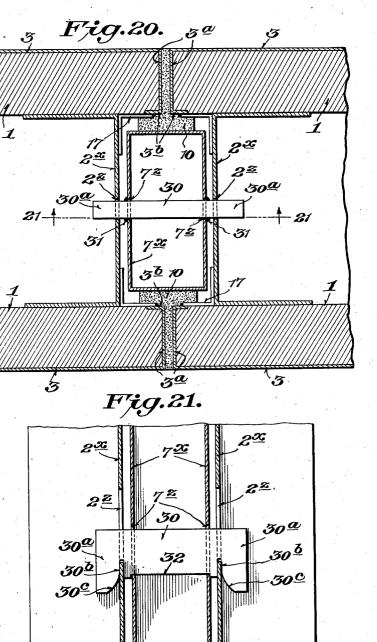


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Nov. 22, 1938.

D. S. BETCONE BUILDING CONSTRUCTION 5 Sheets-Sheet 5 Filed Dec. 17, 1937

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UNITED STATES PATENT OFFICE

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BUILDING CONSTRUCTION

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Application December 17, 1937, Serial No. 180,463

26 Claims. (Cl. 72-1)

This invention relates to building construction, and one object of this invention is to provide a system of building construction in which the walls are built of preformed sectional units the wall sections or units being assembled on the building site with a minimum of labor in the erection process.

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Another object is to provide, in a structure so erected, walls which will be impervious to mois10 ture, of low heat conductivity, and free from objectionable condensation of moisture either on wall surfaces or within the interior wall spaces. A further object is to provide a method and means for erecting buildings differing radically
15 from those in common use. Assuming for the

sake of illustration that a single story residence is to be built, the materials are fabricated in advance and partially assembled into units so as to permit erection substantially as follows,
20 though departures from this order may be made in special instances where advisable. A foundation for the house is first prepared, preferably

of masonry, providing a base for all of the outside walls and for such inside flooring as may be 25 desired. To this base are secured metal sill units in the form of angles defining the precise loca-

tion of the outer walls, and providing connecting means for the wall sections. Upon these sill units are erected and secured the outer wall units, 30 which units provide both inside and outside wall surfaces, said wall units being of appreciable width and of story height. Adjoining wall units are

secured together, successively as placed, by vertical locking members which occupy recesses in the 35 vertical edges of adjoining units. Preferably, the erection of wall units is begun at a corner of the building, special corner sections or units being provided. After the outer wall units are erected,

and the floor placed, interior wall sections or 40 units are erected and connected together in a manner similar to that employed for outer walls. These inner walls, or partitions, preferably rest upon the floor, and the sections are formed at their bases for that purpose; but they may rest 45 upon concrete foundations if it is desired to use

them for the support of an upper story or roof structure.

These various parts are so constructed that they are very readily connected together in the 50 field. The manner in which the various parts are constructed, in certain preferred arrangements, is such as to leave no exposed bolts or other connections on either outside or inside wall surfaces, and after the wall is erected, the vertical

55 joints between panels are filled by caulking or

otherwise, so that both inside and outside wall surfaces are substantially air tight.

The walls, as constructed, are cellular to provide space for ventilation where desirable; also space is provided beneath the flooring for heating and ventilating purposes; the method of installing partitions substantially leaving this space unobstructed.

A further object is to provide novel standardized wall members comprising prefabricated wall 10 units, prefabricated corner units, prefabricated unit locking members, and prefabricated base members, whereby an ordinary wall or building wall may be rapidly constructed by first setting the base members in desired contour or plan in 15 a foundation of masonry, concrete, or the like, and then setting the wall and corner units in position upon the base units, with intermediate locking members between the units for locking adjacent units together, the wall and corner units 20 and the locking members each having interengaging locking elements thereon whereby the simple operation of forcing the locking members down between the units will securely lock the units together in erected position without the 25 use of screws, bolts, welding, and battens; the locking members constituting blind post connections for the walls so that the only finishing treatment needed will be to caulk the vertical joints between the units. 30

