

Jan. 24, 1956

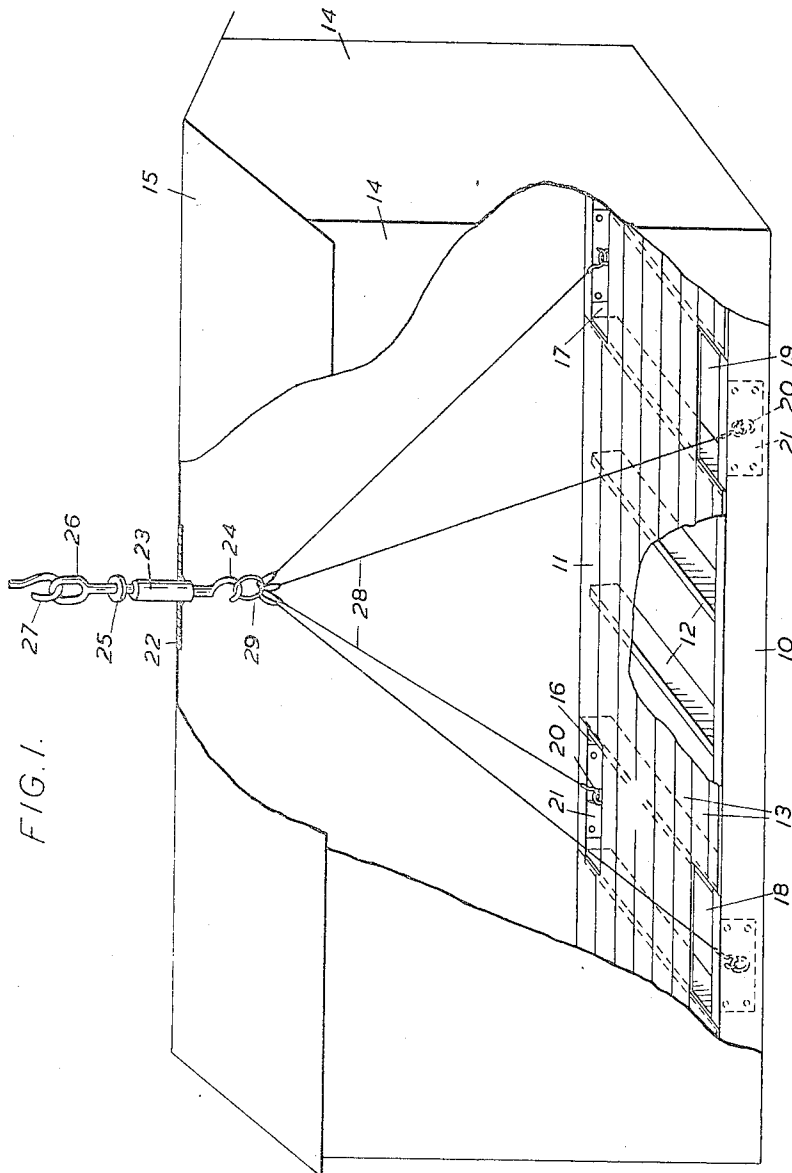
H. C. BOLT

2,731,680

PORTABLE BUILDINGS

Filed April 1, 1954

3 Sheets-Sheet 1



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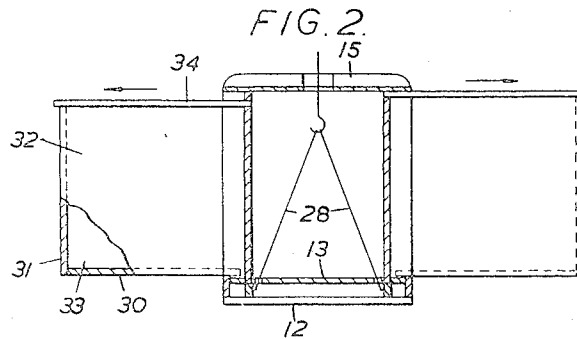
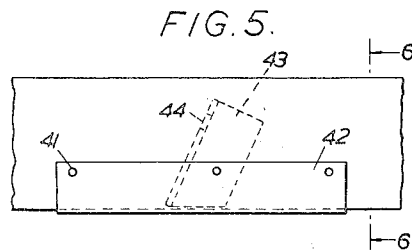
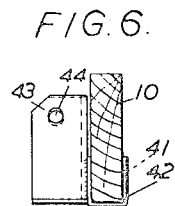
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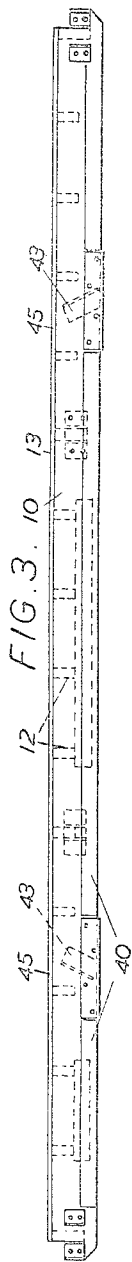
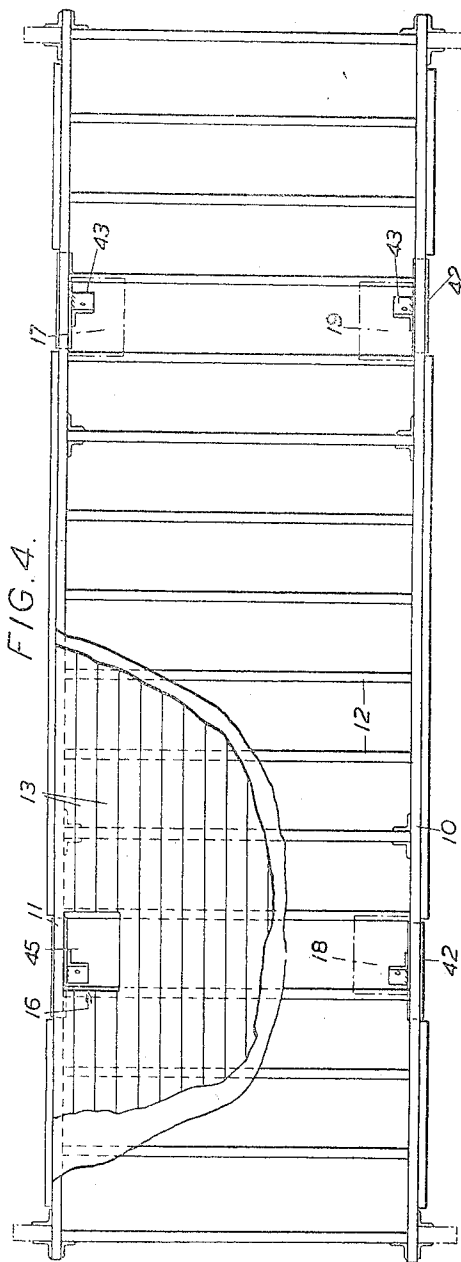
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3 Sheets-Sheet 3



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PORTABLE BUILDINGS

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4 Claims. (Cl. 20—2)

This invention relates to portable buildings such as large huts and prefabricated houses. Difficulties have been experienced in moving such buildings either from a trailer to the building site or vice versa or from place to place on the site. The usual method of lifting portable buildings by crane is by means of steel cables or harnesses attached to the outside of the structure. This system involves special precautions to prevent the crushing of the building or damage to the exterior parts. For example—

- (a) Special strutting inside the building to strengthen it.
- (b) A heavier and stronger frame work than would otherwise be necessary.
- (c) Spreader bars to prevent the steel cables from damaging the building when it is lifted.

A further disadvantage is that when steel cables and spreader bars are employed externally, the cables normally terminate in a ring which is a good deal higher than the roof of the building. This means that the jib of the crane cannot be lowered sufficiently to allow for a high lift.

According to the present invention anchor members, adapted for the attachment thereto of cables, are attached to the base frame of the building, and a closable opening is provided in the roof for the passage therethrough of means for attachment to the cables and to a crane.

Thus when it is required to lift the building, the floor parts are moved to expose the anchor members, cables are attached at their lower ends to these anchor members and at their upper ends to said connection means which latter extends through said opening in the roof and is attached to the crane. The whole building can then be moved by connection to that part of the building (viz. the base frame) that is best able to bear the load.

The anchor members may be disposed below movable parts of the floor, or may be in the form of flat metal plates, having threaded holes to receive eye bolts, and may be fixed flush with the flooring.

