United States Patent [19]

Templin

[11] **3,749,391**

[45] **July 31, 1973**

[54] **ADJUSTABLE FIXTURE MEANS FOR MAINTAINING WOODEN TRUSS MEMBERS IN PROPER POSITION DURING FABRICATION OF A TRUSS**

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[73] Assignee: **TCT Engineering, Inc.,** Vero Beach, Fla.

[22] Filed: **Feb. 17, 1972**

[21] Appl. No.: **227,557**

Related U.S. Application Data

[62] Division of Ser. No. 105,253, Jan. 11, 1971, Pat. No. 3,667,379.

[52] **U.S. Cl.** ..... **269/321 F,** 100/DIG. 13

[51] **Int. Cl.** **B23q 3/02**

[58] **Field of Search** ..... 269/303, 321 F, 299, 269/217; 100/DIG. 13

[56] **References Cited**

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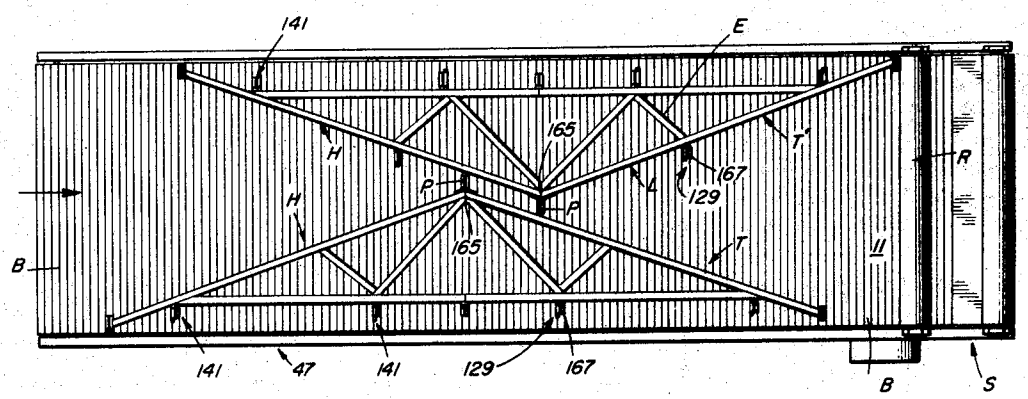
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Assistant Examiner—E. F. Desmond
Attorney—Philip V. W. Peck

[57] **ABSTRACT**

Apparatus for fabricating wood trusses, providing a jig including a moving platform, upon which metal truss plates are placed in proper position on the tops and bottoms of the joints of the wood truss members for embedment therein. The platform being composed of a plurality of slats and the slats being spaced apart, providing areas therebetween for receiving and clamping thereto in adjusted positions fixtures abuttable with the members of the truss to maintain them in proper position on the platform.

