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BUILDING CONSTRUCTION

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Fig. 1.

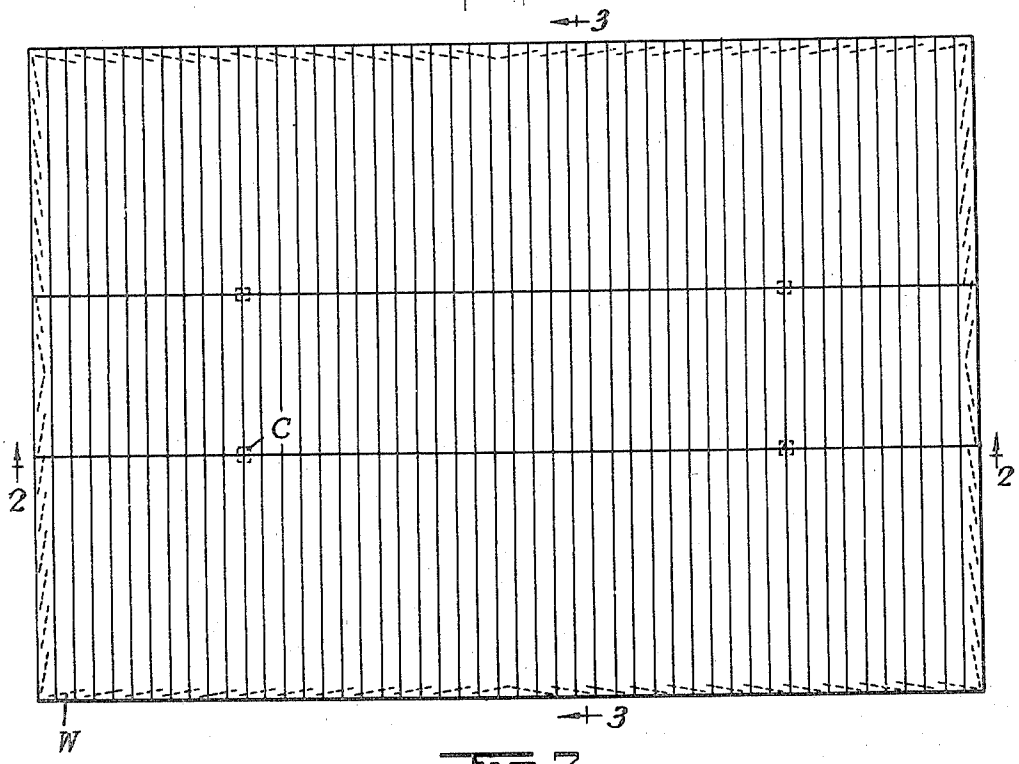

Fig. 2.

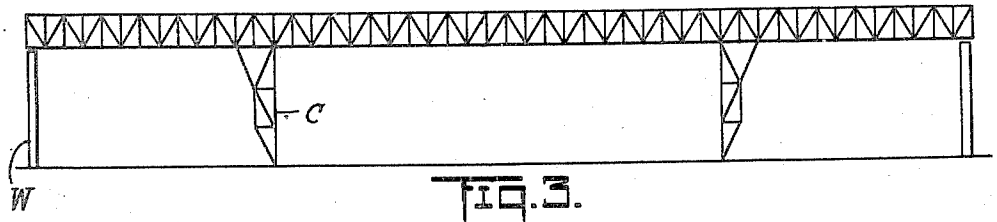

Fig. 3.

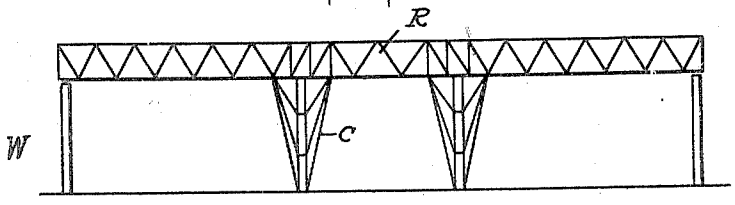

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Fig. 4.

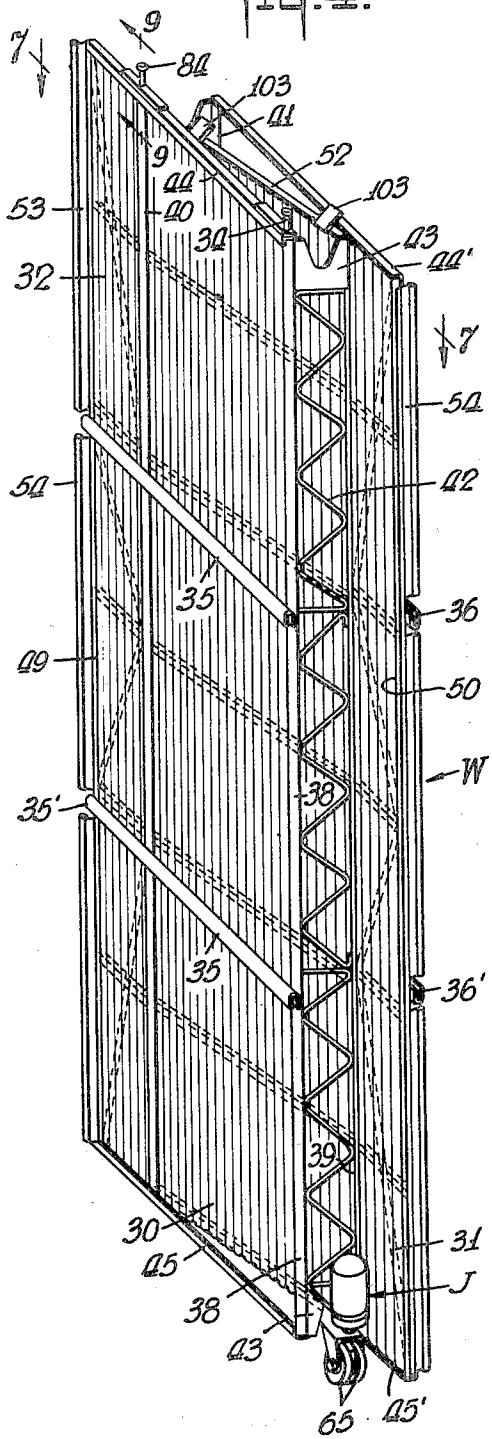

Fig. 5.

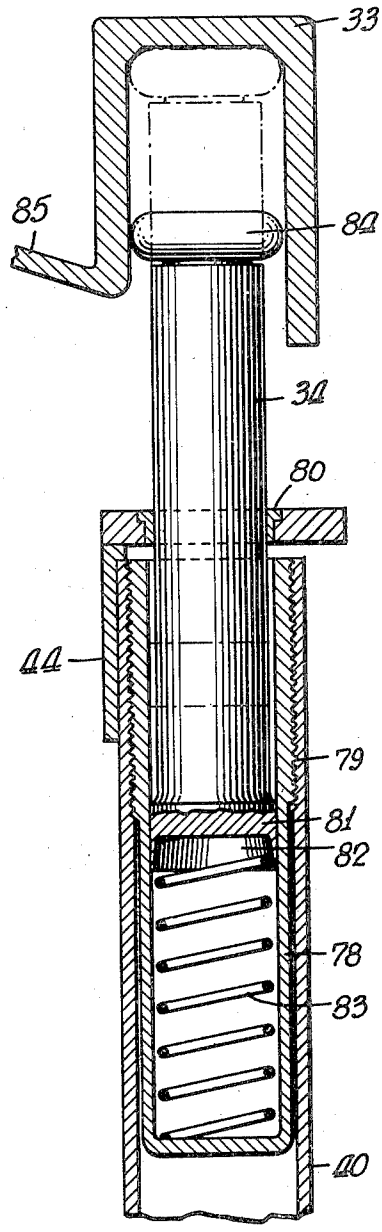

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Fig. 5.

