J. BOYD.

Construction of Roofs.

No. 213,035. Patented Mar. 11, 1879.

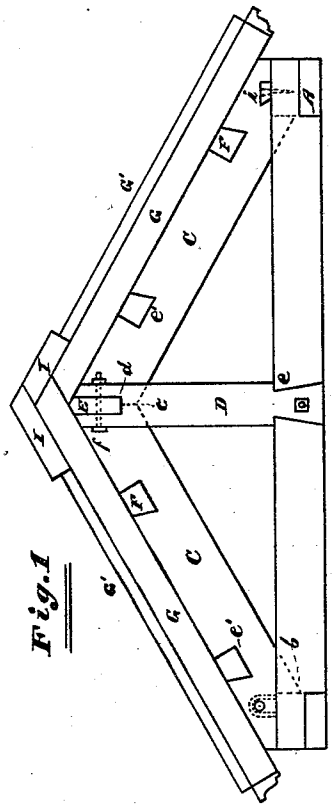


Fig. 1

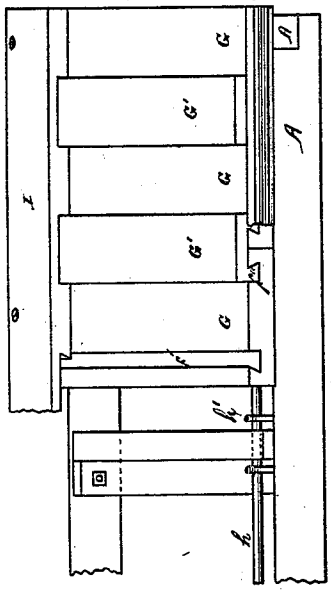


Fig. 2

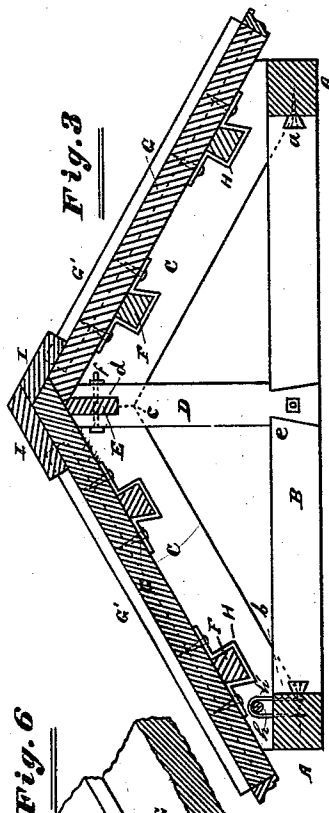


Fig. 3

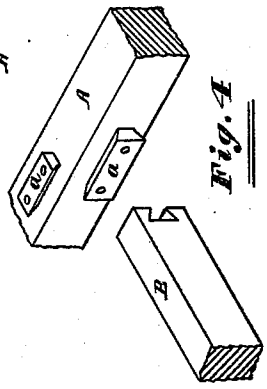


Fig. 4

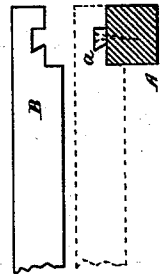


Fig. 5

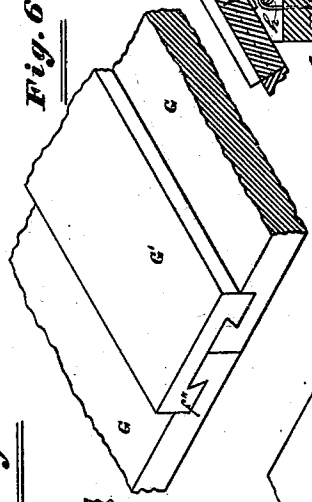


Fig. 6

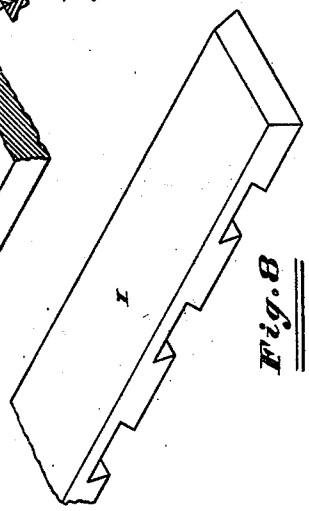


Fig. 8

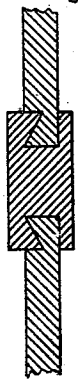


Fig. 7

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UNITED STATES PATENT OFFICE.

JOHN BOYD, OF GALVESTON, TEXAS.

IMPROVEMENT IN CONSTRUCTION OF ROOFS.

Specification forming part of Letters Patent No. **213,035**, dated March 11, 1879; application filed November 27, 1877.

To all whom it may concern:

Be it known that I, JOHN BOYD, of Galveston, in the State of Texas, have invented certain new and useful Improvements in the Construction of Roofs, of which improvements the following is a specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is an end elevation of a roof embodying my invention; Fig. 2, a side elevation thereof; Fig. 3, a central cross-section; Fig. 4, a perspective representation of one of the wall-plates and one of the tie-beams. Fig. 5 represents a modification in the construction and in the mode of uniting the parts shown in Fig. 4; Fig. 6, a perspective view of a part of the roof-covering; Fig. 7, a section showing a modication in the construction and in the mode of uniting the parts shown in Fig. 6; and Fig. 8 is a perspective view of one of the saddle-boards.

Like letters of reference indicate like parts.

In the drawings, A A represent the wall-plates, which may be connected and fitted to each other at their ends in any suitable manner, preferably as represented in Figs. 1 and 2. *a* is a key, cleat, or strip, firmly secured to the central part of the side plates, A A, and arranged upon either the inner face or upon the upper surface thereof. In the example shown the base of the part *a* is narrower than its outer face.

