C. D. CROMLEY.

FOLDING PORTABLE HOUSE.

APPLICATION FILED DEC. 26, 1913.

1,124,212.

Patented Jan. 5, 1915.

4 SHEETS—SHEET 1.

Fig. 1.

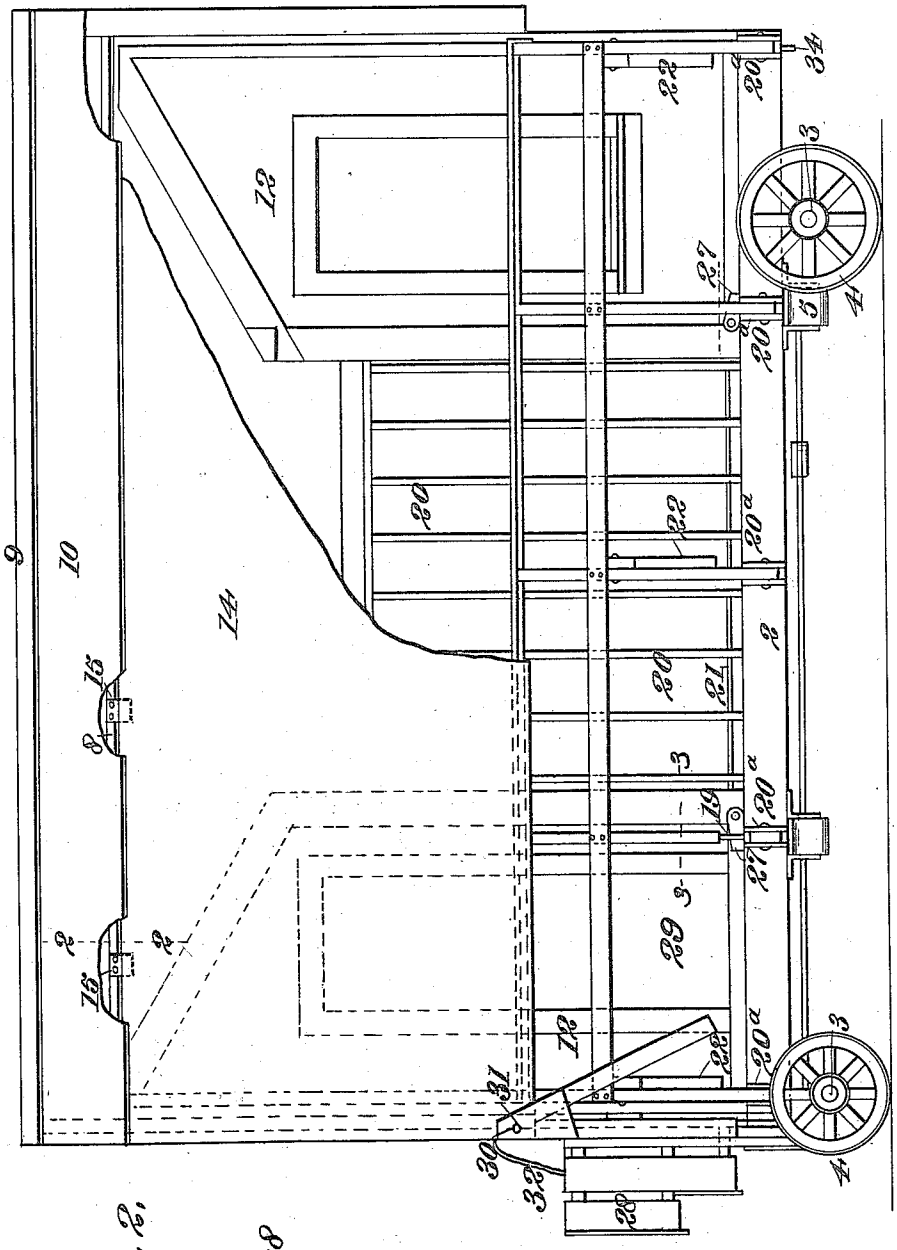


Fig. 2.