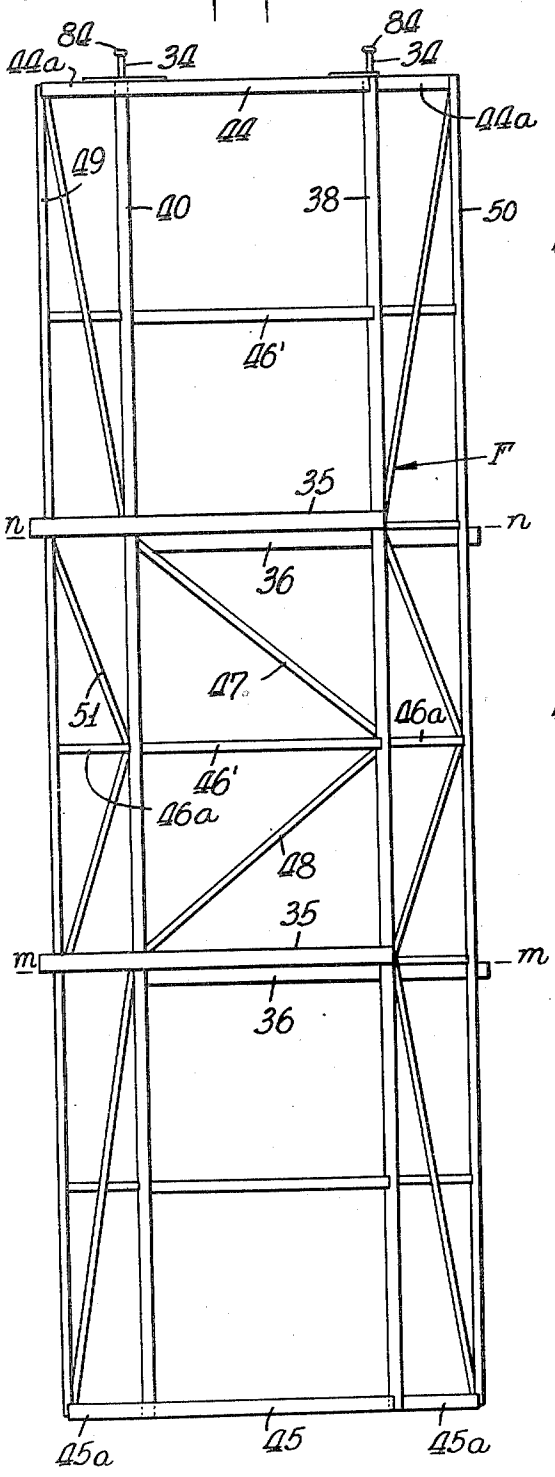
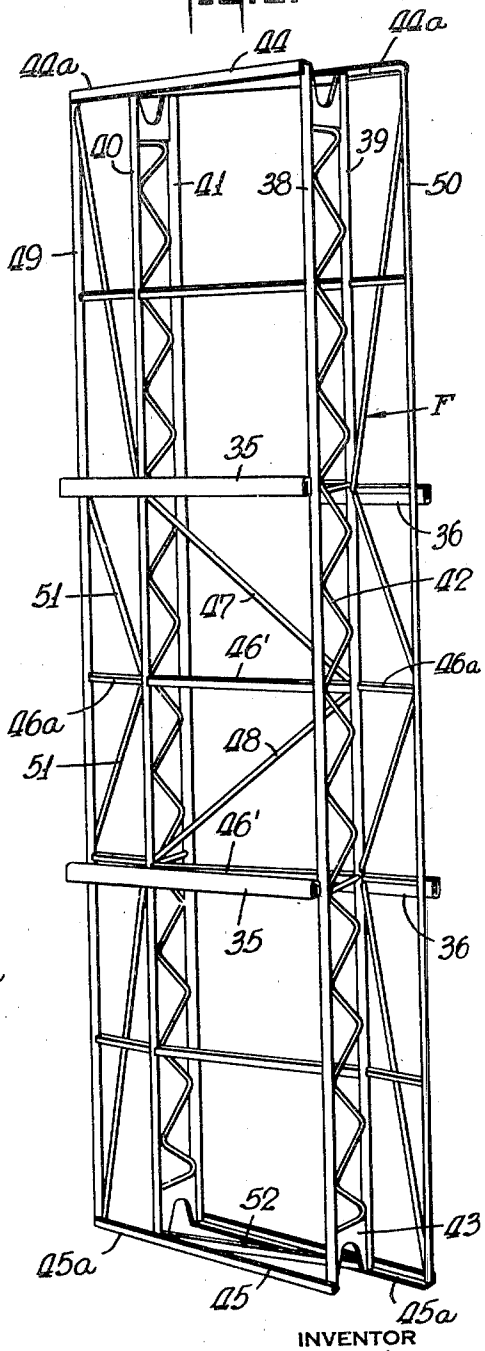


Fig. 6.



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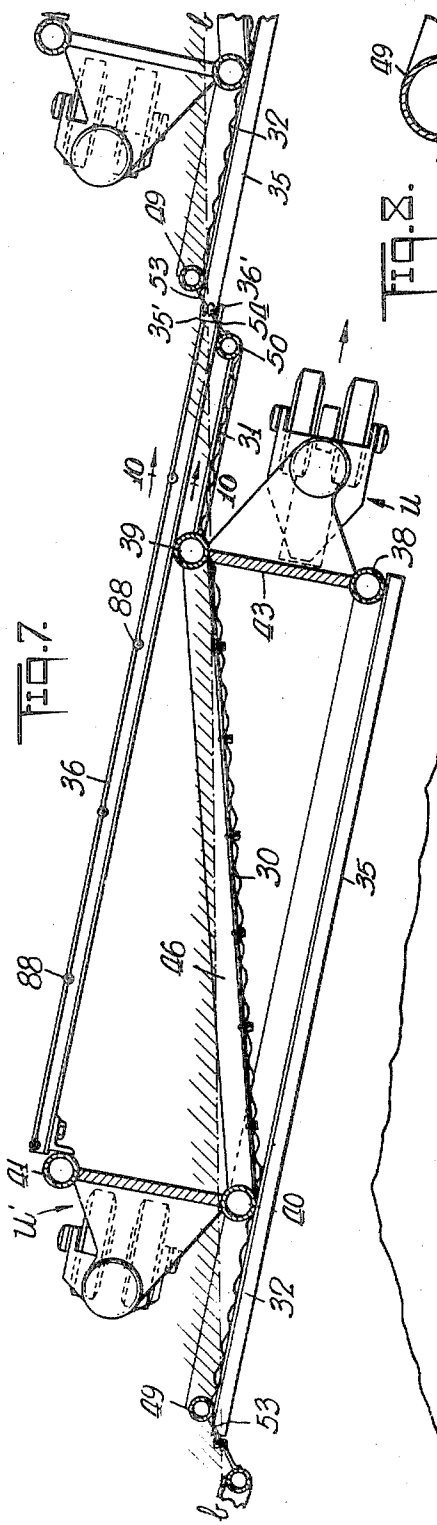

Fig. 7.

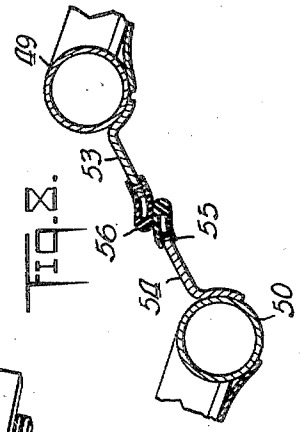

Fig. 8.

Fig. 11.

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FIG. 10.

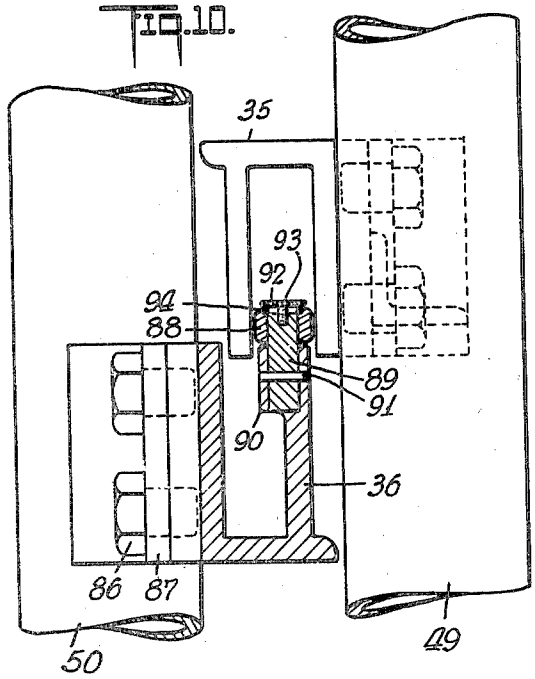

FIG. 15.

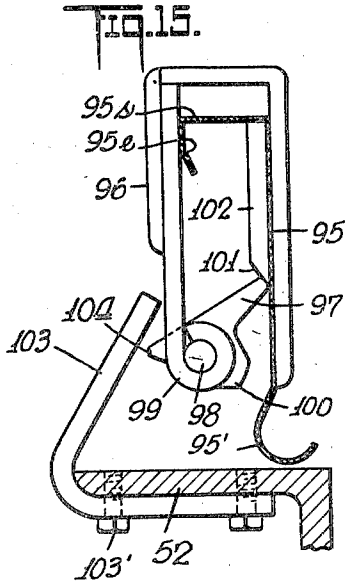

FIG. 16.

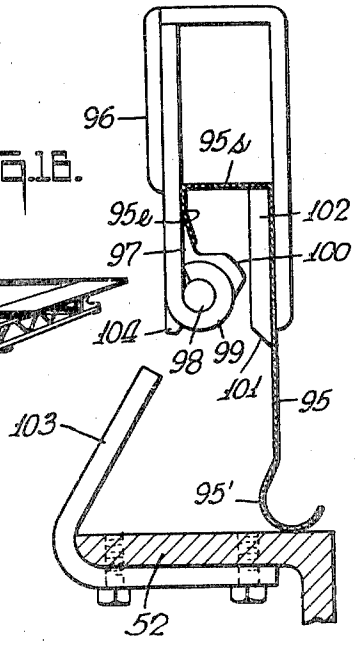

FIG. 18.

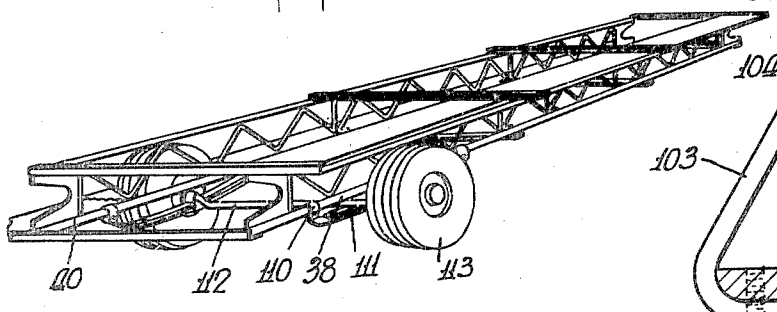

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Fig. 12.

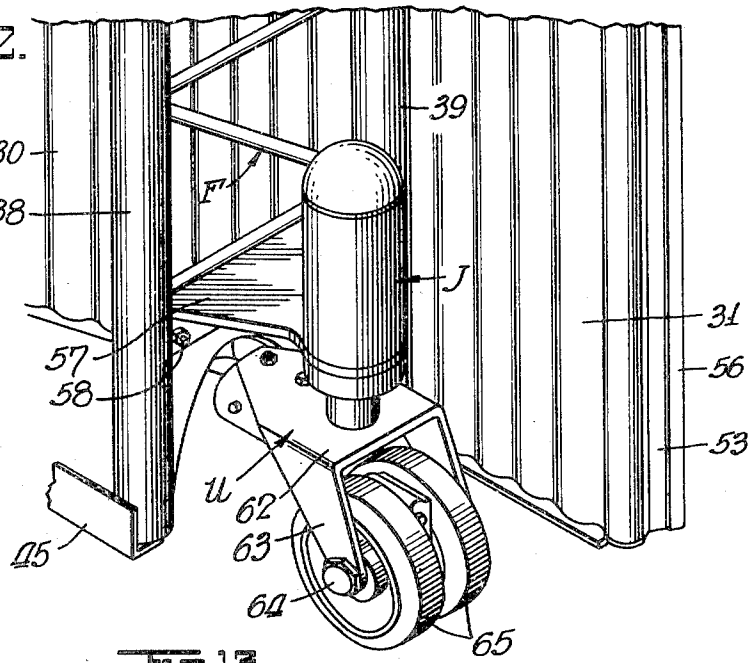


Fig. 13.

