July 3, 1962 C. O. LARSON 3,042,144

SUPPORT-FORMING BRACKET

Filed April 6, 1959

Fig. 1.

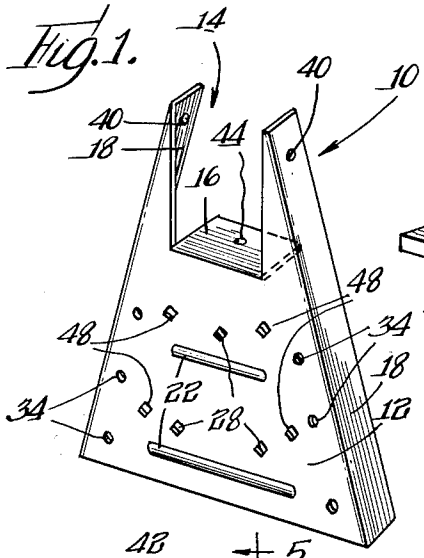


Fig. 2.

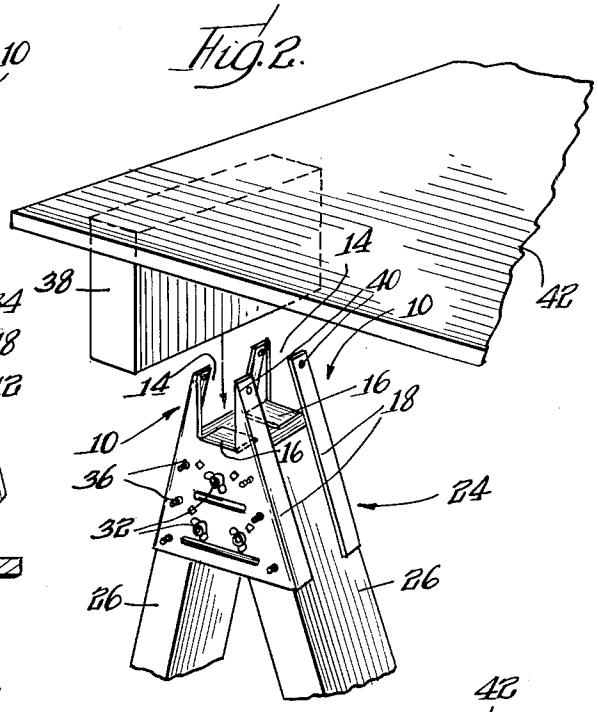


Fig. 3.

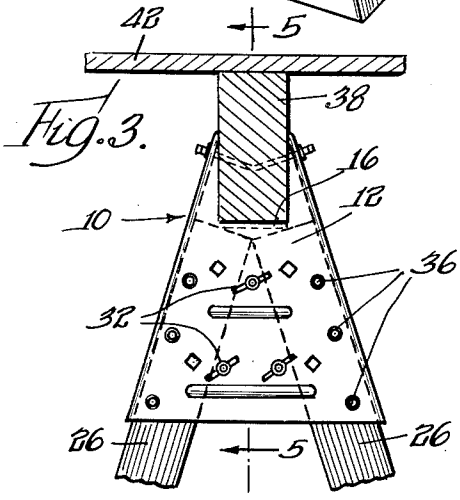


Fig. 4.

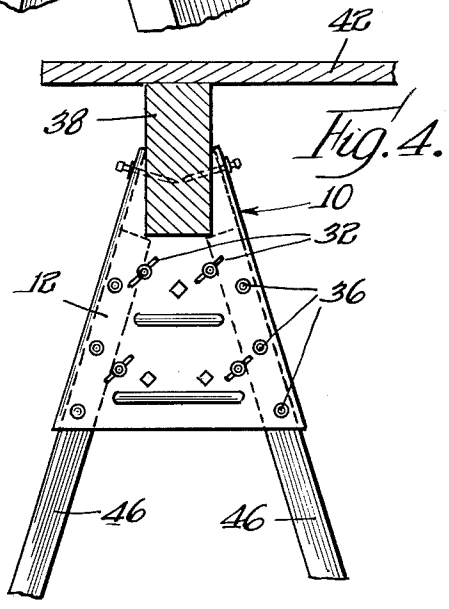
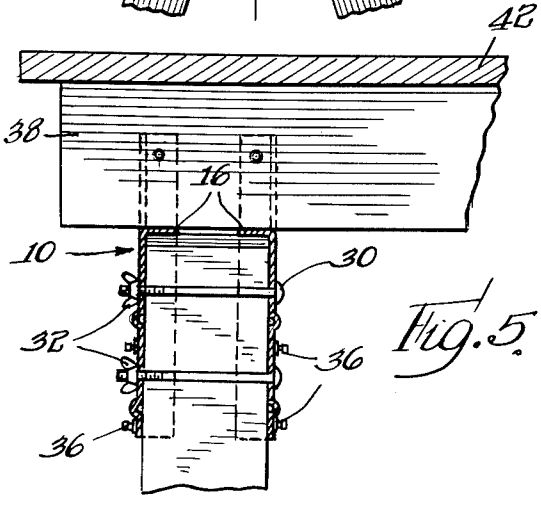


Fig. 5.