The invention will now be further described by way of example with reference to the accompanying diagrammatic drawings wherein:

Figure 1 is a perspective view of a portable building provided with means for lifting it made in accordance with the invention;

Figure 2 is a sectional view of a modified construction of building;

Figure 3 is a side elevation of the floor frame and floor of the building;

Figure 4 is a plan of the floor and frame;

Figure 5 is an enlarged view of a part of Figure 3; and

Figure 6 is a sectional view on the line 6—6 on Figure 5.

The building shown in Figure 1 comprises a rectangular frame comprising long side bars 10, 11 connected by cross-joists 12. The frame is covered with floor boards 13. The frame supports side walls 14 and the latter carry a roof 15.

The floor boards 13 are cut away to leave openings 16,

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17, 18, 19. The openings 16, 17 are spaced apart adjacent the long side 11 of the frame and the openings 18, 19 are spaced apart adjacent the long side 10 of the frame. Accessible through these openings are anchor members in the form of eyebolts or rings 20 welded to anchor plates 21 that are fixed to the inner surfaces of the frame bars 10, 11.

An aperture is provided centrally of the roof 15 (and centrally of the anchor members in plan), and a mild steel plate 22 is fixed over the opening and is welded to a short vertical tube 23 that passes through a hole in the plate. The tube thus passes through the roof. A vertical stem passes through the tube and has a hook 24 on its lower end, a cap 25 near its upper end which closes the tube, and an eye 26 at its upper end. The eye can be engaged by the hook 27 of a crane. The upper ends of four cables 28 are connected to a common ring 29 which is placed on the hook. The crane then lifts the whole building by the cables and anchor plates. If desired the aperture may be closed by a hinged roof light so that when this is opened the hook of a crane can be lowered through the aperture.

The invention is especially useful for handling buildings which are complete and balanced about a central axis such as the buildings described in the specifications of British Patents Nos. 648,536 and 674,946. These buildings will normally be lifted in their folded condition. An example of such a building is shown in Figure 2. These buildings comprise a central living space formed by a body consisting of the parts 10, 11, 12, 13, 14, 15, and side living spaces or wings provided by flaps pivotally attached to the body. On each side these flaps consist of a flap 30 forming the floor of the wing and pivoted at its inner edge to the frame, a side flap 31 pivoted at its lower edge to the outer edge of the floor 30, two end wall flaps 32, 33 pivoted on their inner vertical edges to the body; and roof flaps 34 pivoted or slidably mounted.

The floor structure and anchor members of this building are shown in Figures 2 to 6. On the outer sides of the wooden bars 10, 11 are metal strips 40 which extend along said bars except adjacent the openings 16, 17, 18, 19 where at each position a U-shaped bracket 42 is fixed by screws 41 to the bars, and extends under the bars. Welded to each bracket 42 on the inside of the bar is a short angle section member 43 provided with a hole 44 through which a hook on the lower end of the cable 28 can be inserted.

The openings 16, 17, 18, 19 can be closed by loose or pivoted plates 45 which will normally be flush with the floor boards 13.

I claim:

1. A portable building having a floor frame, a floor on said frame, uprights connected to the frame, a roof on said uprights, four spaced anchor members two spaced apart adjacent one side of the floor and the other two spaced apart along the other side of the floor said anchor members being fixed to said frame, and an aperture in the roof centrally of said anchor members in plan view.
2. A portable building as claimed in claim 1, wherein the anchor members are attached to U-shaped brackets which surround the under parts of bars forming parts of the frame.

3. A portable building as claimed in claim 1, having openings in the floor on the frame, said anchor means being located below the floor, and removable closure members for said openings.

4. In a portable building having a base frame carrying a floor and wall elements and forming therewith a central rigid body to each side of which a set of flaps is pivotally attached which can be folded flat against the body and can be opened out to form the floor and walls

of a side living space on each side of the central body, the provision of anchor members, adapted for the attachment thereto of cables, attached to the base frame of the building, two of said anchor members being provided spaced apart on each side of the base frame below floor level, openings in the floor above said anchor members, removable closure members for said openings, an opening in the roof of the central body for the passage there-through of connection means for attachment to the cables and to a crane.

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