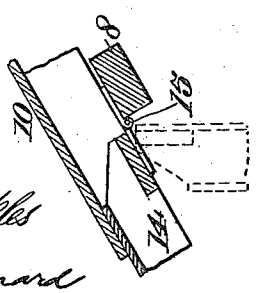
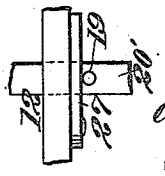


Fig. 3.



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Fig. 5.

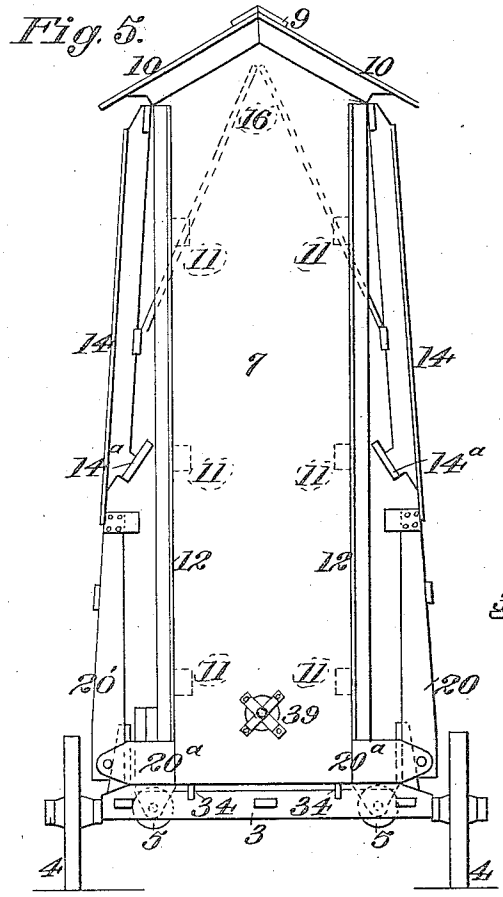


Fig. 4.

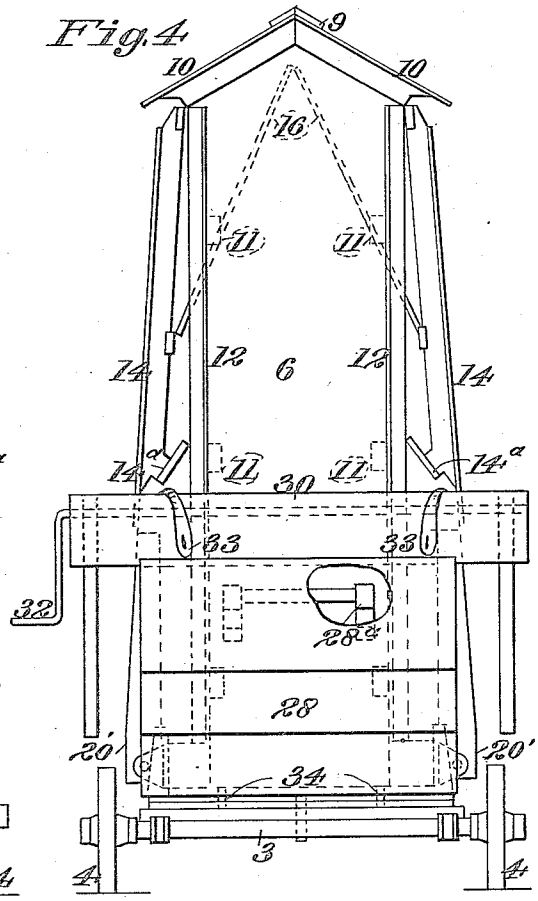


Fig. 7.

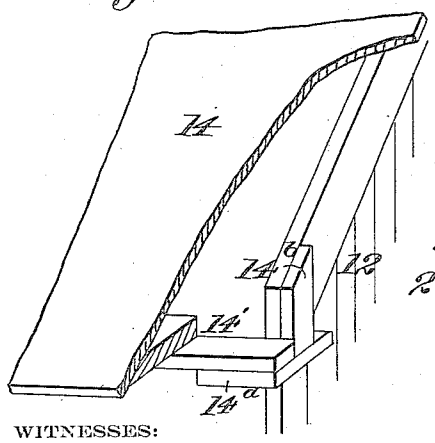


Fig. 6.