2 Claims, 6 Drawing Figures



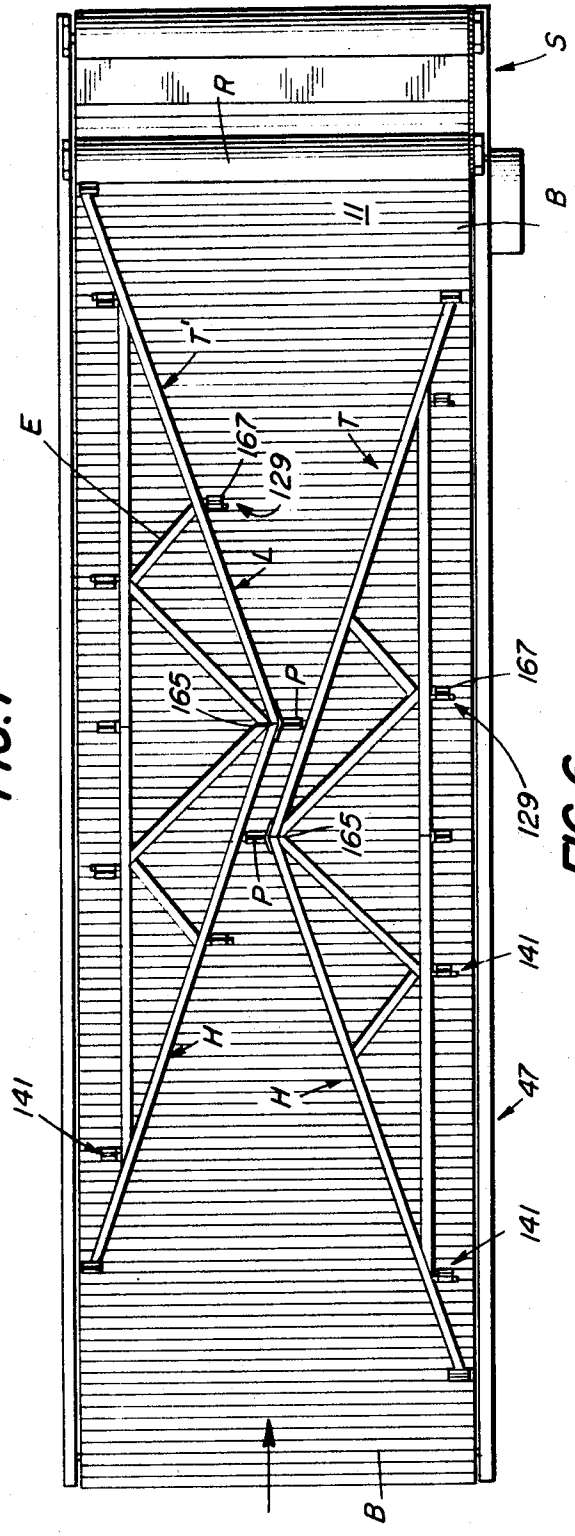

S
R
B
T'
T
E
167
129
L
165
P
141
H
47

FIG. 1

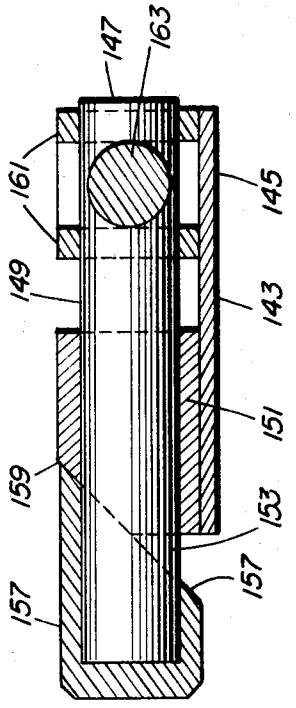

147
163
161
145
149
143
151
159
153
157

FIG. 6

FIG. 2

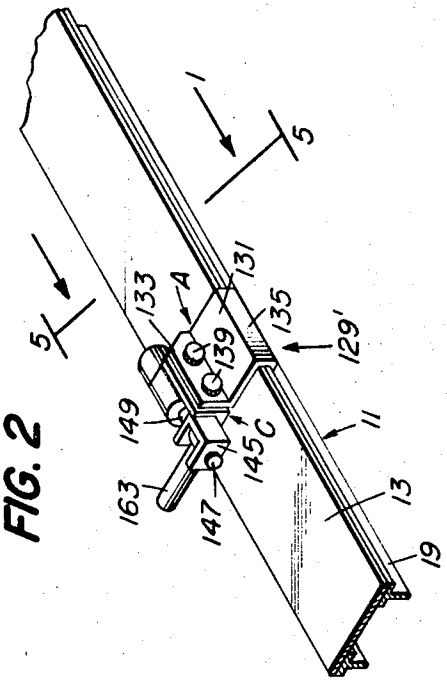


FIG. 5

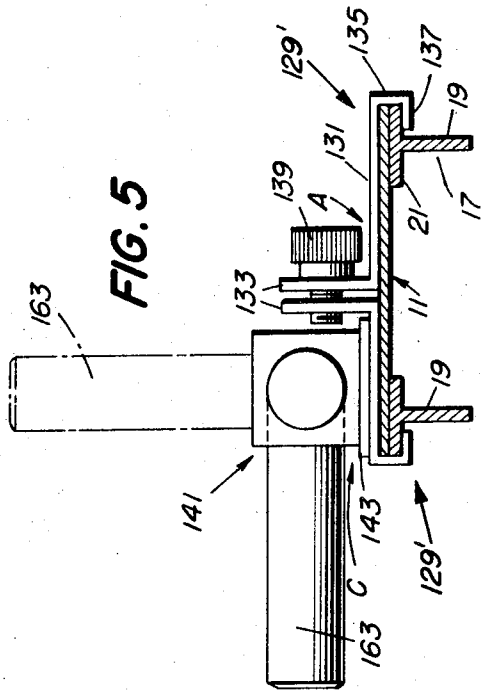


FIG. 3

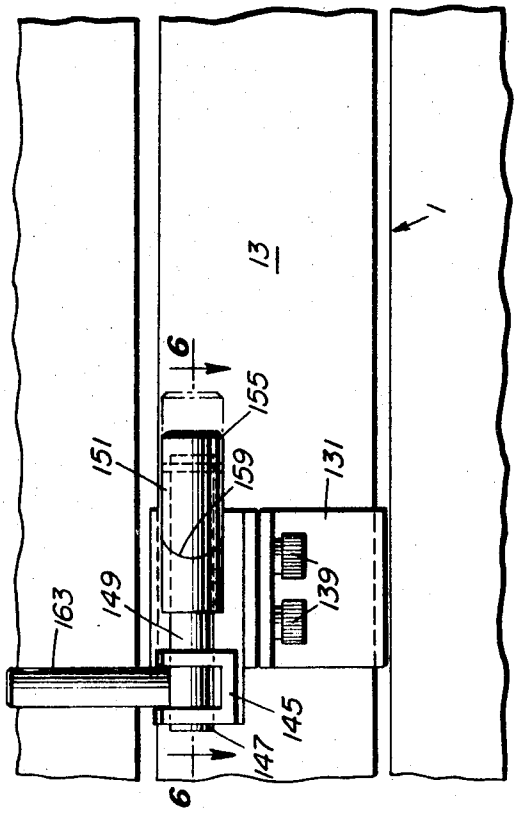
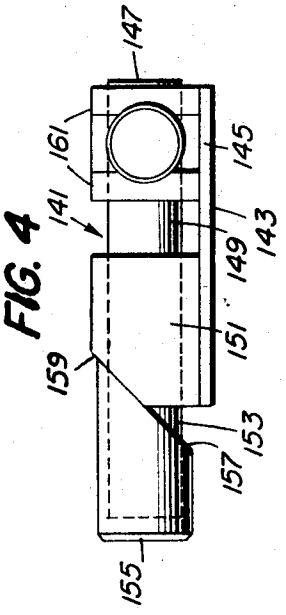


FIG. 4



ADJUSTABLE FIXTURE MEANS FOR MAINTAINING WOODEN TRUSS MEMBERS IN PROPER POSITION DURING FABRICATION OF A TRUSS

This application is a division of Gail H. Templin application, Ser. No. 105,253, filed Jan. 11, 1971 for Apparatus for Pre-fabricating Wood Structures, now U.S. Pat. No. 3,667,379, issued June 6, 1972.

This invention relates broadly to an Apparatus for Pre-Fabricating Wood Trusses the members of which are positioned on a platform forming part of the apparatus, and in its more specific aspects, it relates to means adjustably mounted on certain elements of the platform and abuttable with the members of the truss for maintaining said members in proper position on the platform for embedment of the prongs of the metal truss plates into truss forming position at the joints of the members of the truss; and the nature and objects of the invention will be readily recognized and understood by those skilled in the arts to which it relates in the light of the following explanation and detailed description of the accompanying drawings illustrating what I at present believe to be preferred embodiments or mechanical expressions of my invention from among various other forms, arrangements, combinations and constructions, of which the invention is capable within the spirit and scope thereof.

