

April 27, 1948.

C. W. POWER

2,440,557

FABRIC BUILDING

Filed March 5, 1945

2 Sheets-Sheet 1

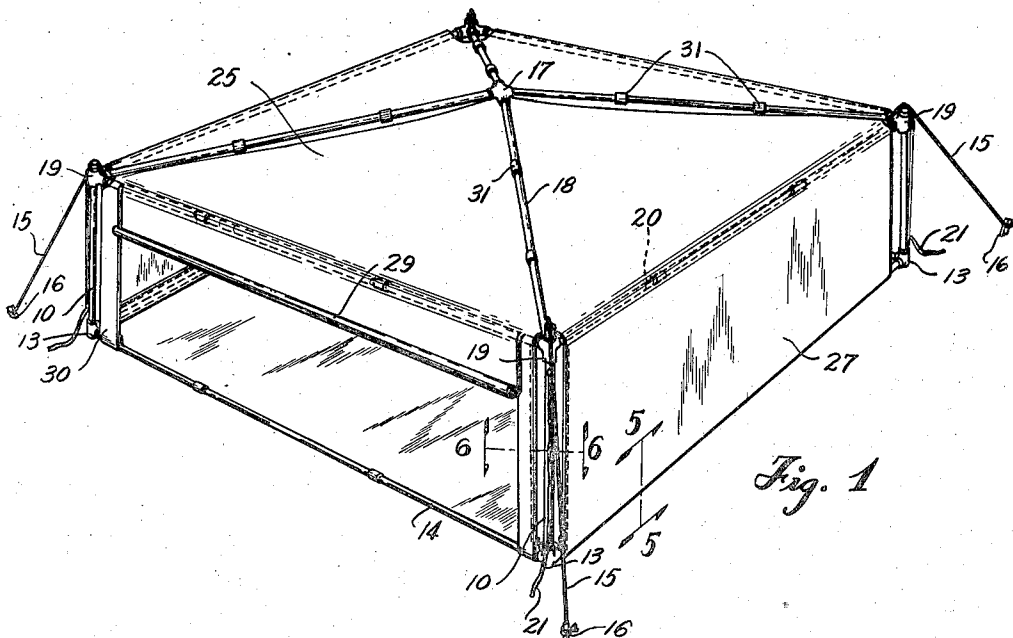


Fig. 1

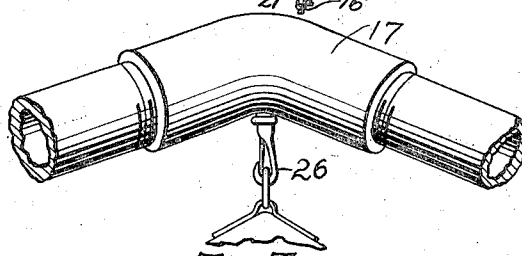


Fig. 7

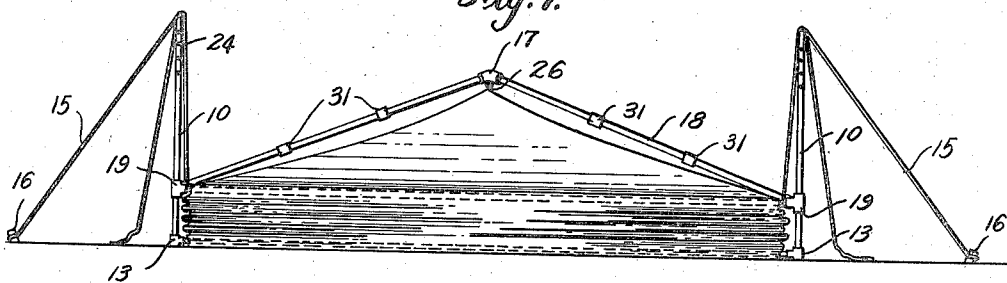


Fig. 2

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2 Sheets-Sheet 2

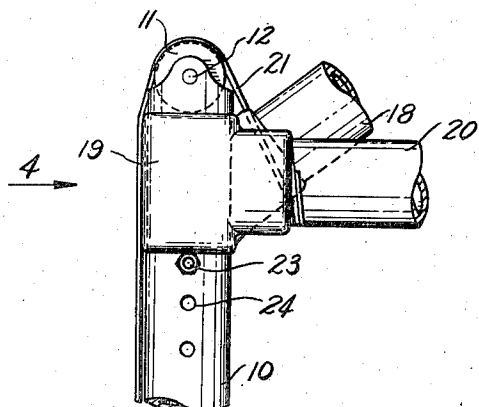


Fig. 3

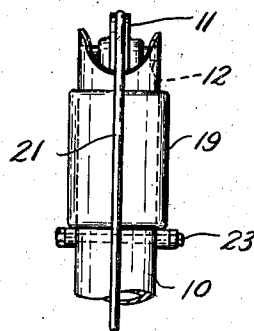
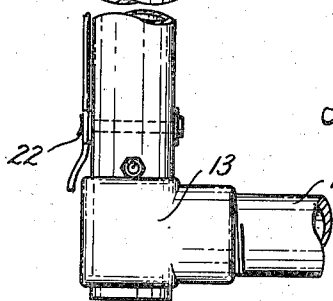


Fig. 4

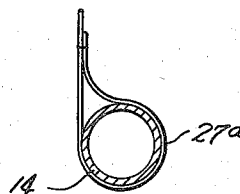


Fig. 5

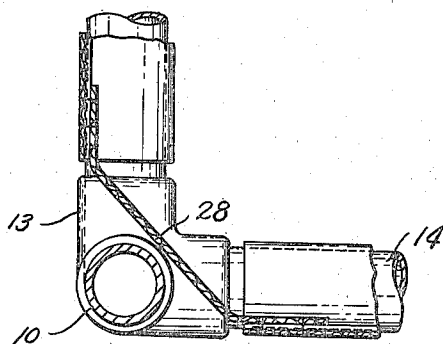


Fig. 6

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2,440,557

FABRIC BUILDING

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Application March 5, 1945, Serial No. 581,021

15 Claims. (Cl. 135—1)

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This invention relates to a fabric building suitable for use as a portable hangar for airplanes and the like.

An object of the invention is to provide a tent-like structure of large size so as to be suitable for use as an airplane hangar consisting of a frame structure and a tent structure suspended therefrom with the parts so arranged that the frame may be disassembled into elements of relatively short length to facilitate transportation from place to place.

Tent-like structures suitable for use as airplane hangars must have relatively long and broad roofs to cover such large pieces of equipment as airplanes, and inasmuch as the wingspread of the plane extends across substantially the entire hangar it is impossible to have any central support to support the roof.

An object of the present invention is to provide a portable airplane hangar wherein there is a roof frame made up of assemblable parts into a relatively rigid self-supporting structure that can be elevated on corner posts and held in elevated position.

