

Feb. 27, 1968

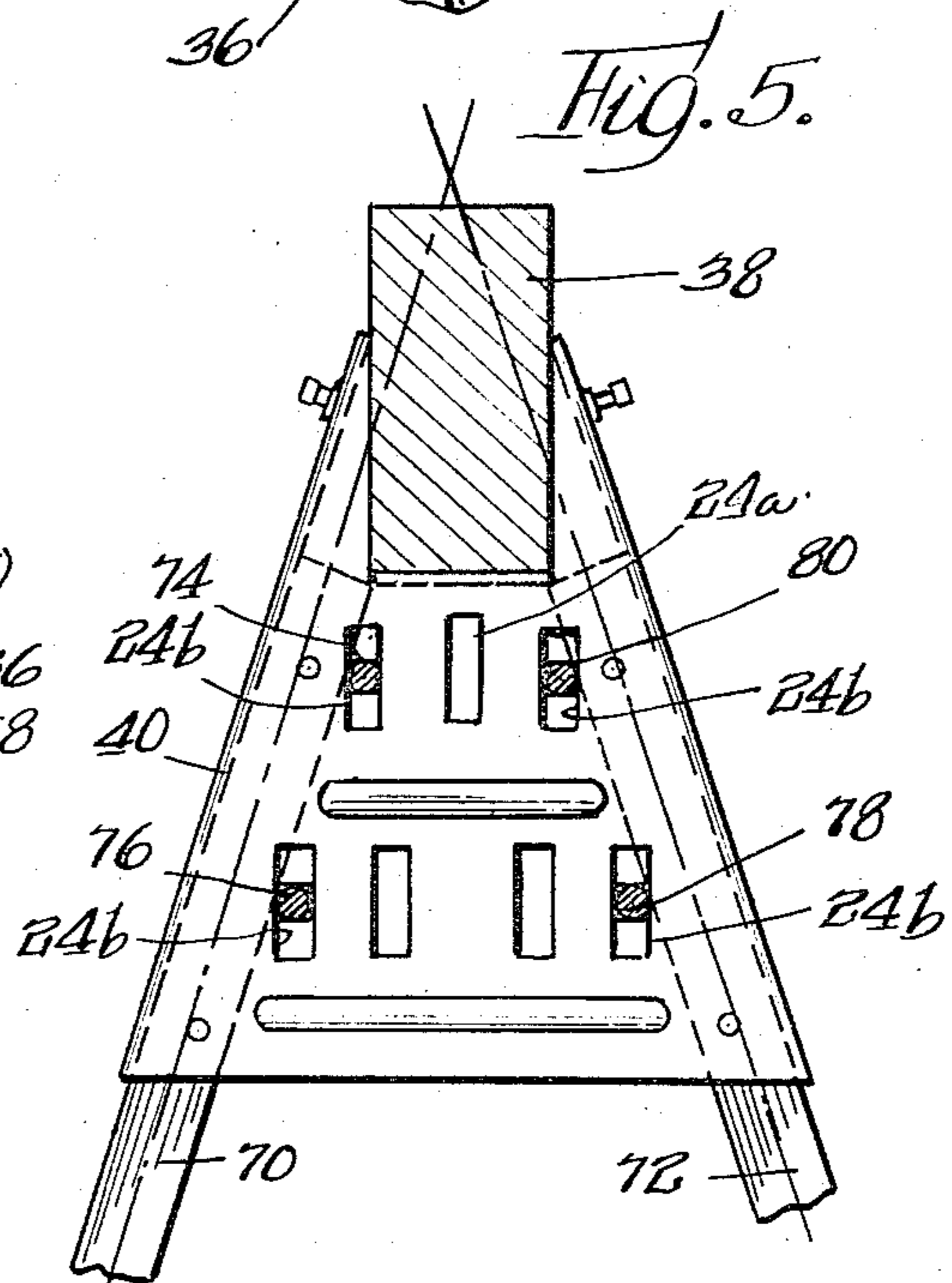
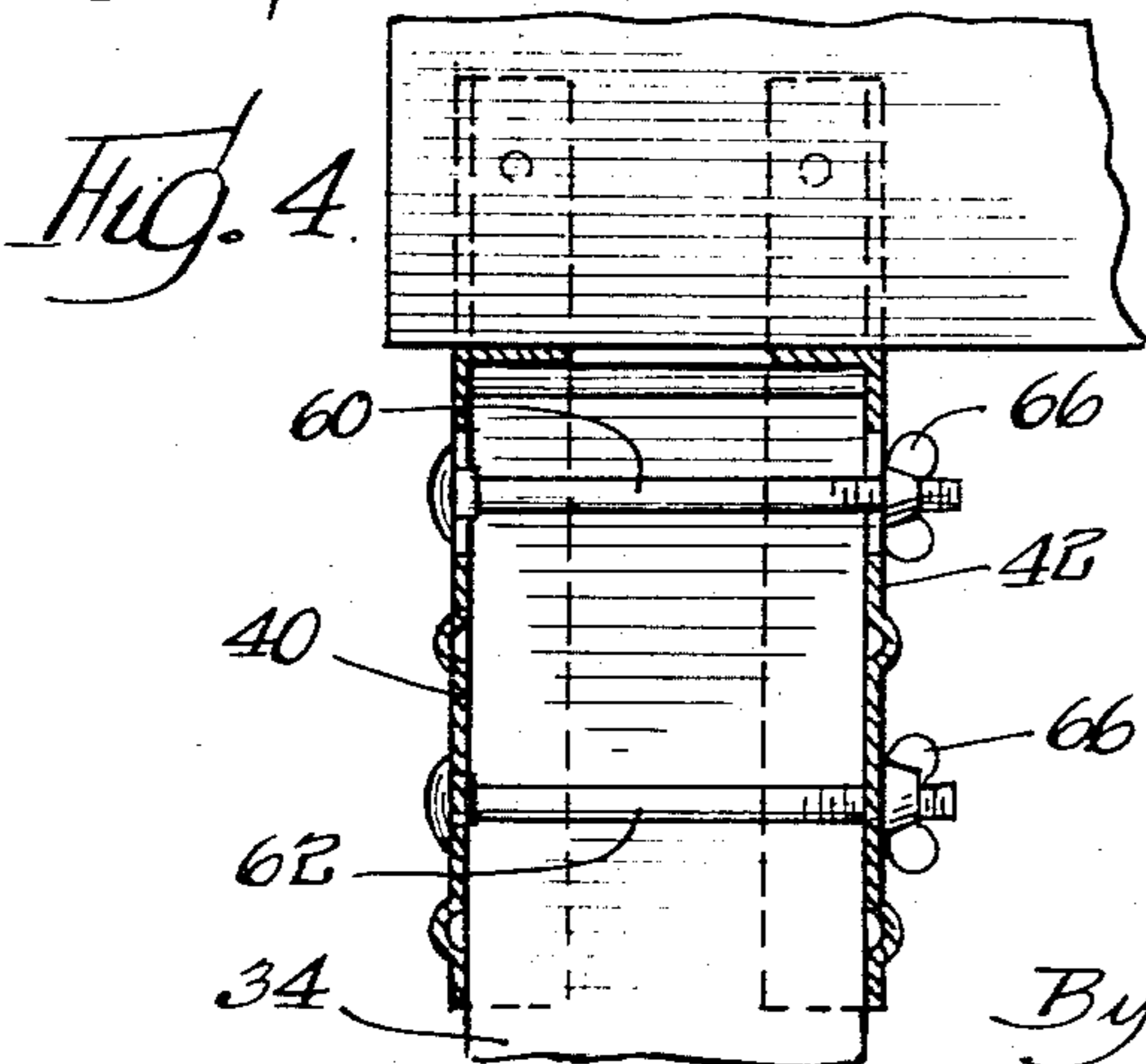