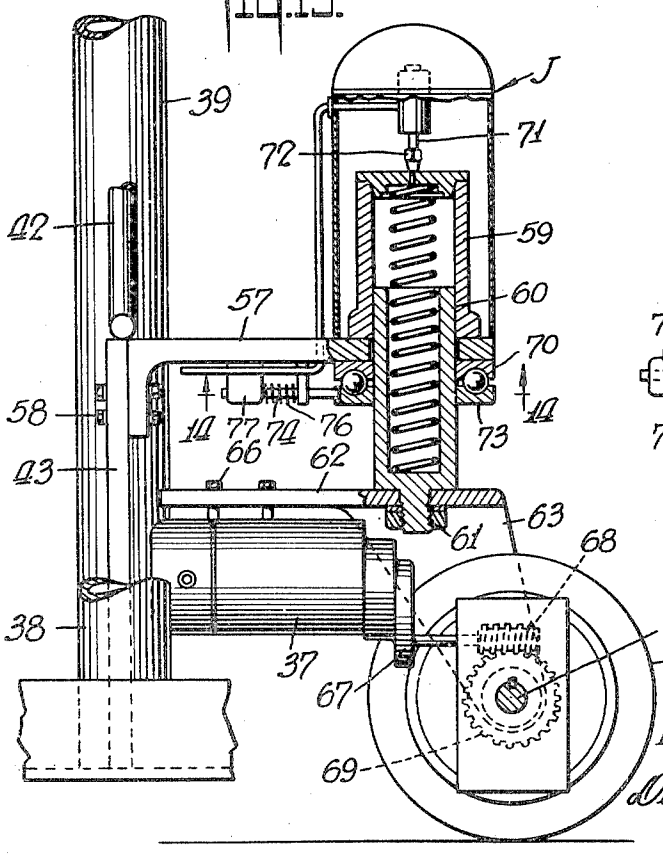
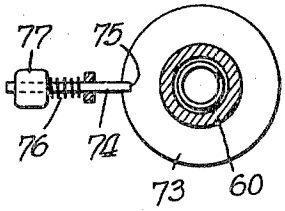


Fig. 14.



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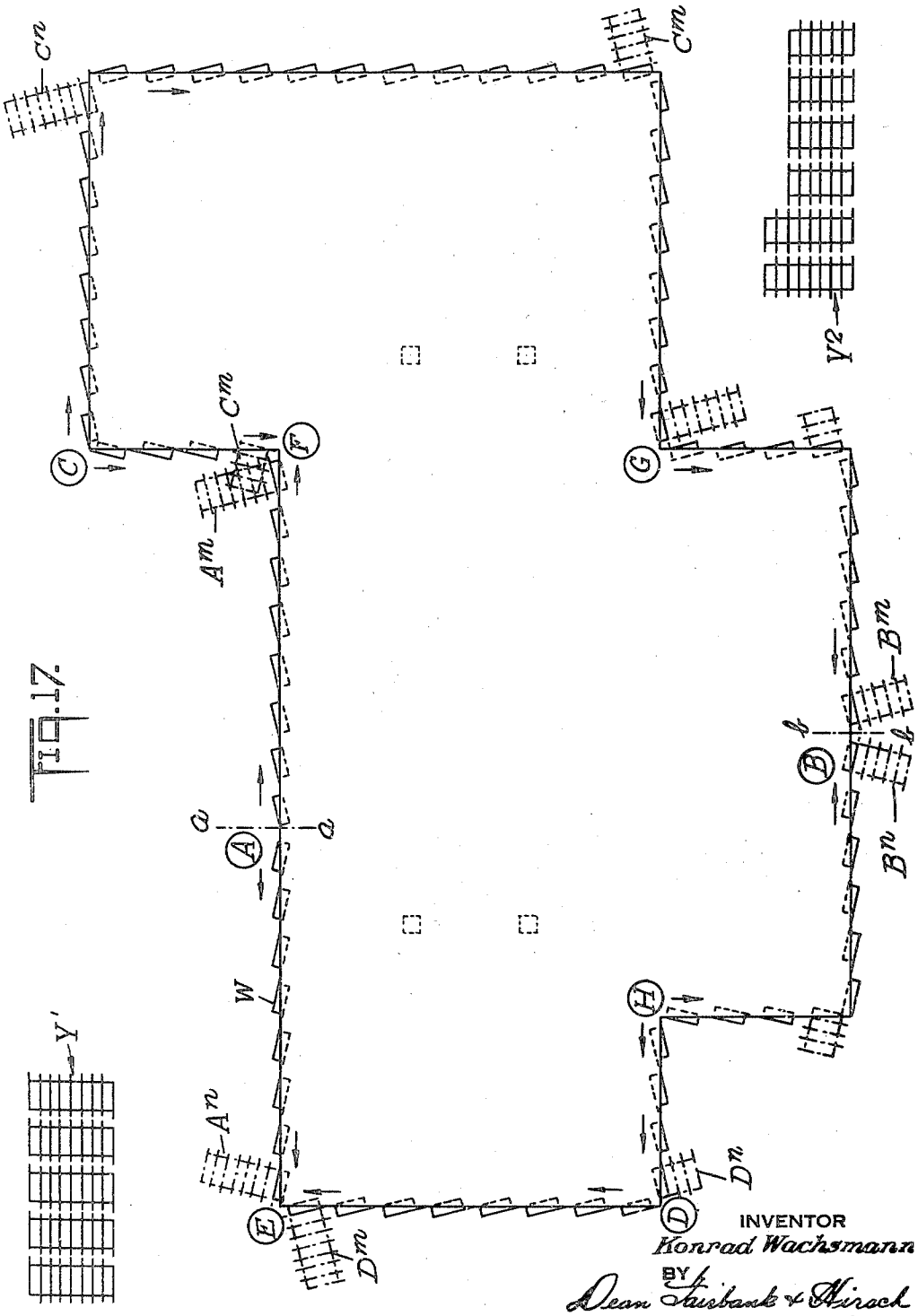

Fig. 17.

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FIG. 17A

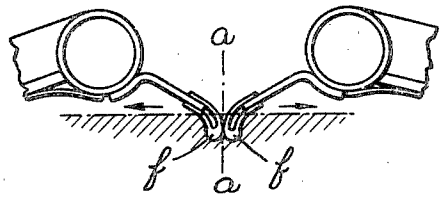


FIG. 17B

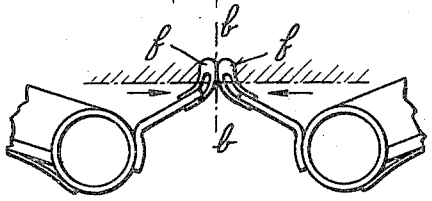


FIG. 17C

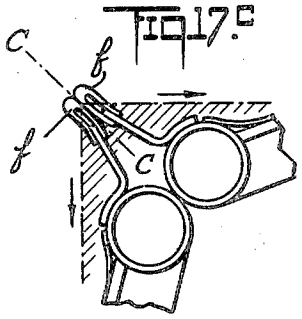


FIG. 17D

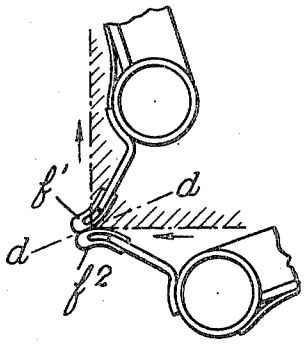


FIG. 17E

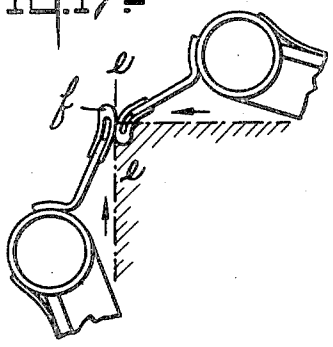


FIG. 17F

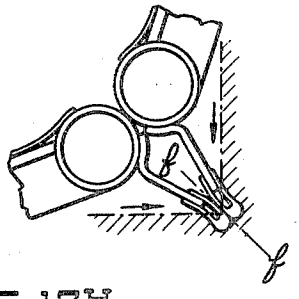


FIG. 17G

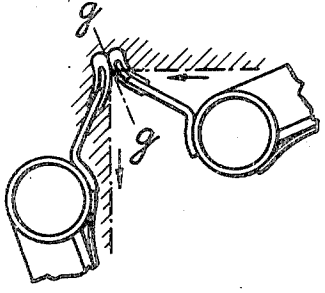
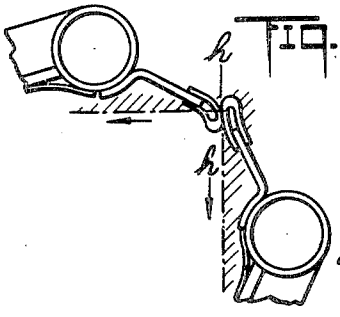


FIG. 17H



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Patented Dec. 20, 1949 2,491,882

UNITED STATES PATENT OFFICE

2,491,882

BUILDING CONSTRUCTION

Konrad Wachsmann, New York, N. Y., assignor of one-fourth to Charles Wohlstetter and one-fourth to Albert Wohlstetter, New York, N. Y.

Application June 22, 1945, Serial No. 600,891

43 Claims. (Cl. 160—43)

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The present invention relates to building construction and is more especially concerned with portable structural wall units primarily designed for buildings of huge proportions, as for instance for hangars capable of housing dozens or hundreds of large planes, but applicable also to warehouses, auditoriums and other types of building constructions.

It is among the objects of the invention to provide a building construction in which the wall is made up of a multiplicity of substantially identical wall section units, each of substantially the height of the building, which units may be readily installed to cooperate for secure and accurate alignment in water and air-tight relation with respect to the roof and with respect to each other, all without the need for rivets, bolts, stays, cement or other fastening means, and without the need for floor rails or other floor obstruction and without imposing extra load upon the roof.

