United States Patent

Larson

[15] 3,656,581

[45] Apr. 18, 1972

[54] SAWHORSE BRACKET ASSEMBLY

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[52] **U.S. Cl.** **182/224**

[51] **Int. Cl.** **F16m 11/00**, E04g 1/32

[58] **Field of Search** 182/181, 185, 224

[56] **References Cited**

UNITED STATES PATENTS

1,908,858	5/1933	O'Kane	182/185
3,042,144	7/1962	Larson	182/185
3,480,111	11/1969	Larson	182/224

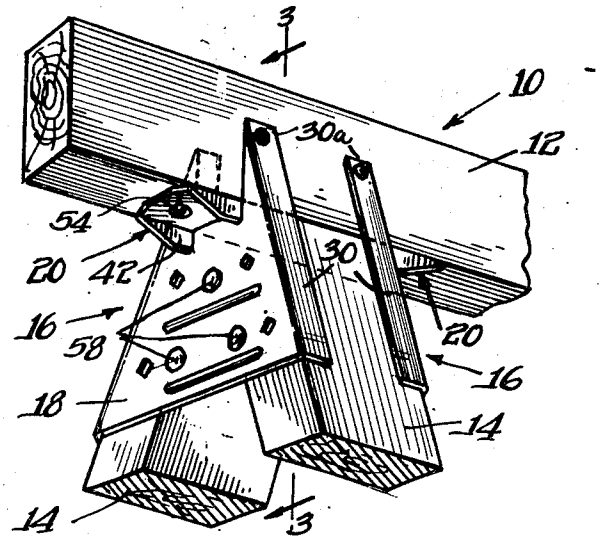
Primary Examiner—Reinaldo P. Machado

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[57] **ABSTRACT**

A bracket assembly for use in the formation of a sawhorse or the like structure. The assembly includes a main support bracket having a generally triangular face plate with a slot of a predetermined width extending inwardly from the apex thereof and a shelf portion extending outwardly from a first surface of the face plate at the base of the slot; and an auxiliary bracket mounted on the main bracket. The auxiliary bracket includes a plate portion having a width at least at a predetermined point therealong equal to the width of the slot in the main bracket and being received thereat in the slot. A first section of the plate portion extends from the first surface of the face plate and rests on the shelf portion. A second section extends from the opposite surface of the face plate and includes flanges along the sides thereof, the ends of which are butted against the second surface of the face plate. The cross member of the sawhorse structure rests on the auxiliary bracket and aligned apertures in the latter and in the shelf portion serve to allow for the insertion of a screw fastener into the cross member. Side flanges along the face plate have apertures at the upper ends thereof for passage of screws into the cross member.

1 Claims, 5 Drawing Figures



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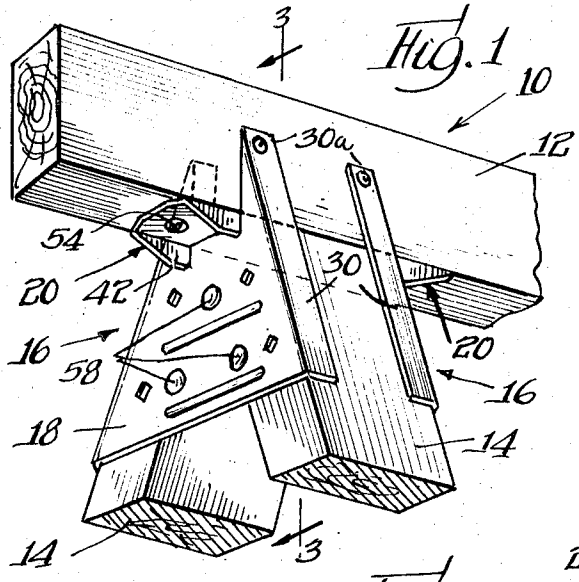


Fig. 1

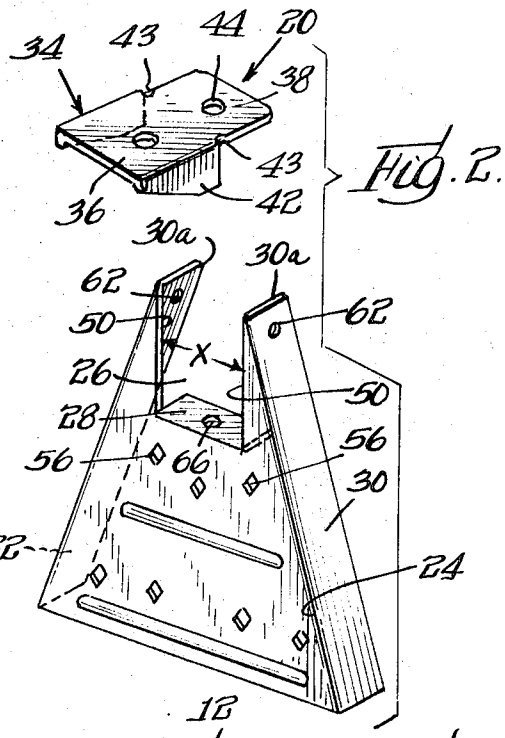


Fig. 2.