The platform for the trusses, the members of which are being fabricated and are being maintained in proper position by adjustable fixture means which will be hereinafter described in detail, is preferably movable, in the nature of a conveyor. It will be appreciated that the various members of the truss which are positioned on the platform of the jig must be maintained in proper position thereon, so that the metal truss plates will be emedded at the joints of the truss. I have so arranged and constructed the platform or conveyor of this invention that it will removably receive in adjusted positions the fixture or member maintaining means which engages the truss members to maintain them in proper positions.

In many instances, the apparatus comprises a jig, in which a platform upon which the truss members are positioned is movable to move the truss members with the metallic truss plates in positions below and above the joints of the truss into presses of various types to embed the metallic truss plates in the joints of the wooden truss. My innovation includes truss member maintaining fixture means some of which are auto-matically released from their truss member maintaining positions as the truss begins its travel through the pressing means. Where a movable platform is employed, and as this description proceeds, it will become clear that certain of said maintaining fixture means need not be automatically released from their truss member maintaining positions, and the reasons for said operations will be fully explained hereinafter.

The platform of the jig upon which the truss members are positioned for embedment of the metallic truss elements in the joints thereof, is composed of a plurality of transversely extending slats, the longitudinal edges of such slats being spaced apart so that the member maintaining fixture means may be adjusted relative to the slats by means positioned in the areas between the slats, such member maintaining fixture means may be adjusted relative to the slats by means positioned in the areas between the slats, such member maintaining fixture means being adjustably fixed to the slats.

With the foregoing general objects, features and results in view, as well as certain others, which will be apparent from the following explanation, the invention consists in certain novel features in design, construction, mounting and combination of elements, as will be more fully and particularly referred to and specified hereinafter.

Referring to the accompanying drawings:

FIG. 1 is a top plan view of the members of a pair of trusses supported on a movable or stationary platform, in readiness to be fabricated into completed trusses by the application of pressure to the metallic truss plates to embed them in the joints of the truss.

FIG. 2 is a perspective view of one of the plurality of slats of which the platform is composed, and illustrating a truss member maintaining fixture and clamping means clamped to the slat.

FIG. 3 is a top plan view of a pair of adjacent slats of the platform, with parts thereof broken away, and particularly illustrating the maintaining and engaging fixture means for a truss member.

FIG. 4 is a top plan view illustrating in detail a truss member maintaining fixture and clamping means.

FIG. 5 is a view taken on line 5—5 of FIG. 2.

FIG. 6 is a view taken on line 6—6 of FIG. 3.

In the accompanying drawings, and particularly in FIG. 1 thereof, I have illustrated a platform for supporting the members of a wooden truss in proper positions for embedment of metal truss plates in the joints between the members to fabricate a completed truss. The platform of the jig which I have designated by the letter B is composed of a plurality of slats designated generally by the numeral 11, each slat comprises an upper surface 13 upon which the wooden members of the truss are supported as will be explained hereinafter. The platform composed of the slats may be movably supported in any suitable manner, as by a frame 47, which may be mounted on legs, or the like. My pending application Ser. No. 105,253, now U.S. Pat. No. 3,667,379, describes apparatus for imparting movement to the platform. In the event that the platform is movable in the general manner of a conveyor, any suitable mounting means for the slats may be provided as are disclosed in my copending application Ser. No. 105,253.

In the initiation of the wooden truss pre-fabricating operation, one or more trusses T and T' (see FIG. 1) may be operated upon at one time. In preparing the various materials and elements for fabricating into a truss, the metallic truss, or connector plates are first placed on the platform B with the prongs or teeth thereof in upright position. It will be appreciated that these plates are placed on the conveyor at prelocations, such locations being where the joints between truss members will be, as at 165. When the metallic truss plates have been so placed in proper positions on the platform the wooden truss members are then placed on the platform in the proper positions for final fabrication of the wooden truss. When this operation is completed, a metallic truss plate is placed at every joint 165 between the members of the truss, the teeth or prongs of each plate facing downwardly in engage-ment with the truss members. With the truss forming members and the metallic truss plates positioned as described above, the various members are in position

prepared to receive pressures at the points **165** in order to embed the upper and lower metallic truss plates in the wooden truss members. The platform B preferably being of the movable or conveyor type, the platform with the properly positioned truss members thereon will be moved toward the pressing station S through which the truss members will pass to form the completed truss. The pressure station may comprise pressure rollers R.