B is the central tie-beam. The ends of the tie-beam are cut to receive the ends of the part *a*. The form of the cleat *a* and of the cut which receives it must correspond to each other, but may be varied from that shown, a dovetail joint being preferable, but not essential, the object of this feature of the construction being to connect the beam B to the plates A A in a simple and easy way, and so as to prevent the spreading or lateral movement of the plates.

C C are the rafters. The lower ends of the rafters are so cut or beveled as to lie upon the upper faces of the wall-plates, and also so as to present shoulders to the inner sides of the said plates, as shown at *b b*. The upper ends of the rafters are so cut as to meet each other at the lower parts of the edges presented toward each other, and so that a considerable space or recess will exist between the remaining parts of these edges, as shown at *c c*.

D D are king-posts applied to the gable wall-plates and to the tie-beams. The upper ends of these posts are beveled to correspond to the slope of the roof, and also have in these ends the deep cuts or grooves *d d*, corresponding in size and form to the recess between the upper ends of the rafters. The lower ends of the king-posts are dovetailed, and are laid into dovetail mortises in the sides of the tie-beams and wall-plates, and are shouldered to rest upon the parts to which they are applied, as shown at *e e*. The king-posts, however, may be fastened to the tie-beams in any suitable manner.

E is the ridge-pole. This pole or bar is dropped into the notches or cuts *d d* and into the spaces between the upper ends of the rafters, it being understood that the said cuts and spaces lie in the same straight line. The ridge-pole is held in its place firmly by means of pins or bolts *f f* passing through it and the king-posts.

F F are the purlins. These purlins have flaring sides, or one side, at least, is inclined, or so beveled as to render the lower sides of the purlins the broadest. The rafters C C have therein the dovetail mortises *e' e'*, into which the purlins are pushed, being thus held down to the rafters.

G G are boards, which, in connection with the battens G' G', constitute the roof-covering. The boards G G are arranged side by side, and the upper ends of those upon one side of the roof lap the upper ends of those upon the other side, by preference, and are beveled off to correspond with the slope of the roof. Upon the under side of the boards G G are the loops or fastenings H H, secured firmly thereto by means of screws, nails, pins, or other suitable means, in such a manner that the boards G G will not be thereby perforated. The purlins, at the time they are arranged in the mortises *e' e'*, are also passed through the loops or fastenings H H, and the boards or coverings G G are thus firmly held in their places.

G' G' are battens, arranged over the joints between the parts G G, which latter are grooved, as shown at *f' f'*; and *f'' f''* are tongues on the battens, and these tongues are

formed to enter the grooves *f' f'*, the grooves having one or more flaring sides, and being so formed as to hold the battens firmly down upon the boards G G. The battens, instead of being tongued, as shown at *f'' f''*, may have grooves cut into their edges, and the edges of the boards G G may be cut to enter these grooves, as shown in Fig. 7. In fact, the grooves and tongues hereinbefore referred to may all be modified in form, so long as the object for which they are employed is accomplished—viz., the production of a tight joint; and to produce this result the sheeting G may be matched to the battens G' by means of a plain tongue and groove. Neither is it essential that the fastenings H H should embrace the bottom and both sides of the purlin.

I I are the saddle-boards or combing. Dovetail grooves are cut crosswise in the under face of the boards I I, and the upper ends of the boards are then slipped down upon the upper ends of the battens, these ends being formed to fit into the grooves in the boards I I. It will be perceived that one of the boards I I laps the upper edge of the other, and these edges may be screwed or otherwise fastened together to produce a tight joint. Instead of being grooved in the manner described, the lower edges of the boards I I may be rabbeted lengthwise; but I deem the grooves preferable.

If additional means may be deemed desirable in order to more securely tie the rafters to the wall-plates, rods *h h* may be passed through the lower ends of the rafters, and staples *h' h'* driven over the rods into the wall-plates. A like result will be obtained if a dovetail rib, *i*, be laid upon the wall-plates, and the lower ends of the rafters are grooved to receive the rib. *i'* is an eaves-cornice, secured to the lower edges of the covering G and battens G' G', and not only gives a finished appearance to the roof, but prevents the battens from sliding down out of their places; but the cornice is not absolutely essential for this purpose.

It will be perceived, from the foregoing description, that the various parts of the roof are securely locked together, and that the employment of only a very few screws, pins, or bolts and like fastenings is necessary. The roof is tight and water-proof, and all the parts can be easily arranged together and taken apart.

The rafters, by being cut or shouldered to receive the inner upper corners of the wall-plates, and also so as to receive the ridge-pole, are held down very firmly in place when the ridge-pole is applied and tied to the king-post. The king-post serves to hold down the roof-ridge, instead, as heretofore, of supporting it. The roof is easily portable, as well as substantial and durable, and it is unnecessary to provide it with any roofing material, such as tin, shingles, asphalt, &c.

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

1. A roof wherein the purlins are held down by means of dovetail-formed mortises or grooves in the rafters, substantially as and for the purposes specified.

2. A roof wherein the ridge-boards are held in place by means of flaring grooves in their under faces and by battens having correspondingly-formed upper ends entering the said grooves, substantially as and for the purposes specified.

3. The combination of the rafters having therein the dovetail grooves *e' e'*, and shouldered as described, the flaring purlins arranged in the said grooves and correspondingly formed, the grooved boards or covering G G, having thereon the fastenings H H, the tongued battens G' G', the grooved ridge-boards, and the ridge-pole tied to the king-posts, substantially as and for the purposes specified.

JOHN BOYD.

Witnesses:
ROBERT W. SHAW,
GEO. A. HILL.