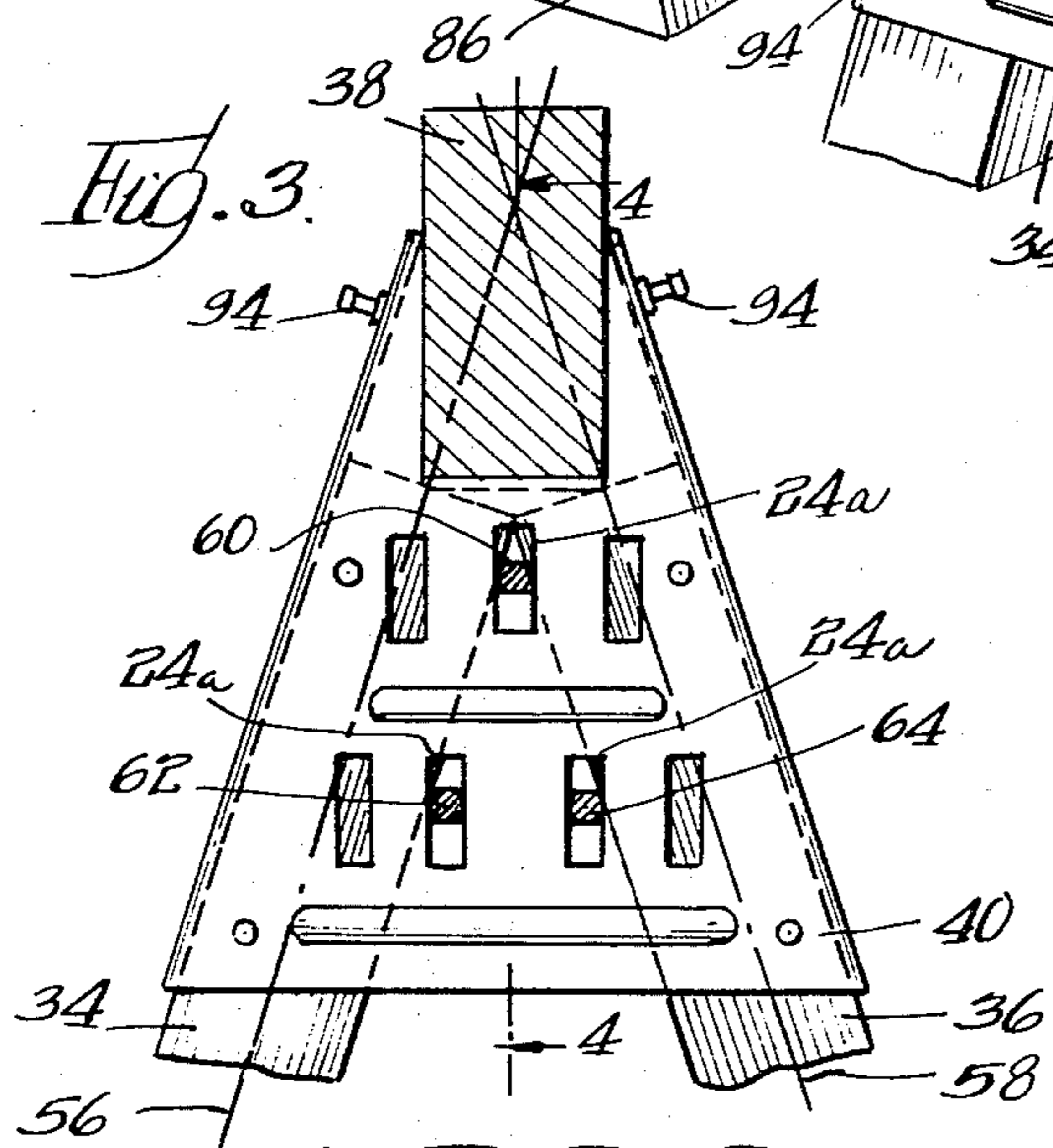
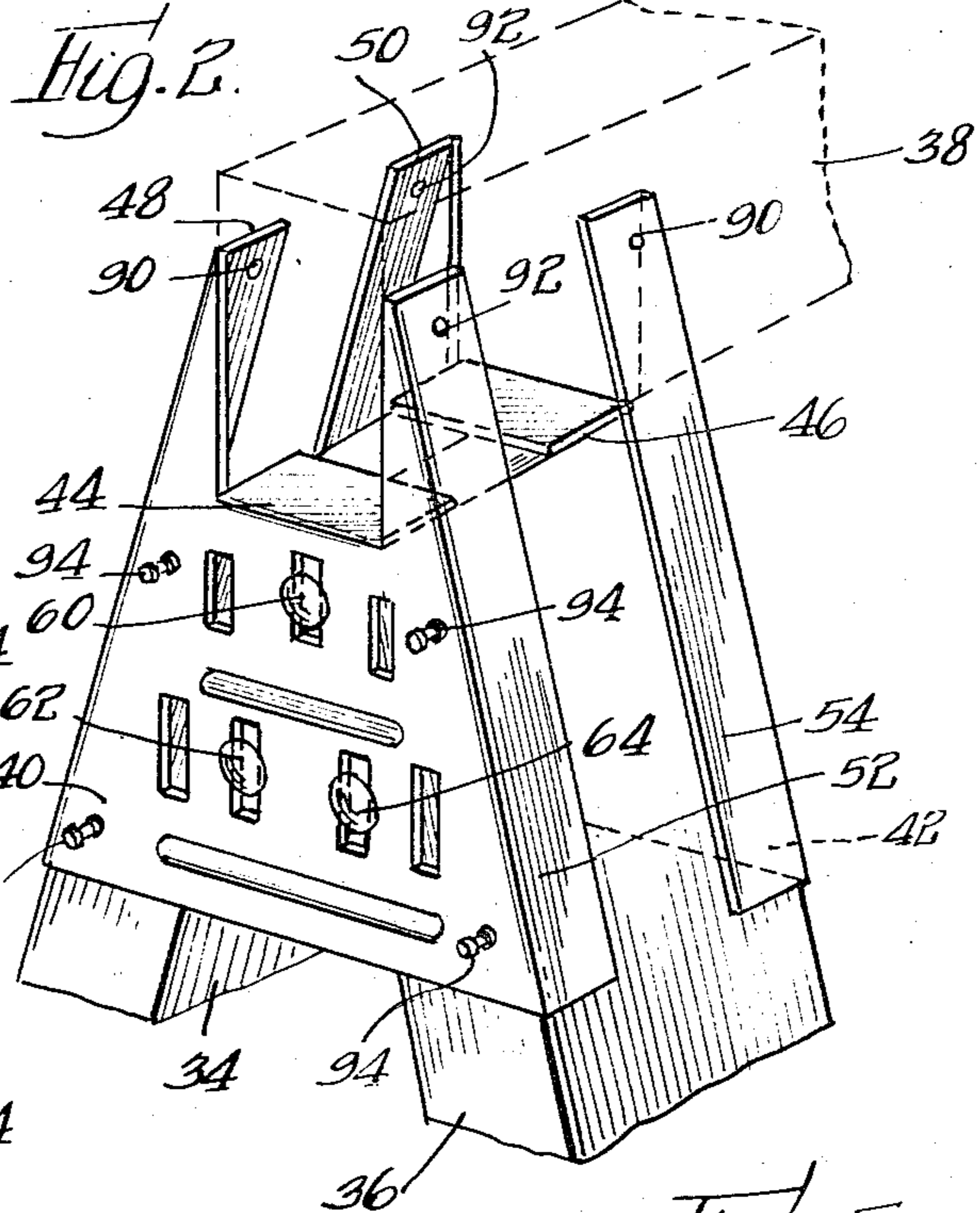
