Dec. 13, 1960 C. O. LARSON 2,964,123

VERSATILE BRACKET

Filed April 3, 1958

FIG. 1

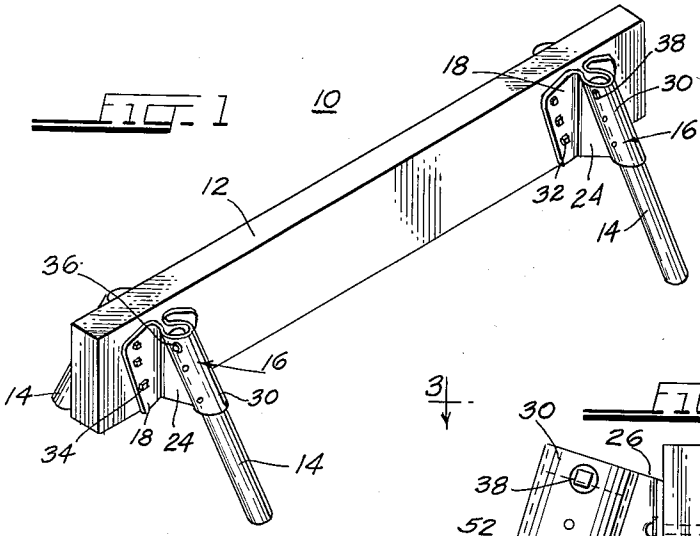


FIG. 6

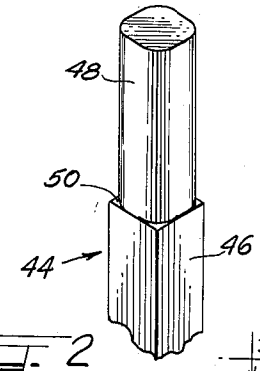


FIG. 2

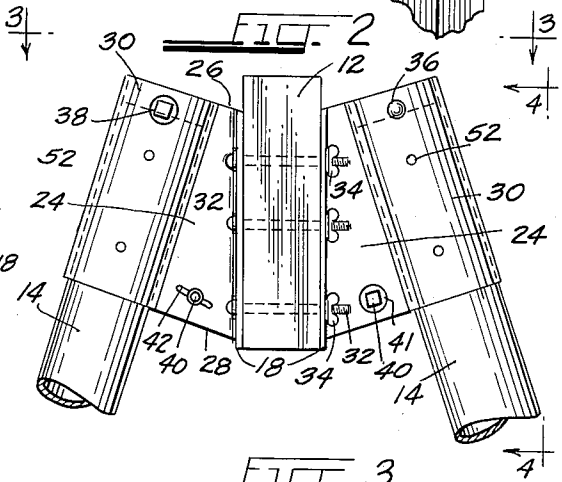


FIG. 4

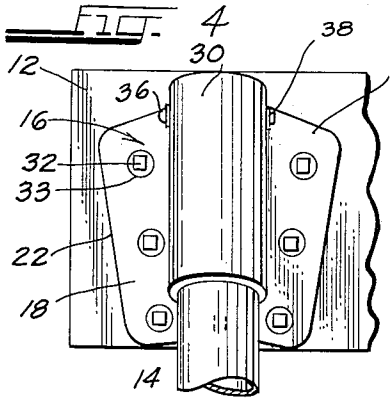


FIG. 3

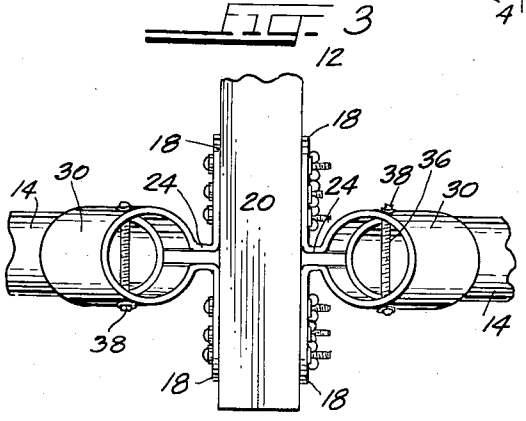
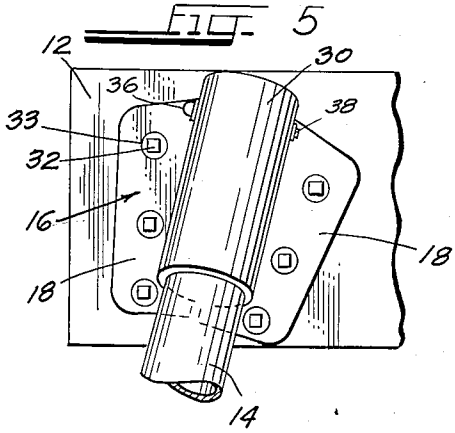