Another object is to provide a building installation of the above type, with respect to which wall units may be selectively and speedily emplaced, removed or replaced for the purpose of affording ready admission or egress of a plane or other equipment or apparatus at any part of the building wall at will, without resort to a crane, tractor or other extraneous instrumentality, and without the need for auxiliary or external wall hangers or frames to sustain the units in open position, and without the need for application, removal or mutilation or destruction of any parts or for resort to tools of any character whatsoever.

Another object is to provide universal wall section units of the above type, which lend themselves readily for the water and air-tight juxtaposition noted, to follow any building plan outline, whether in the form of a plain rectangle or one with wing sections or reentrant angles, to form a completed wall structure that is attractive in architectural appearance.

Another object is to provide a wall section unit of the above type which may be conveniently assembled from more or less conventional tube, angle beam, channel beam and sheet metal stock and the fittings of which may readily be assembled to adapt the unit for displacement thereof to the right or to the left as required for access to the interior of the building.

Certain salient features of the invention in preferred embodiments that are of importance each individually as well as in combination of some or all of them, may be briefly set forth as follows:

Each structural wall unit comprises a sheet

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metal panel, supported on a rectangular box frame structure, from the diagonally opposite corners of which extend lateral wings of sheet metal of the height of the unit, each of said wings having its outer edge protected by yielding cushioning material. According to the invention, the individual wall units are juxtaposed to make up the wall of the building structure, for the lateral wing at the rear face of each unit to engage and form sealing connection with the lateral wing at the front face of the next wall unit. Where the wings lie in the respective front and rear faces of the box frame, each wall unit would be installed to extend at a slightly acute angle with respect to the building line. The box frame has tubes or posts at its corners about which the ends of the semi-elliptical springs of a trailer axle may be shackled, to permit use of the wall unit as the trailer body for transporting a multiplicity of the wall units and associated parts laid thereon.

The roof which is preferably of cantilever construction with wide spans, supported by columns near the middle of the building, has guide rail sections on the underface or ceiling near its edge into which the upper part of the wall unit is keyed, desirably by upstanding resiliently restrained latch elements, thereby to determine the required inclination of the wall unit relative to the building line. Each wall unit also has horizontal guide rails along the opposite faces thereof, the guide rail on the rear face coacting with the guide rail on the front face of the adjoining unit at one side thereof, thereby to permit each wall unit to slide over and be guided therealong.

Each wall unit has an undercarriage, retracted when the unit is installed, but with an associated jack which may be operated from a suitable source of power, desirably by pneumatic pressure, to lift the wall unit to rest upon its undercarriage, preparatory to moving the wall unit. Preferably a motor is installed in each wall unit as part of its undercarriage for propulsion of the wall unit to and from installed position. Both the ceiling rail sections and the rails on the wall units afford enough clearance vertically to permit the raising and lowering of the wall unit with respect to the undercarriage, all without disengagement with respect to either guide rail.

In the accompanying drawings in which are shown one or more of various possible embodiments of the several features of the invention,

Fig. 1 is a diagrammatic plan view of a simple building structure, illustrative of the general arrangement of parts according to the present invention,

Fig. 2 is a view in longitudinal cross section, taken on line 2—2 of Fig. 1,

Fig. 3 is a view in transverse cross section taken on line 3—3 of Fig. 1,

Fig. 4 is a perspective view showing the general appearance of one complete universal wall unit of the present invention,

Fig. 5 is a front elevation of the frame of the universal wall unit,

Fig. 6 is a perspective view of said frame,

Fig. 7 is a transverse sectional view on line 7—7 of Fig. 4, but showing the relative position of a sequence of the wall units,

Fig. 8 is a fragmentary view on a larger scale, showing the lateral contact between two consecutive wall units,

Fig. 9 is a detail view in longitudinal cross section on a greatly enlarged scale, taken on line 9—9 of Fig. 4, and showing the relationship of the latch to the ceiling track,

Fig. 10 is a view on an enlarged scale in transverse cross section, taken on line 10—10 of Fig. 7,

Fig. 11 is a fragmentary perspective view showing the complete co-relation of the wall unit with the ceiling structure.

Fig. 12 is a fragmentary perspective view of a lower corner of the wall unit, showing an undercarriage element,

Fig. 13 is a side elevation partly in longitudinal section of said under-carriage and the associated parts,

Fig. 14 is a detail sectional view in transverse cross-section, taken on line 14—14 of Fig. 13,

Fig. 15 is a more or less diagrammatic sectional view, taken on line 15—15 of Fig. 11, showing the co-relation of the ceiling slide and the wall unit, while the latter is elevated upon its under-carriage,

Fig. 16 is a view similar to Fig. 15, showing the relation of the parts when the under-carriage has been retracted,

Fig. 17 is a diagrammatic plan view of a typical building structure showing various arrangements of sets of wall units with lines of junction between such sets at A, B, C, D, E, F, G and H,

Figs. 17A, 17B, 17C, 17D, 17E, 17F, 17G and 17H are diagrammatic plan views on a larger scale, indicating the relationship between the wall units at the respective lines of junction shown at A, B, C, D, E, F, G and H, in Fig. 17, and

Fig. 18 is a fragmentary perspective view showing the use of a wall unit as a semi-trailer for transportation.

Referring now to the drawings, the building, illustratively shown as a huge hangar for a multiplicity of aircraft, has a roof R sustained on columns C near the middle of the building. The roof is preferably of centilever truss construction to be self-sustaining for a very substantial span beyond the columns, thereby to afford unobstructed room for storing and moving aircraft therein.

The wall is made up of a multiplicity of substantially identical units W, each of substantially the height of the building. The wall units are interrelated with the roof and with each other for facility of installation and removal thereof.

As shown in Figs. 4 to 7, inclusive, each wall unit preferably includes a rectangular box frame F closed by an upright panel 30. Wings 31 and 32, preferably of sheet metal, of the height of the box frame extend outward from diagonally opposite uprights or corners of the box frame and preferably lie in the respective forward and rear faces thereof.

Each wall unit extends obliquely, as shown in Fig. 7, relative to the building line *b—b* with its diagonal approximately along the building line as shown, to afford engagement of the outer edge of the rear wing 31 of each unit with respect to the corresponding edge of the front wing 32 of the contiguous unit.

The ceiling or undersurface of the roof, as shown in Figs. 1, 9 and 11, is provided with a series of rail sections extending along the angle above noted relative to the building line. Each rail section is a channel beam 33 opening downward and the upper part of the wall unit has resiliently resisted latch means, preferably latch bolts 34 which spring into the rail section when in registry therewith.

Each wall unit has horizontal guide rails 35 and 36 respectively, on the forward and rear face of its box frame structure, said guide rails being complementary in form and in level above the floor, so that the rail on the rear face of each unit will register with the complementary slightly higher rail on the front face of the contiguous wall unit at one side thereof.

Each wall unit also has a normally retracted undercarriage U, said undercarriage being in two sections, one at each lower corner in the angle between the frame and the corresponding lateral wing as shown. Each undercarriage has preferably associated therewith a pneumatic jack J by which downward pressure can be exerted upon the frame of the undercarriage, thereby to lift the wall unit and to rest it upon its undercarriage preparatory to movement thereof. To this end, the ceiling rail sections 33 and the meshing guide rails 35 and 36 on the wall units are formed with sufficient vertical clearance to maintain registry thereof, regardless whether the wall unit is in lower or anchored or in raised position. Each unit, after thus being lifted, may be propelled laterally, desirably by its own motor 37, to move along the coacting guide rail 35 of the next unit so as to be superposed thereover in its movement out of the ceiling rail 33.

The installation having been described in its general outline, the specific and desirable embodiment of wall unit shown will now be described.

Referring to Figs. 4 to 8, the wall unit is preferably composed of two pairs of elongated tubes or posts 38, 39 and 40, 41 spaced to form the upright corners or edges of box-frame F. These tubes or posts are held together to form a rigid open-work box frame structure. In one desirable embodiment, truss bars 42 intervene between the sides of such post pair and engage the inner edges of spacer plates 43 intervening and welded between the ends of such tube pair.

The two pairs of posts are connected together by transverse end bars 44, 45 respectively, at the top and bottom of the structure and by horizontal truss bars 46 extending from the front post 40 at one side diagonally to the rear post 39 at the other side. Preferably truss bars 47, 48 extend upward and downward respectively from the junction of horizontal middle truss bar 46 and post 39 to the diagonally opposed post 40 respectively at the junction of such post with horizontal truss bars 46' directly above and directly below the middle bar 46.

The horizontal truss bars 46 preferably extend outward beyond the box frame as at 46^a as continuations of the respective sides of the box frame. The end bars 44, 45 have similarly directed extensions 44^a, 45^a respectively from diagon-

ally opposite corners of the box frame. Upright posts 49, 50 connect the extremities of said extensions 44a, 45a, 46a, thereby to form the frames for the lateral wings 31 and 32 which protrude from diagonally opposite corners of the frame and lie respectively in the forward and rear plane of the box frame. Each of the wing frames is preferably buttressed by truss rods 51 extending diagonally between the lateral longitudinal framing rod 49 and box corner rod 40, and also between framing rod 50 and box corner rod 39. The panel 30 of the wall unit is preferably of sheet metal, desirably with upright corrugations as shown, and extends diagonally across the box frame, from the front post 40 at one edge to the rear post 39 at the opposite edge. The panel thus rests against the horizontal truss bars 46 and the oblique truss bars 47, 48. The panel 30 may be combined in one integral piece with the webs 31, 32 of the wings, although the latter may be made in separate sections. Preferably angle beams 52 diagonally of the ends of the box frame reinforce the horizontal edges of the diagonal panel 30 of corrugated metal. The various parts of the wall unit thus far described are desirably welded together to form a strong rigid unitary structure to which the panel and it wings are preferably bolted.

To the outer upright rods 49, 50 of the wings, there are welded outstanding sheet metal fins 53, 54, which extend the height of the wall unit and over the edge of each of which is doubled and riveted at 55 a binder strip 56 preferably of rubber, natural or synthetic, or other suitable yielding binding material. The midsection of the binder strip 56 protrudes well beyond the edge of the fin to permit flexure thereof about said edge in manner that will appear from the drawings and will be set forth hereinafter.