Another object of the invention is to provide a portable airplane hangar or the like consisting of a pyramid roof frame having assemblable members radiating from a crown fitting and connected to side members at their outer ends with the junctures of the roof frame vertically slidable on corner posts so that the roof frame may be elevated thereon as a unitary structure and held in elevated position and to provide a tent-like structure having a pyramid roof and walls arranged to be suspended from the crown fitting adjacent the center with the walls overlying the side members of the roof structure and connected to base members that connect the corner posts.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a perspective view of the improved portable hangar in fully set-up position;

Fig. 2 is a view in side elevation of the hangar in the position in which it is about to be erected;

Fig. 3 is a view in side elevation, parts being broken away illustrating one of the corner posts;

Fig. 4 is a partial view in side elevation taken in the direction of the arrow 4 upon Fig. 3; and

Figs. 5 and 6 are sectional views taken substantially upon the lines 5—5 and 6—6, respectively, on Fig. 1.

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Fig. 7 is a partial view illustrating the details of construction of the detachable connection between the roof of the tent structure and the roof frame.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the improved hangar comprises a frame consisting of corner posts 10 of suitable height and which have at their upper ends pulleys 11 rotatably mounted upon spindles 12. The lower ends of these posts may be screwed into or otherwise extended into angular fittings 13 which are designed to receive threaded ends of base members 14. Near the tops of the corner posts provision is made for the attachment of guy wires or cables 15 that may be attached to suitable stakes 16.