FIG. 5



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2,964,123

VERSATILE BRACKET

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3 Claims. (Cl. 182—181)

This invention relates to sawhorses, trestles and the like and to brackets for assembling legs and crosspieces to form such devices.

An important object of the present invention is to provide an improved sawhorse, trestle or the like in which the legs of the sawhorse have substantially the entire upper end thereof supported.

Another object of the invention is to provide in a device of the type set forth a structure in which the legs can be slipped into position easily and quickly and can be thereafter rapidly fastened in supporting position.

Yet another object of the invention is to provide a device of the type set forth which can utilize either pipes or wood dowels having rounded upper ends as the support legs.

Still another object of the invention is to provide a structure in which the position of the legs with respect to the other portions of the structure is quickly and accurately determined, the leg being clamped in the predetermined position quickly and easily.

A further object of the invention is to provide an improved bracket for use in assembling sawhorses, trestles and the like which when assembled with suitable legs and a crosspiece will produce a device fulfilling the objects set forth above.

These and other objects and advantages of the invention will be better understood from the following description when taken in conjunction with the accompanying drawing. In the drawing wherein like reference numerals have been utilized to designate like parts throughout:

Figure 1 is a perspective view of a sawhorse made in accordance with and embodying the principles of the present invention, the sawhorse being assembled using brackets also made in accordance with the present invention;

Figure 2 is an enlarged end view with certain portions broken away of the sawhorse assembly of Figure 1;

Figure 3 is a top plan view of the portion of the sawhorse illustrated in Figure 2 and substantially as seen in the direction of the arrows along the line 3—3 thereof;

Figure 4 is a side view of the portion of the sawhorse illustrated in Figure 2 substantially as seen in the direction of the arrows along the line 4—4 thereof, the bracket being shown attached to the crosspiece in a position such that the legs define a plane substantially perpendicular to the longitudinal axis of the crosspiece;

Figure 5 is a view similar to Figure 4 showing the bracket attached to the crosspiece whereby to place the legs in a position such that a plane defined thereby is disposed at an obtuse angle with respect to the longitudinal axis of the crosspiece; and

Figure 6 is a perspective view of the upper end of a wood dowel leg that can be used in place of the pipe legs illustrated in Figures 1 through 5 of the drawing.

Referring now to Figure 1 of the drawing there is shown a sawhorse assembly generally designated by the numeral **10** made in accordance with and embodying the principles of the present invention. The sawhorse **10** includes a crosspiece **12** and four legs **14**, the legs being arranged in two pairs with one pair disposed at one end of the crosspiece **12** and the other pair arranged adjacent the other end thereof. Each leg **14** is held in converging relationship with the associated end of the crosspiece **12** by means of a bracket generally designated by the numeral **16**. The crosspiece **12** is in general rectangular in cross section as may be best seen from Figures 1 and 2 of the drawing and may be preferably formed of wood. The legs **14** in the form of the invention illustrated in Figures 1 through 5 of the drawing are formed of hollow pipe which may be formed of any suitable material such as iron. More specifically, the crosspiece **12** may be formed of 1" x 6" lumber in which case the pipes forming the legs **14** may be ¾" pipes. Alternatively, the crosspiece **12** may be formed of 2" x 6" lumber in which case the legs **14** will be 1½" pipes.

The construction of the brackets **16** can be best seen from Figures 2, 3 and 4 of the drawing. Each bracket **16** includes a pair of attachment flanges **18**, the flanges **18** being formed to lie with the surfaces thereof in common planes. The adjacent edges **20** of the attachment flanges **18** are disposed substantially parallel to each other and are spaced apart when the flanges are assembled with the crosspiece **12** as is best illustrated in Figure 3 of the drawing. The outer edges **22** of the attachment flanges **18** are disposed at an acute angle with respect to the adjacent edges **20** whereby the upper end of the attachment flanges **18** as viewed in Figure 4 are slightly wider than the lower ends thereof.