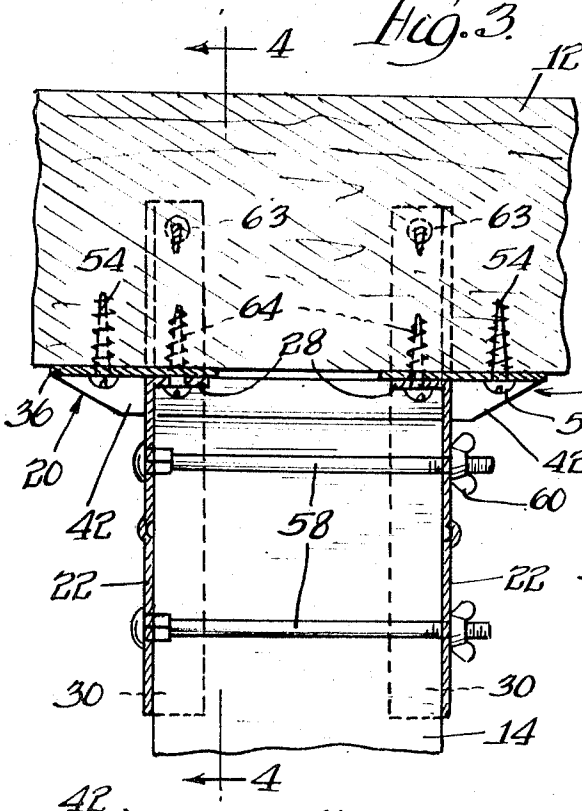


Fig. 3.

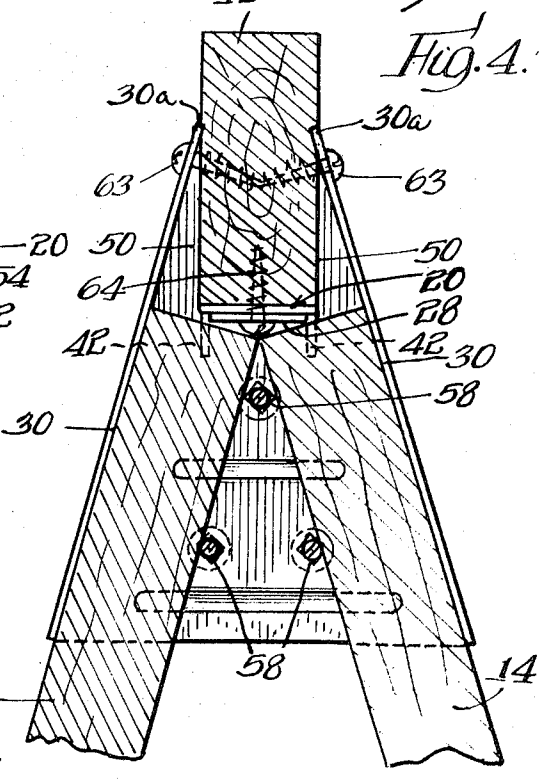


Fig. 4.

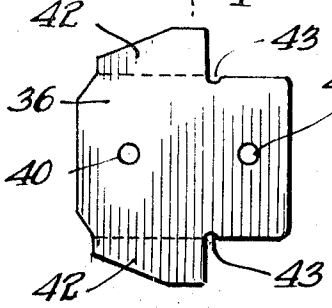


Fig. 5.

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SAWHORSE BRACKET ASSEMBLY

SUMMARY OF THE INVENTION

It is a general object of this invention to provide a new and improved bracket assembly for use in forming sawhorses or the like.

It is a more specific object of this invention to provide an auxiliary bracket for use with a support forming bracket such as shown in my U.S. Pat. No. 3,042,144, which provides added stability and strength to a sawhorse, etc., formed with the last-mentioned bracket, and with screw fasteners binding the cross member against wobble to the bracket assembly.

