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JOIST

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Fig. 1.

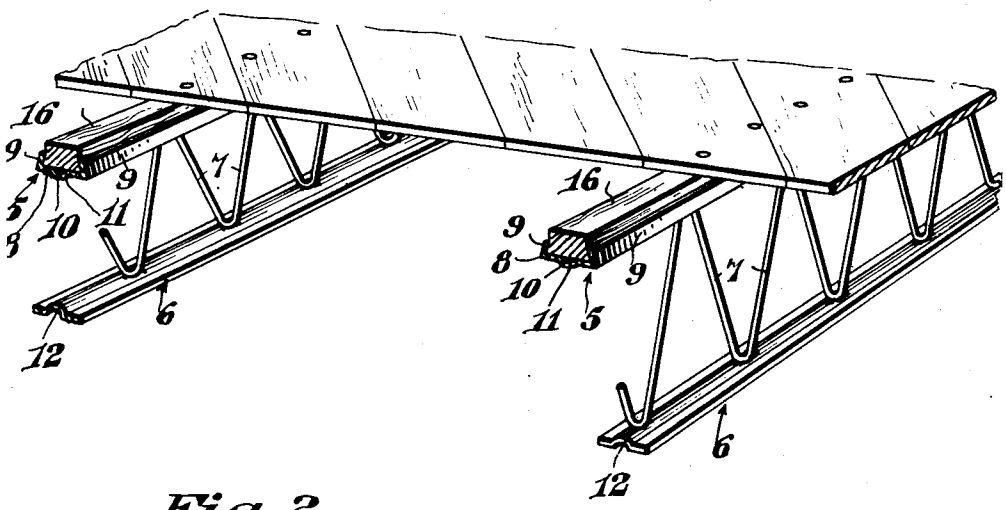

Fig. 2.

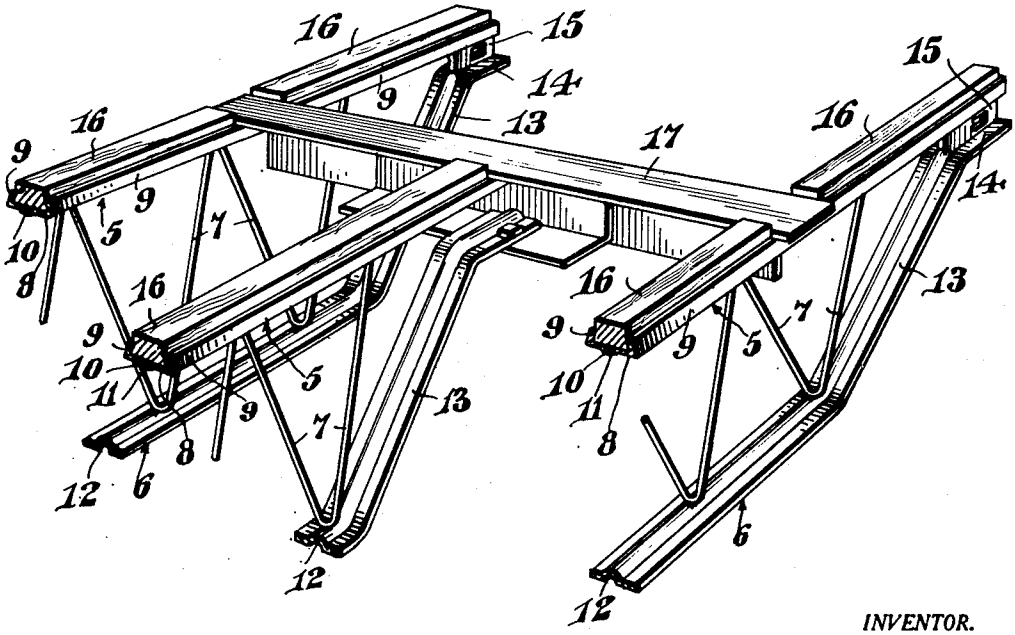

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Fig. 3.

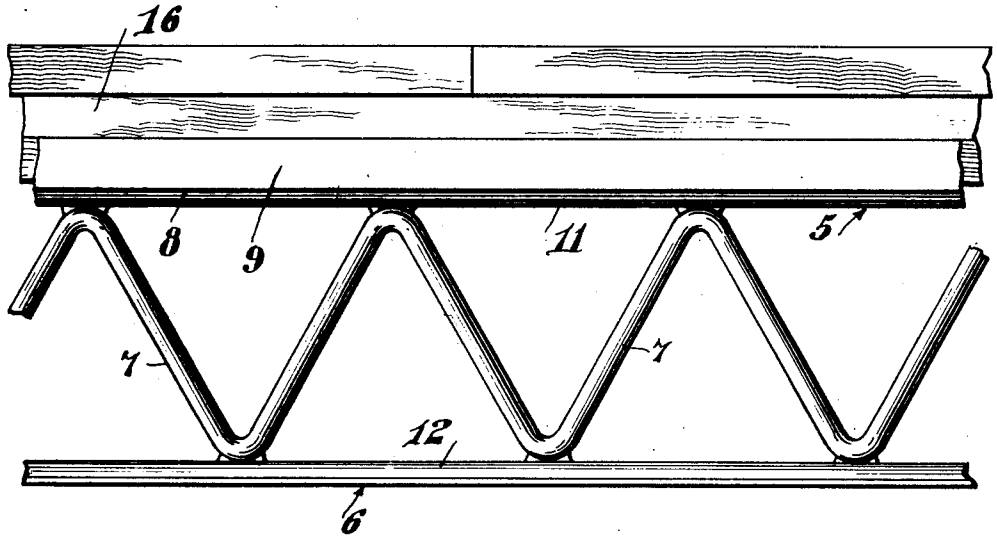
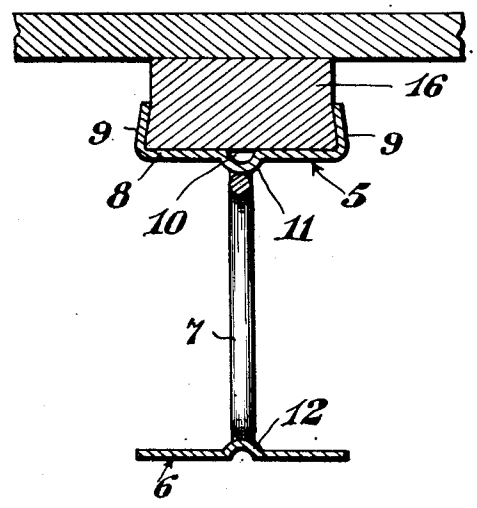