There is provided integral with each of the flanges along the edge **20** thereof an outwardly extending support flange **24**, each flange **24** being disposed substantially perpendicular to the associated attachment flange **18**. The two support flanges **24** are disposed substantially parallel to each other and extend outwardly away from the associated crosspiece in use. As may be best seen in Figure 2 the upper edge **26** of each of the flanges **24** is substantially shorter than the lower edge **28** thereof.

Interconnecting the two support flanges **24** is a part-cylindrical leg receiving portion **30**. The portion **30** is shaped so that the internal diameter thereof is slightly greater than the pipe leg **14** to be received therein. Preferably the portion **30** extends from the lower edge **28** of the support flanges **24** upwardly to the upper edge **26** thereof.

When assembling the sawhorse **10**, a pair of brackets **16** is attached to the crosspiece **12** adjacent to one end thereof. To this end the attachment flanges **18** are each provided with openings therein to receive bolts **32**. The crosspiece **12** is also provided with suitable apertures therein to receive the bolts **32**. In order to assemble the brackets **16** on the crosspiece **12**, bolt **32** is passed through each set of aligned apertures in the crosspiece **12** and the associated brackets **16**. Each bolt is then

provided with a wing nut 34 which can be quickly turned down to tighten the brackets 16 on the crosspiece 12.

Means is provided on each of the brackets 16 to limit the distance that the associated pipe leg 14 can be inserted therein. More particularly, a pair of aligned apertures is provided adjacent to the upper end of each of the leg receiving portions 30 to receive therehrough a carriage bolt 36 which is provided on the other end thereof with a lock nut 38. With this construction, the pipes 34 can be quickly inserted in the leg receiving portions 30 and the bolts 36 determine the position of the leg 14 in the associated bracket 16.

Once the pipe leg 14 has been inserted into position, it is desirable to tighten the leg receiving portion 30 thereabout whereby firmly to clamp the pipe leg 14 in operative supporting position. To this end the leg receiving portion 30 is formed of a bendable material such as metal and is formed of a gauge of metal such that it can be deformed whereby to clamp about the leg 14. The support flanges 24 are also formed resilient at their junction with the attachment flanges 18. Aligned apertures are also provided adjacent to the lower edge 28 of the support flanges 24 to receive therethrough a carriage bolt 40. A wing nut 42 is provided on the outwardly extending threaded end of the carriage bolt 40. Upon tightening of the wing nut 42, the edges of the support flange to which the leg receiving portion is attached will be forced toward each other whereby slightly to deform the leg receiving portion 30 about pipe 14 to clamp the upper end of the pipe 14 therein.

In order to make the sawhorse assembly of Figure 10, the crosspiece 12 is first provided with the two rows of aligned apertures adjacent to each end to receive the bolts 32 therethrough. The brackets 16 are then placed on opposite sides of the crosspiece 12 and the bolts 32 inserted in the aligned apertures. After the wing nuts 34 have been tightened upon the bolts 32, the brackets 16 are firmly assembled on the crosspiece 12.

If the bolts 36 have not been placed in operative position heretofore, they are now positioned as illustrated in Figures 2, 3 and 4. Next the pipes 14 are slipped into the leg receiving portions 30. The bolt 40 is positioned through the aligned apertures in the support flanges 24 and the wing nuts 42 tightened thereon. This serves to clamp the leg receiving portion 30 firmly about the adjacent end of the leg 14. After these operations have been repeated at the other end of the crosspiece 12, the sawhorse assembly 10 is ready for use.

If it is desired to store the sawhorse assembly in a more compact form, the wing nuts 42 are loosened whereby to permit easy and quick removal of the leg 14. In many instances it will be desirable to store the crosspiece 12 with the four brackets 16 attached thereto. The assembly 10 is ready for immediate use upon insertion of the legs 14 and tightening of the wing nuts 42.

Wooden legs may be used in place of the metal pipes 14. For example, when the bracket 16 is of a size to receive a ¾ inch iron pipe it can also be used with a one inch wooden dowel. Similarly, when the brackets 16 are of a size to receive a 1½ inch pipe, they can be used with two inch dowels.