It is another object of this invention to provide an auxiliary bracket for use with a support bracket like the one described above, which provides for added ease of assembly of a sawhorse or the like structure and which is simple and inexpensive to produce.

IN THE ACCOMPANYING DRAWING

FIG. 1 is a fragmentary perspective view of a sawhorse structure formed through the use of a plurality of bracket assemblies according to the invention;

FIG. 2 is an exploded perspective view of a bracket assembly according to the invention;

FIG. 3 is a sectional view of the sawhorse structure of FIG. 1, taken on the line 3—3 of FIG. 1;

FIG. 4 is a sectional view of a bracket assembly according to the invention, taken on the line 4—4 of FIG. 3; and

FIG. 5 is a top plan view of the auxiliary bracket.

DETAILED DESCRIPTION

Referring now to the drawings more in detail, FIG. 1 thereof illustrates a portion of a sawhorse **10** including a crosspiece or member **12**, a pair of legs **14** and a pair of bracket assemblies **16** according to the invention, each including a main support bracket **18** and an auxiliary bracket **20** for interconnecting the crosspiece **12** of the sawhorse structure to the legs **14** thereof.

Turning to FIG. 2, a bracket assembly **16** is shown both in unassembled condition, respectively. The main bracket **18** of the bracket assembly includes a face plate **22** of a generally triangular shape. The face plate is preferably formed as an equilateral triangle including an angle of 33° between the equal length sides **24** thereof, for it has been found that at this angle the supporting legs **14** (FIG. 1) provide more strength and stability to the sawhorse or the like structure.

The bracket **18** further includes a rectilinear slot or opening **26** of a predetermined width indicated as "X" to receive therein a length of lumber or the like material to form a crosspiece, such as **12** of FIG. **1**, of the sawhorse. A shelf or ledge **28** is disposed at the base of the slot **26** and extends rearwardly from the face plate **22** and substantially perpendicularly thereto. The shelf is provided as a support upon which the crosspiece **12** may rest as well as a stop for legs **14** therebeneath. The equal length sides **24** of the face plate **22** are provided with flanges **30** which extend rearwardly and perpendicularly therefrom. The converging flanges **30** (FIG. **1**) define channels for constraining legs **14** of the sawhorse structure **10**.

The auxiliary bracket **20** comprises an elongated plate **34** having first and second sections **36** and **38**, respectively. The first section **36** includes an aperture **40** extending through the section and a pair of flanges **42** extending downwardly along the sides thereof perpendicularly to the plate **34**. The second section **38** has an aperture **44** therethrough and may include a pair of notches **43** on opposite sides thereof, the purpose of which will be explained hereinafter. The width of the auxiliary bracket **20** is slightly larger than the width ("X," FIG. **2**) of slot **26**, so that the bracket may be mounted between the edges **50** defining the slot only at notches **43** thereof whereat the width is approximately equal to the width of the slot **26**. Thus, edges **50** are received in notches **43** as auxiliary bracket **20** is slipped downwardly onto the shelf **28**. If desired, however, the width of bracket **20** may be equal to that of slot **26** and notches **43** eliminated. This provides for a more simple and less costly construction of the auxiliary bracket **20**. The vertically oriented ends **52** of flanges **42** of the auxiliary bracket are butted against face plate **22** when the bracket **20** is in position on shelf **28** to further support section **36** of the bracket **20** against the weight of a crosspiece **12** placed thereon.

FIG. **3** illustrates the manner in which a pair of bracket assemblies **16** maintain legs **14** and crosspiece **12** of the sawhorse structure **10** in an assembled relation. A pair of bracket assemblies **16** are combined with a pair of legs **14** by disposing the bracket assemblies back-to-back in a spaced-apart relation and situating the legs **14** within the channels formed by the adjacent flanges **30** of the main brackets **18** of the respective assemblies. In order to establish positive alignment between the two bracket assemblies, a number of preferably rectangular holes **56** are provided in the face plate **22** of each of the main brackets. Carriage bolts **58** or other suitable fasteners may be inserted through aligned holes **56** in each of the two main brackets **18** to have wing nuts **60** threaded about their free ends so as to draw the bracket assemblies together closely about legs **14** to secure them therebetween. The lower bolts engage the legs **14** for added rigidity. Crosspiece **12** is inserted into slot **26** of both main support brackets **18**. A screw **63** may be inserted through aperture **62** near the apex of the bracket **18** in flanges **30** thereof to aid in securing the crosspiece **12** thereto.