The undercarriage of the wall unit may include a platform 57 bolted as at 58 to the lower spacer plate 43 and accommodated in the angle between the wing 31 and the box frame F. Upon the platform is mounted an upstanding cylinder 59, within which is a hollow piston 60 protruding through the platform and bolted at the lower end thereof as at 61 to the transverse web 62 of a yoke, the arms 63 of which mount the axle 64 to which are rigidly affixed a pair of rubber-tired caster wheels 65, straddled by the yoke. Desirably the yoke has attached to the under-face thereof as by bolts 66, the motor 37 which may be either an electric motor or a pneumatic turbine and which is connected by a transmission 67 to a worm 68 meshing with a worm wheel 69 affixed upon the axle 64. Desirably a ball bearing 70 is interposed between the yoke web 62 and the platform 57 and sustains the wall unit in its lower position. Pneumatic pressure is applied through pipe 71 by way of inlet fitting 72 in the head of the cylinder 59 to press downward upon the yoke 62, 63 and thereby lift the wall unit.

The motor driven caster unit U just described and shown illustratively at the right in Fig. 7 is duplicated at U' at the angle between the wing 32 and frame F at the left, except that no motor is used on unit U', the latter acting merely as a trailer, for which purpose the yoke is preferably displaced 180° from the position of that of the companion caster unit so as to be directed forward as shown.

While the pneumatic power may be introduced through pipe 71 from a compressor or other source of air pressure (not shown), it is feasible, within the scope of the present invention, to store sufficient compressed air within the length of one or more of the hollow tubes 38, 39, 40, 41 to serve as the source of propulsive power for operating the jack J or even for operating the motor 37 when the latter is of pneumatic turbine type.

Preferably the yoke is normally latched to determine the movement of the wall unit in the direction of the width thereof. To this end latch plate 73, which may be the lower race of the ball bearing 70 and be rigid with the yoke 62, is restrained by a latch 74 urged into notch 75 thereof by coil spring 76 and capable of being retracted, as for instance by means of a solenoid 77, whenever it is desired to swivel the yoke about its pivot on the piston 60 for steering the movement of the wall unit.

The spring-restrained latch conformation at the upper end of the wall unit preferably comprises a pair of latch bolts 34 in the posts 38 and 40 at the front face of the wall unit. These latch bolts may each comprises (Fig. 9) an upright rod fitting into a cylindrical cup 78, which is threaded as at 79 near its rim into the upper end of the tubes 38 and 40. The latch bolt is desirably of diameter smaller than the bore of the cup and has a sliding fit in a bushing 80 in end bar 44. The latch bolt has a foot 81 at its lower end with a slide fit in cup 78, said foot being desirably concave at its lower face as at 82 for housing the upper end of a coil spring 83 resting in and supported by the bottom of the cup 78. At the upper end, the latch rod 34 carries a roller 84. The latch rod 34 is normally elevated by the coil spring 83 to the uppermost position shown in dot and dash lines in Fig. 9, determined by engagement of foot 81 with bushing 80.

Each ceiling rail section, as shown, is a deep channel 33 facing downward to accommodate the corresponding latch bolts and extends along the ceiling at slight inclination to the building line to determine the corresponding position of the wall unit when installed, as best shown in Figs. 7 and 11.

Desirably the outer edge of each ceiling rail 33 is formed with an upwardly inclined camming ledge 85 extending the length thereof and which serves, as will be obvious, to depress the spring urged latching bolts 34 as the wall unit is moved upon its undercarriage toward the building in the initial construction thereof, the latching bolts 34 being snapped into rail section 33 when the wall unit reaches home position. After the structure is once assembled, during normal movement of the wall units, the latching bolts 34 will enter the open end of rail section 33 when each wall unit is being moved back into home position, camming ledge 85 serving no further function at this time. The maximum extension of latch member 34 is such that the roller end 84 thereof will fit in the channeled portion of rail 33 and not abut against the extremity of said rail when the wall unit is being moved to its home position. The ceiling rail affords a channel of such depth that the wall unit can drop through a range of two inches or so to settle on the ground as the undercarriage is retracted, and the roller end 84 of the latch bolt 34 will still remain positioned in the ceiling rail, as shown.

The transverse guide rails on the wall units are generally of channel frame construction and are removably bolted as at 86 to brackets 87 on the respective upright posts and extend outward as at 35', 36' beyond the respective wings. These channel units are preferably concave upward along one, preferably the inner face of the wall

unit and concave downward along the other, preferably the outer face of the wall unit, said two channel rails being at different levels, the downwardly directed one being somewhat higher than the upwardly directed one. Accordingly the upper edge of the lower rail at the rear face will intermesh with the lower edge of the upper rail at the front face of the contiguous wall unit. Preferably the lower rail, as shown in Fig. 10, has a series of guide rollers 88 extending thereabove, each roller bearing on the upper end of a stub 89 lodged within a socket 90 formed as a unitary part of the lower guide rail 36 and affixed by a cross pin 91. The roller is preferably kept in place by a washer 92 screwed at 93 upon the end of the stub 89 against a gasket 94 in a socket in the upper end of the roller.

The rail 35 at higher level, as shown in the drawings, is of depth such that it accommodates the guide rollers 88 of the rail at lower level on the neighboring wall unit, both when that wall unit is in elevated position upon its undercarriage or in lower position with the undercarriage retracted.

Desirably the rails described are in two pairs on each wall unit, at substantially equal distances from the top and bottom of the wall unit, that is, the median level *m—m* of one pair of rails is as far above the bottom of the wall unit as the median lelevl *n—n* of the other pair is below the top, the roller bearing rails 36 each extending slightly below the respective median levels and the other rails slightly thereabove.

Inasmuch as each wall unit extends below the ceiling rail, even when elevated upon its undercarriage, there will be a substantial gap between the top of the wall unit and the ceiling when the undercarriage is retracted and the wall unit rests upon the ground in installed position. Means is provided automatically to close and seal the gap between the ceiling and the wall unit, as shown in Figs. 15 and 16.

In the embodiment shown, this means comprises a closure slide 95 of sheet metal rounded at the lower end 95′ thereof and arranged to rest by gravity upon the upper edge of the sheet metal panel 30 or rather upon the upper edge strip 52—44′ thereof. The slide is guided in one or more inverted U-shaped guide frames 96 affixed to the ceiling or underside of the room near the border thereof and adjacent and generally parallel to the sheet metal panel 30. For such guiding arrangement, the sheet metal slide 95 is reversely bent at its upper end to afford a cross span 95^s and a downward edge strip 95^e for snug guiding fit within the U-frame. The U-frame 96 carries a locking arm 97 with a bearing axle 98 rotatable in a bearing 99 formed at the lower end of one wall of the U-frame 96, said arm being weighted at 100 to fall obliquely across the U-frame and to form a rest for the lower inclined cam edge 101 of a locking block 102 welded to the slide, thereby to lock the slide in elevated position in which it is retained before the wall unit is installed.

Upon the upper edge of the wall unit are screwed at 103′ one or more tripper plates 103, each with an upwardly inclined outer end which, as the wall unit meshes with the rail 33, substantially engages the U-frame 96 above the trip finger 104 which protrudes outward from the locking arm 97. Accordingly when the undercarriage of the wall unit is retracted and the wall unit drops to rest upon the ground, the

tripper plate 103 descends therewith past the finger 104, as shown in Fig. 16 and causes the locking arm to turn outward, thereby to release the slide 95 and permit it to settle by gravity upon the top of the wall unit panel 30 and thereby to close the ceiling gap. The locking arm 97 is maintained in the released position by the inwardly turned left hand lower edge 95^e of the slide 95, which thereby acts as a stop to restrain the locking arm from dropping inward by gravity.

Whenever the installed wall unit is elevated upon its undercarriage, preparatory to sliding it out of position, the slide 95 is raised by the rising panel 30 and thereby clears the locking arm 97, which by reason of its counterweight 100 drops inward to engage the locking block 102, so that by the time the door has reached its elevated position the locking arm 97 will have resumed the locking position shown in Fig. 15.

In the arrangement of Fig. 8, it is seen that the flexible binding strips 56 of consecutive wall sections are slightly bent about the edges of the respective carrying fins 53, 54 for face-to-face engagement thereof. The wall units, as shown in Fig. 7, are so arranged that each is movable toward the right when viewed from the exterior of the building, to be guided along the rails 35 at the outside of the contiguous wall unit immediately to the right thereof. The lower guide rail 36 on the moving wall unit, being initially telescoped at its end into the companion rail of the contiguous wall unit, its rollers 88 will ride along the upper or inverted rails 36 of the latter wall unit.

According to the present invention, the wall unit shown in Figs. 4 to 8 is made reversible so that the same unit may be readily altered to be slidable to the left rather than to the right when viewed from the exterior of the building, an arrangement required in many cases as will appear from the illustrations hereinafter. For such reversal, the wall unit need merely be turned upside down in its own plane, the undercarriage units U, U′ are removed from what is now the upper end of the unit and attached to the lower end thereof, the sockets 78 and their contained latch bolts 34 are removed from what is now the lower end of the door and applied in the correspondingly threaded opposed end of the front corner tubes 38 and 40. The four guide rails 35, 36 on each wall unit are removed and reversed so that the rails 36 will have the rollers 88 face upward and be at lower level and the other rails 35 will face downward and be at higher level. Finally the tripper plates 103 are removed from what is now the lower angle beam 52 and applied to what is now the upper beam 52.

In the diagrammatic plan view of a typical building structure shown in Fig. 17 are indicated various manners of correlating sets of the universal wall sections for affording openings or gateways of desired width, such sets contacting between the ends of an individual wall as at A and B, or at angles of the building as at C, D and E, or at reentrant angles, as at F, G and H. The relations between the two junction wall units that connect such two sets of wall units at A, B, C, D, E, F, G and H are indicated on a larger scale more or less diagrammatically in Figs. 17A, 17B, 17C, 17D, 17E, 17F, 17G, and 17H, respectively.