There is shown in Figures 6 the upper end of a wooden dowel leg which can be used with the brackets 16 in forming the sawhorse assembly 10. The leg is generally designated by the numeral 44 and includes a section 46 which is substantially square in cross section. The upper end of the leg 44 has the corners thereof rounded to provide an attachment portion 48 which can be inserted in the leg receiving portion 30 of a bracket 16. A shoulder 50 is formed at the junction of the square section 46 and the attachment portion 48. In forming a sawhorse using a wooden leg 44, the attachment portion 48 is inserted in the leg receiving portion 30 of an associated bracket 16. The wing nut 42 can be tightened on the bolt 40 whereby to cause the leg receiving portion 30 to grip the attachment portion 48 of the leg 44. In addition, a pair of apertures 52 is formed in each side of each leg receiving portion 30 to receive E—Z pull out nails or similar fasteners that can be driven into the attachment portion 48 through the apertures 52. The leg 44 can therefore be readily assembled with the bracket 16 and can also be readily disassembled therefrom for storage.

Referring to Figures 2 and 3 of the drawing it will be seen that the longitudinal axis of each leg 14 and of the associated leg receiving portion is inclined at an acute angle with respect to the plane of the attachment flanges 18. In one preferred construction, the longitudinal axes of each pair of legs 14 define a plane which is perpendicular to the longitudinal axis of the crosspiece 12. If it is desired to spread the ends of the legs farther from each other, the brackets 16 can be tilted or canted as illustrated in Figure 5. This will have the effect of placing the lower ends of the legs 14 on one side of the crosspiece farther away from each other. This may give a desired additional stability in certain constructions.

It will be seen that there has been provided a sawhorse, trestle or the like and a bracket therefor which fulfills all of the objects and advantages set forth above. Although one preferred form of the invention has been shown in the drawing and described in detail, it is to be understood that various changes and modifications can be made therein without departing from the spirit and scope of the invention. Accordingly, the invention is to be limited only as set forth in the following claims.

I claim:

1. A bracket for interconnecting a crosspiece and a pair of legs in a converging relationship to each other comprising an integral one-piece structure including a pair of attachment flanges disposed in a common plane and adapted to be connected to an associated crosspiece, a support flange connected to each of said attachment flanges by a resilient portion and extending outwardly therefrom substantially perpendicular thereto and to the associated crosspiece, a resilient and deformable part-cylindrical leg receiving portion formed integral with and interconnecting said support flanges, said part-cylindrical portion being adapted to receive a leg therein and to extend more than 270° therearound, the axis of said part-cylindrical portion being inclined at an angle to the plane of said attachment flanges, said support flanges having aligned apertures therein to receive a fastener therethrough, and a fastener disposed in said apertures and operative after connection of said attachment flanges to the associated crosspiece to deform said support flanges and said part-cylindrical portion whereby to reduce the effective diameter of said part-cylindrical portion to clamp said part-cylindrical portion about the associated leg.

2. A bracket for interconnecting a crosspiece and a pair of legs in a converging relationship to each other comprising an integral one-piece structure including a pair of attachment flanges disposed in a common plane and adapted to be connected to an associated crosspiece, a support flange connected to each of said attachment flanges by a resilient portion and extending outwardly therefrom substantially perpendicular thereto and to the associated crosspiece, a resilient and deformable part-cylindrical leg receiving portion formed integral with and interconnecting said support flanges, said part-cylindrical portion being adapted to receive a leg therein and to extend more than 270° therearound, the axis of said part-cylindrical portion being inclined at an angle to the plane of said attachment flanges, abutment means positioned in said part-cylindrical portion and adapted to abut against and to position a leg therein, said support flange having aligned apertures therein to receive a fastener therethrough, and a fastener disposed in said apertures and operative after connection of said attachment

flanges to the associated crosspiece to deform said attachment flanges and said part-cylindrical portion whereby to reduce the effective diameter of said part-cylindrical portion to clamp said part-cylindrical portion about the associated leg.

3. A bracket as set forth in claim 2, wherein said abutment means comprise a bolt passing through aligned apertures in the leg receiving portion and the fastener comprises a headed and threaded bolt passing through the aligned apertures in the support flanges in the wider portion thereof and a nut engaging the threaded bolt.

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