A still further object of the invention is to provide prefabricated wall and corner units and locking members of wall or building story height, the wall units being of substantial width and consisting of a pair of panels connected together 35 by metal channels or the like inset from the sides of the units to provide recesses between the channels of adjacent units adapted to receive the locking members, the locking members consisting of metal tubes, plates or studs of substantially rec- 40 tangular cross-section carrying on opposite side faces spaced series of connector elements which cooperate with spaced series of connector, elements mounted on the exterior faces of the channels of the wall units, whereby in erecting the 45 wall the first wall unit may be placed on the previously set base and aligned in correct plumb position with its lower end connected to the base in any desired manner, and a locking stud then placed in the side recess of the placed wall unit 50 and held suspended above locking position by means of a temporary dowel pin or the like, and then setting in place on the base the next adjacent wall unit or corner unit so that the locking member enters the recess in its side, and finally 55 removing the dowel pin and pounding the locking member downwardly in the recesses formed in the sides of the adjacent units thereby locking the connector elements together.

Another object of the invention is to provide novel wall units consisting of factory fabricated panels secured together by metallic channels, said panels comprising either outside or inside wall panels, or in the case of partitions com-

- 10 prising the inside wall panels, or in the case of ordinary walls comprising appropriate panels for such construction, said panels preferably having rigid metal clad insulation covering both the inside and outside of the panels so applied that the
- 15 exposed faces or surfaces will not be defaced by screws, bolts or welding, said insulation acting not only as a sound deadener but also as a stiffener for the panels and channels, the construction providing for a definite break when the wall is
 20 erected between the metal insulation on adjacent
- panels so that the same will not come into contact, and the metal insulation being so arranged on each panel that conductivity of heat through the individual units is prevented, thereby keeping 25 all inside wall surfaces at the same temperature.

A further object of the invention is to provide novel prefabricated base members upon which the wall and corner units are mounted and connected in a novel manner, said base members be-30 ing simple in construction and adapted to be readily set in concrete, masonry, or other foundation material.

A still further object of the invention is to pro-

vide novel prefabricated corner units for the wall
comprising exterior panels of width approximately equal to the cross-sectional width of the wall units and arranged at right angles to each other, said panels consisting of metal clad insulation of same general type as used in the wall
units, and said panels being secured together by

- metal sheets of L-shaped cross-section forming with the panels a box-like structure, the metal sheets being provided with series of connecting elements on their faces adapted to engage the 45 connecting elements on the locking members in
- the same manner as the connecting elements on the wall units engage therewith, said corner units being also provided with means at their lower ends for connection with the base units.

50 Other minor objects of the invention will be hereinafter set forth.

I will explain the invention with reference to the accompanying drawings which illustrate several practical embodiments thereof to enable

55 others familiar with the art to adopt and use the same; and will summarize in the claims, the novel features of construction, and novel combinations of parts, for which protection is desired. In said drawings:

60 Fig. 1 is a perspective view of one form of prefabricated wall unit, detached, showing the spaced panels provided with metal clad insulation, and showing the panels connected together by metal channels inset from the sides of the 65 unit and carrying the series of male connector

elements. Fig. 2 is a perspective view of one of the tubular locking members, detached, showing the series of female connector elements which are 10 adapted to engaged the male elements of the

wall units. Fig. 3 is a perspective sectional view showing the application of the locking members to adja-

cent wall units for locking the units together in 75 vertical alignment. Fig. 4 is a perspective sectional view similar to Fig. 3 showing a modified form of male and female connector elements on the locking members and wall units.

Fig. 5 is an enlarged horizontal section through 5 the joint of a wall formed of the units and locking members shown in Figs. 1-3 inclusive.

Fig. 5A is a perspective detail view.

Fig. 5B is a perspective view of the complete frame of the wall unit, with the wall panels 10 detached.

Fig. 6 is a view similar to Fig. 5 in which a slightly modified form of wall unit is used.

Fig. 7 is a view similar to Fig. 6 showing a still further modified form of wall unit.

Fig. 8 is a perspective view of the side of the section shown in Fig. 7 showing the general spacing of the clips.

Fig. 9 is a horizontal section through the joint between adjacent partition panels, showing the 20 locking member connecting adjacent sections together; also showing the means for securing the ends of the partitions to the faces of intersecting partitions.