It will be understood that each wall section of the building shown in Fig. 17 that is movable toward the right for shifting the same to open

position, when viewed from the exterior of the building will be of precisely the construction shown in Figs. 4 to 8 inclusive, while those, when thus viewed, that are movable to the left to open position, will be the unit shown in Figs. 4 to 8 inclusive, but with their accessories mounted in reverse relation, as described in the second to the last paragraph above. The fins **53**, **54** of each set of wall units are related to each other with the flexible edge strip *f* at the inner face of one unit engaging the corresponding strip *f* at the outer face of the neighboring wall unit, substantially as shown in Fig. 8.

The arrangement at A in Fig. 17 and in Fig. 17A shows wall units extending in two sets along one wall, those at the left being displaceable toward the left and those at the right toward the right, as indicated by arrows. At the junction line *a*—*a* between the junction wall units of the two sets, the flexible edge strips *f* at the outer faces of the adjoining wall units are bowed into face-to-face engagement with each other along a plane at right angles to and with their free edges directed inwardly from the building line, as shown in Fig. 17A. In this relationship, the sections would be slid outward away from the line of junction *a*—*a* to be superposed in two sets of wall units A^m and A^n near corners of the building to afford a wide opening in the midsection of the building for ready access and egress.

In the arrangement at B in Fig. 17 and in Fig. 17B, the units making up one wall are arranged as indicated by arrows to be slid inward from each corner, preferably to the midpoint of the wall, as shown. At the junction line *b*—*b* between the junction wall units of the two sets, the flexible edge strips *f* at the inner faces of the adjoining wall units substantially face each other adjacent the building line with their free edges directed inwardly from the building line. The wall units at the right are thus arranged to be slid toward the left in one set of superposed sections B^m and those at the left to be slid toward the right in the other such set B^n, both adjacent line *b*—*b*. The two junction wall sections indicated in Fig. 17B, which abut at line *b*—*b* in closed position, are thus not moved in the opening or closing displacement of the associated wall units. Depending upon requirements, openings are thus afforded to extend along the wall from one or both corners of the building.

At C in Fig. 17 and in Fig. 17C, is shown one arrangement for forming the junction *c*—*c* between the flexible edge strips *f* of wall units at right angles to each other to form a corner of the building. In this embodiment, the sections that abut to make the corner are displaceable outward as indicated by arrows, to form, when in completely open setting, two sets of superposed sections at C^m and C^n, respectively, both remote from said corner, affording an ample unobstructed opening at said corner. The respective edge strips *f* at the outer faces of the two wall units that make up the corner engage face-to-face, as shown, and their free edges are directed outwardly obliquely from the corner.

At D in Fig. 17 and in Fig. 17D is shown another arrangement which forms the junction *d*—*d* between junction wall units at right angles to each other that form a corner. In this relationship, one set of wall units is slidable outwardly away from the corner and the other set inward toward the corner as indicated by arrows, to form when in completely open setting, two sets of superposed sections, one at D^m remote from the corner, and the other at D^n adjacent the corner of the wall. The flexible edge strip *f'* and f^2 are respectively at the outer face of one and at the inner face of the other wall unit of the pair that make up the corner and they engage in face-to-face relation with their free edges directed obliquely outward from the corner.

At E in Fig. 17 and in Fig. 17E is shown yet another corner arrangement which forms a junction *e*—*e* between the flexible edge strips of wall units at right angles to each other. The walls that meet to form such corner are made up of wall units that are displaceable inward toward the corner, as indicated by arrows, to form two sets of superposed wall units A^n and D^m, both at said corner. The two flexible edge strips *f* at the inner faces of the wall units making up the corner are here directed with their free edges in opposed relation but with their faces in engagement substantially along one of the building lines.

It will be seen that in the arrangements of Figs. 17B and 17E, where the movement of wall units is toward the line of junction, the wall units at the junction remain fixed and in Fig. 17D one of the wall units remains fixed, and the wall units aligned with such fixed junction units are moved successively thereover at the outside of the building in opening and closing the building wall. In Figs. 17A and 17C, the wall units at the junction are movable outwardly and that is true also of one of the walls of Fig. 17D. The said wall units are moved outward to the exterior of the building successively along and in registry with the neighboring wall units. In each case it will be seen that the flexible edge strip at the junction wall unit of the set is at the outer face of a wall unit that is movable and at the inner face of a wall unit that remains fixed in such wall opening and closing displacements.

In Figs. 17F, 17G and 17H are shown arrangements of wall units corresponding to the corners at F, G and H, respectively, of Fig. 17, which in turn correspond closely to Figs. 17C, 17D and 17E, respectively, except that the respective corners here are reentrant corners. The lines of junction of the edge strips on Figs. 17F, 17G and 17H are on lines *f*—*f*, *g*—*g* and *h*—*h*, respectively. While the static relation of the parts in the reentrant corners is thus similar to that at the respective normal corners, those junction wall units which in Figs. 17D and 17E remain fixed in the opening and closing movement correspond to wall units which in Figs. 17G and 17H are movable, and conversely those junction wall units which in Figs. 17C and 17D are movable, remain fixed in the corresponding units of Figs. 17F and 17G, respectively, at the reentrant corners. For instance, while in the corner arrangement shown in Fig. 17E, both of the junction wall units remain fixed, both the junction wall units of the corresponding reentrant corner arrangement of Fig. 17H are movable in opening or closing the contiguous walls of the building.

Thus it is seen that the wall units are to be assembled in two sets from identical elements, either for right-hand or for left-hand opening movement, either readily convertible into the other as required. They admit of assembly in the manner indicated and in every one of the relations set forth and in others (at angles other than right angles) that will be apparent, inherently to form effective lines of junction at the coacting edge strips between consecutive sets of

wall units. In each case a tight seal is inherently effected at the contacting flexible edge strips *f* and also at the roof as set forth, which excludes moisture and wind.

As will be seen, each wall unit is guided in tracks on a neighboring wall unit and the roof. Accordingly, no floor rails or other floor obstruction is required. Moreover the roof does not carry or sustain the weight of the wall units which rest upon the ground. The roof sustains merely lateral strains and so may be built of relatively light and inexpensive construction.

It will, of course, be understood that the self propulsion of wall units for withdrawal may be readily effected as desired, at any part of the building wall, and any number of consecutive wall units may thus be withdrawn to effect a passageway of the width and in the location required for access and egress of large airplanes, for instance. After each displacement, the wall units may be as readily restored to closed position.

The wall unit may be 25 feet or more in height, if desired, and has sufficient stability when installed in the building to withstand high wind.

The invention lends itself to application for any of a wide variety of building constructions such as hangars, warehouses, factories or the like, regardless of the magnitude or shape of its floor plan.

In erecting the building, after construction of the column supported roof as best shown in Figs. 1 and 17, each wall unit W may be self-propelled on its undercarriage into place. The latch bolts 34 of each wall unit are depressed by the guide ledge 85 until they snap into the ceiling rail 33 at which time the sheet metal panel 30 extends directly under the corresponding slide 95. When the undercarriage U, U' is permitted to retract by venting the jack J, the wall unit settles into place upon the ground and the slide 95 is released in the manner previously described to rest upon upper edge strip 52 of the panel of the wall unit. Thus the successive wall units are installed, each abutting the contiguous one at the flexible edge strips *f* with the roller bearing guide rail 36 at the inner face of each wall unit meshing at the end with the end of the rail 35 at slightly higher level on the outer face of the neighboring wall unit.

In the application of the invention, as for instance for the building of a huge hangar, it will be seen that the wall units may be readily retracted from any part of the building wall to permit egress or admission thereat. In each case, the wall unit to be first shifted is first elevated upon its undercarriage by operating jack J and with its undercarriage wheels guided as shown, it slides outward along the ceiling rail section 33 and along the guide rails 35 of the neighboring unit, whereupon the two registering wall units are caused to slide in unison over the third, until the opening in the wall is as wide as desired, substantially the entire length or width of the building being opened, if desired.

The undercarriage unit, as shown in Figs. 12, 13 and 14, while particularly useful in connection with the wall unit disclosed, has utility as a separate article of manufacture, combining as it does a lifting jack and a propulsive motor suitable for transporting any of a variety of heavy building structures.

Obviously the set of upright wall units thus displaced and extending in superposed relation form a relatively stable entity and could, if desired, be propelled outward away from the building, together with the junction wall unit if desired. No auxiliary frames or hangers are required to sustain the wall units when removed from the building line. The general appearance of such completely withdrawn wall is shown at Y^1 and Y^2 in Fig. 17. The wall units may be readily reinstalled in the manner above described.

A further advantage of the wall unit described is that no special truck is required for transporting the same from the place of manufacture or the warehouse to the site of the building to be constructed therewith. As shown in Fig. 18, the main rods or tubes 38 and 40 of the wall unit may be utilized as the frame bars of a semi-trailer. To these bars are removably shackled, as at 110, the ends of the conventional semi-elliptical springs 111 clamped at their middles to the ends of the conventional axle 112, which mounts the usual rubber-tired wheels 113 of a trailer axle unit. The wheel at the right of rod 38 has no obstruction whatsoever, as shown, and the wheel at the left is accommodated in the corresponding open wing, the end corrugated metal panel being removed for that purpose. Of course, a fifth wheel would be affixed at the forward end, not shown, of the wall unit, so that it may be transported as a trailer which mounts a multiplicity of the companion wall units and other structure of the building.

While the invention has a preferred application for affording readily portable wall units of a huge building structure such as hangars, warehouses and auditoriums, it is also applicable to outdoor theatre stages, to smaller structures and to reconstructed buildings and for numerous other applications.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A building wall construction, comprising a plurality of wall units, each comprising a panel of substantially the full height of the building, each having a wheeled undercarriage retracted in the building structure, with the panel resting directly upon the ground, motor driven jack means for elevating the wall unit to rest upon its wheeled undercarriage and track means in the associated building structure parts for guiding the path of travel of the wall unit upon its undercarriage out of engagement with the rest of the building structure.

2. A building wall construction comprising a multiplicity of substantially identical wall units, each of substantially the complete height of the building, each having a lateral wing extending the height thereof and adapted to effect a seal along the height of the neighboring wall unit, each wall unit having a wheeled undercarriage and each having a guide for a neighboring wall unit to facilitate movement of each wall unit along its neighboring unit, for ready withdrawal of any desired number of consecutive wall units.

