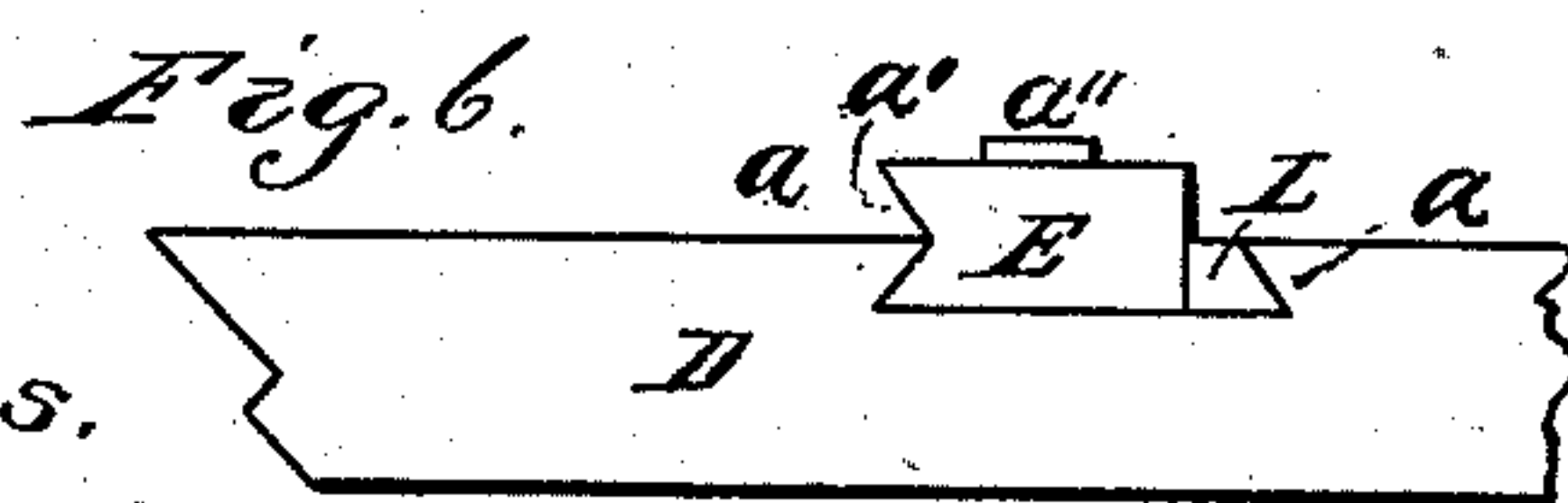
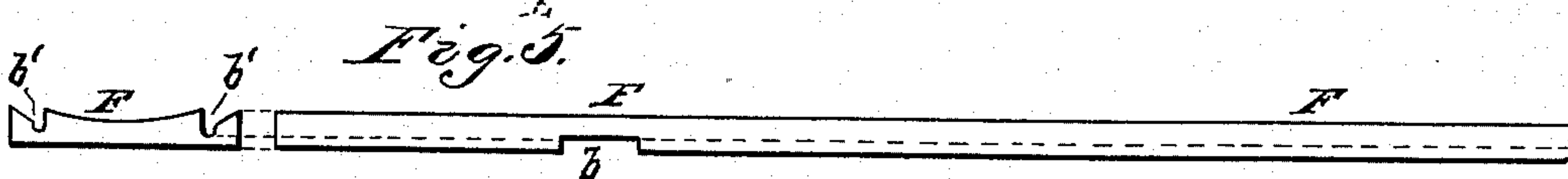
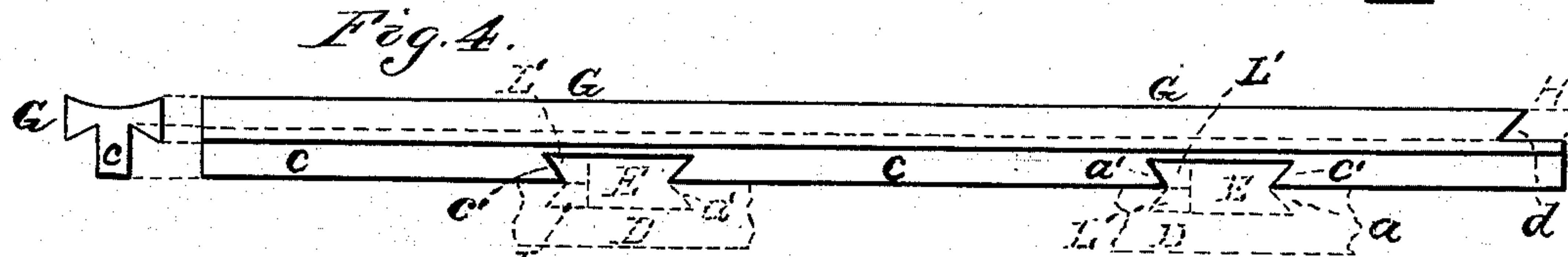