Fig. 10 is a perspective view similar to Fig. 1, 25 showing a part of a partition wall unit illustrated in Fig. 9.

Fig. 11 is a perspective view of a part of a locking member for the partition units.

Fig. 12 is a vertical section illustrating the 39 means for connecting the partition units to a floor.

Fig. 13 is a vertical section through a wall unit in perspective, illustrating the base member anchored in foundation material, and the wall unit 35 mounted thereon.

Fig. 14 is a fragmentary perspective view of the inverted base channel of the wall units shown in Fig. 13.

Fig. 15 is a fragmentary perspective view of the 40 base plate shown in Fig. 13.

Fig. 16 is a fragmentary perspective view illustrating the application of the 7-bolts which connect the inverted base channels of the wall units to the base plate shown in Fig. 13.

Fig. 17 is a perspective view of a portion of a corner unit of the wall.

Fig. 18 is a horizontal section through a corner of the wall assembly.

Fig. 19 is a vertical section showing the means 50 for connecting the wall units to the base plate of the wall.

Fig. 20 is a horizontal section similar to Fig. 7 showing a still further modified form of connec-

tion between the locking members and wall units. 55 Fig. 21 is a vertical section on the line 2!-2!, Fig. 20.

As shown in Figs. 1, 2, 3, and 5 my novel wall unit, which is preferably prefabricated at the factory, comprises a pair of spaced panels 1 of $_{60}$ suitable structural material of substantial thickness, said material being preferably of metal, rock lath, plywood, knotty pine, tile, plastic composition, wood, fibre, or other structural material possessing requisite strength, said panels | being 65 of sufficient height to extend the full height of the wall or building to take care of both modern and conventional walls or buildings, and being of substantial width. Panels I are connected together adjacent their sides by members 2, pref- 70 erably channels of light steel having their legs turned inwardly and their bases inset from the side edges of the panels to provide recesses between the channels of adjacent units. In the lower end of each wall section is an inverted 75

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11 15 channel 15 (Figs. 5B, 13, and 14) fixedly secured therein in any desired manner for the purpose hereinafter described, and the lower ends of the members 2 are welded or otherwise secured to 5 the tops of channels 15, as shown, and in the tops of channels 15 are holes 15x for ventilation purposes. Preferably the top ends of the members 2 are likewise connected by plates 2p (Fig. 5B) welded or otherwise secured thereto, said plates 10 being likewise provided with vent holes 2q, the members 2, 15, and 2p forming a rigid hollow

- members 2, 15, and 2p forming a rigid hollow frame with vent holes to permit air circulation therethrough.
- On the facing surfaces of insulation panels 1 15 metal sheets 3 are applied, which sheets preferably cover the entire outer faces of the panels and have their ends flanged as at 3a around the two sides and bottom, or two sides, top and bottom of the panels 1, and further flanged as at 3b 20 over the edges of the inner faces of the panels,
- 20 over the edges of the inner faces of the panels, thereby leaving the main portion of the inner faces of the panels uncovered so as to break metal-to-metal contact with the channel frames and prevent conductivity. Preferably the sheets
- 25 3 are attached to the panels I by glue or adhesive, and act as a stiffener as well as an insulation and sound deadener. In panels constructed of metal inside and outside, small connector brackets 2c or 17 may be used, same being attached by
- 30 studs, bolts, screws, clips, welding or the like. As shown in Figs. 5 and 5A, the legs of channels 2 are connected to the panels 1 by means of studs 4 which are anchored in the panels and have their outer ends secured to the legs of the 35 channels forming blind connections securely locking the panels to the channels without marring the covering sheets 3 on the exterior surfaces of the panels with bolts, screws, welding marks, or the panels with bolts, screws, welding marks, or the surface of the statement of the secure of the panels with bolts.
- the like. The panels are formed as follows:— 40 The panels I are cut to the proper shape and drilled with holes 1*h* (Fig. 5) to receive the studs 4, said holes having recesses 1*f* at the outer faces of the panels I to receive the flat heads 4*a* of the studs. The studs are then inserted in said holes
- 45 so that the shanks project beyond the inner faces of the panels, and the outer surfaces of the panels i are then covered with glue or mastic, and the panels then slipped into the preformed sheeting 3 from the open upper end of the sheeting, and
 50 passed sufficiently downwardly therein to engage the flange 3a (Fig. 13) at the bottom of the
- sheeting, there being no flanges 3a-3b formed at the top of the sheeting. The panel i will then be held pressed tightly against the sheeting 3 55 until the glue or mastic hardens. The flat heads
- 4b are then formed on the inner ends of the studs 4, and spaced from the inner faces of the panels 1 a distance substantially equal to the thickness of the legs of the channels 2; and the panels are
- 60 then secured to the frames of the units which frames (Fig. 5B) are preferably closed at their tops and bottoms by plates 2p and channels 15. In order that the inner heads 4b of the studs may be engaged with the legs of channels 2, it
- 65 is necessary to have holes $2\hbar$ (Figs. 5A, 5B) provided therein which will be large enough to permit the heads 4b to pass therethrough, said holes moreover being slotted as at 2j so that after the heads 4b are thus inserted, the panels I may be 70 shifted downward with respect to the frames so that the shanks of the studs will enter the slots 2j, while the heads 4b engage the channel legs, as shown in Fig. 5A, thus forming a wall unit comprising spaced shells 3 of sheet metal, in