3. A building wall structure, comprising a plurality of substantially identical wall units, each substantially the height of the building, each unit having lateral sealing wings extending the height of the unit and in sealing engagement with the

corresponding lateral wing of each contiguous wall unit, and horizontal guide rails extending the width of each wall unit and protruding slightly beyond the wing thereof for inter-engagement of consecutive wall units, thereby to guide a sliding displacement of each wall unit along a neighboring unit.

4. A building wall structure, comprising a plurality of substantially identical wall units, each of substantially the height of the building, each unit having lateral sealing wings extending the height of the unit in sealing engagement with the corresponding lateral wing of each contiguous wall unit, and horizontal guide rails extending the width of each wall unit and protruding slightly beyond the wing sections for inter-engagement of consecutive wall units to guide a sliding displacement of each wall unit along a neighboring unit, each wall unit having a normally retracted wheeled undercarriage and power driven jack means to elevate the wall unit to rest upon its undercarriage, said guides affording vertical play to permit such elevation while maintaining the guide rail of the elevated wall unit in registry with the coacting guide rail of the next unit.

5. A building construction of substantially identical wall units each of the height of the structure, each of said units having parallel faces and lateral wing sections protruding from the respective faces at diagonally opposite edges of the wall section, each of said lateral wings being substantially the height of the wall unit and having a yielding sealing strip along the edge thereof for coaction with the corresponding strip on the wing of the neighboring unit, said units being arranged with their diagonal planes at an acute angle to a straight line and with the sealing strips of adjoining wings of consecutive wall units in sealing engagement with each other.

6. A building construction of substantially identical wall units, each of the height of the structure, each of said units having parallel faces and lateral wings extending from diagonally opposite edges of the wall section in the planes of the respective faces, each of said lateral wings being substantially the height of the wall unit and having a yielding sealing strip along the edge thereof for coaction with the corresponding strip on the wing of the neighboring section, said units being arranged with the diagonal planes of the respective units substantially aligned and with the sealing strips of adjoining wings of consecutive wall units in sealing engagement with each other, each wall unit having a horizontal guide rail meshing with a companion horizontal guide rail on the opposite wall of the next wall unit to facilitate sliding displacement of one wall unit over the exterior of the contiguous wall unit.

7. A building construction of substantially identical wall units of the height of the structure, each of said units having parallel faces and lateral wing sections protruding from diagonally opposite edges of the respective faces, each of said lateral wings being substantially of the height of the wall unit and having a yielding sealing strip along the edge thereof for coaction with the corresponding wing of the neighboring unit, said units being arranged with the diagonal planes of the respective units substantially aligned, and with the sealing strips of adjoining wings of consecutive wall units in sealing engagement with each other, each wall unit having a horizontal guide rail on one face thereof, meshing with a companion horizontal guide rail on the opposite face of the next wall unit, to facilitate sliding displacement of each wall unit over the exterior of the contiguous wall unit, each wall unit having a wheeled undercarriage normally in retracted position, jack means for elevating the wall unit upon its undercarriage, the intermeshing guide rails having relative vertical play and thereby permitting such elevation while maintaining the interengagement thereof.

8. A building structure having a portable wall of substantially identical units, each unit being substantially the height of the structure, each unit comprising a rectangular box frame with spaced parallel faces, a panel extending diagonally therethrough and of the height thereof and having end wings protruding from diagonally opposite corners of the box frame, each wing having a yielding sealing strip along the outer edge thereof, horizontal guide rails along the respective faces and wings of the unit, the guide rail on one face being at a higher level than that at the other, and of construction complementary thereto for intermeshing with the lower guide of the contiguous wall unit.

9. The combination recited in claim 8 in which the guide rail at lower level is a channel bar which extends concavely upward and has guide rollers protruding beyond the upper edges thereof and in which the guide rail at higher level extends concavely downward for straddling said rollers on the guide rail of the contiguous wall unit.

10. A building wall structure, comprising units of substantially identical construction, each being of the entire height of the building structure, each unit being in the form of a rectangular box frame with parallel faces and having extension wings extending from diagonally opposite corners of the box frame substantially in the planes of the respective faces, and substantially the height of the panel, each wing having a yielding sealing strip along one of the edges thereof, each of said units having a horizontal guide rail along one face thereof, registering with a complementary horizontal guide rail on the other face of the contiguous unit, with the wing of the outer face of each unit in sealing engagement with the corresponding wing at the inner face of the contiguous unit.

11. The combination recited in claim 10 in which the guide rails of the respective wall units are interrelated to facilitate movement of each wall unit along the outside of a contiguous wall unit for removal of selected parts of the wall structure.

12. The combination recited in claim 10 in which each wall unit is slidably interconnected with the neighboring wall unit at one side thereof, to facilitate displacement thereof along the outer face of such neighboring unit and in which the direction of displacement of succeeding units along each building wall is from one end to the other end thereof.

13. The combination recited in claim 10 in which each wall unit is slidably interconnected with the neighboring wall unit at one side thereof to facilitate displacement thereof along the outer face of such neighboring unit, and in which the direction of opening displacement of succeeding units is from opposite ends of one wall to a junction point between two sets of opposingly directed wall units.

14. The combination recited in claim 10, in which the wall units viewed from the exterior of the building are in two sets, adapted to be

moved away from each other toward the respective ends of the wall, the wall units of each set being overlapped from the corresponding end of the wall with the sealing strip of contiguous end units of the two sets in substantially direct abutting relationship.

15. The combination recited in claim 10, in which extreme wall units of adjoining walls abut at their sealing strips to form corners of the building structure, the edges of the corner wall units contiguous to said corner extending within the building line and said corner units being slidable outwardly along adjacent units and toward the exterior of the building structure.

16. The combination recited in claim 10, in which at least one of the two wall units correlated to form a building corner extends at one edge thereof inside the building line at said corner movable outward along and adjacent unit away from the said corner.

17. The combination recited in claim 10, in which in at least one of two adjacent wall units, the sealing strips of which coact to form a corner of the building, extends to the sealing strip at one edge thereof exterior of the building line and the exterior guide rail of said one unit is aligned with the inner guide rail of the neighboring unit along the wall of which it forms a part, whereby such neighboring unit is movable over the exterior of said one unit.

18. A portable structural wall unit, comprising four upright metal posts, truss structure connecting the same in an openwork rectangular frame with the posts extending along the upright corners thereof, a sheet metal panel extending diagonally through said rectangular frame from the forward post at one side thereof to the rear post at the other, and lateral wings of the height of the unit, lying in the general plane of the front and rear of the open-work frame and extending outward from lateral edges of said panel.

19. The combination recited in claim 18 in which the wings are integral with the diagonal panel.

20. The combination recited in claim 18 in which the wings are integral with the diagonal panel, and in which the entire panel with its wings are corrugated with the corrugations extending in vertical direction.

21. A portable structural wall unit, comprising two pairs of upright metal corner posts, truss bars in the plane of the thickness of the unit connecting the respective pairs of tubes together, truss bars extending diagonally from the front member of one pair of corner posts to the rear member of the other pair and connecting said two pairs of corner posts in a relatively rigid self-sustaining open box-frame structure, and a sheet metal panel of the height of said frame structure extending diagonally along the diagonal truss work from the front of one pair of posts to the rear of the other pair of posts, said plate having integral wing extensions of the height of the unit.

22. The combination recited in claim 21 in which the outer edge of each wing has an upright post extending the height thereof, a fin affixed thereto and extending the height of said post and a flexible binder strip about the edge of said fin.

23. A structural wall unit comprising an open work box-frame metal truss structure, a sheet metal panel of the height of said structure extending diagonally thereof and having unitary wing extensions respectively in the plane of the front and of the rear of said structure, and horizontal guide rails respectively along the front and the rear of said box frame structure, each extending also across and protruding slightly beyond the associated wing, the rails being at slightly different levels to facilitate intermeshing of the end of one rail with the companion rail on the opposite face of an identical contiguous wall unit.

24. A wall structure unit, comprising an open work rectangular truss box-frame of the height and thickness of the unit, a sheet metal panel extending diagonally of said frame and the height thereof and having unitary wings extending the height of the unit respectively along the front and the rear plane of said truss-frame and a retractable undercarriage comprising horizontal brackets secured to the truss-frame near the lower part thereof and extending into the angular spaces determined by the truss-frame and the respective end wings, a cylinder upon each bracket, a fluid pressure operated piston in each cylinder and a caster under each bracket having a carrying yoke attached to the corresponding piston.

25. A wall structure unit comprising an open work rectangular box-frame of the height and thickness of the unit, a sheet metal panel extending diagonally of said truss unit, the height thereof and having unitary wings extending the height thereof respectively along the front and the rear plane of said box-frame and a retractable undercarriage comprising horizontal brackets secured to the box-frame near the lower part thereof and extending into the angular space determined by the box-frame and the respective wings, a cylinder upon each bracket, a fluid pressure operated piston in each cylinder and a caster having an axle under each bracket having a carrying yoke attached to said piston, and a motor carried by the yoke and having a gear reduction transmission to the axle.

26. A wall unit, comprising an open-work box frame of the height and thickness of the unit, a sheet metal panel extending diagonally of said box frame, the height thereof and having unitary wings extending the height thereof respectively along the front and the rear plane of said box frame, and a retractable undercarriage having associated jack means for lifting the wall unit to rest upon said undercarriage, said undercarriage comprising a pair of horizontal brackets attached to opposite sides of the box-frame near the lower ends thereof, in the angles determined between the same and the respective wings, a pneumatic jack mounted upon said bracket, a piston therein, a yoke under said plate connected to said piston and having a wheel with an axle bearing in said yoke.

27. The combination recited in claim 26 in which the open box-frame includes tubes in the structure thereof charged with compressed air as the source of power for operating the jack to depress the undercarriage and elevate the wall unit.

28. In a building structure, a column supported roof having a peripheral wall section retaining guideway, and a plurality of substantially identical portable wall units of the height of the building structure, each unit having resiliently restrained upwardly protruding positioning latches registering within the guideway of the roof.