A roof frame is provided consisting of a central crown fitting 17 from which radial roof members 18 extend downwardly and outwardly toward the corner posts. The outer ends of these radial members are screwed into sockets on corner fittings 19. The corner fittings are also designed to have screwed therein in suitably arranged sockets side members 20. The corner fittings 19 are vertically slidable on the corner posts 10 and may be caused to rise thereon by means of a rope or cable 21 on each corner post which is adapted to be attached to the corner fitting and trained over the pulley 11. This rope or cable may be fastened to a suitable bolt or cleat 22 to hold the corner fitting in its uppermost position while a bolt 23 or the equivalent is inserted into one of several apertures 24 adjacent the upper end of each corner post. A tent-like structure is provided formed of canvas or other weather-resistant material or fabric which has a roof 25 provided with a suitable connection 26 for detachably connecting its center to the bottom of the crown fitting 17. Any preferred or conventional type of detachable connection may be used. However, as illustrated in Fig. 7 a suitable detachable connection consists merely of a ring secured to the center of the roof of the tent structure engageable with a snap hook that is secured to the under side of the crown fitting 17. The snap hook may be opened whenever it is desired to remove the ring therefrom. Sides 27 are secured to the sides of the roof and are arranged to overlie the side members 20 of the roof frame. The lower ends of these sides may be looped as at 27a, see Fig. 5, to receive the base members 14. Gusset strips 28 are preferably connected to the adjacent edges of adjacent sides and assume a position inwardly of the corner posts when the hangar is erected.

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The front wall of the hangar may be vertically divided to provide a door 29 and separable fasteners may be employed to connect the side edges of the door to the end sections 30 of the front wall. A separable fastener of the "zipper" type is preferably employed although other separable fasteners may be employed if desired. The door when detached from the end portions 30 may be rolled up as illustrated in Fig. 1, to permit of ingress and egress to and from the hangar. The base members 14, the side members 20, and the radial members 18 are preferably made up of relatively short lengths of light-weight tubing, such as for example thin-walled aluminum or magnesium tubing. These lengths are connected together by threaded couplings or collars 31 so that in transporting the hangar from place to place the entire frame structure may be disassembled into tubing lengths which are not excessively long. When it is desired to set up the hangar at a given location the tent structure may be suitably deposited on the ground and the corner posts set up at the corners thereof. The base members 14 can be assembled together from their respective sections and screwed into the angle fittings 13. If desired the sockets on these angle fittings as well as the corner fittings 19 may be equipped with right and left-hand threads to facilitate screwing the base and side members into their respective fittings. The base members 14, after being completely assembled, are inserted or threaded through the loops 27a at the bottoms of the walls 27 prior to attachment to the angular fittings 13. The roof frame is then assembled by assembling the sections of the radial members 18 and connecting them to the crown fitting 17 and to the corner fittings 19, respectively. The side members 20 may be assembled and positioned underneath the tent structure at the juncture of the walls 27 with the roof 25. When the roof frame is thus assembled into a unitary structure, that is vertically slidable on the corner posts, the center of the roof is detachably connected to the crown fittings 17 by means of the connection 26. The hangar is then in the position as illustrated in Fig. 2, and the roof may be elevated by simultaneously pulling on the ropes or cables 21 on the four corner posts, thus lifting the roof frame and the roof of the tent into the position shown in Fig. 1. The ropes or cables may be fastened in this elevated position by attaching them to the bolts or cleats 22 and bolts 23 may be inserted through the corner posts to lock the corner fittings 19 in their uppermost positions.

It will be appreciated that because of the long dimensions of a portable airplane hangar and the inability to support the roof by one or more central supporting posts that the roof must be supported entirely from the corner posts and that it must be raised as a unitary structure after having been completely assembled while on the ground. Whenever occasion requires removal of the hangar or its transportation from place to place, it may be completely knocked down into relatively short lightweight elements that can be conveniently packed and shipped in comparatively small space.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. A device of the class described comprising means providing corner posts, an assemblable roof frame slidable upon said corner posts, means for

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hoisting the roof frame upwardly on the corner posts and holding it in elevated position thereon, and a tent having a roof and side walls, the tent having means by which its roof may be suspended from said roof frame.

2. A device of the class described comprising means providing corner posts and an assemblable pyramidal roof frame slidable upon said corner posts, means for elevating the frame upon said corner posts and holding it in elevated position, and a tent structure having a pyramidal roof and walls, the roof of the tent structure being detachably secured to the roof frame.

3. A device of the class described comprising means providing corner posts and an assemblable pyramidal roof frame slidable upon said corner posts, means for elevating the frame upon said corner posts and holding it in elevated position, and a tent structure having a roof and walls, the roof of the tent structure being detachably suspended from the roof frame, the junctures between the walls and the roof of the tent structure overlying the side members of the roof frame.

4. A device of the class described comprising means providing corner posts and an assemblable pyramidal roof frame slidable upon said corner posts, means for elevating the frame upon said corner posts and holding it in elevated position, and a tent structure having a pyramidal roof and walls, the roof of the tent structure being detachably secured to the roof frame, the junctures between the walls and the roof of the tent structure overlying the side members of the roof frame, base members connecting the corner posts and the walls of the tent structure being secured to said base members.