It will be noted that crosspiece **12**, due to the addition of auxiliary brackets **20** is provided with added area for the support thereof and for the distribution of weight carried thereby when the sawhorse is being used. In addition, to better secure the crosspiece **12** to the bracket assembly **16**, a screw fastener **54** may be inserted from beneath crosspiece **12** through aperture **40** in auxiliary bracket **20** and into the lower surface of the crosspiece. Because the section **36** of the bracket **20** is spaced from the leg assembly and extends outwardly from the main bracket **18**, easy access to aperture **40** for the insertion of fastener **54** therein is provided. Further, a screw fastener **64** extends through opening **44** in the portion **38** of the auxiliary bracket and through opening **66** in the shelf portion **28** of the main bracket and into the crosspiece **12**. Thus, it will be seen that the crosspiece is secured by screw fasteners **63** to the flanges **30** and these screw fasteners are slightly angled downwardly. When tightened, these screw fasteners tend to cause the inner top edges **30***a* of the flanges **30** to bite into the crosspiece with a wedging action and with compressive action in the flange portion toward the edges **50** of the slots, thus tending to constantly wedge edges into engagement with the crosspiece. Also, the crosspiece is secured to the shelf portion **28** and to the auxiliary bracket portion **38** by screw fasteners **64** which are in the same vertical plane with corresponding screws **63**. In this relationship, the screw fasteners **63,64** of each pair cooperate with one another, by reason of the inclination of the screws **63**, to urge the crosspiece into tight engagement with the auxiliary bracket and main bracket shelf portion and with the edges **50** of the slot **26** and the ends of the flanges **30**. This confinement of the crosspiece and the interaction between the pairs of screws **63,64** makes for an assembly without wobbling and any tendency theretoward can be immediately corrected by tightening the screws. To further guard against wobble, the screws **54** through the openings **40** in the auxiliary bracket and into the bottom of the crosspiece tend to maintain the support surface of the auxiliary bracket in continuous surface contact with the bottom of the crosspiece.

I claim:

1. An arrangement for interconnecting a cross member and a pair of legs of predetermined lengths and sizes in converging relation to form a support, said arrangement comprising a pair of bracket assemblies, each said assembly including a main support bracket member having a triangular shaped face plate with a slot of predetermined width extending downwardly thereinto from the apex, with a shelf portion extending outwardly from a first surface of said face plate at the base of said

slot, said shelf portions of said pair of brackets being in an aligned opposing relation, each of said brackets further including flanges inclined along each side thereof and extending toward the flanges of the other bracket for receiving and engaging therebetween said legs, and a pair of auxiliary brackets, each one of said pair being associated with a corresponding main support bracket and each comprising a plate portion having a width substantially equal to the width of said slot and being received in said slot, said plate portion having a first section extending outwardly from said first surface of the face plate of said corresponding main support bracket and resting on a corresponding shelf portion with said first section and shelf portion having aligned apertures for receiving a screw fastener to be threaded into the bottom of the cross member and a second section extending outwardly from the opposite surface of said face plate and apertured to receive a screw fastener to be threaded into the bottom of the cross member and further including opposed laterally open notches between said first and second sections receiving the slot forming edge portions of said main support brackets, and each of said flanges having an aperture therethrough adjacent the upper end thereof for receiving a screw fastener to be threaded into the side of the cross member and with the axes of the said apertures in said flanges inclined downwardly to correspondingly position screw fasteners received therein for causing end portions of the flanges to bite into the cross members under influence of the screw fasteners with resultant compression of the flange portions adjacent the edges of the slot causing said edges to snug the adjacent surfaces of an inserted cross member in line with said notches, said cross member being received in the slots of said main brackets and supported on the auxiliary brackets in position for screw fasteners in said apertures to be threaded thereinto for substantially nonwobble support thereof on legs secured between the face plates of the main brackets with the aligned apertures in the shelf portions and auxiliary brackets being disposed in substantially the vertical planes of the corresponding apertures at the upper ends of the flanges to correspondingly position screws received therein with the screws arranged in a generally transverse triangular positioning for engagement of corresponding screws with the bottom and sides of the cross member and with the screws through the second sections of the plate portions arranged with the other screws in a generally longitudinal triangular positioning for additional engagement thereof with the bottom of the cross member whereby to provide a close-coupled array of screws transversely and longitudinally of the cross member, said second section of each plate portion including depending flanges with substantially vertical edges to abut the adjacent face of the main bracket for aligning the aperture in each first section with the aperture in the corresponding underlying shelf portion for screw reception therethrough into engagement with the cross member for assembly and facilitating disassembly by permitting ready removel of the auxiliary brackets from the main brackets upon removal of the screw fasteners.

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