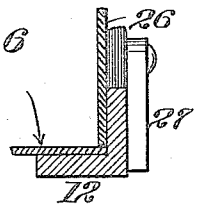
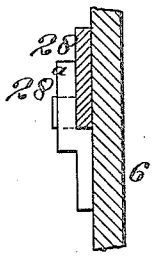


Fig. 8.



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4 SHEETS—SHEET 3.

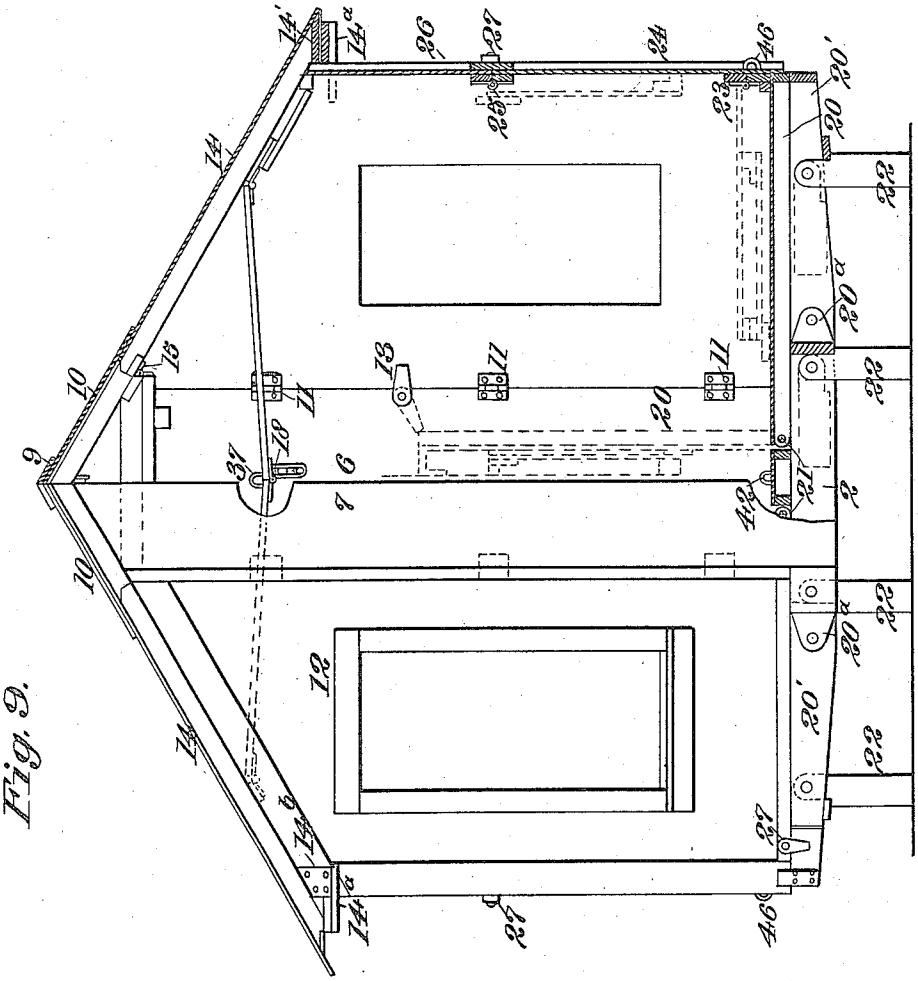


Fig. 9.

