(No Model.)

B. F. ELLIS.

TIE FOR SUPPORTING HEADER JOISTS.

No. 250,137. Patented Nov. 29, 1881.

Fig. 1

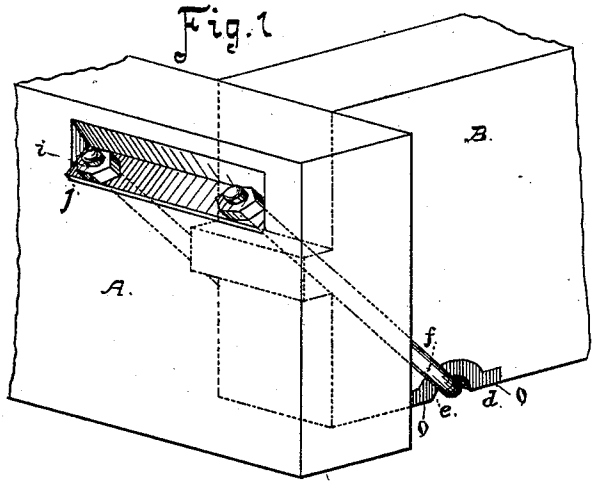


Fig. 2.

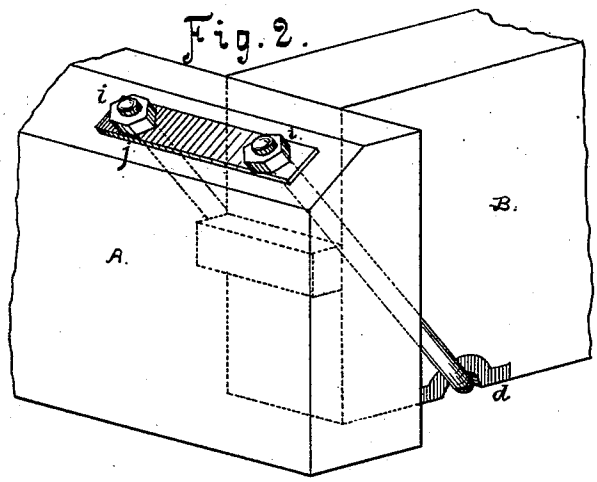


Fig. 3

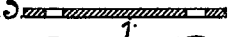


Fig. 4.

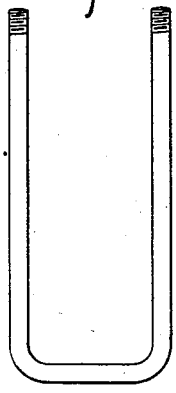


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

BENJAMIN F. ELLIS, OF SAN FRANCISCO, CALIFORNIA.

TIE FOR SUPPORTING HEADER-JOISTS.

SPECIFICATION forming part of Letters Patent No. 250,137, dated November 29, 1881.

Application filed March 26, 1881. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. ELLIS, of the city and county of San Francisco, in the State of California, have invented certain new and useful Improvements in Ties for Supporting Header-Joists; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to an improved method and device for fastening and supporting the ends of that class of joists that abut against and are held in position by a connection with a cross or transverse beam or joist. The usual device used for this purpose is a metallic loop or strap, the upper end of which is bent so that it can be hung over the cross or transverse joist while the end of the abutting joist is swung and supported in the loop. This strap-hanger is unreliable, because when the transverse joist shrinks or warps the end of the abutting joist is displaced and the connection is broken. In fact there is nothing in this device to hold the parts together.

My invention consists in providing a metallic stirrup or tie which will pass diagonally through the transverse joist on each side of the abutting joist, and down under the abutting joist, where it will rest in a seated metallic saddle. This stirrup can be tightened by means of nuts, so that it will be impossible for the joint to separate or be displaced downward.

Referring to the accompanying drawings, Figures 1 and 2 show the application of my invention. Figs. 3, 4, and 5 show details of construction.

Let A represent the transverse joist, and B the abutting joist. In carpentry there are two kinds of abutting joists, and these are known as "header-joists" and "tail-joists," and the joist against which the ends of these joists abut are called "trimmer-joists." In connecting the end of the header or tail joist with the transverse or trimmer joist the end of the header or tail joist is simply abutted against the trimmer-joist, and the method heretofore employed was to support it by a loop or sling. My tie or holder is intended to take the place of this loop or sling. After the timbers have been placed in position in the usual way I proceed and make a horizontal V-shaped groove near the upper edge of the trimmer-joist on the side opposite the end of the header or tail joist. Taking the lower side of this V-shaped groove as a facing, I bore two holes diagonally downward through the trimmer-joist, one on each side of the header-joist. Having obtained the angle of these holes, I cut a notch in the under side of the header-joist in line with the two diagonal holes, and in this notch I place a metallic casting, *d*, in the under side of which is a groove or channel, *e*. I then take a U-shaped rod of iron, *f*, which forms the stirrup or tie, and placing one of its legs on each side of the header or tail joist I pass the legs up through the diagonal holes in the trimmer-joist until the bend of the stirrup is drawn up into the groove *e* of the metallic saddle or casting *d*. The ends of the stirrup-rod *f* will then project through the V-shaped recess on the opposite side of the trimmer-joist. These projecting ends are cut with screw-threads. I then take a metallic plate, *j*, in which two holes are made corresponding with the ends of the rod *f*, and pass it down over the ends of the rod until it rests on the lower face of the V groove or channel, after which I turn a nut, *i*, down on the end of each rod against the plate *j*, until the saddle is drawn firmly up against the under side of the header-joist. If preferred, the holes might be made from the upper rear corner down diagonally through the beam, as represented at Fig. 2. This latter arrangement will avoid the necessity of making a V-groove in the side of the beam, and it brings the strain more nearly in a vertical direction.

This method and device for connecting the beams or joists not only supports the header or tail joist, so as to enable it to resist downward strains, but it also draws its end close up against the trimmer-joist, so that it cannot be separated by any strain that the strength of the stirrup will resist, thus practically forming a unit of strength at that point.

The saddle or casting *d*, I prefer to make with a projecting end, O, on each side of the channeled or grooved portion, and to fit these ends in corresponding seats in the under side of the joist, so that their lower faces will be flush with the under edge of the joist. This leaves no projections, while the projecting ends give a larger bearing-surface and prevent the saddle from being displaced or turning in its seat.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

A joint-fastening for connecting the ends of header or tail joists with a transverse beam or joist consisting of the U-shaped metallic stirrup *f*, arranged to straddle the abutting joist so that its bent portion will rest in a groove, *e*, in a plate on the under side of the joist, while its parallel ends pass diagonally through the trimmer-joist and are tightened by nuts on the opposite side of the trimmer-joist, substantially as specified.

BENJAMIN F. ELLIS.

Witnesses:
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