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METAL JOIST BRIDGING

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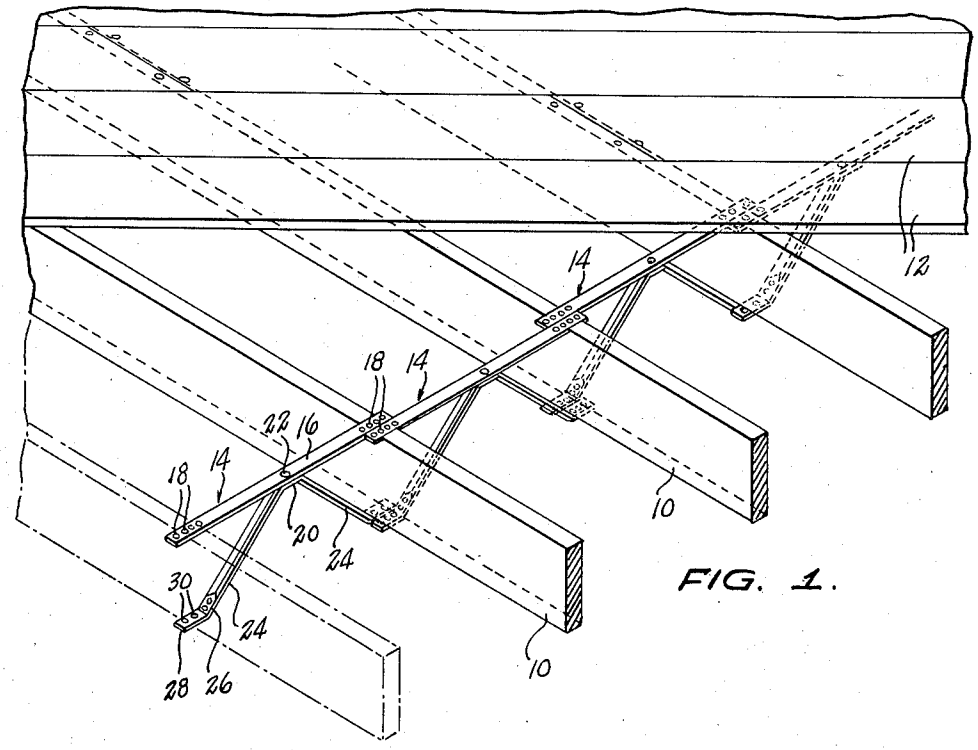


FIG. 1.

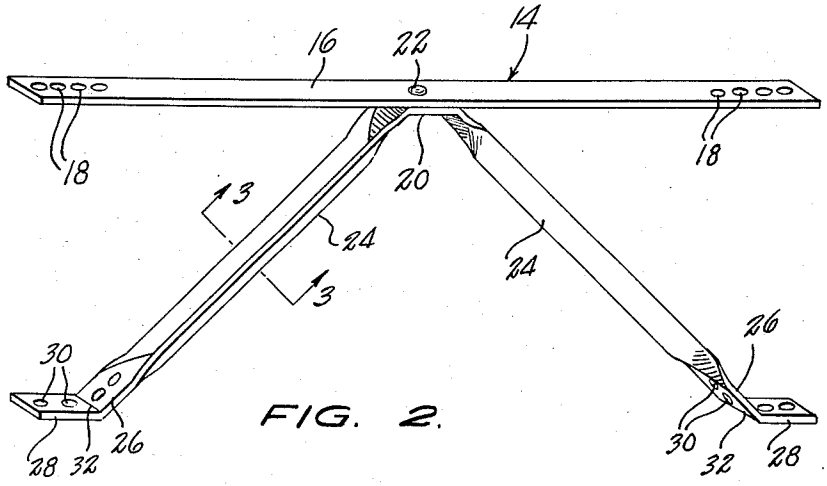
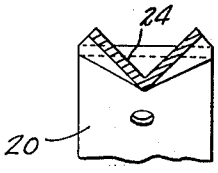


FIG. 2.