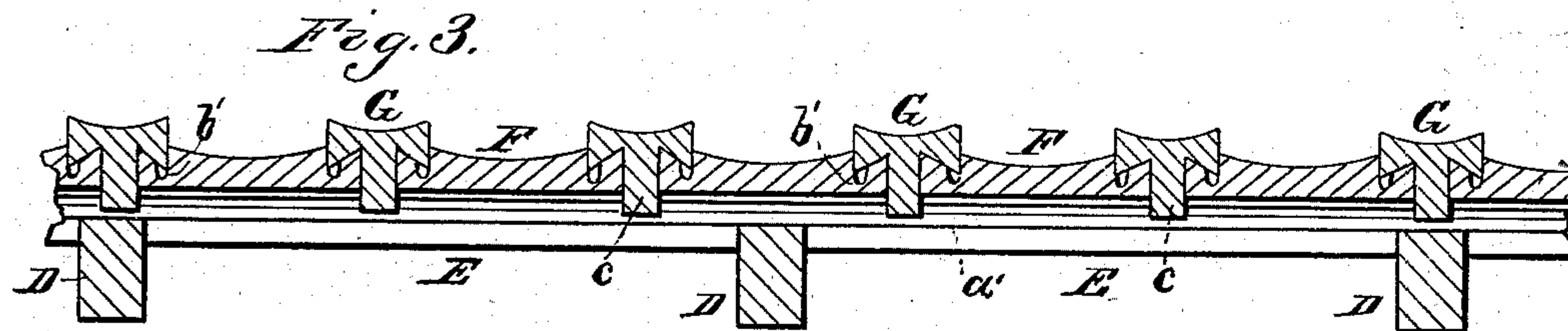
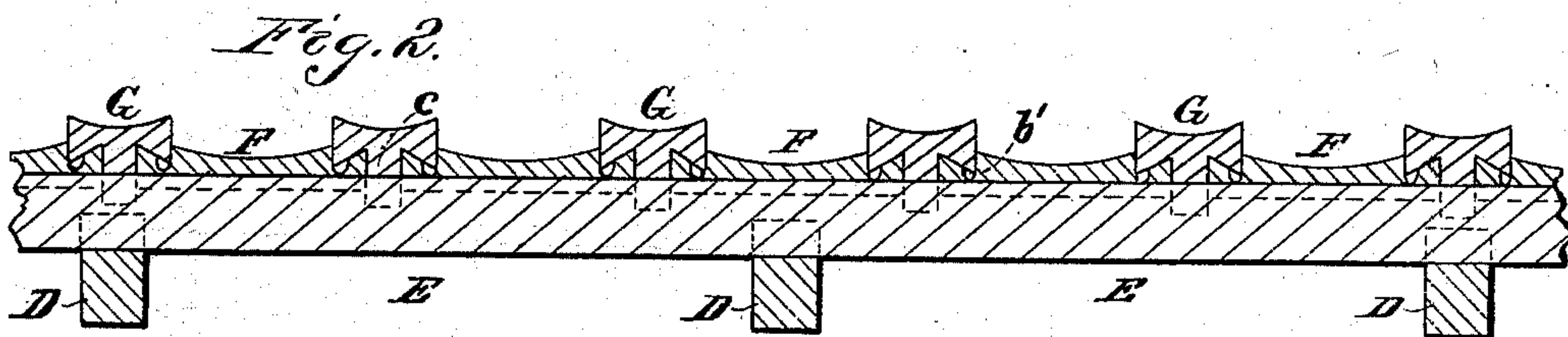


