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2,827,988

PORTABLE BUILDING STRUCTURE

Filed June 11, 1953

2 Sheets-Sheet 1

Fig. 1.

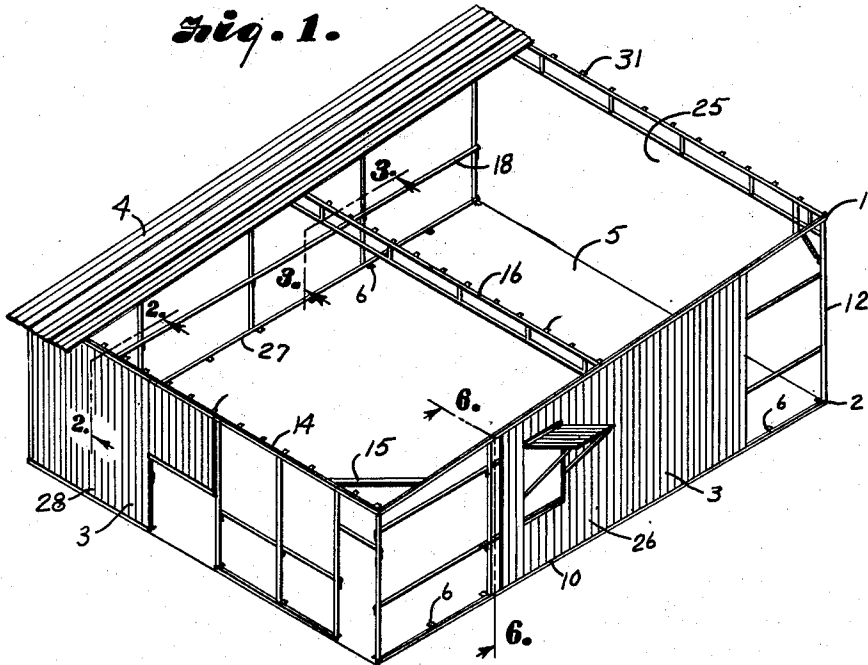


Fig. 2.

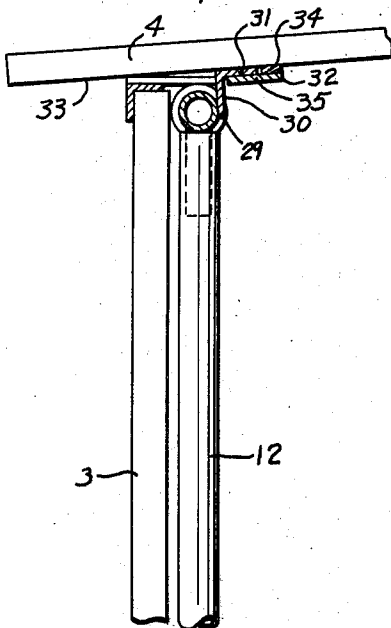
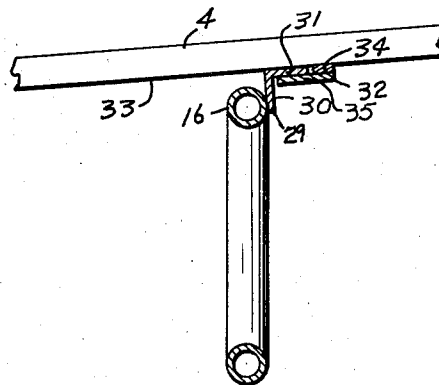


Fig. 3.



