

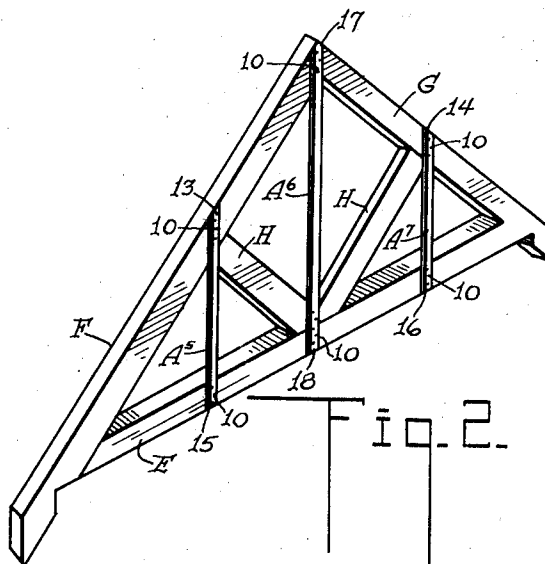
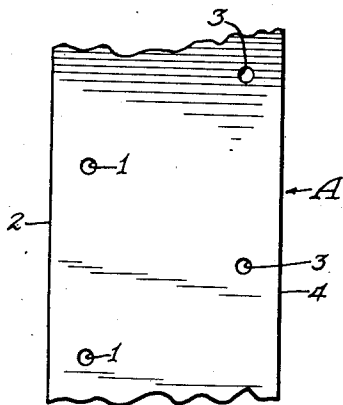
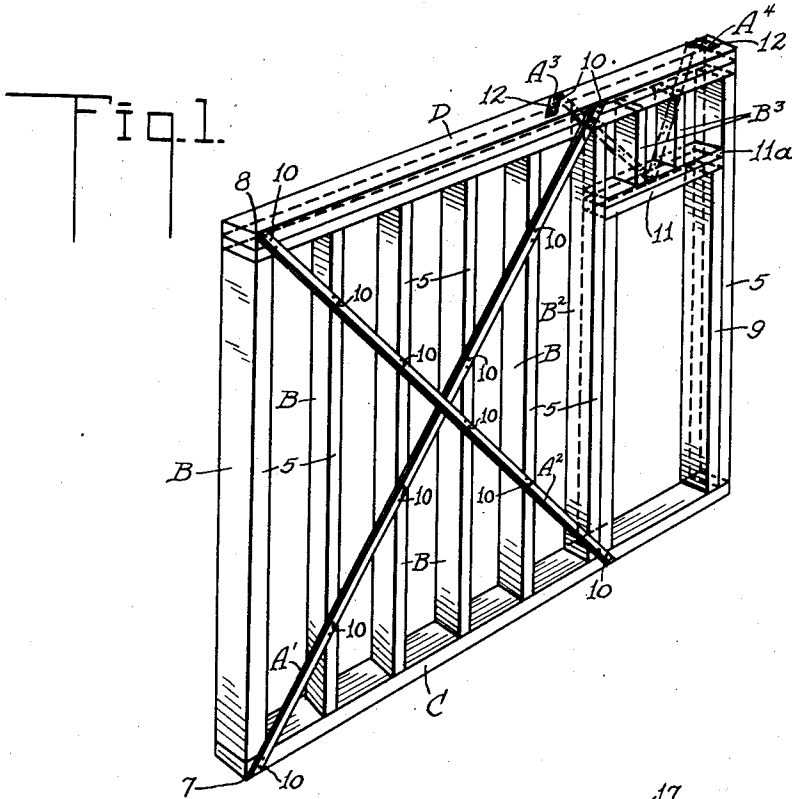
Nov. 17, 1942.

R. O. BOYDSTUN

2,302,101

METAL BRACING

Filed March 31, 1941



INVENTOR
 REVEAL O. BOYDSTUN
 BY *Munn, Anderson & Lilly*
 ATTORNEY

UNITED STATES PATENT OFFICE

2,302,101

METAL BRACING

Reveal O. Boydston, Pittsburg, Calif.

Application March 31, 1941, Serial No. 335,999

3 Claims. (Cl. 20-4)

An object of my invention is to provide a metal bracing that may be quickly and readily secured to the front faces of wall studs, the bracing being disposed in a diagonal manner across the studs to act as reinforcing for the wall and to take the place of the customary wood bracing. The metal bracing is in the form of a perforated metal strip and this can be cut to any desired length and thus there is no waste. The bracing may also be used over an opening in a wall to "pick-up" the weight at this point, and it may also be used as a pick-up for trusses. In the case of a truss, the bracing strips may extend vertically if desired. The perforations in the metal bracing are provided to receive nails or other fastening means that are driven through the openings and into the frame work. The openings are staggered so as not to weaken the bracing.

