April 16, 1940. C. O. LARSON 2,197,187

SAWHORSE

Filed Oct. 11, 1938

FIG. 1

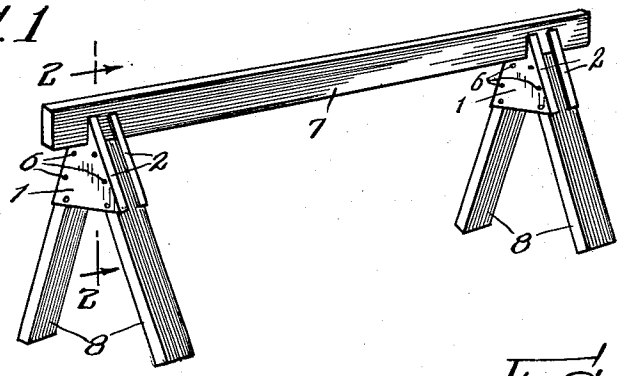


FIG. 2.

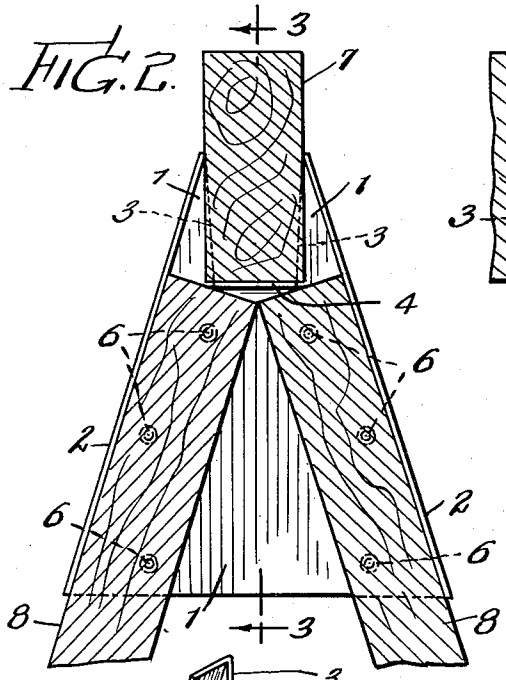


FIG. 3.

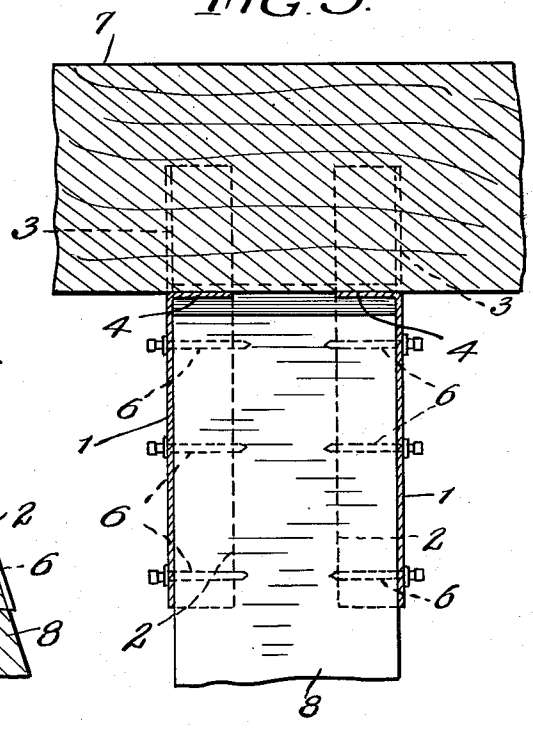
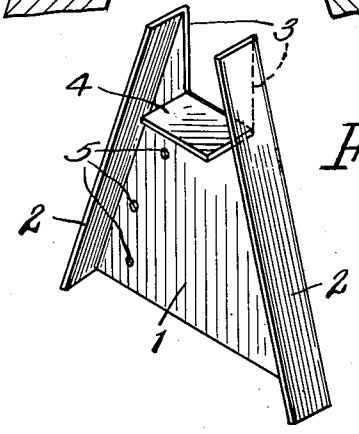


FIG. 4.