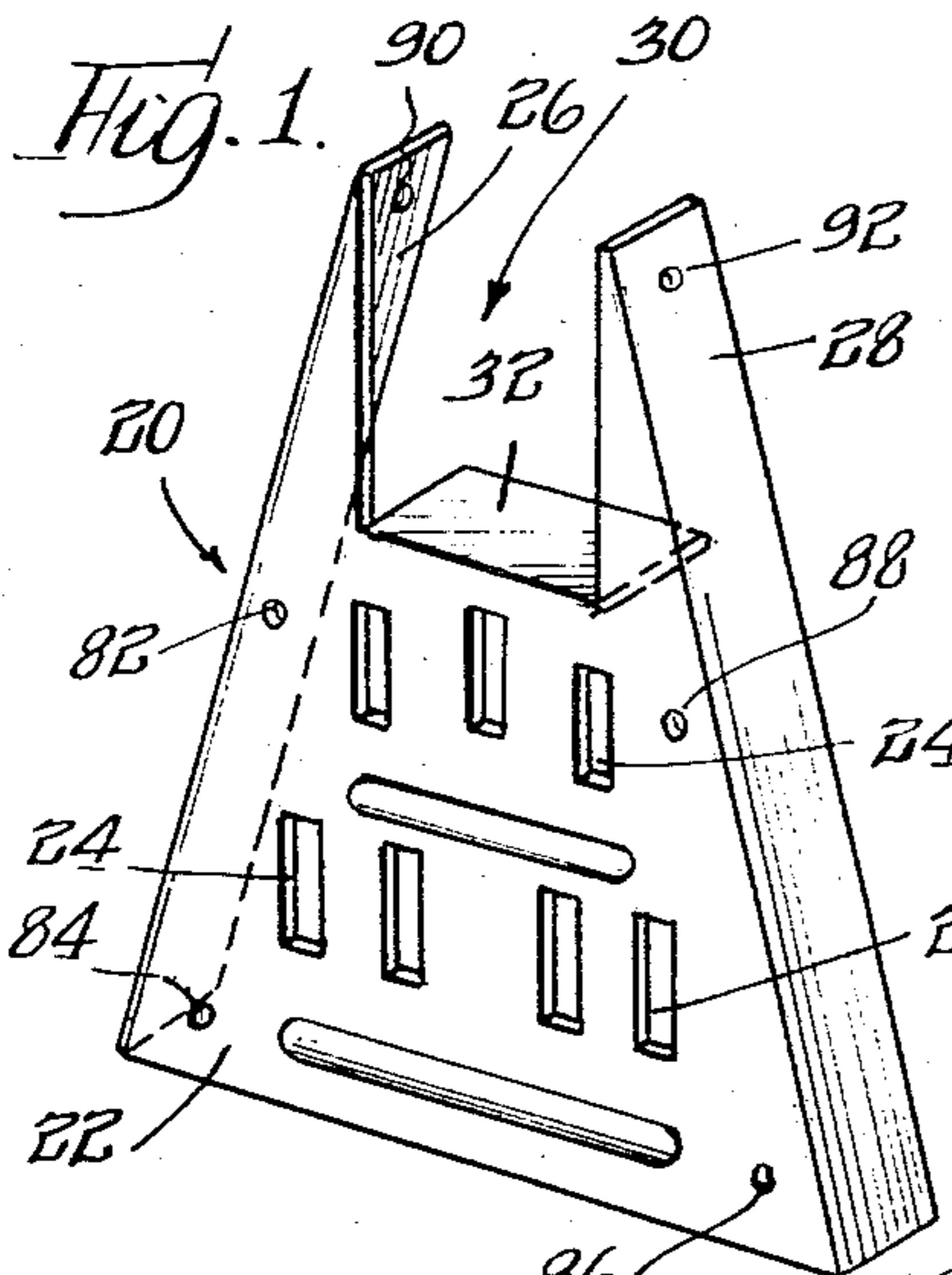
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3,370,675