The distinct advantage of metal bracing over wood bracing lies in the fact that the metal bracing may be applied to the wall or truss with greater speed. Also, metal bracing will afford greater strength, while at the same time lessening the weight of the building. It will further be apparent that the metal bracing will not interfere with the placing of water pipes and electrical conduits within the wall sections and between the studs. If wood bracing is used, the plumber or electrician must bore holes through the bracing in order to pass the pipes or conduits therethrough, and this weakens the bracing. This is entirely eliminated with metal bracing construction, and considerable time is thereby saved.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming a part of this application, in which:

Figure 1 is a perspective view of a wooden wall construction illustrating the metal bracing attached thereto;

Figure 2 is a perspective view of a wooden truss further illustrating the use of the metal bracing as applied to a truss; and

Figure 3 is a plan view of a portion of the metal bracing used.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

In carrying out my invention, I provide my improved metal bracing which is indicated generally at A in Figure 3. The metal bracing comprises a metal strip of any width and thickness desired, and the strip may consist of any different kind of metal desired. A row of openings 1 is placed parallel to and near one edge 2 of the strip, and a second row of openings 3 is placed parallel to and near the opposite edge 4 of the strip. It will be noted that the openings in the row 1 are staggered with respect to the openings in the row 3. This staggering of the openings will strengthen the metal strip and will provide automatic guides for positioning nails in the right places for hammering into the wooden frame. The nails will be placed diagonally with respect to each other and thus the strip will be secured to the frame work in a more rigid manner than would be possible where the openings in one row are arranged directly opposite from the openings in the other row.

In Figure 1, I illustrate strips of the metal bracing A as being nailed to the front faces 5 of wall studs B. Two of these strips are designated at A1 and A2, and it will be noted that they extend diagonally from the corners 7 and 8 of the wall to the stud B2 that is disposed adjacent to the door frame 9. It will be noted that nails 10, or other suitable fastening means, are driven through certain of the perforations 1 and 3 that overlie the faces of the studs and on into the studs B, bottom plate C, and top plate D. At least two nails are hammered into each stud B and the two nails are arranged on the diagonal since one nail is placed in each row of openings. The crossing of the bracing strips in the manner indicated reinforces the stud partition, and this is especially efficient reinforcing against forces created by earthquakes.

It will also be seen from Figure 1 that shorter strips of the metal bracing A3 and A4 are secured to the center of the door frame top plate 11, and these strips extend diagonally and upwardly to the top plate D of the stud partition or wall. The short strips A3 and A4 are secured to the short studs B3 disposed above the door frame 9 and between the top plate 11a and the wall top plate D. Two nails are hammered into each short stud B3. If desired, the upper ends of the strips A3 and A4 may be bent over the top plate D and secured to the horizontal upper surface thereof as at 12. It will be noted that the space between the studs is free of any wood bracing and therefore water pipes and electrical conduits

may be received in the spaces between the studs and will not interfere with the metal bracing.

Another form of pick-up which can be performed by the metal bracing is illustrated in the wooden truss of Figure 2. The tie beam E of the truss extends between rafter members F and G, and wooden intermediate struts H connect the center of the tie beam E with the centers of the rafter members F and G. Pick-up strips consisting of my metal bracing are applied at A5, A6, and A7. The metal strips are preferably vertically disposed and extend downwardly from the apices of the various triangles formed in the truss and act as suspension rods. For example, the strips A5 and A7 have their upper ends connected substantially to the mid-points of the rafters F and G as shown at 13 and 14, while the lower ends are connected to the tie beam E as indicated at 15 and 16. The center metal strip A6 acts as a suspension rod or king post and has its upper end connected at 17 to the place where the rafters F and G are connected to each other. The lower end of the same metal strip A6 is connected at 18 to the center of the tie beam E and supports the center joint formed by the intermediate struts H. All three metal strips are used as pick-ups to support the weight of the tie beam E and the intermediate struts H. It will be noted that even in this arrangement the staggered openings 1 and 3 cause the nails to be diagonally placed with respect to each other. There is far less tendency for the metal strips to pull loose where the nails are diagonally arranged than where nails are arranged in a non-diagonal manner.

The metal bracing, although nailed on the outside of studding, is placed under the sheathing or lath of the completed wall. The cost of the metal bracing is as cheap or cheaper than the wood bracing replaced. The amount of time necessary to install the metal bracing is far less than that to install wooden bracing. When electrical con-

duits or pipes are placed in the wall using wood bracing, it is necessary to bore holes through certain of the bracing members to pass the conduits and pipes therethrough. The bracings thus perforated are weakened and weaken the wall construction. The use of metal bracing does away with the time consuming operation of boring holes therethrough to receive conduit and pipes and remains as strong or stronger than the non-perforated wood bracing.

I claim:

1. The combination with a stud partition construction including a plurality of vertically disposed studs arranged parallel with respect to each other and disposed between top and bottom plates; of metal bracing contacting with the faces of the studs and extending diagonally from the top to the bottom of the stud partition; said bracing having staggered nail-receiving openings therein; and nails received in the openings that overlie the studs and top and bottom plates for securing the metal bracing to the wall.

2. The combination with a stud partition composed of studs, top and bottom plates, and a door frame having a top door frame plate; of metal bracing diagonally arranged and being nailed to the faces of the studs and plates; and additional metal bracing secured to the door frame top plate and extending upwardly at a diagonal to the stud partition top plate and being nailed to the faces of the studs and both top plates for constituting a "pick-up" for the door frame top plate.

3. The combination with a stud partition composed of studs, top and bottom plates, and a door frame having a top door frame plate; of metal bracing secured to the door frame top plate and extending upwardly at a diagonal to the stud partition top plate and being nailed to the faces of the studs and to both top plates for constituting a "pick-up" for the door frame top plate.

REVEAL O. BOYDSTUN.