Fig. 4.



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Patented Sept. 27, 1932 1,879,295

UNITED STATES PATENT OFFICE

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JOIST

Application filed October 13, 1930. Serial No. 488,433.

The object of the present invention is to provide a skeleton joist, rafter or beam, with means by which overlying material, such as floors, roof decking and the like can be nailed directly to the beams, the anchoring material for such nails being effectively retained in place and the whole forming a unit that constitutes a practical article of manufacture.

In the accompanying drawings:

Figure 1 is a perspective view of an embodiment of the invention, showing portions of the novel floor joists and flooring laid thereon.

Figure 2 is a perspective view showing the said joists and the manner in which headers can be utilized therewith.

Figure 3 is a detail side elevation of a portion of the joist on an enlarged scale.

Figure 4 is a cross sectional view.

In the embodiment disclosed, the joist is of skeleton formation. It consists of an upper chord 5, a lower chord 6, and an intermediate lattice-work 7 connecting the chords.

The upper chord 5 is preferably of deformed metal, comprising a body wall 8 and upstanding side walls 9 formed by rolling or otherwise shaping sheet metal bars or plates. The central portion of the body is grooved as illustrated at 10, producing on the underside a rib 11. The bottom chord 6 may be a substantially flat bar of metal, except for a central upstanding longitudinal rib 12. The lattice 7 is preferably in the form of a rod bent to zigzag form with its bent portions electrically welded alternately to the ribs 11 and 12. The ends of the rafter are preferably reduced by bending upwardly the end portions of the lower chord 6, as shown at 13, and having the terminals 14 offset and parallel to the ends of the top chord 5. These end portions are joined by suitable pieces 15.

In the channel formed by the bottom wall 8 and the upstanding walls 9 is placed a nailing strip 16. This is preferably of wood, though obviously any material that will allow nails or other fasteners to be driven thereinto may be employed. The nailing strip 16, it will be noted, fills the channel and extends well above the top of the chord, to-wit, the side walls 9. It is preferably tapered upwardly and the walls 9 are bent inwardly, so as to grip the same. In other words, a substantial dovetail joint is provided. This securement is obtained by having the walls 9 originally in substantially perpendicular relation to the bottom wall and inserting the nailing strip 16, and then rolling and pressing inwardly the side walls 9. This obviously is preferably done at the manufacturing plant where rolling mechanism is available.

The ribs 11 and 12 of the upper and lower chords constitute not only reinforcements for stiffening the chords, but they provide satisfactory means for effecting electrically welded joints between the chords and the web. Further than that the rib 11 of the upper chord produces the groove in the bottom of the channel which is covered or bridged by the nailing strip.

It has been found that these nailing strips when of wood, in order to retain their position and prevent shrinkage must not have a moisture content exceeding ten per cent and if such wood is not employed, the strips are apt to become loose and the structure defective. It will be noted that the strip 16 has relatively broad bearings on the bottom wall 8, but that the channel 10 is left open beneath it. By having the nailing strip 16 extending well above the top edges of the side walls, the overlying floor or deck is supported and engaged only with these strips. This will be clear by reference to Figure 1. The extension of the strips furthermore permits their projecting upper sides to be notched and receive, for example, a cross header, as shown at 17 in Figure 2, this cross header being of T-form and its top plate being thinner than the projecting portions of the nailing strips 16, so that it will not interfere with the laying of a deck over the header 17 if desired. This header moreover can be supported directly on the upper edges of the side walls 9 if desired and on it can be hung an intermediate truss, as shown in Figure 2.

From the foregoing, it is though that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art with-

out further description and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim, is:

A joist or like structure comprising a chord member of formed metal providing a bottom wall and side walls integral therewith, forming a longitudinal channel, said bottom wall having a longitudinal groove on its inner side providing a longitudinal rib on its outer side, a second chord member, and a skeleton lattice electrically connecting the chord members and electrically welded to the rib, leaving the interior of the channel unobstructed, and a wood-like nailing strip located in the channel and bridging the groove.

In testimony whereof, I affix my signature.

JULIUS KAHN.