Oct. 7, 1941. N. L. PAVES 2,257,762

PANEL AND JOIST

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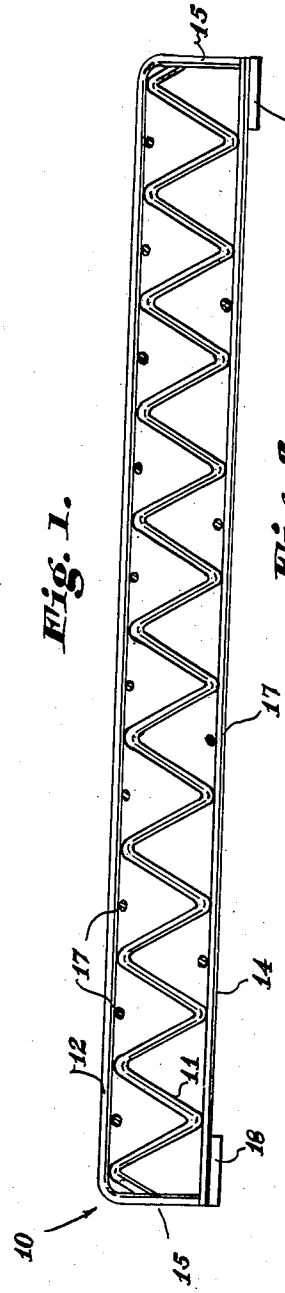


Fig. 1.

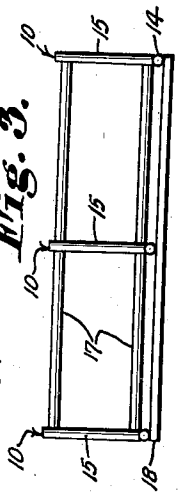


Fig. 3.