29. In a building structure, a column supported roof having wall retaining guide rail along its

periphery at the under surface thereof, a plurality of substantially identical portable wall units of the height of the building structure, each unit having resiliently restrained upwardly protruding latch means meshing in said guide rails, and an upwardly and outwardly inclined guide plate protruding from the outer edge of the guide rails and serving to depress the latch means as the wall unit is moved in place, the said latch means being resiliently urged into the guide rail when the wall unit reaches correct position.

30. A building construction comprising columns, a roof supported thereby and protruding outward therefrom, portable wall units, each of said units extending at a small acute angle relative to the building line, each wall unit having lateral wings protruding respectively from the front face toward one side and from the rear face toward the other side thereof, the successive units engaging each other at such wings with the front wing at one face of each unit engaging the rear wing at the adjacent side of the next wall unit, each of said wall units having guide runners at its top and the roof having guide rails for the respective runners, said rails for the several wall units, extending at the same slight angle relative to the building line as the respective wall units.

31. A building construction, comprising a column supported roof, having its various spans protruding well beyond the columns, said roof having a series of straight guide rails at the underface or ceiling and near the periphery thereof, each of said guide rails extending at a small acute angle relative to the building line, a multiplicity of substantially identical portable wall units, each having guide runners at its top adapted to coact with the corresponding guide rails at the ceiling, to dispose each wall unit at a corresponding acute angle relative to the building line, each wall unit having lateral wings extending the height thereof, protruding respectively from the front and rear plane of the unit, one to the right and the other to the left, the rear wing of each wall unit tightly engaging the front wing of the neighboring wall unit.

32. A building construction, comprising a column supported roof, having its various spans protruding well beyond the columns, said roof having a series of straight guide rails at the underface of said roof or ceiling and near the roof periphery, each of said guide rails extending at a small acute angle relative to the building line, a multiplicity of substantially identical portable wall units, each having guide runner means at its top adapted to coact with the guide rails at the ceiling, to dispose each wall unit at a corresponding acute angle relative to the building line, each wall unit having lateral wings extending the height thereof, protruding respectively from the front and rear plane of the unit, one to the right and the other to the left, the wing along the rear face of each wall unit tightly engaging the wing along the front face of the neighboring wall unit, each of said wall units having a horizontal guide rail along one face thereof and a complementary horizontal guide rail at a slightly higher level along the opposite face thereof, said guide rails protruding slightly beyond the lateral edges of the wall units for intermeshing in the installed position of the wall unit, whereby each wall unit will form a guide for sliding displacement of a contiguous wall unit therealong.

33. A building construction, comprising columns, a roof supported thereon having substantial overhanging spans, a sequence of guide rail sections near the periphery and at the underface or ceiling of said roof, each of said rail sections extending at a small acute angle relative to the building line, a multiplicity of substantially identical wall units, each wall unit having lateral wings extending the height thereof, one extending from one face in one direction, the other from the opposite face in the opposite direction, the wings from opposed faces of consecutive wall sections being in tight engagement at their edges, each wall unit having runner means at the upper end thereof registering with the corresponding rail section at the ceiling, each wall unit having a horizontal rail across the rear face thereof and a complementary slightly higher rail across the front face thereof, the horizontal rail across the rear face of one wall unit meshing at one end with the rail across the front face of the neighboring wall unit.

34. A building consstruction, comprising columns, a roof supported thereon having substantial overhanging spans, a sequence of guide rail sections near the periphery and at the underface of said roof or ceiling and near the roof periphery, each of said guide rail sections extending at a small acute angle relative to the building line, a multiplicity of substantially identical wall units, each having lateral wings extending the height thereof, one extending from one face in one direction, the other from the opposite face in the opposed direction, the wings from the opposed faces of adjacent wall units being in tight engagement at their edges, each wall unit having a guide runner at the upper end thereof registering with the corresponding ceiling rail section, each wall unit having a horizontal rail with a protruding end across the rear face thereof and a complementary slightly higher rail across the front face thereof, each of said horizontal rails meshing at its protruding end with the complementary horizontal rail across the front face of the adjacent wall unit, each wall unit having a normally retracted undercarriage, manually controlled power means for depressing the undercarriage and correspondingly raising the wall unit preparatory to lateral displacement thereof, the roof rail and the complementary rails affording vertical play to permit such elevation of the wall unit.

35. In a building construction, the combination of a column supported roof having wide overhanging spans, a multiplicity of contiguous substantially identical portable wall units, a corresponding multiplicity of rail sections at the ceiling or undersurface of the roof near the periphery thereof, each wall unit having upwardly directed latch members urged by resilient means, said latch members coacting with the corresponding rail sections, each rail section having an outwardly extending upwardly inclined ledge for initially depressing the resiliently urged latch members as the wall unit is moved toward the building, for automatic latching thereof into place when it registers with a rail section.

36. In a building construction, the combination of a column supported roof having wide overhanging spans, a multiplicity of contiguous substantially identical portable wall units, a corresponding multiplicity of rail sections on the ceiling or underface of the roof near the periphery thereof, each wall unit having upwardly directed latch members urged by resilient means, said

latch members coacting with the corresponding rail sections, each rail section having an outwardly extending upwardly inclined ledge for depressing the resiliently urged latch members as the wall unit is moved toward the building, for automatic latching thereof into place when it registers with the rail, each of said rail sections opening at one end to permit removal of the corresponding wall unit, while the neighboring wall units remain in place.

37. In a building construction, a column supported roof having wide overhanging spans, a plurality of portable substantially identical wall units, each having a pair of lateral wings extending the height thereof, the edge of each wing section overlapping the edge of the neighboring wing section, the wall units extending at an acute angle to the building line, the roof having rail sections at the ceiling or undersurface thereof at corresponding acute angles to the building line, each wall unit having upstanding resiliently restrained latch means for coaction with the rail, each rail section having an upwardly and outwardly inclined ledge, for facility in introduction and latching of the wall unit into position, each rail section being open at one end thereof for facility in sliding the wall unit therealong for effecting an opening in the building.

38. In a building construction, a column supported roof, having overhanging spans, a plurality of portable substantially identical wall units, each having a pair of lateral wings extending the height thereof, the edge of each wing overlapping the edge of a wing on the neighboring wall unit, the wall units extending at an acute angle to the building line, the roof having guide rail sections on the ceiling or undersurface thereof at corresponding acute angles to the building line, each wall unit having upstanding resiliently restrained latch means for coaction with the corresponding rail section, each rail section having an upwardly inclined ledge protruding outward therefrom for facility in introduction and latching of the wall unit into position, each rail section being open at one end thereof for famility in sliding the wall unit therealong for effecting an opening in the building, and coacting guide rails across the respective wall units to guide an adjacent wall unit therealong.

39. In a building construction, a column supported roof having overhanging spans, a plurality of portable substantially identical wall units, each having a pair of lateral wings extending the height thereof, the edge of each wing overlapping the edge of the wing of a neighboring wall unit, the wall units extending at an acute angle to the building line, rail sections on the ceiling or undersurface of the roof at corresponding acute angle to the building line, each wall unit having upstanding resiliently restrained latch means for coaction with a corresponding rail section, each rail section having an upwardly and outwardly inclined ledge, for facility of introduction and latching of the wall unit into position, each rail section being open at one end thereof for facility in sliding the wall unit therealong for effecting an opening in the building, and coacting horizontal rails along the respective wall units to permit each wall unit in such sliding displacement to be guided along the neighboring wall unit, each wall unit having a normally retracted undercarriage, manually controlled operating means for lifting the wall unit to rest upon its undercarriage, both the latch connection at the ceiling and the horizontal rail connections between consecutive wall units affording play to permit such lift, while maintaining the said parts in effective coaction.

40. In a building construction, a roof having overhanging spans, supports therefor, a plurality of portable wall units each having an associated undercarriage to facilitate movement of the wall unit into or out of place and having associated means for retraction of the undercarriage to settle the wall unit on the ground, the roof having a multiplicity of slides depending therefrom in direct alignment with the respective wall units when in place, means releasably retaining said slides in elevated position, and means mounted on each wall unit automatically to release the corresponding slide upon retraction of the undercarriage to cause the slide to settle in place on the top of the wall unit when the latter rests directly upon the ground.

41. In a building construction, a roof having a series of guide frames depending therefrom, slides mounted in said guide frames, a locking arm hinged in said guide frame for retaining the slide in elevated position, said arm having a protruding finger and an associated wall unit having an undercarriage and having a tripper arm at its upper end adapted to displace the finger as the undercarriage is retracted, and thereby to release the locking arm and permit the slide to settle upon the top of the wall unit.

42. In a building construction comprising columns, a roof supported thereon having overhanging spans, a plurality of substantially identical portable wall units therefor, each wall unit having a forward and rear face and retractable undercarriage, each wall unit having a pair of lateral wings, extending in the plane of the forward and rear faces thereof respectively, said wall units being arranged with respect to the building line for lateral contact of the rear wall wing of each unit with the forward wall wing of the contiguous unit at one side thereof, the roof having guide rails near the periphery thereof substantially determining the position of said wall units, each wall unit having spring urged latch means substantially in the forward plane thereof protruding upward therefrom for latching into the said guide rail, each wall unit comprising a panel extending diagonally between the said wings, the roof having dependent guide frames substantially directly above the installed panels and their associated wings, slides mounted in said guide frames, means latching said slides in elevated position, and one or more tripper plates affixed to the upper part of the wall units adapted to trip the latch as the wall unit settles downward upon retraction of its undercarriage to release the associate slide for closing the gap between the roof and the wall unit.

43. A building construction comprising an overhanging roof, a support therefor, a multiplicity of substantially identical portable wall units, said roof having guide rails for positioning the respective wall units with respect to the building line, each wall unit being substantially sealed with respect to its neighbor and having guide rail coordination therewith, and each wall unit resting directly upon the ground, each wall unit having an associated jack-carrying, motor operated undercarriage normally retracted and adapted to lift the wall unit and to propel it at the exterior of the building to register beside a neighboring wall unit, whereby a plurality of wall units may be

juxtaposed and then propelled as a stable entity away from the building line.

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