SUPPORT BRACKET

Filed Jan. 27, 1966

2 Sheets-Sheet 1



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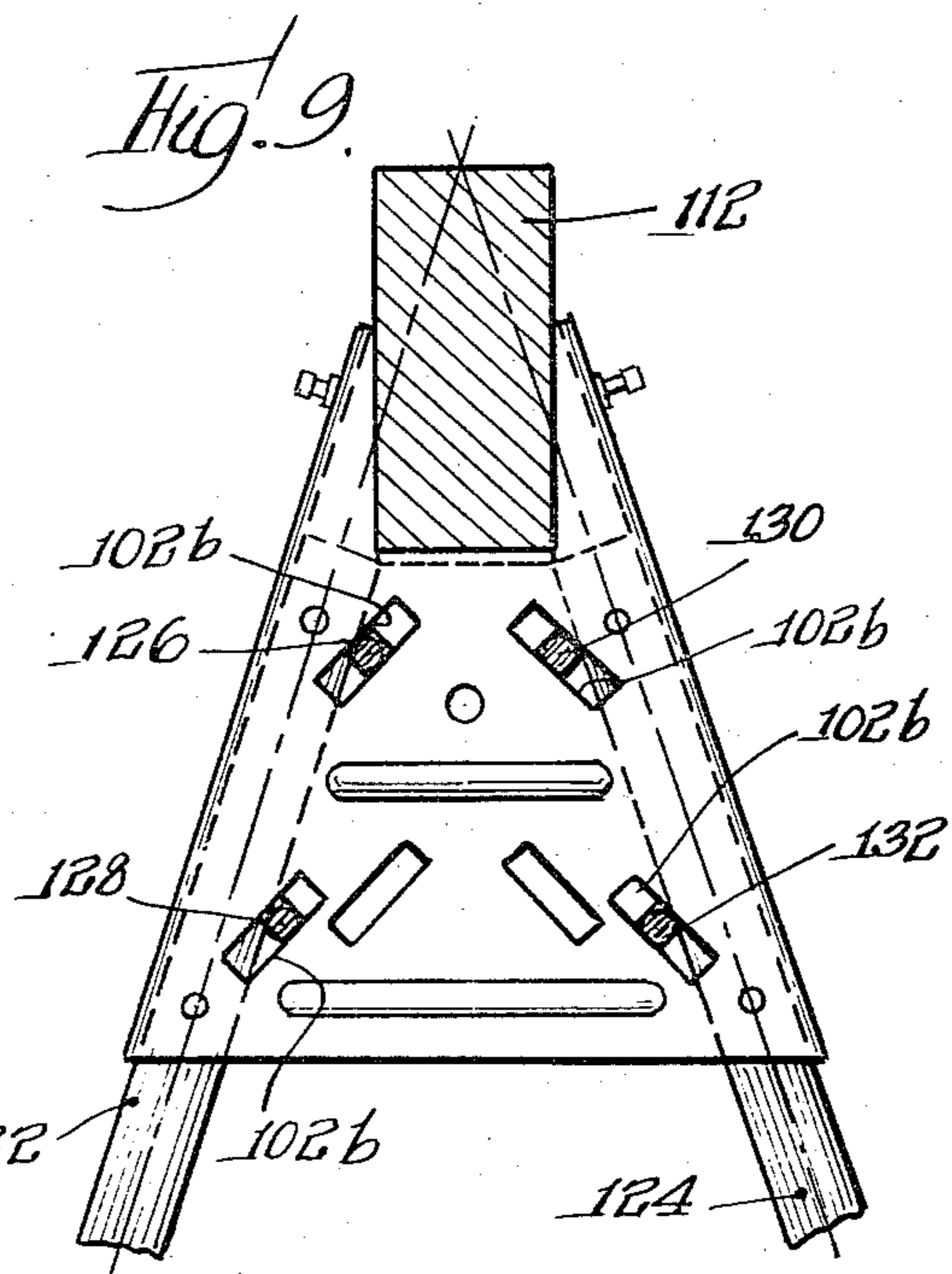