The leading half of each truss, which is that portion of the truss marked L, which extends from the peak P of the truss in the direction of travel of the platform may be maintained by fixtures marked generally by the numeral **167** such fixtures not being provided with means which is automatically released as the truss passes through the station S. These fixtures **167** may be made in a variety of forms but preferably embody a member maintaining fixture means **129** upon which may be mounted and fixed a truss member engaging and maintaining shaft in the nature of the shaft **153,** however, the shaft in these fixtures **167** is not movable relative to the maintaining means **129** in order to applyma maintaining pressure on the truss members T in the leading half of the truss. Instead, the fixtures **167** are movable into position engaging a truss member by positioning the maintaining means **129** relative to a slat upon which it is mounted. Thus, it will be recognized that by moving the maintaining means **129,** the truss member engaging shaft may be moved into engagement with said truss member.

The trailing half of each truss which follows the leading half L thereof in the direction of travel of the trusses on the platform, I have marked with the letter H, and this trailing half extends from the peak P of each truss rearwardly to the end thereof. In this trailing half of each truss, I use as the maintaining means the pressure means **141.** As was explained, when the shaft which engages the truss member to maintain it in proper position is projected, the operating or manipulating handle **163** is in upright position as illustrated in dotted lines in FIG. **5.**

From the discussion of my invention thus far, it will be appreciated that it is necessary to position and maintain the truss forming elements in their proper and desired positions on the platform. While there are several means which may be employed for accomplishing this purpose, I have evolved one form of such means which achieves the purpose thereof in a highly advantageous manner. Since trusses of different spans and cambers may be fabricated on an apparatus involving a supporting platform, it is necessary that any truss member maintaining fixture means be adjustable to conform to these different dimensioned trusses. In FIGS. **2** and **5,** particularly, I have disclosed one such adjustable means which my work in this discipline indicates is highly satisfactory. The slats **11** are spaced apart from each other along their longitudinal edges as is clearly illustrated in FIG. **3** of the drawings. This spacing between the longitudinally extending edges of adjacent slats permits the maintaining means to be movable or adjustably mounted on any slat. Such maintaining means comprises a pair of clamping means, designated generally by the numeral **129'** and each of these clamping means **129'** is of the same structure and comprises a base plate **131,** having an element **133** upstanding from one end thereof and at the other end a flange **135** extends downwardly having an inwardly extending flange **137** extending from the lower end thereof. As I have stated, any suitable supporting means may be provided for the slats **11** which form the platform B and in FIG. **5,** I have disclosed one type of supporting means for the slats which is of T shape and comprises a head **21** and a leg or the like **19** extending downwardly therefrom. Consideration of FIG. **5** clearly shows that one of these elements involving the head **21** supports each longitudinal side of each slat and extends the full length of such slat. The space between the inwardly extending flange **137** and the lower surface of the base **131** is substantially equal the thickness of the slat **11** and the head **21** of the T-shaped elements **17.** In using the maintaining mechanism, each clamping means is positioned in the desired location on a slat with the base **131** resting on the slat and the members **135** and **137** embracing the ends of the slat and the head **21,** while the flange **137** hooks under the head **21.** Thus, it will be apparent that the two parts A and C of the maintaining means are positioned as illustrated in FIG. **5.** In order to firmly hold the members A and C in their proper adjusted positions, I provide threaded aligned holes in the upstanding members **133** into which are threaded screws **139.** It will thus be apparent that upon tightening the screws, the upstanding members **133** of the parts A and C will be urged together thereby firmly clamping the members A and C to the slat.