75 which are fitted stiffening insulation panels 1,

said shells and panels being assembled upon a hollow frame (2, 2p, 15) disposed between the panels, and said frame having vent holes in its top and bottom members to permit sufficient circulation of air between the panels to prevent un- 5 due condensation of moisture.

On the exterior faces of the channels are a series of spaced wedge-shaped male connector elements 5 adapted to engage corresponding female connector elements 6 on locking members, 10 hereinafter explained, said male connector elements 5 having their narrow ends disposed uppermost and having their sides undercut as shown in Figs. 1 and 3, while the female locking elements as shown in Figs. 2 and 3 have wedge- 15 shaped recesses 6a in their lower ends conforming with the shape of the male elements 5, the sides of the recesses being also beveled to suit the undercutting of the sides of the male members. The spacing of the female elements 6 20 corresponds with the spacing of the male elements 5, and any desired number of elements may be used in said series.

Preferably each locking member 7 comprises a length of light steel tubing or studding having 25 a rectangular cross-section adapted to extend substantially the height of the wall panels, said locking members being prefabricated and carrying on opposite faces the female connector elements 6, above described, so that when the lock-30 ing members are driven down through the recesses between channels 2 of adjacent units, as illustrated in Fig. 3, the female connector elements 6 will engage the male connector elements 5 thereby simultaneously drawing the units there-35 to and locking the units together.

Preferably locking members 7 are of substantial width but do not extend to meet the inner faces of the panels i so that when adjacent units are connected together, as indicated in Figs. 5, 6 and 7, there will be a definite gap between the inturned flanges 3b of the insulation 3 on the inner faces of the panels i and the faces of locking members 7 so that the metal parts do not come into contact, the gap preventing conductivity and assisting in keeping all inside metal surfaces at the same temperature.

Fig, 4 shows a modification of the connector elements shown in Fig. 3. Instead of female locking elements on locking member Tx, 50 offset tongues 6y are struck out of the material of member Tx, between three-sided slits formed in the tube, the tongues 6y being adapted to engage correspondingly shaped offset straps 5y (instead of male elements 5) which 55 are struck out of the material of the channels 2x, between parallel slits, the sides of the straps 5y being beveled as shown to present a wedging action as the tongues 6y enter between the straps and the faces of the channels when the locking 60 member Tx is pounded downwardly within the recesses formed between the channels 2x of adjacent units.