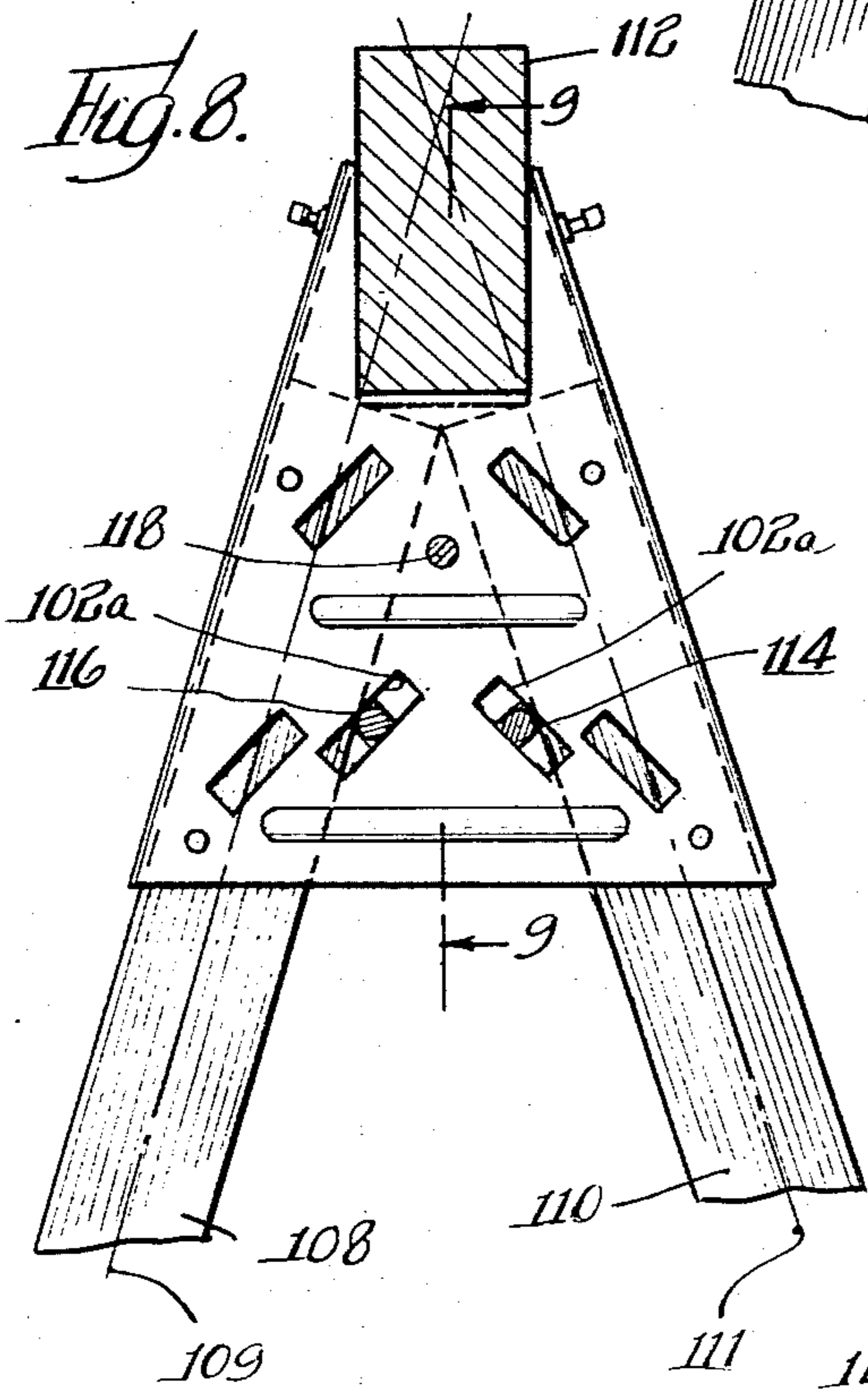
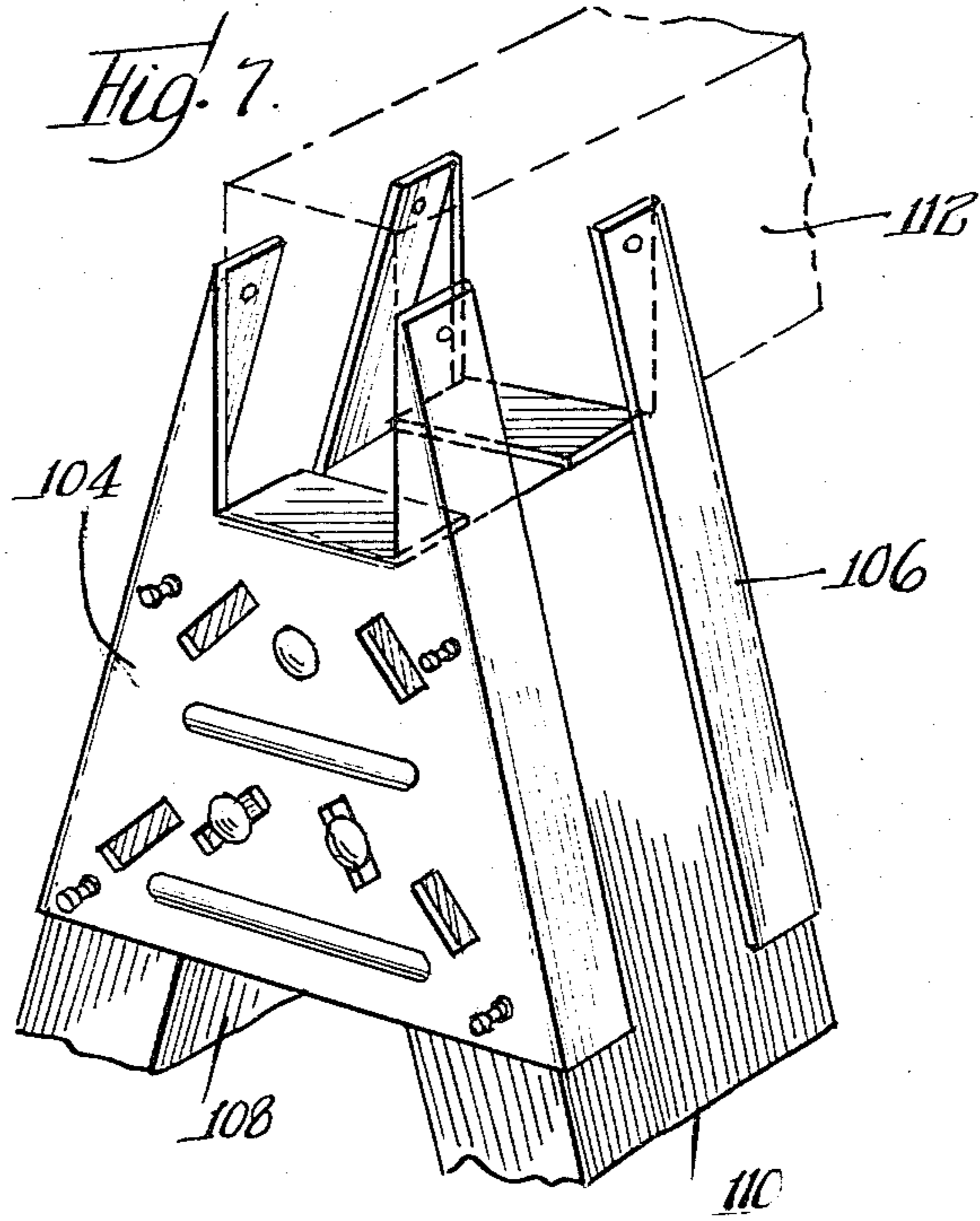
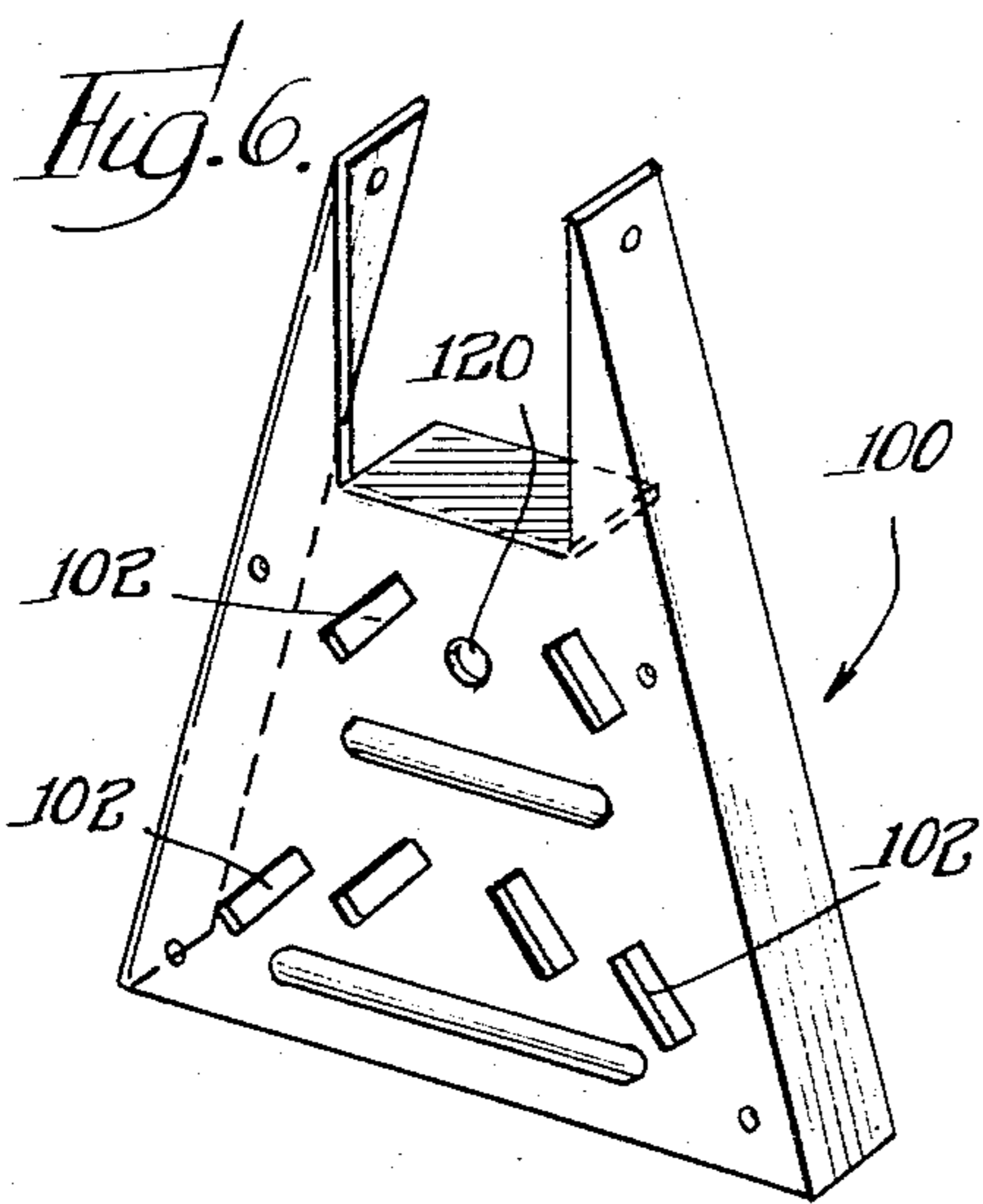
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SUPPORT BRACKET