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2,197,187

SAWHORSE

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Application October 11, 1938, Serial No. 234,419

2 Claims. (Cl. 304—5)

This invention relates to structural joints, and more particularly to those employed in sawhorses and things that are ordinarily made of wood, and which require strong joints between the beams or wood members thereof.

Generally stated, the object of the invention is to provide a novel and improved construction and arrangement whereby duplicate metal plates, each provided with converging flanges and a notch, are advantageously used in a novel and effective manner to form strong joints between the beams or members thereof, such as the joints between the legs and the top portion of a sawhorse, or some similar structure.

It is also an object to provide certain details and specific features of construction tending to increase the general efficiency and desirability of a metal joint of this particular character.

To the foregoing and other useful ends, the invention consists in matters hereinafter set forth and claimed and shown in the accompanying drawing, in which—

Fig. 1 is a perspective of an ordinary sawhorse provided with sheet metal joints embodying the principles of the invention.

Fig. 2 is a transverse section on a larger scale, on line 2—2 in Fig. 1 of the drawing.

Fig. 3 is a vertical longitudinal section on line 3—3 in Fig. 2 of the drawing.

Fig. 4 is a perspective of one of the sheet metal plates forming said joints.

As thus illustrated, the invention comprises duplicate sheet metal plates of the kind shown in Fig. 4 of the drawing, each plate having an outside or body wall 1, inturned and upwardly converging side flanges 2, an upper notch 3 between the converging ends of the flanges, and an inturned flange 4 forming a seat for the bottom of said notch. If desired, screw or nail holes 5 can be provided in the body wall 1, for the nails 6, indicated in the drawing, or for screws if desired. Preferably, nails or screws that can be easily withdrawn are employed, so that the structure may be knocked down and taken apart when desired.

As shown, the invention is applied to an ordinary sawhorse comprising a conventional top beam 7 disposed in the notches 3 of four plates of the kind shown and described. The upwardly converging legs 8 of the sawhorse, ordinarily made of wood like the top bar or beam 7, are engaged by the flanges 2 in the manner shown, and the side edges of the notches 3 are preferably formed to cut into or enter the sides of the beam 7 a distance, as indicated in Fig. 2 of the drawing, whereby the beam 7 is rigidly held against endwise displacement. When the nails or screws 6 are inserted into the legs of the sawhorse, a very strong construction is formed. Advantageously, it will be seen, the members of each pair of plates can be spaced any desired distance apart, practically, depending upon the size or thickness of the legs of the sawhorse.

Thus, the plates do not need to be made in rights or lefts, as each plate is either a right or a left. The notches 3, it will be seen, can be slightly tapered downwardly, if desired, so that the beam 7 will have a wedging effect therein, causing the edge of the notches to cut into the beam, when the latter is forced into position. When the parts are assembled, the flanges 4, it will be seen, form a seat for the bottom or under side of the beam 7 of the sawhorse.

Thus, the tapered plates, with their converging flanges, can be inexpensively stamped or pressed out of sheet metal, of suitable thickness and quality, to form rigid joints for sawhorses or other similar structures. The top beam 7 can be pulled out of the notches 3, if desired, and the legs can be left connected together by the plates, if desired, for the purpose of storage or transportation. But, as stated, if desired, the screws or nails can also be removed, if more compact packing or building of the parts together is necessary or desirable.

While the metal plates shown in the drawing are described as being made of sheet metal, preferably, for average or ordinary purposes, it is obvious, of course, that these plates can be made of cast metal, which might be preferable for larger or heavier work, such as a heavier sawhorse, and hence the invention is not limited to any particular method of forming these plates.

Also, it is obvious that the flanges 2 may have holes therein, for nails or screws, if such is necessary or desirable, and that, for example, each flange could have its upper portion provided with a hole for a screw or nail to be inserted in the top member 7 of the sawhorse. These holes, like the holes 5 previously described, can be formed in the sheet metal or cast metal in any suitable or desired manner.

Moreover, it is obvious that bolts can be used, instead of either nails or screws, if such is necessary or desirable, for fastening the bracket plates to any desired structure, by making the said holes in the plates large enough for bolts that are suitable for that purpose.