Fig. 6 shows a modified form of wall unit in which the anchor studs for the metal clad insu-65 lation 3 do not pass through the legs of channels 2. Studs 4x are provided, similar to studs 4 of Fig. 5, but same pass through clips or angle irons 2c secured to the exterior faces of the bases of channels 2 adjacent the side edges 70 thereof, the construction however presenting the same insulating effect as the structure shown in Fig. 5. The units are otherwise similar to that shown in Fig. 5. In assembling the studs 4x, holes could be punched in the clips 2c and the 75 4

studs 4x inserted through these holes, riveting the heads of the studs against the clips after insertion. On the other hand, it would be possible to make a connection at this point similar to that
described in connection with Figs. 5-5A, and to rivet or weld the clips 2c to the channels 2 be-

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fore attaching the panels. Figs. 7 and 8 show a still further modified

- form of wall unit in which the anchor studs for 10 the metal clad insulation 3 are omitted entirely and the insulation 3 is attached to the channels 2x by series of spaced angle clips 11 welded or otherwise secured to the channels 2x and to the flanged portions 3b, this method being relatively
- 15 less expensive. As the clips 17 are spaced about two feet apart any conductivity of heat through the clips will be negligible. As shown the channels 2x (Figs. 7-8) are provided with struck-out straps 5y (Fig. 4) to receive the tongues 8y struck 20 out of the locking members 1x.
 - The wall units are preferably mounted upon prefabricated base members shown in Figs. 13, 15, 16, 18 and 19, consisting of base plates if each having a vertical flange if a provided with
- 25 a plurality of series of elongated slots i b for receiving the T-heads isa (Fig. 16) of bolts is, hereinafter described. The opposite edge of each plate ii may be flanged outwardly and downwardly as at iic to shed moisture and to con-
- 30 form with the face of foundation 12, each base plate i being mounted in the concrete or other foundation material, same being preferably secured thereto by a series of bolts 13 or the like (Figs. 13, 18 and 19) anchored in blocks or ex-
- 35 panding members 13a. A sheet 14 of waterproofing material such as felt or the like may be interposed between the base plates 11 and foundation 12.
- In the bottom of each wall section is an in-40 verted base channel 15 (Figs. 13, 14 and 19) secured therein in any desired manner, each channel 15 having one leg 15a adapted to be disposed adjacent flange 11a of base plate 11, and said leg being likewise provided with a plurality
- 45 of series of elongated slots 15b corresponding with and adapted to register with the slots 11b in base plate 11. As shown in detail in Fig. 16, members 11a and 15a are secured together by T-bolts 16 whose T-shaped heads 16a in one posi-
- 50 tion may be passed through the registering slots 11b, 15b and the bolt rotated 90°, whereupon nut 16b may be applied to the bolt 16, and thus the parts may be readily secured together without having to obtain access to the interior of 55 the inverted channel member 15. The wall unit
- panel at the slotted side 15a of the channel 15 preferably terminates at its lower end sufficiently to clear the bolts 16.
- Figs. 9, 10, 11 and 12 show a further modified 60 wall unit for use particularly in forming interior partition walls where prevention of heat conductivity through the walls is not important. In this modification the metal clad insulation 3 of the panels 1 is provided with side flanges 3a
- 65 and 3b as in the preceding figures, but the channels 2x (Fig. 4) are set nearer the sides of the sections so that the flanges 3b of the metal clad insulation overlap the legs of the channels 2xand are secured thereto by welding. Instead of
- 70 using a hollow locking member 7 or 7x, the locking member may comprise a flat strip 18 carrying the tongues 6y (Fig. 4) struck out of the metal thereof for engaging the straps 5y carried by the channels 2x, the strips 18 being used in 75 the same manner as members 7 and 7x. The

partition units may be attached to intersecting walls W (Fig. 9) by means of angles or clips 19 secured thereto and to the wall W in any desired manner. In the lower end of each partition unit is an inverted channel member 20 (Fig. 12), 5 which is also preferably provided with vent holes similar to holes 15x in channels 15 in Fig. 5B. The channel 20 connects the lower ends of side channels 2x; and a plate provided with vent holes similarly to plate 2p (Fig. 5B) connects 10 the upper ends of channels 2x. The outer ends of the legs of the channel are flanged outwardly as at 20a to underlie the bottom of the panels i and to extend sufficiently beyond the faces of the panels to permit insertion of nails or screws to 15 fasten same to the flooring F, which flooring F, as shown in Fig. 19, is mounted upon stringers S and disposed above the lower ends of the inner exterior wall panels i so as to hide the bolts i6. Fig. 19 shows that the floor F within the house 20 is disposed above the bottoms of the outside panels, and there is a space beneath the inside panels I for the attachment of the wall units to the base 11 by means of the bolts 16 before the stringers are laid for the floor F and thus 25 before the floor is placed. This method of fastening requires that the outside wall units should be erected first, then the stringers S and floor F be laid with care, and after that the partitions should be set as in Fig. 12. 30