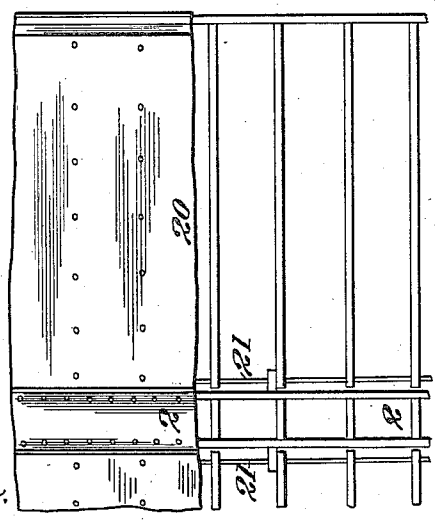


Fig. 10.

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4 SHEETS—SHEET 4.

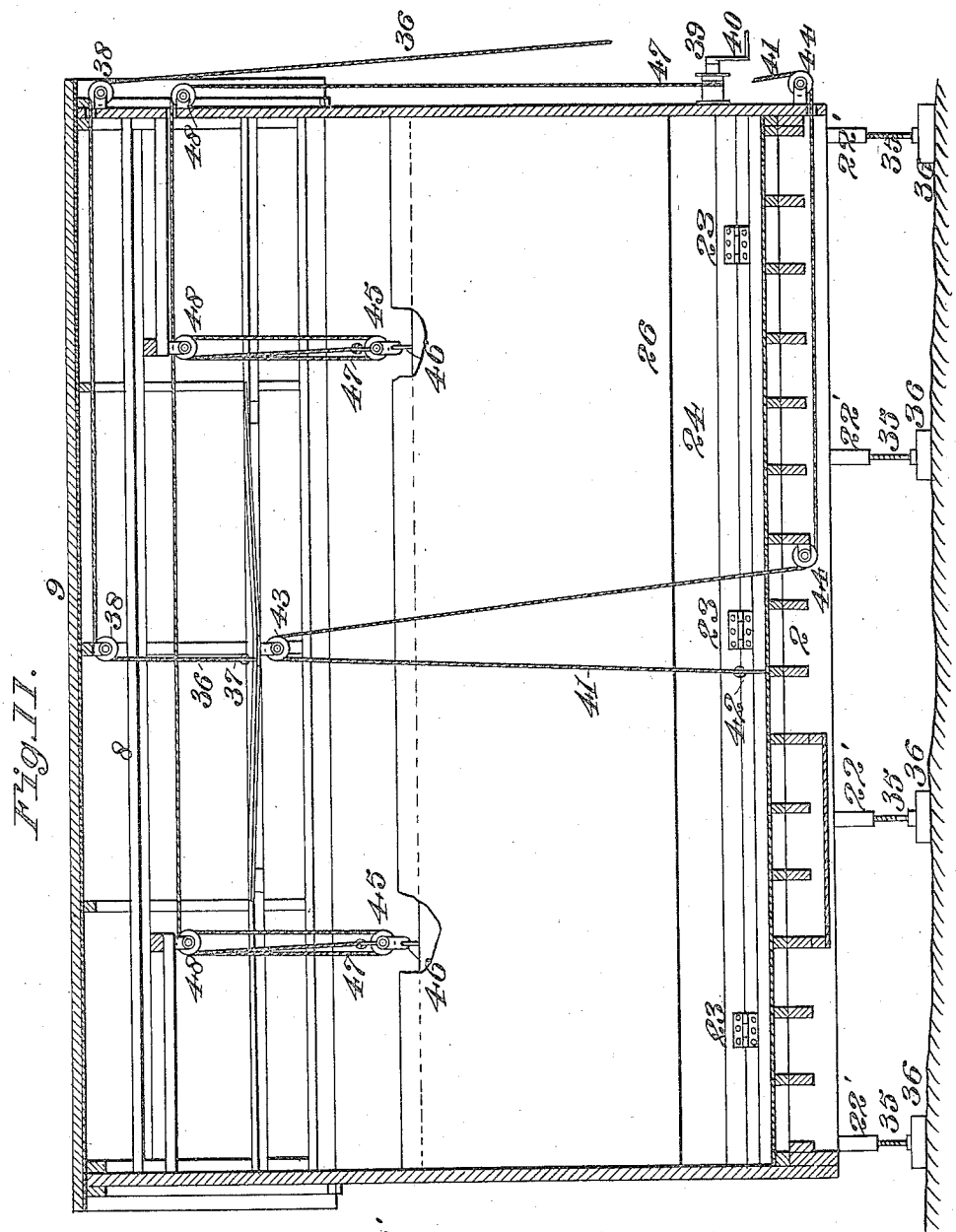


Fig. II.

