

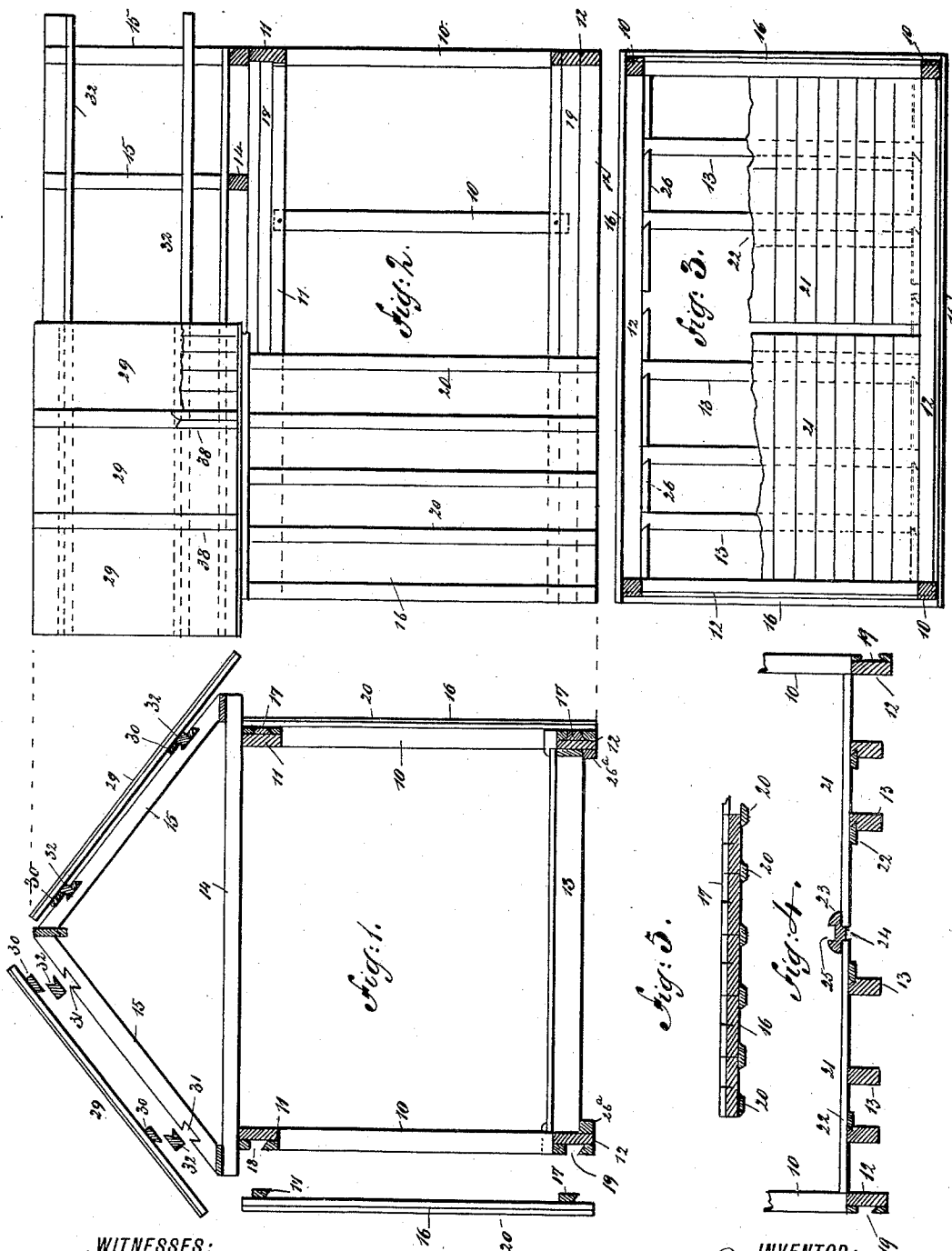
(No Model.)

2 Sheets—Sheet 1.

J. A. BOYD.
FRAME BUILDING.

No. 467,533.

Patented Jan. 26, 1892.