The maintaining means **129,** as has been explained, is removably clamped to a slat in any desired position thereon, and affixed to either base portion **131** is a truss member engaging and maintaining apparatus in the nature of the pressure means, and I have designated this pressure means in its entirety by the numeral **141.** The pressure means **141** comprises a flat base **143** into which extends one end of a shaft **147** which extends outwardly therefrom, as at **149.** The bracket **145** is supported by the shaft **147–149** and is slidable relative to the base **143.** A projected end or length of the shaft **149** rotatably extends into a fixed sleeve **151** which is fixed into any suitable manner to the base **143.** The shaft extends beyond the confines of the sleeve **151,** as at **153,** and is provided with a working nose **155** which is adapted to engage a truss member when the pressure means is in operative truss member maintaining position. The projecting portion **153** of the shaft has affixed thereto and thereabout an element **157** which is provided at its rear end with an annular cam surface **159** which mates with and is cammed by a cam surface **159** which is provided on the forward end of the sleeve **151.** The length of the shaft **147** which extends through the arms **161** of the bracket **145** is provided with a shaft operating handle **163.** The shaft operating handle **163** is fixed to the shaft so that manipulation of the handle from the full line position of FIG. **5** to the dotted line position of FIG. **5** will result in rotation of all the lengths of the shafts **147, 149** and **153,** as well as rotation of the element **157** which is fixed to the portion **153** of the shaft. Due to the mating cam surfaces **157** and **159,** the portion of the shaft **153** with its nose **155** will be projected when the handle **163** is moved into the dotted line position of FIG. **5.** In this position, the nose **155** will be in pressure maintaining engagement with a truss member at the desired and preselected point thereon. It is to be recognized that various types of pressure fixtures for adjustable mounting on the conveyor and for maintaining engagement with the truss

members may be used, and such pressure fixtures will still fall within the spirit and scope of my invention.

When the platform B is of the movable or conveyor type so that the truss members with the metal truss plates applied above and below the joints are moved between rollers or the like, pressing means at the pressure station S for embedment of the metal truss plates into the members of the truss at the joints thereof, shaft operating handles **163** of each pressure fixture means **141** will engage a roller R, or the like, at the pressing station S and will be moved downwardly into the full line position of FIG. **5**, so that through the cam mechanism the working nose **155** will be released from maintaining engagement with a member of the truss. The other maintaining means **167** being without a shaft operating handle will not come into operating engagement with a pressure roller or other suitable pressing means.

I claim:

1. Apparatus for prefabricating wooden truss members into a completed truss, including a platform for supporting wooden truss members and pronged metallic truss plates in position for receiving pressures from a press, said platform being formed of a plurality of elongated slats and the longitudinal edges of adjacent slats being spaced apart, means being removably mounted and fixed at any longitudinal location on a slat, and said means including clamping mechanism clamping the longitudinal edges of a slat to fix said means in any adjusted position on the slat, and said means including mechanism projectable from said means to and from position engaging a wooden truss member to maintain it in proper position on said platform, the projectable mechanism being rotatably mounted, and an operating handle being connected to said projectable mechanism, said platform being movable and said operating handle extends upwardly from said slats when said projectable mechanism is in operative position engaging a truss member, and is in position substantially horizontal with respect to said slats when said projectable means in in inoperative retracted position, and said operating handle when in upstanding position being engagable with said press as the platform travels to move said operating handle into inoperative position substantially horizontal with respect to said slats.

2. Apparatus for prefabricating wooden truss members into a completed truss, including a platform for supporting wooden truss members and pronged metallic truss plates in position for receiving pressures from a press, means being releasably fixed on said platform for sliding to any desired location thereon, and said means including mechanism projec-table from said means to and from position engaging a wooden truss member to maintain it at a proper position on said platform, and an operating handle being connected to said projectable mechanism, said platform being movable and said operating handle extends upwardly from said platform when said projectable mechanism is in operative position engaging a truss member, and is in position substantially horizontal with respect to said platform when said projectable means is in inoperative retracted position, and said operating handle when in upstanding position being engagable with said press as the platform travels to move said operating handle into inoperative position substantially horizontal with respect to said platform.

* * * * *