receive cap screws for securing adjacent parts to the structural member, whether it be a sill, a post, or a top plate. This feature will be made clearer as the description progresses.

In Figures 5, 6 and 7 I show how the various structural members are secured to each other by the anchoring member shown in Figure 4, while in Figures 10 to 15 inclusive, I show detailed views of the various forms used in conjunction with the anchoring or fastening member shown in Figure 4. It is best now to describe the various forms, and in Figure 10 I show a corner sill form A. It will be noted from this figure that the form can be either a casting, or constructed from heavy sheet metal, and that it is provided with a bottom plate 26, a top plate 27, and two vertical plates 28 and 29 interconnecting the bottom and top plates 26 and 27. The plates 26 and 27 extend beyond the vertical plates 28 and 29, so as to provide recesses for receiving the sills. For example, if the form A shown in Figure 10 is the right-hand front form A, shown in Figure 1, the end of the sill 2 disposed adjacent to the form

would be received in the recess 30 formed by the plates 26, 27 and 28, while the end of the sill 8 would be received in a recess 31, formed by the plates 26, 29 and 27. The ends of the sills 2 and 8 are cut in the manner shown at 32 and 33 so as to be received in the recesses 30 and 31. The vertical wall 28 has an opening 34 for receiving part of the anchoring member shown in Figure 4. The opening 34 aligns with an opening 35 in the sill 2.

Reference to Figures 6 and 7 will show the same form A anchored to the sill 2 and the sill 8 by anchoring members indicated generally at F. Cap screws 36 are passed through the openings 34 and 37 and secure the shanks 11 of the anchoring members to the form A.

One of the vertical posts 9 is secured to the form A by an anchoring member F, and in order to prevent the post from moving laterally I provide the top plate 27 of the form A with a boss 38, that is designed to enter a recess in the bottom of the post 9, see Figures 3 and 6. A cap screw 39 secures the post 9 to the form A. After the form A has been securely fastened to the sills 2 and 8 and to the post 9, the open side of the form is closed by a cover plate 40, see Figure 10.

In Figure 11 I show a form B similar to the form A except that this form is provided with a recess 41 in addition to the recesses 30 and 31. Parts in the form B similar to the form A will bear like reference numerals. The form B will receive three sills. For example, the side wall form B shown in Figure 11 is the same as the front form B shown in Figure 1, and is also the same as the form B shown in Figure 7. The recess 30 of the form B receives the sill 1 while the recess 41 formed by the bottom and top plates 26 and 27 and a vertical plate similar to the plate 28, receives the sill 2. An inside sill 42, see Figure 1, is received in the recess 31. The sills 1, 2 and 42 are secured to the form B by fastening members F in the same manner as already described. A post 9 is also secured to the top plate 27 of the form B, and this is accomplished in the same manner as that already described for the form A. After the sills 1, 2 and 42 and the post 9 have been firmly secured to the form B, a cover plate 43 closes the open side of the form. In like manner all of the other sills are secured to corner forms A or side wall forms B.

The top plates 10 are secured to the posts 9 by forms similar to the forms A and B, except that these forms are changed in shape slightly to accommodate the roof structural members 44 shown in Figures 6 and 7. The roof corner form C shown in Figure 12 is identical to the corner form A except that the top plate 27 of the form C is provided with a downwardly inclined portion 45, that is designed to abut the under surface of the roof structural member 44. In like manner the roof wall form D is identical to the side wall form B except that the top plate 27 of the form D has a portion which is inclined downwardly as at 46. Since the top plates 10 are secured to the posts 9 in the same manner as the sills are secured to the posts, further description of this manner of fastening is unnecessary and like reference numerals will be applied to similar parts.

In addition to securing the top plates 10 to the posts 9 I secure the roof structural members 44 to the forms C and D. Reference to Figure 6 will show a fastening member similar to that

shown in Figure 4 with the exception that the shank 11 is dispensed with. A cap screw 47 is passed through an opening 48 in the roof corner form C, and is screwed into one of the threaded cylinders in the fastening member, which in turn is imbedded in the structural member 44. In this way the structural member is secured to the form C.

The two structural members 44 meeting each other at the top of the roof are secured together by a roof ridge form E shown in Figures 6 and 14. This roof ridge member is cup-shaped as shown in Figure 14, and has inclined sides 49 against which the adjacent ends of the structural members 44 abut. Anchoring means F are utilized for securing the structural members 44 to the form E, and the parts are securely wedged into place by a wedging plate 50, see Figure 6 that bears against the under-side of the roof members 44 and is moved toward the form E by a screw 51.

A form E is placed at each juncture of two roof members 44 and the forms are connected to each other by a wood ridge 52, see Figure 7. The wood ridge 52 is connected to the forms E by the same fastening means F. At predetermined distances along the wood ridge 52 I place metal blocks 53, see Figure 7. These blocks are of the shape shown in Figure 5. A cover strip 54 is secured to the blocks by cap screws 55 and this strip bears against the under surface of roof panels indicated generally at 56 shown in Figure 5.