WITNESSES:

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INVENTOR:

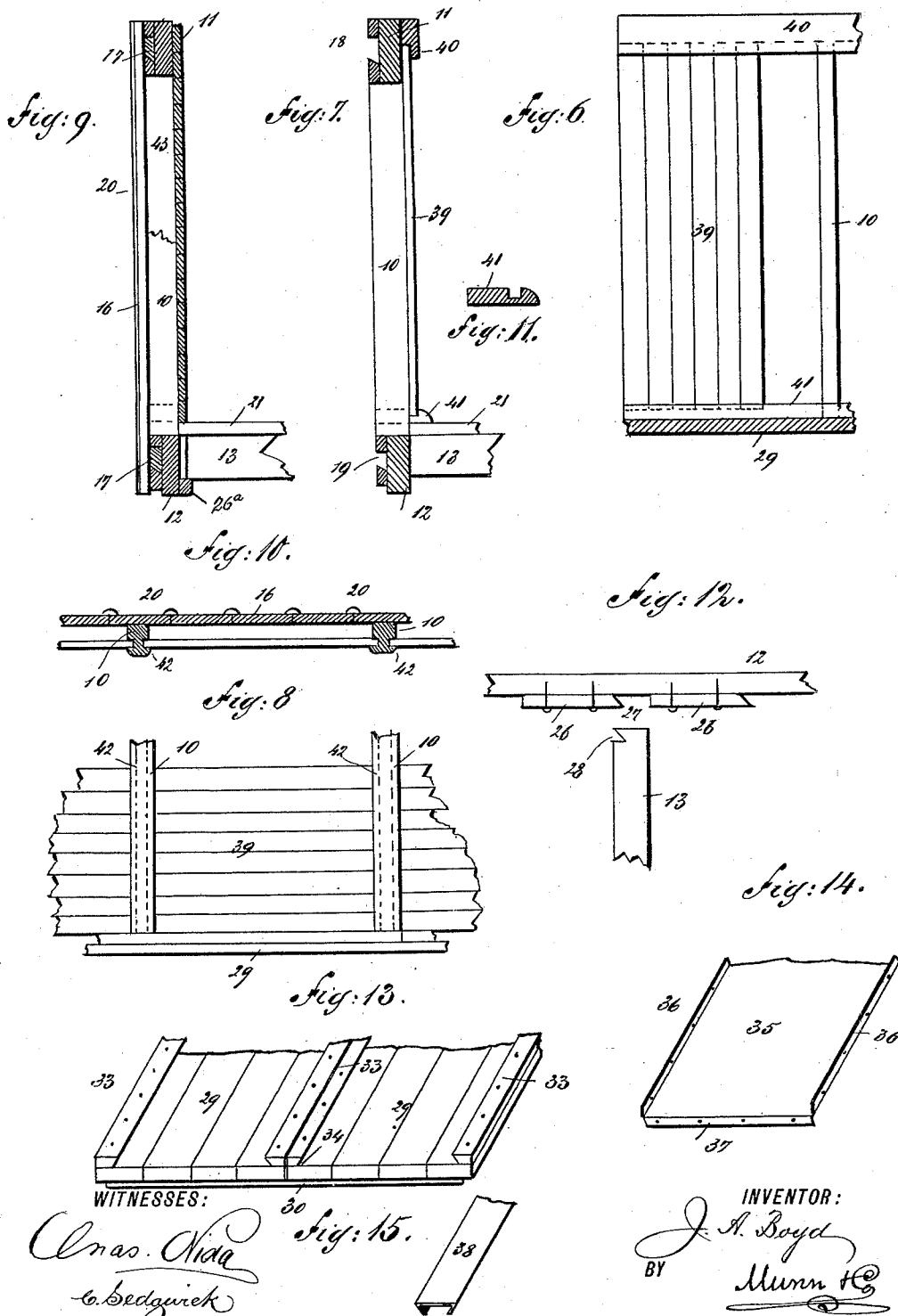
J. A. Boyd
BY *Munn & Co.*

ATTORNEYS.

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UNITED STATES PATENT OFFICE.

JOHN ALLEN BOYD, OF HOUSTON, TEXAS, ASSIGNOR TO JOHN BOYD, OF
SAME PLACE.

FRAME BUILDING.

SPECIFICATION forming part of Letters Patent No. 467,533, dated January 26, 1892.

Application filed February 23, 1889. Renewed June 23, 1891. Serial No. 397,176. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALLEN BOYD, of Houston, in the county of Harris and State of Texas, have invented a new and useful Improvement in Frame Buildings, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the construction of buildings, especially frame buildings, and has for its object to provide a means whereby the building may be erected at a minimum cost and in a simple, convenient, and expeditious manner.