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2 Sheets-Sheet 2



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3,370,675

SUPPORT BRACKET

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 Filed Jan. 27, 1966, Ser. No. 523,315
 3 Claims. (Cl. 182-224)

This application relates to a frame assembly and more particularly to a trestle type frame assembly.

When forming a trestle type support frame for a table support, sawhorse, or other use, it is a common practice to utilize the bracket to hold the legs in an angled relationship relative to a horizontal structure or cross-member. The horizontal cross-member is usually made of 2 x 4 framing lumber. The legs of the support frame are made of 2 x 4 or other size framing lumber. The size of the lumber utilized for the legs will vary with the use for which the frame is intended and the size of the available lumber.

Since the size of the lumber utilized for the legs of the support frame varies, the support bracket should be adaptable for positioning legs of any size lumber in an angled relationship relative to each other and to the horizontal structure or cross-member. The need for a bracket which is adaptable for use with lumber of all sizes is particularly apparent in view of the fact that the dimensions of lumber, which is nominally of the same size, could vary somewhat depending upon the grade and finish of the lumber. It will also be apparent that the legs of the support frame might be of different sizes due to the availability of only a limited supply of lumber.

Trestle type supports for tables and sawhorses are often disassembled for storage when the table or sawhorse is not in use. Thus, the trestle type support should be relatively easy to assemble and reassemble. The support bracket for the trestle type frame should be constructed to facilitate the insertion and removal of the legs and horizontal cross-member from the support brackets.

Therefore, one of the objects of this invention is to provide a support bracket, for a trestle type frame, which is suitable for use with all sizes of lumber.

Another object of this invention is to provide a support bracket, for a trestle type frame, which is suitable for use with leg members of different sizes.