With the bracket plates formed as shown and

described, it will be seen that the tapered notch 3 of each plate provides edges that cut into the beam 7, and, in that way, make it unnecessary to provide any other means or expedients for fastening the beam in place in the upper ends of the plates. The edge portions at each side of each notch serve to stiffen the upper end portions of the flanges 2, so that the latter will not be liable to spread or bend apart at their upper ends, when the beam is forced downward into position.

It will be seen that the nails 6 constitute a plurality of fasteners inserted through the body wall of each plate, into the members 8, parallel with the beam 7 resting in the notches of said plates. Thus the parts are very easily and quickly assembled, and as easily taken apart.

It is important to observe, it will be seen, that the invention contemplates two separately formed sheet metal plates that have no physical connection between them, of any kind whatever, when incorporated in the sawhorse or other structure, except the beam 7 and the legs 8 of the structure, as these wooden members form the only physical connection between the two plates of each pair. Moreover, each plate, considered by itself, is fastened directly and rigidly to the members 8 of the structure, so that these legs 8 cannot be removed except by pulling out the nails 6 or other fastening provisions.

An important advantage is that the assembling of the different parts is very much facilitated and simplified. Two of the leg members of the sawhorse can be laid on an ordinary carpenter's bench, with their upper ends together, and one of the metal plates can then be placed over these upper ends, and the said members can be adjusted endwise until their said ends bear firmly against the flange 4 of said plate. Then the nails 6 can be be driven through the preformed holes in the sheet metal to thus individually and separately fasten the plate to the two sawhorse legs. The structure can then be turned over and the other plate of the pair can then be placed on the legs and then fastened thereto by the driving of the nails 6 at the other side of the tapered structure thus formed. The two pairs of legs can be thus separably fastened together, by sheet metal plates that are applied individually and separately to each pair of legs. Thereafter, the two pairs of legs can be positioned upright, and then the horizontal beam 7 can be forced into the downwardly tapered notches formed in the top portions of said plates. Thus, the assembling of the parts becomes merely a matter of using a carpenter's bench or even the floor for nailing the individual and separate plates to the legs of the sawhorse. Thus, the flanges 4 have an important function, as they not only serve to support the horizontal beam 7 in its predetermined position, but also serve as positioning means in the assembling of the different parts for the correct and proper nailing of each metal plate separately and individually to the wood legs.

What I claim as my invention is:

1. In a device of the class described, a top beam, a pair of legs convergingly related to each other and to the beam at opposite end portions of the beam, and means securing each pair of legs together and to the beam, said means comprising a pair of separate, independent and identical stamped sheet metal plate members for each pair of legs, each plate member including a tapered quadrilateral face portion having an approximately rectangular notch inset from its shorter parallel side receiving the top beam and having straight flanges right angularly extending from its converging sides engaged with the outer faces of said legs, and fastening means penetrating openings in the face portion of each plate member in the area thereof covered by said legs and fixed in said legs to secure each plate member to the adjacent pair of legs independently of each other plate member and the fastening means therefor, including a flange right-angularly directed from the face of each plate member at the base of the notch therein, said horizontal flange serving as a seat for the top beam.

2. In a device of the class described, a top beam, a pair of legs convergingly related to each other and to the beam at opposite end portions of the beam, and means securing each pair of legs together and to the beam, said means comprising a pair of separate, independent and identical stamped sheet metal plate members for each pair of legs, each plate member including a tapered quadrilateral face portion having an approximately rectangular notch inset from its shorter parallel side receiving the top beam and having straight flanges right angularly extending from its converging sides engaged with the outer faces of said legs, and fastening means penetrating openings in the face portion of each plate member in the area thereof covered by said legs and fixed in said legs to secure each plate member to the adjacent pair of legs independently of each other plate member and the fastening means therefor, including a horizontal flange right-angularly directed from the face of each plate member at the base of the notch therein, with the top ends of the adjacent legs engaged with and stopped by said horizontal flange and the bottom of the top beam seated on the upper face of said horizontal flange.

CHARLES O. LARSON.