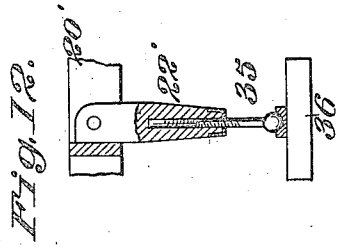


Fig. I2.

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CHARLES D. CROMLEY, OF ALAMEDA, CALIFORNIA.

FOLDING PORTABLE HOUSE.

1,124,212. Specification of Letters Patent. Patented Jan. 5, 1915.

Application filed December 26, 1913. Serial No. 808,687.

To all whom it may concern:

Be it known that I, CHARLES D. CROMLEY, a citizen of the United States, residing at Alameda, in the county of Alameda and State of California, have invented new and useful Improvements in Folding Portable Houses, of which the following is a specification.

This invention relates to portable houses, and particularly to a foldable portable house of the character shown in my former application Serial No. 707,503, filed July 3, 1912.

It is among the objects of the present invention to provide an easily ported house, of such structure that it may be folded for transportation purposes and readily adjusted upon wheeled trucks by which it may be conveyed from place to place by horse power or otherwise.

It is a further object of the invention to provide a house, the main elements of which are flexibly but permanently connected, thus permitting the movement and adjustment of the elements, when the house is to be shipped in folded position. The elements move relatively, when unfolded, to form a capacious, substantially rain and draft-tight building; means being provided for interlocking the elements for rigidity.

It is also an object of my invention to provide means whereby the house may be mounted upon its transporting trucks, disconnected from the same, and folded or unfolded practically by a single individual.

The invention consists of a house having elements flexibly connected, with means for locking the sections in folded or unfolded position.

It also comprises details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the folded and mounted house partly broken away. Fig. 2 is a section of rafter joint on line 2—2, Fig. 1. Fig. 3 is a detail of end lock on section line 3—3, Fig. 1. Fig. 4 is a front end elevation of the folded house. Fig. 5 is a rear end elevation. Fig. 6 is a detail of the locking latch for the end and side walls. Fig. 7 is a perspective detail of the steps. Fig. 8 is a detail of the step hanger. Fig. 9 is an end view of the unfolded house one-half in section. Fig. 10 is a plan of a portion of the floor and floor timbers. Fig. 11 is a longitudinal section of the house. Fig. 12 shows a leveling jack.

In its illustrated embodiment, my invention includes a substantial, central floor structure and truck frame 2, of appropriate length and width, which is adapted for connection with removable axles 3 having traction wheels 4, upon which wheels the house structure may be supported and transported from place to place. The central floor frame 2 is also provided with rollers 5, upon which the structure may be laterally shifted, as occasion may require, for its proper adjustment over a foundation or surface upon which the house is to be erected.

Referring to Figs. 1, 4 and 5, the house is shown as provided with front and rear central wall sections 6—7 respectively, which are rigidly connected, preferably, to the central floor or truck frame 2. The upper portions of the end panels 6—7 are connected by longitudinal roof beams 8 and a rigid piece 9; these being covered by an appropriate roofing 10. Along the vertical edges of the front and rear panels 6 and 7 are provided hinges 11 by which sectional end walls 12 are connected to the panels. The end walls 12 are adapted to be swung outwardly from within the structure into the plane of the end panels 6—7 and locked in their outwardly adjusted positions, as in Fig. 9, by suitable latches or other equivalent devices 13. Before the end wall sections 12 can be unfolded from beneath the central roof 10, it is necessary to adjust roof sections 14, which are connected by hinges 15 attached to the roof timbers 8, to the position shown in Fig. 9. Before adjustment, the roof sections 14, when folded, lap over the inwardly adjusted end walls 12, as shown in Fig. 4. For the purpose of adjusting the roof sections 14, of which there is one on each side of the central, rigid roof 10, these roof sections are connected to the divergent ends of arms 16 by hinges 17; the inner ends of the arms 16 converging and being hingedly united, as at 18, to a position approximately central within the house. The arms 16, which are connected at their convergent ends by the hinges 18, form not only a means for elevating the oppositely inclined roof sections 14, but also form connecting ties between the roof sections, tending to hold the latter in substantial, rigid position. When the roof sections