Another object of this invention is to provide a support bracket, for a trestle type frame, which facilitates the assembly and disassembly of the frame.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in connection with the accompanying drawings, wherein:

FIG. 1 is a perspective view of the support bracket;

FIG. 2 is a perspective view of a frame assembly utilizing the support bracket shown in FIG. 1;

FIG. 3 is an elevational view of the support bracket where leg members of relatively large size are used;

FIG. 4 is a detail view taken along the line 4-4 of FIG. 3;

FIG. 5 is an elevational view of the support bracket where leg members of a relatively small size are used;

FIG. 6 is a perspective view of a modified form of the support bracket shown in FIG. 1;

FIG. 7 is a perspective view of a frame assembly utilizing the support bracket shown in FIG. 6;

FIG. 8 is an elevational view of the support bracket of FIG. 6 where leg members of relatively large size are used;

FIG. 9 is an elevational view of the support bracket of FIG. 6 where leg members of relatively small size are used.

Referring now to the drawings in greater detail, a sup-

2

port bracket 20, as shown in FIG. 1, is utilized to connect three framing members together to form a sawhorse type structure without the necessity of beveling the ends of the members where they are joined. The support bracket 20 has a face plate 22 in which a plurality of apertures or slots 24 are cut. The longitudinal axes of the apertures or slots 24 are substantially parallel to each other. The face plate of the bracket has two flanges 26 and 28 connected thereto. The flanges are located at an acute angle to each other and to the longitudinal axes of the apertures or slots 24. The upper portion of the bracket 20 has an opening 30 therein. The lower edge portion of the opening 30 has an edge or shelf 32 extending therefrom.

One end of a trestle type frame assembly is shown in FIGS. 2 to 5 wherein two brackets are utilized to join two leg members 34 and 36 to a horizontal stringer or cross-member 38. It should be understood that a second assembly, similar to that shown in FIG. 2, is located at a second end portion of the horizontal stringer or cross-member 38. The two leg assemblies at opposite end portions of the cross-member 38 will result in a frame having a trestle or sawhorse shape. Such a frame has many uses for supporting table tops, shelves, work benches, and other devices.

The cross-member 38 is supported by the two brackets 40 and 42, which are of the same structure as the bracket 20 of FIG. 1. The cross-member rests on the two shelves or ledges 44 and 46 which are positioned adjacent the lower surface of the cross-member 38. The cross-member 38 is retained against transverse movement by the upwardly extending side portions of the face plate and flanges. It will be apparent that a cross-member which is supported between two frame assemblies, similar to that shown in FIG. 2 will be rigidly supported.

The two leg members 34 and 36 are positioned between the two brackets 40 and 42, as shown in FIGS. 2 and 3. The outer surface of the leg member 34 abuts flange 48 of the bracket 40 and flange 50 of the bracket 42. Likewise, the outer surface of the leg 36 abuts flange 52 of the bracket 40 and flange 54 of the bracket 42. The upper end portions of the two leg members 34 and 36 abut the two shelves or ledges 44 and 46 of the brackets (see FIG. 3). When the two leg members 34 and 36 are so positioned, longitudinal axes 56 and 58 of the leg members 34 and 36 will be positioned at an acute angle, about thirty-three degrees, relative to each other.

The two brackets 40 and 42 are interconnected by the connecting members or carriage bolts 60, 62 and 64. The carriage bolts 60 to 64 have wing nuts 66 connected at one end thereof. The wing nuts 66 can be tightened on the carriage bolts 60 to 64 to draw the two bracket members 40 and 42 together to clamp the leg members 34 and 36 securely between the two brackets (see FIG. 4).

The carriage bolts 60 to 64 are slidably mounted in the inner three slots 24a of the two brackets 40 and 42. The carriage bolts may be slid in the slots 24a until they contact the inner surface of the two leg members 34 and 36. It should be noted that the longitudinal axes of the slots 24a are positioned at an acute angle relative to the surface of the leg members 34 and 36. Thus, the bolts 60 to 64 may be moved in the slots 24a to contact an inner surface of the leg members 34 or 36. When the carriage bolts 60 to 64 have been wedged tightly against the inner surface of the leg members, the wing nuts 66 will be tightened to securely clamp the leg members and brackets in that position. When the carriage bolts have been tightened, it will be apparent that the leg members 34 and 36 are clamped securely between the two brackets 40 and 42 by the carriage bolts 60 to 64 and the flanges 48 to 54 of the brackets.

Since the bolts 60 to 64 are slidable in the slots 24a,

it will be apparent that they can be adjusted to be wedged against the surface of a leg member which extends inwardly of the outermost portion of the slots 24a (see FIG. 3). Since the slots 24a have a substantial length, it will also be apparent that the dimensions of the leg members 34 and 36 can vary and still be engaged by the bolts 60 to 64. Therefore, leg members of varying dimensions may be used with the brackets 40 and 42. It should be noted that the two leg members 34 and 36 do not necessarily have to be of the same dimensions. The carriage bolts 62 and 64 are independently adjustable and they may be positioned to clamp two leg members having different dimensions.

The construction of the frame assembly shown in FIGS. 2 and 3 is facilitated by the fact that the carriage bolts 60, 62 and 64 are slidable in the slots 24a. When the carriage bolts are loosened, the bolts will fall, under the influence of gravity, to the bottom of the slots 24a. The leg members 34 and 36 may then be easily removed from between the two brackets 40 and 42. When it is desired to reassemble the frame structure shown in FIGS. 2 and 3, it is merely necessary to insert the two leg members 34 and 36 between the brackets 40 and 42, wedge the carriage bolts 60 to 64 into engagement with the surface of their respective leg members, and to tighten the wing nuts 66 on the carriage bolts. It will be apparent that the bracket members 40 and 42 permit leg members of varying dimensions to be utilized to construct the support frame while facilitating the assembly and disassembly of the frame.

The support brackets 40 and 42 have a second group of slots 24b located outwardly of the first group of slots 24a. The second group of slots 24b are intended for use with leg members 70 and 72 which are of a relatively small thickness (see FIG. 5). It will be apparent that the inner surface of the two legs 70 and 72 would not be positioned sufficiently far inwardly to intersect the slots 24a. Thus, when leg members of a relatively small thickness are utilized with the frame assembly, the four carriage bolts 74, 76, 78 and 80 must be placed in the slots 24b so that they may wedge against the inner surface of the two leg members 70 and 72.