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SUPPORT-FORMING BRACKET

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This invention relates generally to a support-forming bracket and more particularly to a bracket which is intended to implement the formation of a support taking the general shape of a trestle bent.

The bracket of the present invention is of a kind which is particularly useful in situations where it is desired to join, in angled relationship, two pieces of readily available, standard dimension material, such as framing lumber, in order to form supporting structure for a stringer or for some plane member. An example of such a situation can be found in the erection of large tables, like banquet tables or ping-pong tables.

A common known practice is to adapt brackets of this type to the exclusive employ of readily available 2 x 4 framing lumber. This, of course, precludes the use of lumber having a lesser cross-section and frequently leads to the provision of unnecessarily strong and unreasonable expensive supports. It is, therefore, an object of the present invention to provide a novel support-forming bracket of a kind which is susceptible to use with material of variable width and of a kind which is further susceptible to use with material of both nominal one-inch and nominal two-inch thickness.

A bracket of the kind exemplified herein must necessarily form a steady support, free from wobble, else its use would be strictly limited. Hence, it is another object of the invention to provide a bracket which embraces the leg-forming members and the stringer firmly and which thereby produces a rigid supporting structure.

Still another object of the invention is to provide a support-forming bracket having components which are nestable and thereby require but little storage space.

A further object of the invention is to provide a sawhorse incorporating a novel bracket which permits construction of the horse from material of a number of different cross-sections.

Still further objects and features of the invention pertain to the particular structure and arrangements whereby the above objects are attained.

The invention, both to its structure and mode of operation, will be better understood by reference to the following disclosure and accompanying drawings forming a part thereof, wherein:

FIG. 1 is a perspective view of a clamping member fashioned in accordance with features of the invention;

FIG. 2 is a perspective view of a pair of the clamping members shown in FIG. 1 combined in a bracket which is used in forming a support for a plane member;

FIG. 3 is a front end view of a bracket in accordance with the invention employing nominal two-inch thickness legs in forming a support;

FIG. 4 is a front end view of a bracket in accordance with the invention employing nominal one-inch thickness legs in forming a support; and

FIG. 5 is a view through the section 5—5 of FIG. 3.

Referring now in detail to the drawings, specifically to FIG. 1, there can be seen a clamping member 10 which includes a triangular face plate 12. Since it has been found

that a useful supporting structure results from disposing two legs in an inverted V-shaped formation angulating the legs at approximately 33°, face plate 12 is desirably fashioned in the form of an equilateral triangle which includes an angle of approximately 33° between the equal-length sides.

Clamping member 10 is also provided with a rectilinear slot or opening 14 which extends downwardly from the narrowest apex of the triangular face plate 12. Slot 14, which may advantageously be adapted to receive nominal two-inch thickness material, terminates in a shelf or ledge 16 that is disposed at the base thereof to extend rearwardly and perpendicularly from face plate 12.

The equal-length sides of face plate 12 are provided with flange portions 18 which extend rearwardly and perpendicularly therefrom. These converging flanges help in defining channels for constraining the leg members as will be brought out more clearly hereinbelow. Upon reflection, it will be recognized that the triangular nature of the plate 12 combines with the manner in which the flange portions 18 are disposed to permit nesting of a number of the members 10 for storage or packaging.

In order to impart additional strength, face plate 12 is fashioned with a number of embossed, reinforced ribs 22.

In constructing a support unit, such as shown generally at 24 in FIG. 2, a pair of the clamping members 10 may be combined with two leg members 26 by disposing the clamping members back-to-back in spaced-apart relationship and situating the leg members 26 inside the channels formed by the adjacent flange portions 18. In order to establish positive alignment between the two clamping members 10, a number of preferably rectangular holes or apertures 28 are appropriately provided in the plate 12 of each clamping member, carriage bolts 30 or other suitable fasteners may be inserted through the aligned holes 28 in each of the two clamping members 10 to have wing nuts 32 threaded about their free ends so as to draw the clamping members 10 closely about the leg members 26.

As is evident, the width of the leg members 26 is freely variable within the limits established by the length of the carriage bolts 30. Furthermore, the holes 28 may be so located in the plate 12 that the leg members 26 may rest against the shanks of adjacent carriage bolts for additional support when the unit 24 has been assembled.

A number of small, preferably round holes 34 may also be provided in the face plate 12 adjacent to the flange portions 18. These holes 34 permit nails 36 or other suitable fasteners to be inserted therethrough into the legs 26 so as to develop strength and rigidity in the unit 24.