2 Sheets—Sheet 1.

No. 252,302.

Patented Jan. 17, 1882.



Witnesses,
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R. J. Morse

Inventor,
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per. F. F. Warner -
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

J. BOYD.
FRAME HOUSE.

No. 252,302.

Patented Jan. 17, 1882.

Fig. 7.

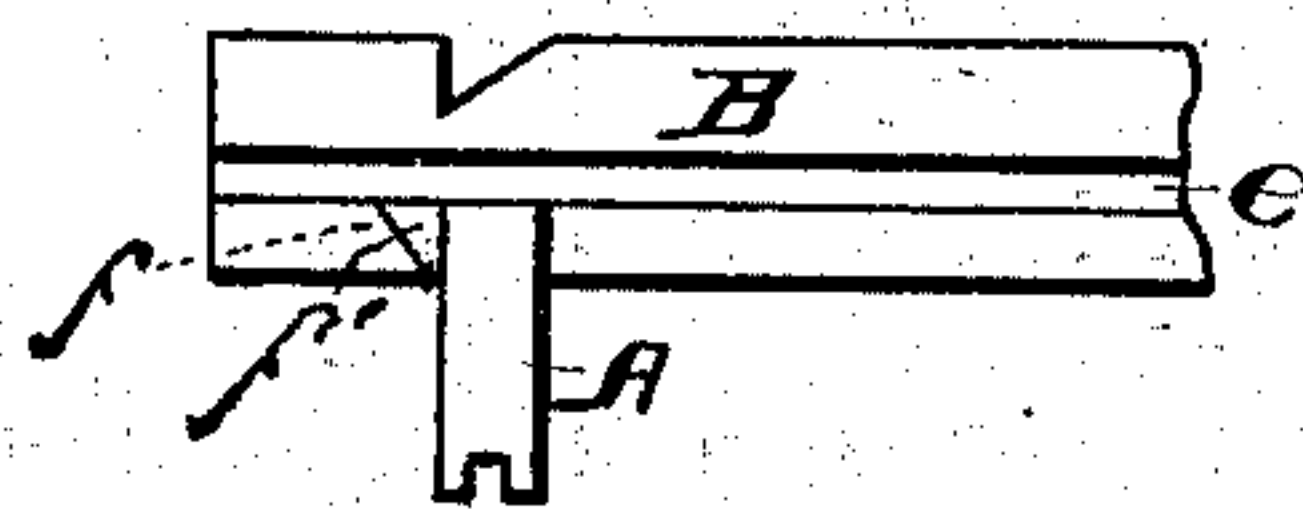
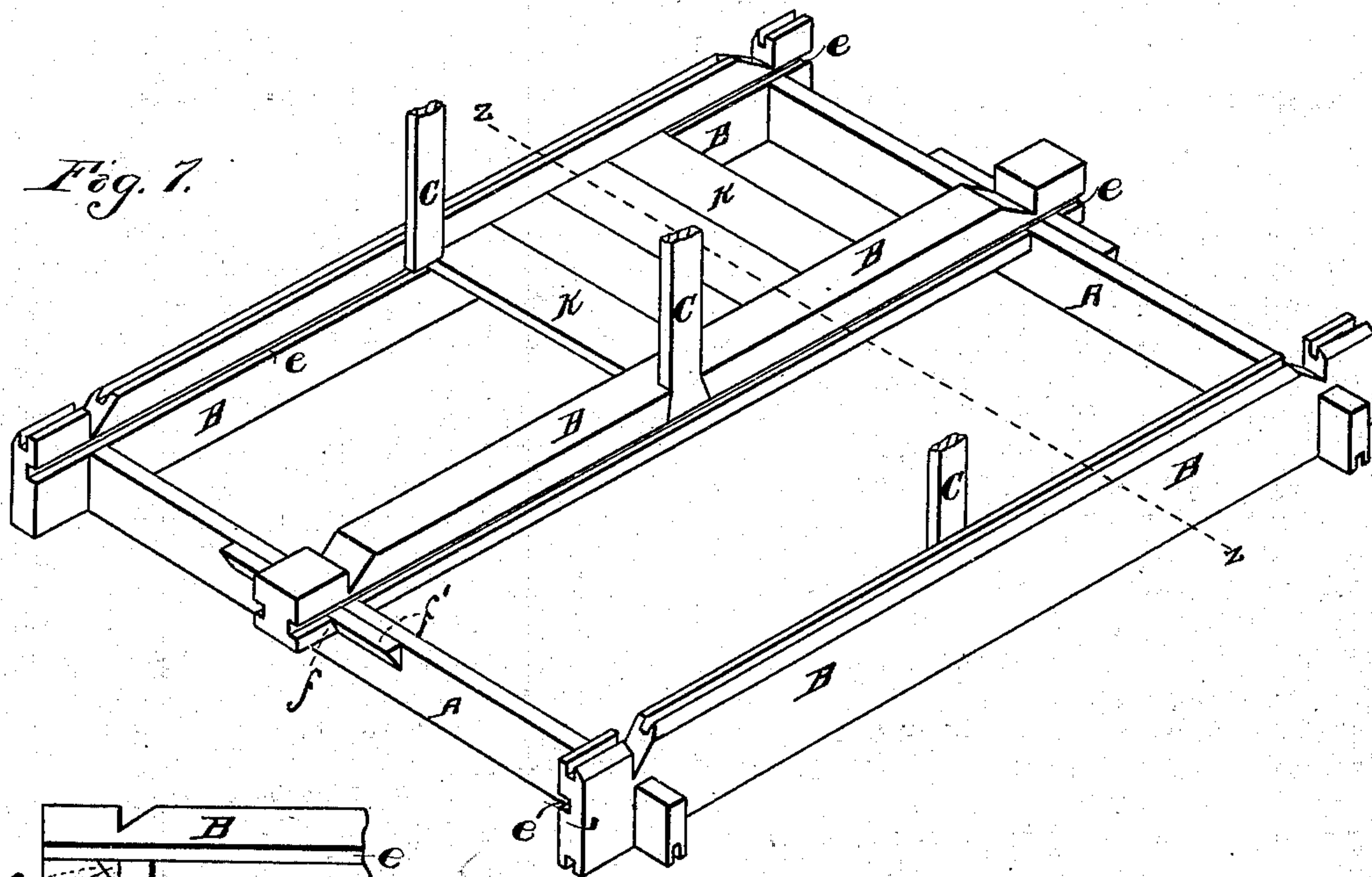
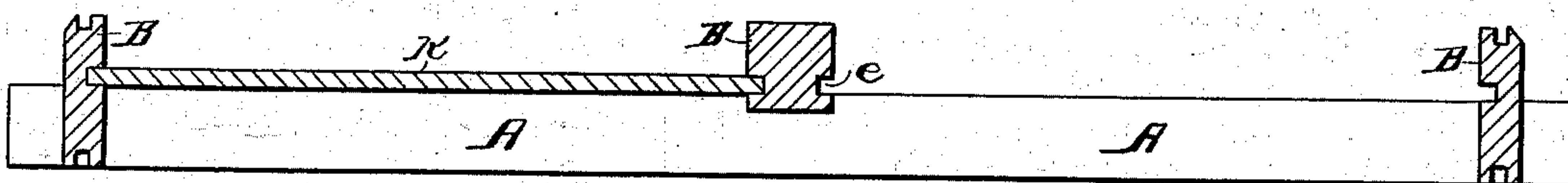


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN BOYD, OF GALVESTON, TEXAS.