14 are in their folded or pendent positions, the expanding or spreading arms 16 assume the position shown in dotted lines in Figs. 4 and 5, and when it is desired to raise the roof sections 14, force is applied to the inner connected ends of the arms 16 so as to draw the latter downwardly. This spreads the hinges 17 and the roof sections 14 until the roof sections are in their proper positions, as in Fig. 9. Having spread the roof sections 14 by pulling down the arms 16, the operator then unlocks the end sections 12 from their innermost folded positions by withdrawing locking pins 19 from the floor section 2, Fig. 3, and swings the end wall sections 12 outwardly until they aline with the central panels 6—7. Before the end wall sections 12 are swung outwardly about their hinges 11, the operator swings to a horizontal position joist frames 20′ and the lateral floor sections 20, one of which is pivoted on each side of the floor structure or frame 2 to hinges or longitudinally extending pivot rods 21, about which the lateral floor sections 20 can be swung from a vertical position, Figs. 1 and 5 to the full line horizontal position in Figs. 9 and 10. When the floor sections 20 are adjusted horizontally, they are supported upon legs 22, Fig. 9, or equivalent supports 22′, Fig. 12; likewise, the central truck frame 2 is also provided with legs 22 which may be turned to vertical supporting position for the structure when removed from the carriers or axles. To the outer, longitudinal edge of each of the floor sections 20 there is hinged, as at 23, a lower horizontal section 24, these forming parts of side walls to the building. To the free edges of the sections 24 are secured hinges 25 by which a second foldable wall section 26 is secured to each of the lower wall sections 24.

When the house is to be transported from place to place, the side wall sections 24—26 are folded upon each other and then again folded about the hinges 23 to lie upon the floor 20, Fig. 9, and this may then be adjusted in a vertical position, as shown in dotted lines, Fig. 9, in which position the floor section may be locked by the latch 13, although it is also held in folded, vertical position by the inwardly adjusted end wall or section 12. When the floor sections 20 and the wall sections 24—26 on each side of the house have been adjusted in proper positions, the end walls 12 may then be turned about their hinges 11, thus effectually locking the floor sections 20 downward and also locking the connected side wall sections 24—26 in vertical positions. The end walls 12, when adjusted in alinement with respective panels 6—7, may be latched in position by a latching device 27, Figs. 1 and 9. After the house has been transported and shifted into the desired position, suitable steps, as 28, which may be detached from supports 28^a on the house, may then be adjusted adjacent to one or the other end which may have a doorway, as 29, Fig. 1; the steps 28 being utilized, when the house is in transportation, as a driver's seat, in which position they are shown connected to the house in Fig. 1.

In order that a single individual may be able to position the house, when folded, upon the axles 3, and similarly to dismount the house from the axles, I have provided a suitable form of winch 30 which has a shaft 31 with a crank 32 at one end; straps or other suitable flexible connections 33 being connected to the winch shaft 31. During transportation the winch 30 is adjusted upon the folded structure, as shown in Figs. 1 and 4, and when the house is to be dismounted, the operator removes the winch 30 and positions it adjacent to one end of the house, supporting it upon the ground or other surface and passing the perforated ends of the straps 33 beneath pins 34, Fig. 1 then by winding the crank shaft 31 the straps 33 will be wound upon the shaft until the adjacent end of the house is elevated sufficiently to permit the removal of the axle 3 from beneath the central floor frame 2. When the axle 3 is removed, the operator may unwind the straps 33, having previously adjusted the central supporting legs 22 to a vertical position so that they will rest upon the ground or other surface as the lowering proceeds. Having removed the truck axle 3 from one end of the house and rested the house upon its supporting legs 22 at that position, the winch 30 is then shifted to the other end of the structure and a similar proceeding is performed so that the house is then resting upon its foundation, after which the elements are successively unfolded by beginning with the hinged roof sections 14 and swinging them outwardly and upwardly, then lowering the lateral floor joists 20′ which may be turned to a horizontal position about respective pivots 20^a mounted in the central floor or truck frame 2. Having adjusted the floor joist sections 20′ to the proper horizontal position and then moving out the end walls 12, the inwardly folded floor sections 20 and wall sections 24—26 are then swung outwardly and vertically until they engage and partly support the eaves of the roof sections 14 and the foldable sections are locked by the buttons 27.