A further object of the invention is to provide a means whereby the several parts constituting the structure will be so formed that they may be readily detached one from the other and packed for transportation.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section through the frame, illustrating the siding sections as detached upon one side. Fig. 2 is a side elevation of a portion of a building, illustrating the application of the side section. Fig. 3 is a horizontal section or ground plan, illustrating the floor-joists. Fig. 4 is a vertical longitudinal section through Fig. 3, illustrating the partition-shoe in position. Fig. 5 is a cross-section through the outside siding. Fig. 6 is a side elevation of the interior vertical section of the walls. Fig. 7 is a vertical section taken through Fig. 6. Fig. 8 is a partial side elevation of the inside wall-section when the same is run horizontally. Fig. 9 is a vertical section through Fig. 8. Fig. 10 is a longitudinal section through another modification of the inside wall. Fig. 11 is a transverse section through a floor-cleat. Fig. 12 is a detail view illustrating the mode of uniting the joists to the sills. Fig. 13 is a perspective view illustrating two uncovered roof-sections. Fig. 14 is a perspective view of the covering adapted to be secured to the roof-sections, and Fig. 15 is a partial perspective view of the roof-seam cap.

In carrying out the invention the frame of the structure consists, essentially, of the studs 10, wall-plates 11, sills 12, joists 13, tie-beams 14, and rafters 15.

The first essential feature of the invention consists in the construction of the siding or weather-boarding constituting the outer walls. The siding is built up of a number of sections 16, composed of any number of boards of convenient size rigidly secured together by battens or cleats 17, nailed or otherwise fastened to the inner face at the top and bottom. Said cleats are more or less wedge shape in cross-section, their outer or base face being narrower than their inner face, as shown in Fig. 1. A wedge-shaped groove 18 and 19, adapted to receive the cleats, is formed, respectively, in the outer face of the wall-plates 11 and sills 12, into which grooves the cleats are made to enter. To place the sections in position, the cleats are slid into the grooves 18 and 19 from the end of the building to their proper station. If in practice it is found desirable, the upper wall of the grooves may be dispensed with, in which event the section-cleats may be hooked on, thus avoiding the necessity of sliding the sections the entire length of the structure. The joints of the sections where the boards come together are covered upon the outer side by securing over the said joints battens 20, as best illustrated, in Fig. 2, and at the corners of the structure the sections are secured in any suitable or approved manner to the corner-posts.

The second feature of my invention relates particularly to the flooring, the said flooring being formed into sections 21 in similar manner to the side sections, the said flooring-sections being united by cleats 22, having one beveled longitudinal edge, as shown in Figs. 3 and 4. The floor-joists 13, as shown in Fig. 4, are provided with an angular groove at or near the upper edge upon one face to receive the beveled edge of the said floor-cleats 22. The floor-sections when laid in place are forced in endwise, whereby the cleats are rigidly locked in the joist. By way of holding these floor-sections firmly into position a strip 23, provided with a longitudinal central tongue 24 upon the under face, is utilized, the tongue being made to enter the opening intervening the

opposed ends of the floor-sections to a bearing upon the upper face, the said ends of the sections preferably approaching each other at the center of the floor. This strip 23 acts
 5 as a key and at the same time serves as a shoe to hold the partition-walls in place. To that end the shoe is provided with a longitudinal groove or channel 25 in the upper face. The partition when resting upon the shoe thus
 10 binds the shoe in place and the shoe in turn securely locks the flooring.

A third feature of the invention is that of securing the ends of the floor-joists 13 to the sills 12, as illustrated in Figs. 1, 3, and 12. Wherever a joist is placed two spaced cleats 26 are
 15 horizontally secured to the inner face of the sill, so arranged as to form a half-dovetail groove 27, and the ends of the joists are provided with an angular recess 28 in one side,
 20 so as to fit and drop down into the groove of the sills. A suitable strip 26^a is fastened under the cleats, upon which the joists rest.