FRAME HOUSE.

SPECIFICATION forming part of Letters Patent No. 252,302, dated January 17, 1882.

Application filed June 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN BOYD, of Galveston, in the county of Galveston and State of Texas, have invented certain new and useful
5 Improvements in Frame Houses, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1, Sheet 1, is a vertical central cross-section of the roof of a frame
10 house embodying my improvements. Fig. 2, Sheet 1, is a section in the plane of the line *xx*; Fig. 3, Sheet 1, a section in the plane of the line *yy*, viewed in the direction indicated by the arrow there shown. Fig. 4, Sheet 1, is a
15 detail in side elevation of one of the roof-battens. Fig. 5, Sheet 1, is a like representation of one of the roof-boards. Fig. 6, Sheet 1, is a detail showing the mode of joining the purlin and rafters. Fig. 7, Sheet 2, is a perspective, showing the mode of constructing the
20 ceiling; and Fig. 8, Sheet 2, is a section in the plane of the line *zz*.

Like letters of reference indicate like parts.

My invention relates to the construction of
25 the roof and ceiling.

A A are the wall-plates, and B B are the tie-beams. C C are the king-posts. D D are the rafters. E E are the purlins. F F are the roof-boards. G G are the caps or batten. H H
30 are key-boards. I I are the saddle-boards, and J is the ridge-pole. K K are the ceiling-boards. L and L' are keys, and M M are verge-boards.

The principal features of my invention, so far as the same relate to the roof, are substantially as follows:

Across the rafters I cut dovetail gains *a a* to receive the purlins, and in one edge of the purlins I make a V-shaped groove, *a'*. The depth of the gains *a a* is such that the purlins
40 stand about half their thickness above the rafters, and the gains *a a* are somewhat longer than the purlins are broad, as indicated. After arranging the purlins in their places or seats in the gains *a a*, I lock them there by means
45 of keys L L. Upon the upper purlin, by preference, I make a rib, *a''*, and in the roof-boards I cut a correspondingly arranged gain or groove, *b*, so that when the roof-boards are arranged in place they will be prevented from
50 slipping downward. I also sink into the upper sides of the roof-boards the longitudinal grooves *b' b'*.

The batten or caps G, I make T-shaped, in transverse section, and their tongues or vertical parts *c c* are arranged between the longitudinal edges of the roof-boards, and extend
55 below the undersides of the latter, as is clearly indicated in Fig. 3. In the lower edges of the tongues *c c*, I make the dovetail grooves *c' c'*, arranged to engage the grooved edges of the
60 purlin. The battens will by this means be held down in their proper places, and they in turn hold down the roof-boards to the frame of the roof. I make the upper sides of the roof-boards and batten somewhat dishing, as is clearly in-
65 dicated in Figs. 2 and 3, to aid in draining the rain or water away from the joints. The grooves or channels *b' b'* will also drain away any water that may find its way underneath the lateral extensions or wings of the batten. The
70 upper ends of the batten have in them a bevel or under-cut, *d*, and the lower edges of the key-boards H H are correspondingly beveled, as shown at *d'*. I connect these key-boards and the saddle-boards rigidly together, so that when
75 they are secured in their proper places the key-boards will not only prevent the batten from being moved upward, but also so that the batten will hold down the key-boards and saddle-boards securely at their lower edges during
80 the engagement of the beveled edges *d* and *d'*. It will be perceived that if the battens cannot be pushed upward or toward the ridge-pole they cannot be lifted from the purlin, owing to the dovetail joining of these parts, as de-
85 scribed. For this reason the keys L' L' are not absolutely essential. This mode of construction allows the whole roof-covering to expand and contract without injury. The battens and roof-boards being capable of lateral move-
90 ment, and not being secured by means of nails, screws, or like fastenings, no injury results. The parts may also be arranged together and separated with facility. The battens, as will be perceived, need only to be dropped or ar-
95 ranged between the roof-boards in order to cover the joints between the latter.