For the purpose of properly leveling the house, when in position and unfolded, I have illustrated in Fig. 12 the underpinning 22′ as provided with a screw 35 adapted to rest on the mud blocks or sill 36, and by turning the screw 35 the floor joists and frame can be properly leveled. For facilitating the manual adjustment of the several

sections, particularly when the house is of a large size, in which case it would be too difficult for one person to safely manipulate, I provide means whereby the roof sections 14 can be swung about their hinges 15 to the innermost position. In this instance the means comprises a rope or cable 36′, Fig. 11, which is connected to an eye 37 adjacent to the inner connected portion of the spreader frame 16; the rope 36′ passing over suitable direction pulleys 38 and thence downward so as to be wound on a drum 39 which may be manipulated by a crank 40 to wind the rope 36′ and thus actuate the truss frame 16—16. When the rope 36′ is drawn or wound upon the drum the truss frame 16 is collapsed and the roof is lowered. When it is desired to elevate the roof sections, a rope 41, Fig. 11, which has one end fastened to an eye 42 in the floor structure and which passes upwardly through a pulley 43, connected to the central portion of the truss frame 16—16, and thence passes around direction pulleys 44 to the drum 39, may be wound upon the drum so that the flexibly jointed frames 16 would be drawn from the folded position, Figs. 4 and 5, to a substantially horizontal position, Figs. 9 and 11, in which position the roof sections 14 are adjusted outwardly. The floor sections may be lifted to the vertical folded position by means of a tackle 45, connected to hooks 46 fastened to the outer portions of the floor sections 20. The rope 47 of the tackle passes around suitable guide pulleys 48, thence down to and being windable upon the drum 39 so that the operator by manipulating the crank 40 and winding the rope 47 can draw upwardly the floor sections 20, over which will have been folded the foldable wall sections 24—26.

The undersides of the roof sections 14 are provided with cornice or eaves boards 14′ which are adapted to overlap the upper edge of a horizontal edge of the adjacent wall section 26, when this is vertically adjusted. To the cornice boards 14′ are secured transversely projecting stops 14^a at each end of the cornice boards, against which stops the hinged and turnable end wall members 12 will abut when adjusted into the plane of the end panels 6—7. The stop 14^a, Fig. 9, hooks under a plate 14^b on the end wall 12, thus preventing the roof from lifting.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A portable house comprising a rigid, longitudinal floor frame, vertical end wall panels secured to the rigid floor frame, a roof part connecting the upper ends of the panels, lateral roof extensions hingedly connected to the roof, means for adjusting the lateral roof extensions, lateral floor sections hingedly connected to the rigid floor structure, sectional side walls hingedly connected to the lateral floor sections adapted to be adjusted vertically into juxtaposition with the eaves of the lateral roof sections, and end wall sections hingedly connected to the end wall panels and adapted to be turned into the plane of said panels and form intersecting corners with the side walls and the roof elements.

2. A portable folding house comprising a longitudinally extending frame, an under-structure consisting of joists and underpinnings flexibly connected to the frame for lateral and substantially vertical adjustment thereto, floor sections hingedly connected to the frame for vertical adjustment and horizontal adjustment to rest upon the under-structure, when adjusted, vertical end panels rigidly connected to the frame, a longitudinal roof structure connecting the upper ends of the panels, foldable side wall sections hingedly connected to each other and to the outer, longitudinal edges of the floor sections, said wall and floor sections being adapted to be folded together and adjusted in a vertical position between the end panels and end walls, and roof sections flexibly connected to relatively fixed portions of the building and adapted to fold together to overlap the vertically adjusted lower sections.