A fourth feature in the construction of my improved building consists in the construction
 25 of the roof. The roof-sections 29 are formed in the same manner as the siding-sections, the several boards making up the sections being connected by cleats 30, having one beveled longitudinal edge, and the rafters 15 are
 30 provided with dovetail recesses 31 to receive a purlin 32, having one straight edge and a V-shaped channel in the opposed edge, as shown at the left in Fig. 1, which purlin is
 35 wedged into the recesses 31 to project beyond the rafters, as illustrated to the right in the same figure. The roof-sections are laid upon the rafters, and the beveled edges of the section-cleats are made to enter the projecting
 40 portion of the V-shaped channel of the purlin, whereby the said roof-sections are effectually held in position. Upon the upper edge of each roof-section at each longitudinal edge
 45 a strip 33 is secured, downwardly and outwardly beveled upon the inner face, as illustrated at 34 in Fig. 13. Upon these roof-sections the roof-covering 35 is laid lengthwise,
 50 the outer side edges of which covering are upturned and fastened to the bevel surface of the roof-strips 33, and the ends 37 of the said covering are turned down and secured
 55 to the ends of the section. Each section is thus formed into a water-tight tray. If, however, it is found desirable, the roof-covering may be fastened to the back or straight surface
 60 of the section. By the application of the roof-covering, which may be of felt, metal, or other material, all injury to the roof is avoided therein by shrinkage of the boards underneath, as would be the case in the ordinary
 65 method of roofing. The covering being only fastened at its outer edges to the roof-sections, any shrinking of the sheathing upon which it may be laid does not tear or damage the covering, as would happen were it nailed
 across the upper surface thereof. The joints of the sections at their upper contacting side edges are rendered water-tight by means

of a metal cap 38, illustrated in Fig. 15, which cap is so formed as to embrace the two engaging roof-strips 33 and to slide upon and
 70 cover them. In the construction of the roof illustrated in Fig. 2, one joint is represented as covered, another partially so, and a third is shown exposed.

A fifth feature of the invention relates to
 75 the construction of the inner wall, as best illustrated in Figs. 6 and 7. When such walls are required in a building of the character described, they are preferably constructed by
 80 securing the upper ends of vertical inner wall-boards 39 to the wall-plates 11 by means of a rabbeted binding-strip 40, fastened thereto, and the lower ends of the boards can in like
 85 manner be secured in a grooved strip 41, (illustrated in detail in Fig. 11,) which latter strip is fastened to the floor-sections. Into both of these strips 40 and 41 the boards may be made
 to slide at the top and bottom.

A modification of the construction of the inner wall is illustrated in Figs. 8 and 9, in which
 90 the inner wall-boards 39 are run horizontally instead of vertically, in which event the studs 10 are grooved, as shown at 42 in Fig. 10, or provided with a grooved strip, in which the
 95 ends of the inner wall-boards may be entered at the top and dropped downward.

In both modes of applying the inside wall-boards an air-space 43 is left between the outer and the inner wall, the advantage of which
 100 in resisting heat and cold is evident.

This class of buildings has the advantage of being at once readily erected and quickly
 105 taken down or apart without injury. It is a substantial building, the plates and sills being firmly secured together by means of studs mortised and tenoned at top and at bottom,
 and the sills and joists are dovetailed together.

This form of building is adapted either to a temporary or to a permanent purpose—to
 110 the camp as well as to tenement use. The building is especially adapted for erection in out-of-the-way places, where skilled labor is not to be had, as a person of ordinary intelligence should be able to locate the parts and
 115 put up the work successfully.

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

1. In the construction of frame buildings,
 120 the combination, with the studs and sills, each provided with a longitudinal groove in the outer face, and wall-plates, each provided with an outer longitudinal groove, of siding constructed in sections, provided with cleats
 125 adapted to enter and to slide in the grooves of the sills and wall-plates, substantially as shown and described.

2. In the construction of frame buildings, the combination, with the studs, the sills, each
 130 provided with a longitudinal outer groove, and a wall-plate also grooved upon its outer face, of siding constructed in sections, cleats secured to the inner face of said sections,

adapted to enter and to slide in the said grooves, and battens covering the joints in the sections, substantially as shown and described.

3. In the construction of frame buildings, the combination, with the studs, the sills, and the wall-plates, said sills and plates provided with an outer longitudinal groove having a straight upper wall and an inclined lower wall, of siding constructed in sections and cleats secured to the inner face of said sections, having an undercut lower edge, substantially as shown and described.

4. In the construction of frame buildings, the combination, with the studs, the sills, and the wall-plates, said sills and plates provided with an outer longitudinal groove having a straight upper wall and an inclined lower wall, of siding constructed in sections, battens covering the abutting edges of the boards comprising the sections, and a cleat secured at the top and bottom of each section having an undercut lower edge adapted to slide in said grooves, substantially as shown and described.