I have described all of the structural members going to make up the complete house and these structural members form wall boundaries which are closed by panels. There are two types of panels, the roof panels 56 and the wall panels shown at 57 in Figure 8. Each roof panel 56 is bounded by a frame 58 and is covered by a waterproof sheet 59, and beneath this I place an insulating sheet 60. A cross piece 61 is carried by each panel 56 and is notched at 62 for receiving the top plate 10, see Figure 5. Weather stripping 63 can be placed between the cross piece 61, and the top plate 10. The panel is secured to the top plate 10 by means of a cap screw 64 that is threaded into a sleeve 65 and by a cap screw 66 that passes upwardly from the under side of the top plate 10 and is screwed into the same sleeve 65. It will be noted from Figure 5 that the same cap screw 66 passes through an opening 67 in the wall panel 57, and secures the wall panel in place at the same time.

The wall panels 57 shown in Figure 8 can be of any construction desired. I have shown the panel 57 as being bounded by a frame 68 and show the panels being covered by boards 69 that are held in place by cross pieces 70. The panels are placed between the posts 9 as indicated by the dotted lines at the left-hand rear wall of Figure 1. Figure 1 shows the structural members comprising the sills, posts, and top plates as being provided with openings 71 at equal spaces. These openings are pre-arranged and receive the fastening cap screws which secure the panels to the structural members. The panels are provided with openings in the frame 68 which register with the openings in the structural members.

In order to further waterproof the roof, I provide channels 72, see Figures 6 and 7, that extend over the roof members 44 so as to cover the break between the roof members and the roof panels 56. The channels 72 are secured to the roof members by cap screws 73, see Figure 6.

Many of the openings 71 in the structural mem-

bers are provided with the fastening member shown in Figure 4 with the shank 11 omitted. In this way threaded portions are provided at the necessary places for receiving cap screws which secure panels to the structural members.

In Figure 15 I show how the joists 74 are secured to the sills. Joint hangers 75 I-shaped in cross section are placed between the joist and the sill in the manner shown in Figure 15. A bolt 76 extends through the sill and on into the joist as shown in Figure 5, and is provided with a nut 77. Flooring 78 of any desired structure is placed upon the joists and is preferably four feet in width and has a length equal to the inside dimensions of the room. The floor sections will be a multiple of four because the inside measurements of the rooms are multiples of four.

In Figure 9 I show a possible floor plan utilizing the structure shown in Figure 1. In this plan it will be noted that the living room has an inside dimension of twelve feet by sixteen feet, the kitchen an inside dimension of eight feet by eight feet, and the bedrooms an inside dimension of twelve feet by eight feet. In this particular floor plan special panels indicated at 79 are disposed at the places shown in order to provide a bathroom. In this particular structure the inside dimensions of the bathroom are not multiples of four. If they were a post would have to be placed in the living room wall paralleling the wall containing the post from which projects the wall disposed between the bathroom and the right-hand bedroom. In order to do away with this, special panels are used. By special panels I mean panels of a less or greater width than the standard ones. However, Figure 9 does show a post in the wall that bounds one side of the living room and kitchen and this is to compensate for the width of the wall between the left-hand bedroom and bath.

It will be seen from the foregoing that a house can be quickly assembled and securely fastened together by the cap screws and forms so that when the house is completely constructed it will have the same rigidity as a house built by carpenters. The house can be quickly disassembled without the loss of any parts and transported to any place desired. Windows and doors are provided in panels so that the mere placing of these panels in position will also correctly position the windows and doors.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

The sleeve 16 is provided with a kerf at each end for aiding in assembly purposes. In like manner the cylindrical member 21 and the nut 24 are provided with kerfs so that these members may be readily rotated by screws drivers.

I claim:

1. An anchoring device for a sectional building comprising four tubular internally threaded portions extending at right angles from a common center and all lying in the same plane and a post enclosing all but the outer ends of the portions.

2. An anchoring device for a sectional building comprising four tubular internally threaded portions extending at right angles from a common center and all lying in the same plane, an anchoring shank connected to the center of the tubular portions and extending at right angles to the plane thereof, and a post enclosing all but the

outer ends of the portions and the anchoring shank.