With the support unit 24 prepared, for example as described hereinabove, a cross-piece, bar or stringer 38 may be inserted into the slots 14 of the clamping members 10. When cross-piece 38 contacts the ledges 16, nails or other suitable fasteners may be inserted through the holes 40 in the flange portions 18 to enter the cross-piece 38 and to affix the supporting unit 24 thereto.

In certain instances, it is of advantage to have the cross-piece 38 secured to a plane member 42 as by screws or other suitable fasteners; and where the plane member 42 is of adequate rigidity and strength, cross-piece 38 need only be wide enough to satisfactorily engage the slots 14. As will be realized, a supporting unit 24 may be disposed at a number of suitable locations about the plane member 42, as for example at each

corner thereof. Furthermore, when it is desired to support but a single cross-piece **38**, units **24** need only be disposed at the ends of such a cross-piece.

In an alternative manner, the clamping members **10** may be first fastened to the stringer **38**, having the leg members **26** subsequently affixed in the bracket formed by the two clamping members. In such instance, one of the clamping members **10** may be secured to the stringer **38** by means of a screw or nail extending through the hole **44** in ledge **16** into the stringer **38**. Using a leg member **26** as a guide, the second clamping member **10** may be spaced appropriately along the stringer **38** and affixed thereto in a manner similar to that employed in affixing the first clamping member.

With both leg members **26** inserted into the bracket formed by the two clamping members, the carriage bolts **30** and the nails **36** may be applied as previously described. This alternative method of construction has the particular advantage of leaving the clamping members **10** affixed to the stringer **38**, preventing loss thereof when the leg members **26** are removed, as for storage.

Advantageously, the nails used in assembling the support unit **24** may be double-headed nails for ease in disassembly. Furthermore, for strictly temporary assemblies, only the carriage bolts **30** need be employed.

According to an important feature of the invention, leg members **26** of nominal two-inch thickness material may be substituted for leg members **46** of nominal one-inch thickness material. In such case, it is appropriate to provide a number of additional, preferably rectangular holes **48** in the face plate **12**. These holes or apertures **48** are advantageously arranged circumscribing the holes **28** in order to allow the carriage bolts **30** to contact and support the legs **46**. In other respects, use of the legs **46** is similar to the use of the legs **26**.

The brackets formed by the clamping members **10** and by the fastener elements described hereinabove have proved useful in a wide variety of situations. For example, these brackets have proved useful in constructing support units for workbenches, banquet tables, ping-pong tables, tables for electric train sets, sawhorses, and scaffoldings.

The manner in which the present invention may be practiced and the purposes to which it may be put are evident from the foregoing descriptions.

While particular embodiments of the invention have been shown, it will be understood, of course, that the invention is not limited thereto since many modifications may be made; and it is, therefore, contemplated to cover by the appended claims any such modifications as fall within the true spirit and scope of the invention.

The invention is claimed as follows:

1. A bracket assembly for interconnecting a cross member and a pair of leg members of predetermined different sizes in converging relationship to form a support, and comprising a pair of similar clamping members each including a substantially triangular face plate with a slot extending downwardly from the apex for receiving a support member, said clamping members being disposed in spaced relationship and having elongated flanges extending along the edges of said face plate with the flanges on each clamping member extending toward corresponding flanges on the other clamping member for receiving and engaging inserted leg members, each face plate having an outer set of apertures adjacent the flanges for receiving securing means to be passed through said apertures and into the inserted leg members, each face plate having inner and intermediate sets of holes for selective use with different sizes of leg members, the intermediate set including a pair of upper holes and a pair of lower holes arranged to parallel the flanges proximate thereto and the inner set including an upper hole and a pair of lower holes arranged to parallel the upper and lower holes of the intermediate set, said outer set of apertures lying between said flanges and said intermediate set of holes, and fastener means having shanks arranged to pass through one set of holes for holding the plates in position against the inserted leg members, the lateral spacing between the holes of the inner and intermediate sets being such as to accomodate predetermined different sizes of leg members with the inner faces of the leg members in abutting engagement with the fastener shanks extending through said one set of holes.

2. A bracket assembly as claimed in claim 1, wherein each clamping member includes a shelf portion at the base of said slot and with the shelf portions extending toward one another to form an abutment for the ends of the inserted leg members and with each shelf portion being apertured to receive securing means to be passed therethrough and into an adjacent end of the cross member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,211,069	Brethour	Jan. 2, 1917
2,090,969	Thompson	Aug. 24, 1937
2,197,187	Larson	Apr. 16, 1940
2,376,787	Larson	May 22, 1945
2,638,386	Larson	May 12, 1953
2,706,661	Clayton	Apr. 19, 1955
2,941,618	Larson	June 21, 1960