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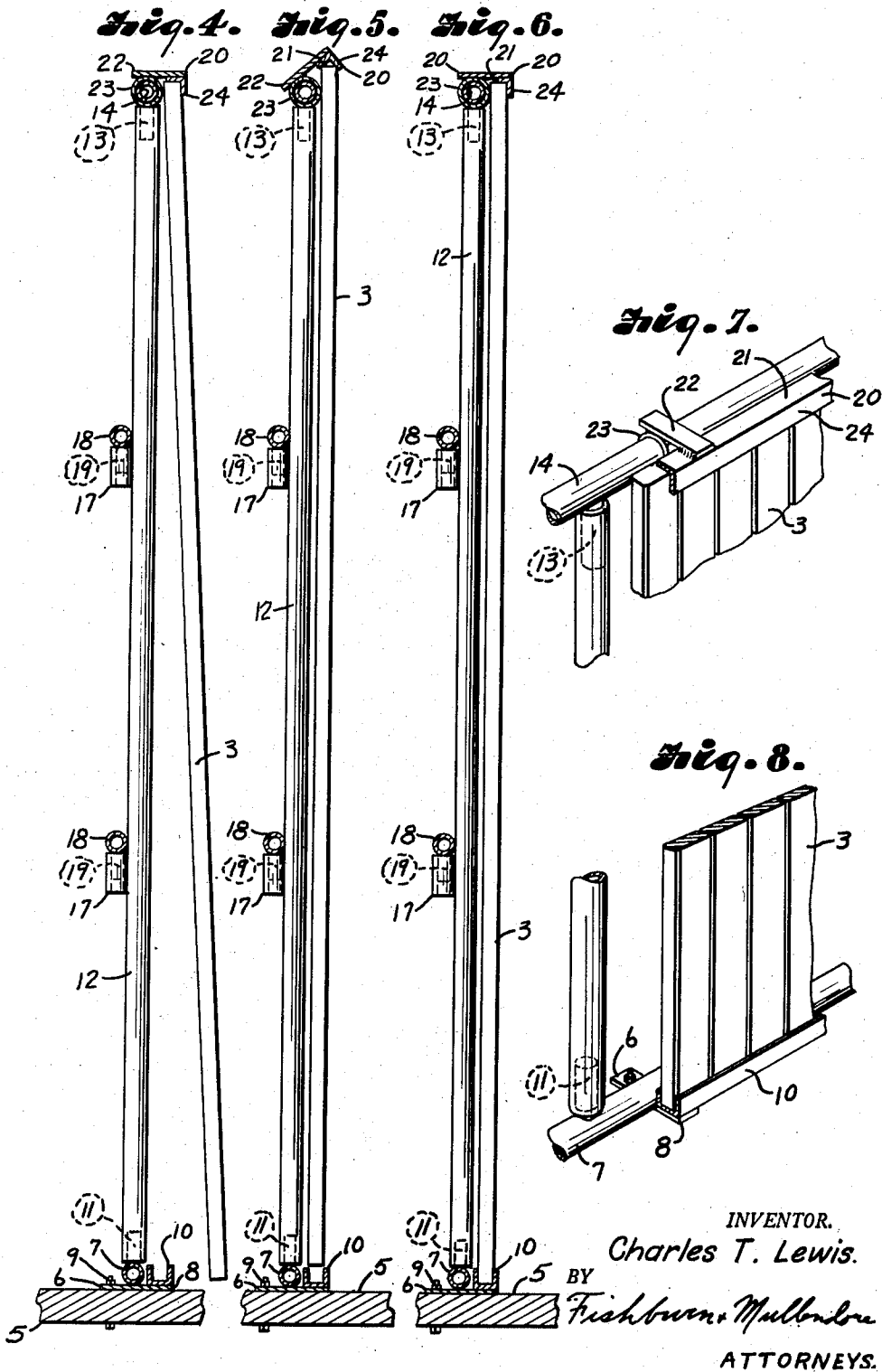
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PORTABLE BUILDING STRUCTURE

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Application June 11, 1953, Serial No. 361,017

2 Claims. (Cl. 189—2)

This invention relates to building structures, and more particularly to such a structure with a novel arrangement of parts for facilitating erection and removal to other locations.