After the carriage bolts 74 to 80 have been wedged against the inner surface of the two leg members 70 and 72, the wing nuts 66 for these carriage bolts are tightened and the leg members 70 and 72 are clamped between the two brackets 40 and 42 in the same manner as previously explained. It will be apparent that through the use of two groups of slots, that is, a first relatively inwardly positioned group of slots 24a and a second relatively outwardly positioned group of slots 24b, leg members having substantial variations in size may be clamped to cross-members by the use of a single set of brackets 40 and 42.

If it is desired to construct a relatively permanent support frame assembly, the brackets 40 and 42 may be nailed to the two leg members 34 and 36 and to the cross-member 38. Nail holes 82, 84, 86 and 88 (see FIG. 1) are provided in the surface of the face plate of the two brackets. In addition, two nail holes 90 and 92 are provided in the upper end portion of the flange members 48, 50, 52 and 54. When nails 94 are driven into the nail holes 82 to 92, the leg members and cross-member will be securely connected to the two support brackets 40 and 42. It should be noted, however, that when it is desired to construct a frame assembly which may be easily assembled and disassembled, the carriage bolts will provide sufficient connection means to retain the leg members in secure engagement with the brackets 40 and 42 to support the cross-member 38.

A modified form of the bracket is shown in FIG. 6. The bracket 100, shown in FIG. 6, has a face plate with flange members extending therefrom in a manner similar to the bracket shown in FIG. 1. The longitudinal axes of the apertures or slots 102 in the bracket 100 are angled relative to the vertical axis of the bracket 100. The longi-

tudinal axes of the slots 102 are also positioned at an acute angle to the bracket flanges. In all other respects the bracket 100 is substantially the same as the bracket 20 of FIG. 1.

5 A support frame assembly utilizing two brackets 104 and 106, is shown in FIGS. 7 and 8. The brackets 104 and 106 are of the same structure as the bracket 100. Leg members 108 and 110 are positioned between the brackets 104 and 106 in the same manner as the leg members 34 and 36 are positioned between the brackets 40 and 42. A horizontal stringer or cross-member 112 is also supported by the brackets 104 and 106 in the same way as previously explained for the horizontal stringer or cross-member 38. As previously mentioned, the brackets 104 and 106 differ from the brackets 40 and 42, in that the slots or apertures 102 are angled relative to the vertical axes of the brackets.

As will be seen in FIG. 8, connection members or carriage bolts 114, 116 and 118 are inserted into slots 102a to clamp the brackets together. When the support structure is being assembled, the carriage bolts are loosely connected between the two brackets 104 and 106. The two leg members 108 and 110 are then inserted between the two brackets in an abutting relationship with the flanges of the brackets. Since the slots 102a slope downwardly, the carriage bolts 114 and 116 will slide downwardly in the slots 102a and tend to wedge themselves, almost automatically, against the inner surface of the leg members 108 and 110.

30 The two leg members 108 and 110 will be positioned with their longitudinal axes 109 and 111 at an acute angle to each other. Since the longitudinal axes of the slots 102a are positioned at an acute angle relative to the inner surfaces of the leg members 108 and 110, leg members of different sizes can be held by the bolts 114 and 116. For the bolts 114 and 116 to engage the leg members 108 and 110 it is merely necessary for the inner surfaces of the leg members to extend past the outermost portion of the slots 102a.

40 In the embodiment shown in FIG. 8, the carriage bolts are positioned in the innermost slots or apertures 102a, since the leg members 108 and 110 are relatively large. The carriage bolt 118 is positioned in a generally circular hole or aperture 120 in the face plate of the brackets. It will be apparent that a slot or aperture could be utilized in place of the hole 120 so that the carriage bolt 118 could be moved relative to the leg members 108 and 110. It has been found, however, that a hole 120 will suffice when relatively large leg members are utilized.

50 In FIG. 9, the support assembly is shown using relatively small leg members 122 and 124. The carriage bolts or connection means 126, 128, 130 and 132 are positioned in the outer slots or apertures 102b and wedged into contact with the inner surface of the leg members 122 and 124. Wing nuts for the carriage bolts may then be tightened to securely clamp the leg members 122 and 124 securely into place. As previously explained, the downwardly sloping sides of the apertures 102b will cause the bolts 126 to 130 to slide into engagement with the innermost surface of the leg members as soon as the leg members are inserted between the two brackets 104 and 106.

65 From the foregoing description, it will be apparent that the slots or apertures in the assembly brackets 40, 42, and 104 and 106, permit the brackets to be utilized with leg members of various dimensions. While the leg members of each of the disclosed embodiments have been shown as being of the same size, it is apparent that leg members of different sizes could be used when the supply of materials was such that leg members of the same size are not available. In addition to being able to use leg members of different dimensions, the brackets facilitate the rapid assembly of the support frame. The brackets also facilitate the rapid disassembly of the support frame for storage, since the brackets need not be nailed to the

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support legs and cross members unless a relatively permanent structure is desired.

While particular embodiments of the invention have been shown, it should 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.

What is claimed is:

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 elongate 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 inner and outer sets of slots with elongate axes extending generally in the direction of said flanges for selective use with different sizes of leg members, the outer set of elongate slots including upper and lower pairs of slots with the elongate axes thereof intersecting a horizontal line across the face plate and symmetrically arranged on opposite sides of the vertical center line through the face plate with adjacent elongate edges facing each other, the inner set including a pair of elongate slots with the elongate axes thereof intersecting a horizontal line across the face plate adjacent the lower pair of slots of the outer set and symmetrically disposed on opposite sides of the ver-

6

tical center line through the face plate with adjacent elongate edges facing one another, and plural fastener elements each having a shank arranged to pass through a corresponding slot of one set of slots for holding the plates in position against inserted leg members of predetermined size, the lateral spacing between the slots of the inner and the outer sets being such as to accommodate predetermined sizes of leg members and the elongate apertures permitting the fasteners to slide therein from a position spaced from the leg members to a position in wedging engagement with adjacent surfaces of the leg members to clamp opposed surfaces thereof against corresponding flanges thus to accommodate minor variations in predetermined size of leg members being clamped.

2. A bracket assembly as claimed in claim 1, wherein the slots of both sets are substantially parallel to one another and perpendicular to the base line of the face plate.

3. A bracket assembly as claimed in claim 1, wherein the slots of both sets are inclined to the planes of the flanges and the base line of the face plate.

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