3. An anchoring device comprising a shank having a bifurcated end and its other end provided with a threaded bore, a sleeve having a reduced portion receivable between the legs of the bifurcated end, said legs and reduced portion having registering openings, a tubular member having a threaded portion passed through the registering openings, a tubular nut threaded onto the portion, said sleeve, tubular member, and nut having their axes lying in the same plane and extending at right angles to the axis of the shank and a post enclosing all but the outer ends of the shank, sleeve, tubular member and nut.
4. An elongated structural member having four sides with openings in each side, the axes of the openings lying in the same plane, and tubular threaded members receivable in the openings, and an anchoring shank extending at right angles to the tubular members and being connected thereto, said structural member being provided with a longitudinal bore for receiving the anchoring shank.
5. A box-like form for connecting two horizontal members forming a corner, and a vertical member, said form having top and bottom plates with two vertical walls connecting the plates and spaced from two edges of the plates for forming three recesses two of these receiving the horizontal members, and a cover for the third recess removably secured to the vertical walls.
6. A box-like form for connecting three horizontal members and a vertical member, said form having top and bottom plates, a U-shaped member connecting the plates and being spaced from three edges of the plates for forming four recesses three of these receiving the horizontal members, and a cover for the fourth recess removably closing the open end of the U-shaped member.
7. A box-like form for a roof corner having top and bottom plates with two vertical walls connecting the plates and being spaced from two edges of the plates for forming member receiving recesses, and a cover removably secured to the vertical walls, the top plate having a portion inclined into the box and designed to contact with a roof structural member.
8. A box-like form for a roof construction having top and bottom plates, a U-shaped member connecting the plates and being spaced from three edges of the plates for forming three member receiving recesses, and a cover removably closing the open end of the U-shaped member, the top plate having a portion inclined into the box and designed to contact with a roof structural member.
9. A box-like form for connecting two horizontal members forming a corner, said form having top and bottom plates and two vertical walls forming recesses for receiving the ends of the members, the widths of the vertical walls being equal to the widths of the abutting ends of the members.
10. A box-like form for connecting three horizontal members, two of which are aligned, and the third extends at right angles to the first two, said form having top and bottom plates, a U-shaped member connecting the plates and being spaced from three edges of the plates for forming three recesses for receiving the ends of the members, the widths of the vertical walls being equal to the widths of the abutting ends of the members.
11. A box-like form for a roof corner having top and bottom plates with two vertical walls connecting the plates and being spaced from two sides of the plates for forming member-receiving recesses, the top plate having an inclined portion for supporting a roof structural member.
12. A box-like form for a roof construction having top and bottom plates, a U-shaped member connecting the plates and being spaced from three edges of the plates for forming three member-receiving recesses, the top plate having an inclined portion for supporting a roof structural member.
13. In a sectional building construction, two rows of parallel structural floor members of a given length or a multiple of that length for forming the bases for two parallel walls, a vertical member disposed at the juncture of two aligned floor members of one row and constituting an end of another wall, a box-like form disposed at the juncture of the two aligned floor members and the vertical member, said form having top and bottom plates for receiving the adjacent ends of the aligned members and having vertical walls for spacing these ends apart, a distance equal to the width of the vertical member, the top plate of said form also supporting the bottom of the vertical member flush with the tops of the aligned floor members, and a similar form placed between adjacent ends of the other parallel row of floor members, whereby the overall length of both rows of members are identical.
14. A sectional building in which the overall length of the structural boundary members of each room are equal to the inside dimensions of the room and comprising structural members arranged to form the boundaries of a room floor, box-like forms disposed at the corners of the floor for connecting the adjacent ends of the structural members together, said forms having top and bottom plates for receiving the ends of the members, said forms having top and bottom plates the ends of the members in such a manner that only the inner corners of the members abut each other.
15. A sectional building in which the overall length of the structural horizontal and vertical boundary members of each room are equal to the inside dimensions of the room and comprising structural members arranged to form the boundaries of a room floor, walls and ceiling, box-like forms disposed at the corners of the floor and vertical members, and at the ceiling and vertical members, said forms having top and bottom plates for receiving the ends of the horizontal members, and having vertical walls abutting the ends so that only the inner corners of adjacent ends abut each other, the top plates of the floor forms also positioning the lower ends of the vertical members flush with the upper surfaces of the floor members and the bottom plates of the ceiling forms positioning the upper ends of the vertical members flush with the lower surfaces of the ceiling members.
16. In a sectional building, horizontal structural members and a vertical member forming a corner in a building, a box-like form having top and bottom plates for receiving the ends of the horizontal members adjacent to the corner, vertical walls spacing the plates apart so that the plates lie flush with the tops and bottoms of the horizontal members, said vertical walls spacing the adjacent ends of the horizontal members a distance equal to the width of the vertical member, and means securable to the vertical walls for

fastening the horizontal members to the form, said walls providing access to tighten or loosen the fastening means, and means for securing the vertical member to the top plate.

5 17. In a sectional building, floors, walls, and ceilings formed from structural members, box-like forms connecting the ends of the members together, said forms having top and bottom plates

for receiving the horizontal members, vertical walls connecting the plates together and abutting the ends of the adjacent horizontal members, said walls being aligned with corresponding sides of the vertical members connected to the forms, and fastening means securing the walls to the members and the vertical members to the plates. 5

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