FIG. 3.



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METAL JOIST BRIDGING

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3 Claims. (Cl. 20—9)

The present invention relates to bridging, and more particularly has reference to metal bridging adapted to be used for bracing floor and ceiling joists.

Bridging, both wood and metal, heretofore designed has in many instances required removal of the bridging at various locations, to permit heating and other conduits to pass through the space between adjacent joists. One important object of the present invention, accordingly, is to provide bridging that will permit the passage of conduits up to as much as six inches in diameter, without interference.

Summarized briefly, the bridging devised for the above stated purpose comprises a horizontal bar connectable at its opposite ends to and extending transversely between adjacent joists. A second bar of inverted V shape is connected at its apex to the midlength portion of the first bar, and has short, horizontal extensions at its ends adapted to be secured to the bottom edges of the joists. Both bars are adapted to be cheaply and easily manufactured from inexpensive metal stock, and the particular shapes of the bars, the locations of their connections, and the cross sectional shape of the V-shaped bar all cooperate to provide a light, easily applied, strong bridging means.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing in which like reference characters designate like parts throughout the several views and wherein:

Figure 1 is a perspective view showing fragmentarily a plurality of joists and an associated floor or ceiling, provided with bridging formed according to the invention;

Figure 2 in an enlarged perspective view of one of the bridging elements per se; and

Figure 3 is a transverse section, still further enlarged, on line 3—3 of Figure 2.

Nailed to a plurality of conventional joists **10** are floor or ceiling boards **12**. To brace the joists, there are provided bridging elements **14** formed according to the present invention. These are located wherever desired along the length of the joists, and are usable to advantage in discharging the two main purposes of joist bridging which are, namely, the proper distribution of weight applied to the floor or ceiling, and the prevention of spread of the joists. The bridging elements are used at the center of a long span, but can be used elsewhere if desired.

Each bridging element **14** includes an elongated, straight, flat top bar **16**, and it will be understood in this regard that lighter metal can be used without sacrificing strength and rigidity by employing angle iron material. In this event, the ends of the angle iron would be flattened for nailing.

Formed in each end portion of the top bar **16** is a series of apertures **18**, the apertures of the series extending longitudinally and centrally of the bar. The apertures permit the selective location of nails along the length of the top bar **16**, the selection being made according to the distance between joist centers.

A short, flat bight portion **20**, secured to the midlength portion of bar **16** by a rivet **22** or if desired by a bolt and nut, is formed medially between the ends of a bottom bar of inverted V shape. The bottom bar has straight legs **24**, diverging downwardly from opposite ends of bight **20**, and as shown in Figure 3 the legs, for the greater part of their lengths, are of V or U shaped cross section to impart rigidity thereto.

The respective legs **24** at their divergent ends are flattened as at **26**, with the flattened parts **26** merging into horizontally, outwardly projecting, short extensions **28**. Formed in the portions **26**, **28** are openings **30**, there being at the outer end of each leg a longitudinal series of said openings continuing through both the extension **28** and portion **26**.

At least some of the apertures of the top bar **16** are aligned with corresponding apertures of the respective extensions **28** along lines perpendicular to the respective planes of the top bar and extensions. In the illustrated example, thus, the apertures **30** formed in the extensions **28** are aligned with those two apertures **18** nearest the corresponding end of the top bar **16**. As a result, when the device is in operative relationship to a joist **10**, corresponding, aligned apertures **18**, **30** will be disposed at corresponding locations on the top and bottom surfaces of the joist **10**.

Initially, the extensions **28** would be coplanar with the portions **26**, but would be bendable along lines **32** extending transversely of the legs, to engage against the bottom of the joists **10** when the bridging is applied.

It will be seen that the construction provides a particularly strong bridging between floor and ceiling joists which will permit the passage of conduits even if the conduits are of maximum diameter.