Figs. 17 and 18 illustrate the construction of the corner units of the wall assembly. This unit as shown preferably comprises a pair of panels 21, similar to panels 1, but disposed at right angles to each other to form an L-shaped structure, 35 an angle iron 22 being applied to the heel if desired for the purpose of reinforcing same; and metal clad insulation 23 is applied to the exterior faces of the panels and flanged around the ends as at 23a and 23b in the same manner 40 as flanges 3a, 3b of insulation 3. An L-shaped sheet 24 having flanged ends 24a forms with the panels 21 a box-like structure, the flanges 24a being welded or secured to the flanges 23b of the metal clad insulation as shown in Figs. 46 17-18. The lower end of the sheet 24 is boxed in by a plate 25 disposed above the tops of flanges Ila of the base plate II, said plate having vent holes 25a (Fig. 18) therein. A similar vented plate may close the upper end of the box formed 50 by sheet 24. Panels 21 are of width substantially equal to the cross-sectional width of the wall units so that when applied as shown in Fig. 18 to the base 11 the inner panels of the adjacent wall units will substantially contact while the 55 panels 21 will complete the exterior walls. The base plate 11 at the corner is mitred as at 11x (Fig. 18) and preferably the anchor bolts 13 of the base plate extend upwardly through the bottom plate 25 of the corner unit to hold the latter 60 down upon the base plate 11.

The faces of sheet 24 are provided like channels 2x, with spaced series of straps 24y (or connecting elements as in Figs. 1-3) to receive the tongues 6y on the locking members 7x so 65that both the wall units and corner units are locked together by the locking members 7 or 7x. The open joint between the inner panels i at the corner may be covered in any desired manner.

Figs. 20 and 21 illustrate a still further modified 70 form of connection between the wall units and studs shown in Figs. 3 and 4. In place of the tongues 6y (Fig. 4) formed integrally with the locking members (which tongues may be subject to bending) I provide spaced series of relatively 75

thick cleats 30 extending through coaxially disposed slots 1z in the locking members 1x and welded or otherwise secured to the members 7xas at 31 (Fig. 20), the ends of the cleats 30 projecting beyond the faces of the locking members. Preferably the lower edge of each cleat 30 is recessed as at 32 to embrace the opposed walls of the locking member as shown in Fig. 21 and assist in maintaining the cleats centered in the locking 10 members. Extending upwardly from the lower

- edges of the projecting ends 30a of the cleat are slots 30b spaced from the faces of the locking member 7x a distance equal to the spacing of the channels 2x of the wall units therefrom, the lower 15 outer sides of the slots 30b being rounded out-
- wardly as at **30**c to facilitate engagement of the cleats with the openings in the channels 2x. In the channels 2x are spaced axially disposed series of slots 2z of width slightly greater than that of
- cleats 30, and of length somewhat more than the height of the outer ends 30a of the cleats, so that the same may readily enter slots 2z when the locking members are sufficiently raised. When the locking members are subsequently driven downwardly, the slots 30b will receive the web of 25 the channels 2x as indicated in Fig. 21 securely
- locking the wall units to the locking members, the cleats 30 being of sufficient thickness to resist bending stresses. 30
- The upper ends of the wall and corner units may be finished with any appropriate coping or roofing if in a building structure. I have omitted from the drawings, for the sake of simplicity, any showing of ceiling and roof or coping con-
- 35 struction, as well as the placing of doors and windows; but it is to be understood that wall sections may be made to provide for doors and windows, as well as to support other members not herein described, for ceiling and roof construc-40 tion.
 - The above construction provides prefabricated factory finished wall and corner units which may be rapidly assembled to form a wall structure without use of screws, bolts, or welding, said units
- 45 being assembled with locking members in the form of blind posts, so that the only finishing treatment needed for the erected wall structure will be caulking at the vertical joints shown at 9 in Figs. 5, 6, 7, 9, 13 and 20 filling the gaps be-
- 50 tween the panels of adjacent wall or corner units. In order to further waterproof the joints insulation 10 may be applied between the faces of the locking members T and Tx, and the inner faces of panels I and 21, same bridging the gaps between My construction 55 adjacent wall unit panels. therefore lends itself readily to making the wall air-tight by caulking the joints or otherwise filling them on both the inside and outside after the walls are erected, this feature being very im-
- 60 portant.