Portable building structures have been used in oil fields and other areas for closing or weatherizing rigs and equipment to protect same and workmen from bad weather. In the past such portable buildings have consisted of frames and panels bolted together in erection and required time and special help in the field. Also many pieces, such as bolts and nuts, were required, and installation often necessitated workmen climbing around engines and drilling operations as well as the building frame which sometimes is very hazardous.

The objects of the present invention are to provide a portable building wherein the frame includes hinged members for holding panels in place; to provide a hinged rail on upper frame members whereby workmen at floor level may insert the upper edge of a wall panel in the hinged rail, push upwardly to partially rotate the rail upwardly to allow the lower edge of the panel to be aligned with a bottom rail, and then lowering of the panel into the bottom rail for completing installation thereof with the upper and lower edges retained in place by the rails; to provide a portable building structure in which one or more panels may be removed without disturbing the other panels which remain in their original position; and to provide a building structure which is easy and simple to erect on substructures commonly placed in position to accommodate the drilling equipment before drilling is commenced by use of helpers usually employed on a rig.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of a building structure embodying the features of the present invention.

Fig. 2 is a vertical sectional view through the building structure taken on the line 2—2, Fig. 1.

Fig. 3 is a vertical sectional view through the building structure taken on the line 3—3, Fig. 1.

Fig. 4 is a vertical sectional view through the building wall illustrating the initial step in installing a panel.

Fig. 5 is a vertical sectional view similar to Fig. 4 with the upper panel holding member hinged upwardly and the panel aligned for insertion of the lower rail.

Fig. 6 is a vertical sectional view through the building wall on the line 6—6, Fig. 1.

Fig. 7 is a partial perspective view of the building structure particularly illustrating the arrangement of the engagement of the hinged upper rail with the panel.

Fig. 8 is a partial perspective view showing the arrangement of the lower portion of the panel in the building structure.

Referring more in detail to the drawings:

1 designates a building structure having a frame gen-

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erally designated 2, supporting wall panels 3 and roof panels 4. The frame 2 is preferably adapted to be erected on a flooring 5 or other substructure usually placed in position to accommodate drilling equipment and the like. In the structure illustrated the frame 2 is made up of a plurality of pieces of pipe or other suitable tubular members cut to desired lengths, however, other structural shapes could be used.

The frame includes a plurality of base members 6 each of which consists of a tubular member or stringer 7 provided with spaced, transversely extending plates 8 suitably secured to the tubular member as by welding. The plate members 8 are arranged to rest on the floor 5 or other substructure, and be suitably secured thereto as by bolts 9, in such a manner that the tubular member or stringer is on the top of the plate 8 and is between the bolt 9 and the desired position of the wall panels 3. The plates 8 extend under the desired position of the lower edges of the wall panels 3 and secured to the said extending portion are bottom rails 10. The rails 10 are illustrated as being channel shape with the web of the channels secured to the top of the plate 8 and one of the legs of the channel adjacent the tubular member 7. The bottom rail 10 is preferably coextensive in length with the tubular member or stringer 7, however, a plurality of sections of the rail 10 may be utilized. Also the rail 10 may be an angle-iron instead of a channel with one leg secured to the plate 8 and the other extending upwardly therefrom in spaced relation to the tubular member a distance substantially equal to the thickness of the wall panel 3 to be installed.

A plurality of spaced, vertically extending pins 11 are secured to the tubular member 7 for mounting posts or studding 12. The posts or studding are preferably tubular, however, they may be solid with sockets at the ends thereof for receiving the pins 11. The upper ends of the posts or studding 12 also have sockets or are of tubular shape for receiving pins 13 secured to and depending from header members 14 which are also preferably of tubular structure. The corners of the structure are preferably braced by removable ties 15 which connect the header members of adjacent walls as illustrated in Fig. 1. Also the structure is preferably reinforced by transverse trusses 16 removably connected to the header members of opposite walls.