In use of the bridging, the bar **16** is nailed across the top of the joists as shown in Figure 1, with nails being directed through selected openings **18**. After the flooring or sheathing **12** is laid, the legs **24** are engaged tightly at their divergent ends against the bottoms of the joists, with extensions **28** being bent as necessary, and extensions **28** are then nailed to the joists through apertures **30**.

As previously noted, a rivet **22** is employed to connect the top and bottom bars. However, if a bolt and nut are used, these could be left loose initially, to be tightened after the bridging is installed.

The apertures **18**, **20** are so spaced so as to permit the bridging to be used on joists spaced from twelve to sixteen inches apart from center to center. The legs **24**, in this connection, can be bent if necessary to selected angular relationship to locate the divergent ends thereof the necessary distance apart.

Further, the design is such that the article may be delivered to the user without any bends whatever in the metal, to facilitate handling and shipping.

The metal is sufficiently light to permit the workman to bend the same with his fingers when installing the bridging.

It will be seen that should, for example, adjacent joists tend to warp or bend to change the distance between each other, the pressures resulting would be transmitted through the legs **24** to the point of connection of the legs to the top bar. The top bar itself resists such pressures, further, since it extends in a straight line between the joists, perpendicularly to the length and planes of the joists. A particularly strong bridging means thus is provided, at low expense, without detracting from ease of installation.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and de-

scribed, since such construction is only intended to be illustrative of the principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. Joist bridging comprising a straight top bar lying wholly in one plane and having at each end a longitudinal series of apertures for receiving fastening elements extending into the top surfaces of adjacent joists with the top bar extending between the joists perpendicularly to the length and planes thereof; and a bottom bar approximately in the shape of an inverted V having at its apex short, flat bight portions in face to face contact with and connected to the top bar, the bottom bar having legs formed at their outer ends each with an extension having a longitudinal series of apertures for receiving fastening elements extending into the bottom surfaces of said joists, the extensions lying in a common plane parallel to that of the top bar, some at least of the apertures of the top bar being aligned with corresponding apertures of the respective extensions along lines perpendicular to said planes of the extensions and top bar, at least the bottom bar being of material bendable along lines extending transversely of its end portions and bight, for bending of the legs of the bottom bar into selected angular relationships relative to one another and to the top bar, and for bending of the divergent ends of the legs along lines extending transversely thereof to provide said extensions bearing against the bottom surfaces of joists, while maintaining the extension in a common plane parallel to that of the top bar with the apertures of the top bar and extensions being maintained in alignment.

2. Joist bridging comprising a straight, elongated, flat top bar having at each end a longitudinal series of apertures; and a bottom bar approximately in the shape of an inverted V having an apex portion in contact with and connected to the midlength portion of the top bar, said bottom bar including legs diverging downwardly from the connection of the bottom bar to the top bar, said legs terminating at their divergent ends in outwardly directed, flat extensions disposed in a common plane parallel to the plane of the top bar, said extensions being formed with longitudinal series of apertures some at least of which are aligned, along lines perpendicular to said planes, with corresponding apertures of the top bar.

3. Joist bridging comprising a straight, elongated, flat top bar having at each end a longitudinal series of apertures; and a bottom bar approximately in the shape of an inverted V having an apex portion in contact with and connected to the midlength portion of the top bar, said bottom bar including legs diverging downwardly from the connection of the bottom bar to the top bar, said legs terminating at their divergent ends in outwardly directed, flat extensions disposed in a common plane parallel to the plane of the top bar, said extensions being formed with longitudinal series of apertures some at least of which are aligned, along lines perpendicular to said planes, with corresponding apertures of the top bar, said legs being respectively swingable upon said apex portion to effect selective adjustments in the spacing of the extensions from the ends of the top bar, to accommodate joists of different widths therebetween, the legs, at their free ends, being of a material bendable along a line extending transversely of the respective legs, for adjusting the legs of the respective legs following selective adjustments of the legs about the axis of the connection of the legs to the apex portion, whereby to maintain the corresponding apertures of the top bar and extensions in alignment with the extensions being maintained in a common plane parallel to that of the top bar.

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