To assemble a wall, the base plates II are first anchored by bolts 13 in desired plan or contour in foundation material 12, and the first wall or corner unit is then mounted to the base plates 65 and held in correct plumb position. A locking member T or Tx is then set in the recess at one side of the wall or corner unit and is initially

- held sufficiently above its final locking position so that the locking elements formed on or attached 70 thereto will lie directly above the cooperating locking elements formed on or attached to the
- channels 2, 2x, or 24. The next adjacent wall unit is then set upon the base plate beside the first unit, and when the two units have been squared 75 to position, the temporary pin is removed and the

locking member 7 or 7x is driven down to final locking position so as to interengage the locking elements and thereby hold the two units firmly locked together and to the locking member.

I do not limit my invention to the exact wall 5 units shown in the drawings for the same may comprise inside and outside panels connected by the channels 2, or may comprise merely inside panels for partitions, or comprise merely outside panels for ordinary walls, depending upon the 10 use for which the wall is intended.

I claim:-

1. In a wall assembly, a plurality of prefabricated wall units arranged side by side, said units each comprising spaced wall panels forming the 15 opposite wall faces connected together; a plurality of separate prefabricated locking members positioned within the spaced panels between adjacent wall units; and locking elements prearranged on the units and members adapted to 20 interlock when the members are positioned.

2. In a wall assembly as set forth in claim 1, each unit having structural members between the panels inset from the sides thereof to form recesses; and said locking members comprising 25 blind posts adapted to fit within the recesses formed at the sides of adjacent units.

3. In a wall assembly, a prefabricated base, a plurality of prefabricated wall units arranged side by side on the base, each unit comprising spaced 30 panels forming the opposite wall faces connected together, means for securing the lower ends of said wall units to the said base; and means for locking the adjacent panels together.

4. In a wall assembly as set forth in claim 3, 35 said base comprising plate members adapted to be secured to a foundation, each having an upstanding flange provided with spaced series of slots; inverted channel members in the lower ends of the wall units adapted to seat upon the plate 40 members, each channel member having one leg provided with series of slots adapted to register with those of the plate members; and members connecting the slotted members through the registering slots.

5. In a wall assembly as set forth in claim 3, said base comprising plate members adapted to be secured to a foundation, each having an upstanding flange provided with spaced series of slots; inverted channel members in the lower ends of 50 the wall units adapted to seat upon the plate members, each channel member having one leg provided with series of slots adapted to register with those of the plate members; and bolts connecting the slotted members, said bolts having 55 heads adapted to be inserted from the side of the base through the registering slots.

6. A prefabricated wall unit comprising spaced wall panels adapted to form the opposite wall faces connected together; metal insulation cover- 60 ing the exposed faces and the edges of the panels, and means for connecting the insulation to the panels to prevent conductivity from one panel to the other of the unit.

7. In a wall unit as set forth in claim 6, metal- 65 lic structural members between the panels adjacent the sides of the units; and means for connecting the panels to the channels whereby conductivity of the insulation from one panel to the other of the unit is prevented.

8. In a wall assembly, prefabricated units, prefabricated plate members adapted to be secured to a foundation each having an upstanding flange provided with spaced series of slots; inverted channel members in the lower ends of the wall 75

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units adapted to seat upon the plate members, each having one leg provided with series of slots adapted to register with those of the plate member; members connecting the slotted members 5 through the registering slots; and means for locking the units together.

9. In a wall assembly, a plurality of prefabricated wall units arranged side by side, separate

prefabricated locking members positioned be-10 tween the wall units, and locking elements prearranged on the units and members adapted to interlock when the members are positioned.