I construct the ceiling as follows: The tie-beams or ceiling-joists B B are grooved, as shown at *e e*, and into these grooves I arrange
100 the ceiling-boards K K, which are previously made of suitable length to admit of being arranged in the said grooves, as indicated in Fig. 7, thus forming panels.

To fasten the tie-beams down upon the wall-plates I make in the former a beveled gain, *f*, and upon the wall-plates I fasten a beveled key, *f'*. By placing the tie-beam upon the wall-plate, and then slipping the former along laterally until the key *f'* enters the gain *f*, the beam will be held down securely. A projection of any desired length may thus be given at the eaves, and a cornice finish produced by fastening the verge-boards *M M* to the projecting ends of the tie-beams.

It may be here stated that the gains *a a* may be made to fit the purlin, in which case the purlin should be inserted endwise into the said gains, and the keys *L L* will not be absolutely essential; but I deem it best to make the said gains long enough to permit the purlin to be dropped into them, and to use the said keys for the purpose set forth.

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

1. The combination, in a roof, of the T-shaped caps or battens *G G*, having in their depending tongues the transverse dovetail grooves *c' c'*, the roof-boards *F F*, arranged above the grooves *c' c'* and below the horizontal or lateral arms of the said battens, and the purlins *E E*, adapted to enter the grooves *c' c'* and grooved longitudinally to engage the said tongues, substantially as and for the purposes specified.

2. The combination, in a roof, of the purlins *E E*, having thereon the ribs *a'' a''*, and having on one longitudinal edge thereof the V-shaped groove *a'*, the rafters *D D*, having therein the dovetail gains *a a*, and the roof-boards, having therein the gains or grooves *b b*, substantially as and for the purposes specified.

3. The combination, in a roof, of the T-

shaped caps or battens *G G*, the roof-boards *F F*, the purlins *E E*, and the rafters *D D*, when the said battens overlap and depend between and below the said boards, and when the said battens and rafters have therein dovetailed grooves, and the purlins have V-shaped grooves to admit of their being connected to each other, substantially as and for the purposes specified.

4. The combination, in a roof, of the roof-boards *F F*, having therein the grooves or channels *b' b'*, and the T-shaped caps or battens *G G*, covering the said grooves or channels and depending between and below the said boards, and having in their lower edges transverse grooves *c' c'*, for adapting them to be locked to the frame by means of correspondingly-formed purlins, substantially as and for the purposes specified.

5. The combination, in a roof, of the dishing roof-boards *F F*, having therein the grooves or channels *b' b'*, and the T-shaped and dishing caps or battens *G G*, extending between the said boards and covering the said grooves or channels, substantially as and for the purposes specified.

6. The combination of the T-shaped caps or battens *G G*, having therein the dovetail gains *c' c'*, the roof-boards *F F*, and the purlins *E E*, having therein the grooves *a' a'*, substantially as and for the purposes specified.

7. The combination, in a frame house, of the wall-plates *A A*, the tie-beams *B B*, arranged upon the wall-plates, and having therein the beveled gains *f f*, and the beveled keys *f' f'*, applied to the said plates, substantially as and for the purposes specified.

JOHN BOYD.

Witnesses:

W. C. ANDERS,
E. J. DUHAMEL.