To further reinforce the frame tubular socket members 17 are suitably secured as by welding to the posts or studding 12 between the stringers 7 and headers 14. The socket members 17 are preferably arranged on the opposite sides of the posts or studding 12 relative to the side on which the wall panels 3 are to be installed. Struts 18 of desired length to extend between selected studding or posts are provided with depending pins 19 which are received in the socket members 17 of the respective studding or posts whereby the struts 18 connect the studding or posts and extend longitudinally of the respective wall to further reinforce and provide a strong frame structure. The struts 18 are also arranged at the top of door openings and at the top and bottom of window openings for carrying panel supporting members.

Top or upper rails 20 are arranged on the header members 14 to engage and support the upper ends of the panels 3. The upper rails 20 preferably are angle members with one flange 21 secured as by welding to spaced arms 22 which extend from collars 23 rotatably sleeved or otherwise hingedly mounted on the header members 14. The flange 24 of the upper rail 20 extends downwardly in spaced relation to the header member 14 whereby the spacing between the flange 24 and the periphery of the collar 23 is such as to receive the upper ends of the panels 3 therebetween. In the illustrated structure the panels 3 are arranged on the exterior of the

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frame 2. Therefore, the bottom rail 10 and top rail 20 are arranged on the exterior side of the stringers 7 and headers 14 respectively. The sleeve 23 is rotatable or hinged on the header member 14 whereby the rail 20 may be swung upwardly whereby workmen applying wall panels 3 to the frame 2 grasp a panel 3 while standing on the floor 5 and insert the upper end of said panel in the space between the flange 24 and collar 23, as illustrated in Fig. 4. Then by pushing upwardly the upper rail is swung upwardly as in Fig. 5 whereby the lower end of the panel may be moved toward the studding or posts 12 until the lower end of the panel is above and in alignment with the space between the upwardly extending legs of the channel member forming the rail 10. Then the panel 3 is lowered until the lower end thereof engages in the channel of the rail 10. During the lowering movement of the panel the upper rail 20 remains in engagement therewith whereby when the panel is applied the upper and lower ends thereof are retained in position by the rails 20 and 10 as shown in Fig. 6.

In the building structure illustrated the end 25 is open and the header members 14 of the side frames 26 and 27 slope toward the end 28 whereby the roof panels 4 slope. Roof supporting angle brackets 29 are arranged on the header member 14 for the end frame 28 and also on the trusses 16. Each of said angle brackets 29 has flanges 30 secured as by welding to said header member 14 of the end frame 28 and the trusses 16, the other flange 31 of the angle brackets being above the header member and trusses and extending toward the open end 25 of the structure or the higher portion of the roof, the upper face of the flange 31 substantially corresponding to the slope of said roof.

The roof panels 4 are provided with locking lugs 32 on their lower faces 33, said lugs consisting of spacers 34 secured to the under face 33 of the roof panels and plate members 35 suitably secured to the spacers and extending toward the end frame 28. The spacers 34 are preferably substantially the same thickness as the flange 31 whereby the locking lugs 32 may be engaged with the angle brackets 29 with the flange 31 of said angle brackets between the plate portion 35 of the locking lugs and the under surface 33 of the roof panels as shown in Figs. 2 and 3.

In assembling a building of parts constructed as described, the base members 6 are secured to the floor by bolts 9 in a position to substantially define the desired walls of the building. The studding or posts 12 are then assembled by sleeving the lower ends thereof over the respective pins 11 which are upstanding and spaced along the stringers 7. Then the header members are mounted on the posts or studding by sleeving the pins 13 into the upper ends of said posts or studding. The trusses 16, braces 15 and struts 18 are then connected in the structure to make a strong frame 2. The wall panels 3 are then mounted on the erected frame by inserting the upper ends of the panels 3 between the flange 24 of the upper rail and the collar 23. Then the panel is placed upwardly, swinging the rail upwardly as shown in Fig. 5 and the lower end of the wall panel 3 moves into alignment with the channel of the lower rail 10. The panel 3 is then lowered into the position shown in Fig. 6. After the wall panels are arranged on the building structure the roof panels are placed over the trusses and header member 14 of the end frame 28 and the panels moved to engage the locking lugs with the angle brackets 29. Each of the roof panels is separately secured in place by locking lugs and angle brackets whereby one or more of the roof panels may be removed individually.