10. In a wall assembly as set forth in claim 29,

each unit having recesses in its side edges, and 15 said locking members comprising blind posts adapted to fit within the recesses formed at the sides of adjacent units.

11. In combination with a wall assembly as set forth in claim 9, corner units at the corners

20 of the wall having locking elements pre-arranged on its face adapted to interlock with those on the locking members when the members are in position, the width of the exterior faces of the corner units being substantially equal to the 25 cross-sectional thickness of the wall units.

12. In a wall assembly as set forth in claim 9, corner units at the corners of the wall, each comprising panels connected together in angu-

lar relation forming exterior wall faces; plate 30 members inset from the outer edges of the panels to form recesses for receiving the locking members, and locking elements pre-arranged on the plates adapted to interlock with those on the locking members when the latter are in posi-35 tion.

13. A corner unit for a wall assembly comprising a pair of panels connected together in angular relation to form exterior wall faces, plate members adjacent the outer ends of the panels; and ·40 series of locking elements pre-arranged on the plates.

14. A corner unit for a wall assembly comprising a pair of panels connected together in angular relation to form exterior wall faces, inter-45 connected plate members disposed parallel with the said panels and inset from the outer edges thereof to form with the panels a box-like structure; and series of locking elements pre-arranged on the plates.

- 15. In a wall assembly a plurality of prefabri-50 cated wall units arranged side by side, each unit having recesses in its side edges; prefabricated locking members within the recesses formed between adjacent units; and locking elements com-
- 55 prising series of male and female elements on the sides of the units and on the locking members adapted to interlock when the locking members are forced downwardly between the units.

16. In an assembly as set forth in claim 15, 60 said elements being wedge-shaped with undercut engaging surfaces.

17. In an assembly as set forth in claim 15, said elements comprising tongues and straps struck out of the material of the units and lock-65 ing members.

18. In a wall assembly as set forth in claim 15,

said elements comprising cleats extending from the faces of the locking elements adapted to enter openings in the sides of the units, said cleats having open slots in their lower edges adapted to embrace the material of the units below the 5 openings when the locking members are forced downwardly.

19. In a wall assembly as set forth in claim 15. said elements comprising cleats fixedly mounted in and extending through the locking members 10 and adapted to enter openings in the sides of the units, said cleats having open slots in their lower edges adapted to embrace the material of the sides of the units below the openings when the locking members are forced downwardly. 15

20. A wall unit comprising a hollow prefabricated rigid frame; prefabricated insulating panels at opposite faces of the frame; prefabricated metal sheets covering the exposed faces of the panels; and means for connecting the panels 20 to the frame.

21. In a wall unit as set forth in claim 20, said frame comprising side channels; a plate connecting the upper ends of the side channels; and an inverted channel connecting the lower ends of 25 the side channels; said plate and inverted channel having vent holes therein.

22. In a wall unit as set forth in claim 20, said frame having series of slots in its side faces; and said means comprising series of studs anchored 30 in the panels and extending through the inner faces thereof and having heads on their outer ends spaced from the panels, said heads being adapted in one position to enter the slots.

23. In a wall unit as set forth in claim 20, said 35 frame having series of slots in its side faces; and said means comprising series of studs anchored in the panels and extending through the inner faces thereof and having heads on their outer ends spaced from the panels; said heads being 40 adapted in one position to enter the slots; and said metal sheets being flanged around the edges of the panels and spaced from the frame whereby conductivity from one panel to the other of the unit is prevented. 45

24. In a wall unit as set forth in claim 20, said metal sheets being flanged around the edges and inner faces of the panels; and said means comprising spaced series of clips connecting the frame with the flanges on the inner faces of the 50panels.

25. In a wall unit as set forth in claim 20, series of clips on the sides of the frame; and said means comprising series of studs anchored in the panels and extending through the inner faces of the 55 panels and secured to the clips.

26. In a wall unit as set forth in claim 20, series of clips on the sides of the frame; and said means comprising series of studs anchored in the panels and extending through the inner faces 60 of the panels and secured to the clips, and said metal sheets being flanged around the edges of the panels and spaced from the frame whereby conductivity from one panel to the other of the unit is prevented. 65.

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