5. In the construction of frame buildings, the combination, with the studs, the sills, and the wall-plates, said wall-plates and sills provided with an exterior longitudinal groove, and siding constructed in sections provided with cleats upon the inner face adapted to enter the said grooves, of joists secured to the sills having an angled groove in one face, and flooring constructed in sections provided with cleats upon the under face, which cleats are undercut upon one side to enter the joist-grooves, substantially as shown and described.

6. In the construction of frame buildings, the combination, with the studs, the sills, and the wall-plates, said wall-plates and sills provided with an external longitudinal groove, and siding constructed in sections provided with cleats upon the inner face capable of sliding in said grooves, of sill-cleats arranged to form a series of half-dovetail spaces, a supporting-strip below said spaces, joists notched at the end to enter said spaces and provided with an angled groove in one face, and flooring constructed in sections provided with attached cleats adapted to enter the joist-grooves, substantially as shown and described.

7. In the construction of frame-buildings, the combination, with the studs, the sills, and wall-plates, said wall-plates and sills provided with an exterior longitudinal groove, and siding constructed in sections provided with cleats upon the inner face adapted to enter the said grooves, of joists secured to the sills having an angled groove in one face and flooring constructed in sections provided with cleats upon the under face, undercut upon one side to enter the joist-grooves, and a partition-shoe provided with a tongue entered between the abutting ends of the flooring-sections and having a groove produced in the upper face, substantially as shown and described.

8. In the construction of frame buildings,

the combination, with the sills and joists secured to the same having a groove in one face, of flooring constructed in sections provided with cleats upon the under face capable of entering the grooves in the joists, and partition-shoes inserted between the opposed ends of the floor-sections, substantially as and for the purpose specified.

9. In the construction of buildings, the combination, with the sills provided with attached cleats upon the inner face arranged to form a series of half-dovetail spaces, supporting-strips below said spaces, and joists notched at one end to enter said spaces and rest upon said strips and provided with longitudinally-extending grooves, of flooring constructed in sections provided with cleats upon the under face undercut upon one side to enter the joist-grooves, substantially as shown and described.

10. In the construction of buildings, the combination, with the rafters and tie-beams of the roofing, said rafters provided with spaced recesses in the outer edge, of purlins introduced into the recesses of the rafters, adapted to project beyond the same, and roof-sections provided with cleats upon the under face adapted for contact with a support upon the said purlins, substantially as shown and described.

11. In the construction of buildings, the combination, with the rafters and tie-beams, said rafters provided with recesses in the outer face and purlins adapted for insertion in the said recesses and projecting beyond the outer face of the rafters, said purlins provided upon the upper face with an essentially-V-shaped channel, of sections provided with cleats upon the under sides undercut to enter the channel of the purlins, all combined for operation as and for the purpose specified.

12. The combination, with the studs, sills, and wall-plates of a building, said sills and wall-plates provided with a longitudinal outer groove, and siding-sections provided with cleats upon the inner side capable of sliding in the said grooves, of tie-beams mounted upon the wall-plates, rafters secured to said tie-beams, provided with recesses in their outer edge, purlins having the upper longitudinal edge provided with an essentially-V-shaped groove held in the recesses of the rafters, and roof-sections having cleats attached upon the under side, undercut to engage with the upper surface of the purlins, all combined for operation substantially as shown and described.

13. In the construction of buildings, the combination, with the rafters and tie-beams, said rafters provided with recesses in the outer face, and purlins held in said recesses projecting beyond the outer surface of the rafters, of roof-sections having cleats secured upon the under face capable of engaging with the projecting portion of the purlins and provided upon the upper surface at the side edges with marginal strips, a covering

attached to the said strips and to the ends of the sections, and a cap-plate capable of sliding over the contacting marginal strips of the opposed roof-sections, all combined for
5 operation substantially as shown and described.

14. In the construction of buildings, the combination, with the studs, the sills, and wall-plates, the said sills and wall-plates provided with an outer longitudinal groove, and
10 siding-sections having cleats attached upon the inner face adapted to enter the said

grooves, of inside wall-sections held in contact with the inner faces of the studs, whereby an air-space is obtained between the inner
15 wall and outer siding-sections, and means, substantially as shown and described, for retaining the inside ceiling in contact with the said studs, as and for the purpose specified.

JOHN ALLEN BOYD.

Witnesses:

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