When it is desired to move the building to another location the various parts are disassembled and readily transported and erected at the other site.

It is believed obvious that I have provided a portable building structure with means for holding the various panels in place on building framework whereby the struc-

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ture can be very quickly and easily assembled, and when occasion requires one or more panels may be very quickly and easily withdrawn and the entire building removed to another location. It is also believed obvious I have provided a structure wherein unskilled workmen can quickly and easily place the wall panels in position while standing on the floor or other support and without climbing around equipment or otherwise creating hazardous conditions during erection of the building.

What I claim and desire to secure by Letters Patent is:

1. In a portable building structure having spaced walls, a support, a plurality of removably connected members forming a building frame having wall base members secured to the support and including vertically extending studs removably mounted on the wall base members and header members releasably connecting the upper ends of the studs, said wall base members having stringers extending longitudinally of the respective walls, said header members extending longitudinally of the respective wall base members, means secured on the wall base members alongside the stringers and having open top channels extending longitudinally of the respective walls, a plurality of wall panels having lower ends supported in said open top channels of the respective wall base members, said open top channels being of suitable width to slidably and removably receive said lower ends of said wall panels, and means hingedly mounted on the header members and cooperating therewith to form open bottom channels extending longitudinally of the respective wall panels and in vertical alignment with the channel means on the wall base members and engaging the upper ends of said wall panels and cooperating with the open top channel means on the respective wall base member to retain the wall panels therebetween, said open bottom channels being of suitable width to slidably and removably receive the upper ends of said wall panels, said wall panels being of a length to extend into the aligned upper and lower channel means whereby the upper ends of the wall panels are inserted into the upper channel means and pushed upwardly to hinge said upper channel means upwardly to permit the lower ends of the wall panels to be moved over and in alignment with the lower channel means and lowering of the wall panels effects engagement of the lower channel means while maintaining engagement of the upper channel means.

2. In a portable building structure having spaced walls, a support, a plurality of removably connected members forming a building frame having wall base members secured to the support and including vertically extending studs on the wall base members and header members connecting the upper ends of the studs, said wall base members having tubular stringers extending longitudinally of the respective walls, said header members being tubular and extending longitudinally of the respective wall base members, means on the wall base members alongside the stringers and forming open top channels extending longitudinally of the respective walls, a plurality of wall panels having lower ends supported in said open top channels of the respective wall base members, said open top channels being of suitable width to slidably and removably receive said lower ends of said wall panels, means hingedly mounted on the header members forming open bottom channels extending longitudinally of the respective walls and in vertical alignment with the channel means on the wall base members and engaging the upper ends of said wall panels and cooperating with the open top channel means on the respective wall base members to retain the wall panels therebetween, said open bottom channels being of suitable width to slidably and removably receive the upper ends of said wall panels, said wall panels being of a length to extend into the aligned upper and lower channel means whereby the upper ends of the wall panels are inserted into the upper channel means pushed upwardly to hinge said upper channel means upwardly to permit the lower ends

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of the wall panels to be moved in alignment with the lower channel means and lowering of the wall panels effects engagement of the lower channel means while maintaining engagement of the upper channel means with said wall panels, a plurality of roof panels having end portions extending over the header member and beyond the wall panels, bracket members fixed on the header members having portions extending upwardly and terminating in plate portions inclined laterally from the header members, and locking lugs on the roof panels and having

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portions spaced therefrom slidably embracing the bracket members for retaining the roof panels in position.

References Cited in the file of this patent

UNITED STATES PATENTS

651,251	Karr	June 5, 1900
1,133,164	McCoy	Mar. 23, 1915
2,298,743	Lichter	Oct. 13, 1942
2,612,660	Casey	Oct. 7, 1952