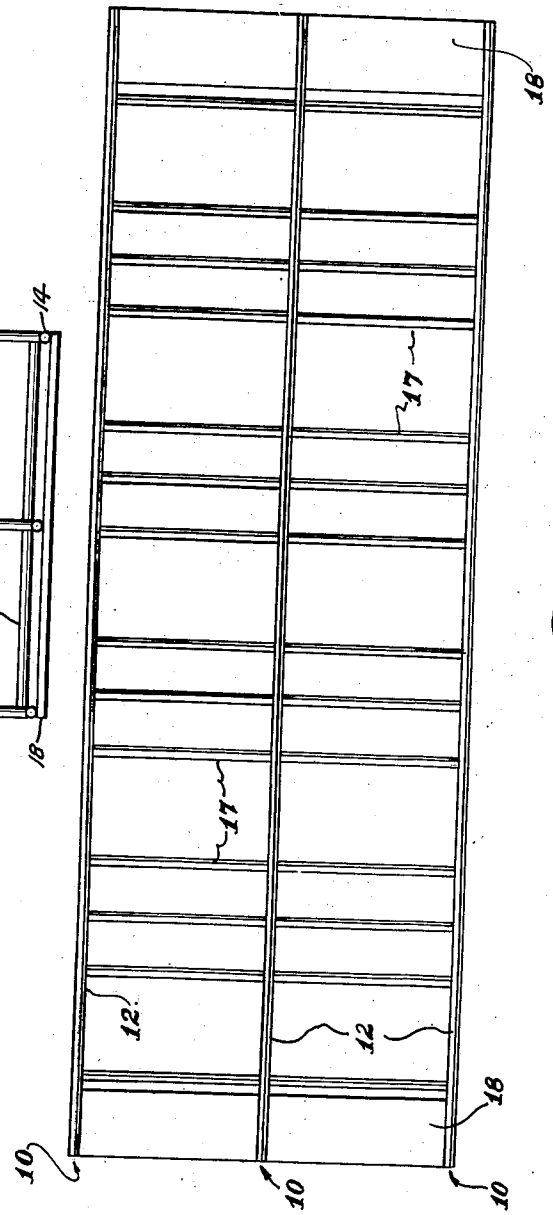


Fig. 2

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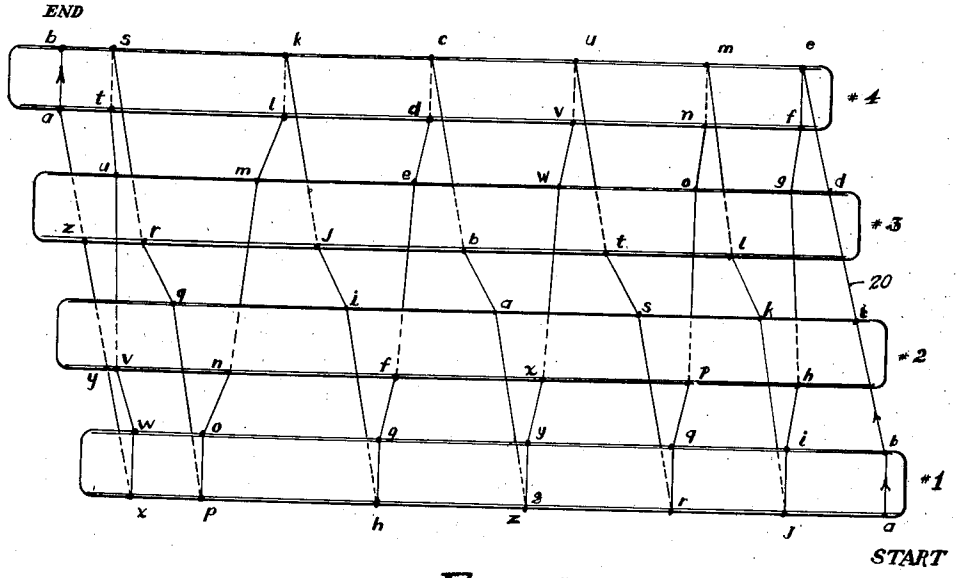


Fig. 4

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UNITED STATES PATENT OFFICE

2,257,762

PANEL AND JOIST

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Application February 17, 1940, Serial No. 319,395

1 Claim. (Cl. 189—34)

This application relates to prefabricated panels made of parallel spaced joists laid edgewise and transversely connected.

Steel joists are known for building construction. They comprise webs and chords. The webs are of rod or wire or bar stock or of expanded metal, and the chords, which are of considerably greater weight and thickness than the web material, are in the form of channel or angle or T bars welded to the webs at their upper and lower edges, or formed integral with them.

I have recognized that the chords are far greater in weight and thickness than required. I believe that such excess weight is provided because the trade has believed that joist having lighter chords could not withstand the shocks incident to shipment and handling and erection on the job. I have discovered that if I arrange two or more joists in a panel by laying them parallel, spaced, and edgewise, and transversely connecting them at the place of fabrication, that a panel of joists so connected can be shipped and handled as a unit without danger of bending of the joists thereof even though their chords be of light stock, such as light rod, bar, or channel, rather than of the heavier channels, angles, or T bars, now provided.

An important object of the invention, therefore, is to provide a panel of steel joists each of which has its chords made of light stock, with the joists laid parallel and edgewise and spaced and transversely connected by suitable means.

Other objects of the invention will presently be understood upon reference to the specification which follows and to the appended drawings. In these drawings:

Figs. 1, 2 and 3 are elevation, plan, and end views of a three joist panel.

Fig. 4 diagrammatically shows a four joist panel having the continuous joists connected by a diagonal bracing which is not shown in the panel of Figs. 1–3.

The three joist panel shown in Figs. 1–3 consists of three parallel joists 10 which are spaced apart and which are laid parallel, on their edges. Each joist consists of a web of light rod stock 11 bent to form a Warren type truss, an upper chord 12 welded to the upper apices of the truss, and a lower chord 14 welded to lower apices of the truss, with both chords being made of light rod stock. The upper chord has its ends bent down as indicated at 15 to form ends for the joist and all contacting points of the chords and web are welded to one another wherever possible.

For transversely connecting the three joists 10 to form the panel shown, tie rods 17 and bearing plates 18, and/or the bracing 20, may be utilized, with the parts welded wherever possible to the joists to form a panel.

The panel as a whole may be handled for shipment, fabrication, and erection on the job without danger of buckling of the joists, as contradistinguished from the case which would exist if joists of the form indicated, employing chords of light rod stock, were handled singly. That is to say, by combining joists into a panel, we can handle the joists without danger even though the joists be lighter in weight than joists now provided.

The panel as a whole may be fabricated in a factory and then shipped and erected on the job as a panel, thus resulting in a saving of time and money for installation.

Fig. 4 shows the use of a wire or band 20 continuously passed from joist to joist of the four joist panel to form continuous diagonal bracing for the four joists of the panel, with the contact points welded. The wire may start at the lower right corner of joist number 1(*a*) and run past contact points *a*—*z*, *a*—*z*, *a*—*b*, as indicated, terminating on the upper left corner of joist number 4(*b*).

Now having described the panel hereof, reference should be had to the claim which follows for a determination of the invention hereof.

I claim:

A unitary prefabricated floor or roof panel comprising horizontal joists in the form of trusses of rod or bar stock only laid edgewise, parallel and spaced apart, and transversely arranged means integrally connecting them, and comprising a continuous diagonal bracing arrangement of wire, running from the end of one outside joist to the opposite end of the other outside joist, over and under the joists alternately, back and forth in several courses, and out of perpendicular to the joists.

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