5. A device of the class described comprising means providing corner posts, a pyramidal roof frame, said roof frame comprising radial members extending downwardly and outwardly from the center of the roof to the corner posts, side members connecting the outer ends of the radial members, the junctures between the outer ends of the radial members and the side members being slidable upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and walls, the roof being suspended from the roof frame and the junctures between the walls and roof of the tent structure overlying the side members of the roof frame.

6. A device of the class described comprising means providing corner posts, a pyramidal roof frame, said roof frame comprising radial members extending downwardly and outwardly from the center of the roof to the corner posts, side members connecting the outer ends of the radial members, the junctures between the outer ends of the radial members and the side members being slidable upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and walls, the roof being suspended from the roof frame and the junctures between the walls and roof of the tent structure overlying the side members of the roof frame, base members connecting the corner posts, the walls of the tent structure being detachably secured to the base members.

7. A device of the class described comprising means providing corner posts, a pyramidal roof frame, said roof frame comprising radial members extending downwardly and outwardly from the center of the roof to the corner posts, side members connecting the outer ends of the radial members, the junctures between the outer ends of the

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radial members and the side members being slidable upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and walls, the roof being suspended from the roof frame and the junctures between the walls and roof of the tent structure overlying the side members of the roof frame, base members connecting the corner posts, the walls of the tent structure being detachably secured to the base members, said corner posts having pulleys thereon and ropes trained over said pulleys adapted to be connected to the roof frame for elevating the roof frame upon the corner posts.

8. A device of the class described comprising means providing corner posts, a pyramidal roof frame, said roof frame comprising radial members extending downwardly and outwardly from the center of the roof to the corner posts, side members connecting the outer ends of the radial members, the junctures between the outer ends of the radial members and the side members being slidable upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and walls, the roof being suspended from the roof frame and the junctures between the walls and roof of the tent structure overlying the side members of the roof frame, base members connecting the corner posts, the walls of the tent structure being detachably secured to the base members, one of the walls being divided to provide an openable door.

9. A device of the class described comprising corner posts, a roof frame slidable thereon, means for hoisting the roof frame on the corner posts, and a tent structure having a roof suspended from the roof frame and walls extending from adjacent corner post to corner post.

10. A device of the class described comprising corner posts, a roof frame having radially extending members slidable at their outer ends upon the corner posts, means for hoisting the roof frame on the corner posts and a tent structure adapted to be suspended from the roof frame.

11. A device of the class described comprising corner posts, a roof frame having radially extending members slidable at their outer ends upon the corner posts, means connecting the outer ends of said members between the corner posts, means for hoisting the roof frame on the corner posts, and a tent structure having a roof suspended from the roof frame and side walls, the juncture between the walls and roofs of the tent structure overlying said connecting means.

12. A device of the class described comprising corner posts, a roof frame having radially extending members slidable at their outer ends upon the corner posts, means connecting the

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outer ends of said members between the corner posts, means for hoisting the roof frame on the corner posts, means connecting the corner posts adjacent the bottoms thereof and a tent structure having a roof suspended from the frame and side walls, the junctures between the walls and roof of the tent structure overlying said connecting means, the bottoms of the side walls being connected to the connecting means between the bottoms of the corner posts.

13. A fabric building comprising means providing upright corner posts, an assemblable roof frame having fittings at its corners slidable upon the corner posts whereby after assembly of the roof frame between the corner posts it may be bodily lifted with the fittings sliding upwardly upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and side walls suspended from the roof frame.

14. A fabric building comprising means providing upright corner posts, an assemblable roof frame having fittings at its corners slidable upon the corner posts whereby after assembly of the roof frame between the corner posts it may be bodily lifted with the fittings sliding upwardly upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and side walls suspended from the roof frame, and means connecting the upper ends of the corner posts, said means serving to hold the tent structure in distended position.

15. A fabric building comprising means providing upright corner posts, an assemblable roof frame having fittings at its corners slidable upon the corner posts whereby after assembly of the roof frame between the corner posts it may be bodily lifted with the fittings sliding upwardly upon the corner posts, means for holding the roof frame in elevated position on the corner posts and a tent structure having a roof and side walls suspended from the roof frame, and means connecting the upper ends of the corner posts, said means serving to hold the tent structure in distended position and the walls of the tent structure in a position extending from adjacent one corner post to another.

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