3. A portable folding house comprising a longitudinally extending frame, an under-structure consisting of joists and underpinnings flexibly connected to the frame for lateral and substantially vertical adjustment thereto, floor sections hingedly connected to the frame for vertical adjustment and horizontal adjustment to rest upon the under-structure when adjusted, vertical end panels rigidly connected to the frame, a longitudinal roof structure connecting the upper ends of the panels, foldable side wall sections hingedly connected to each other and to the outer longitudinal edges of the floor sections, said wall and floor sections being adapted to be folded together and adjusted in a vertical position between the end panels and end walls, roof sections flexibly connected to relatively fixed portions of the building and adapted to fold together to overlap the vertically adjusted, lower sections, and a means for adjusting the roof sections laterally.

4. A portable folding house comprising a longitudinally extending floor part with a central horizontal frame, an under-structure consisting of joists and underpinnings flexibly connected to the frame for lateral and substantially vertical adjustment thereto, floor sections hingedly connected to the floor part for vertical adjustment and horizontal adjustment to rest upon the under-structure when adjusted, vertical end

panels rigidly connected to the central frame, a longitudinal roof structure connecting the upper ends of the panels, foldable side wall sections hingedly connected to each other and to the outer, longitudinal edges of the floor sections, said wall and floor sections being adapted to be folded together and adjusted in a vertical position between the end panels and end walls, roof sections flexibly connected to relatively fixed portions of the building and adapted to fold together to overlap the vertically adjusted, lower sections, means for adjusting the roof sections laterally, and devices for limiting and locking the unfolded adjustable sections.

5. In a portable house, a floor frame, a central roof element, means rigidly connecting said element to the floor frame, a lateral roof member hingedly connected to each side of the central roof element and movable downwardly to be disposed on the adjacent side of the connecting means, a lateral floor member hingedly connected to each side of the floor frame, a side wall hingedly connected to the outer side of each floor member so as to fold on top of the floor member, the floor member when the side wall is folded thereon being movable upwardly to be disposed on the adjacent side of the connecting means, and end panels hinged on opposite sides of the connecting means and movable inwardly to positions on opposite sides of the connecting means.

6. A portable house comprising a relatively narrow central frame with a roof part, a floor part and end panels, floor sections hinged to said frame, roof sections hinged to the roof part to form an extension thereof, folding underpinning connected to the center frame for supporting the extended floor sections, and end walls hinged to the frame and adjustable outwardly over the floor sections for supporting the roof sections when extended.

7. In a portable house, a central roof element, a lateral roof member hingedly connected to each side of said element, and a pair of arms hingedly connected together at their inner ends and having their outer ends hingedly connected to the outer side portions of said respective roof members, said arms when the roof members occupy collapsed positions having their inner ends converging and disposed beneath and adjacent to the roof element and between the roof members so that when said inner ends of the arms are moved downwardly the roof members will be simultaneously raised into operative positions.

8. In a portable house, a central roof element, a lateral roof member hingedly connected to each side of said element, and collapsible means connected to the roof members and operable by downward movement to effect upward movement of the roof members to place the latter in operative positions, said means when the roof members occupy collapsed position being disposed beneath the roof element and being housed by the latter and by said roof members.

9. In a portable house, a floor frame, a central roof part, members connecting said floor frame and roof part, a lateral floor member hingedly connected to each side of the floor frame, a lateral roof member hingedly connected to each side of said central roof part, and end walls hingedly connected to said connecting members, said end walls, and the lateral floor and roof members being foldable one upon the other and being disposed upon opposite sides of the connecting members, and said end walls when in operative position acting to hold the lateral roof members raised and having their lower ends seating on the lateral floor members.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES D. CROMLEY.

Witnesses:
JOHN H. HERRING,
W. W. HEALEY.