

United States Patent

Moehlenpah

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[54] **APPARATUS FOR FABRICATING WOOD STRUCTURES**

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[52] U.S. Cl.....**100/231, 29/200, 100/DIG. 13, 227/152, 269/321 F**

[51] Int. Cl.**B30b 1/18**

[58] Field of Search ..**100/DIG. 13; 227/152; 29/200; 269/321 F; 144/288.6; 100/231**

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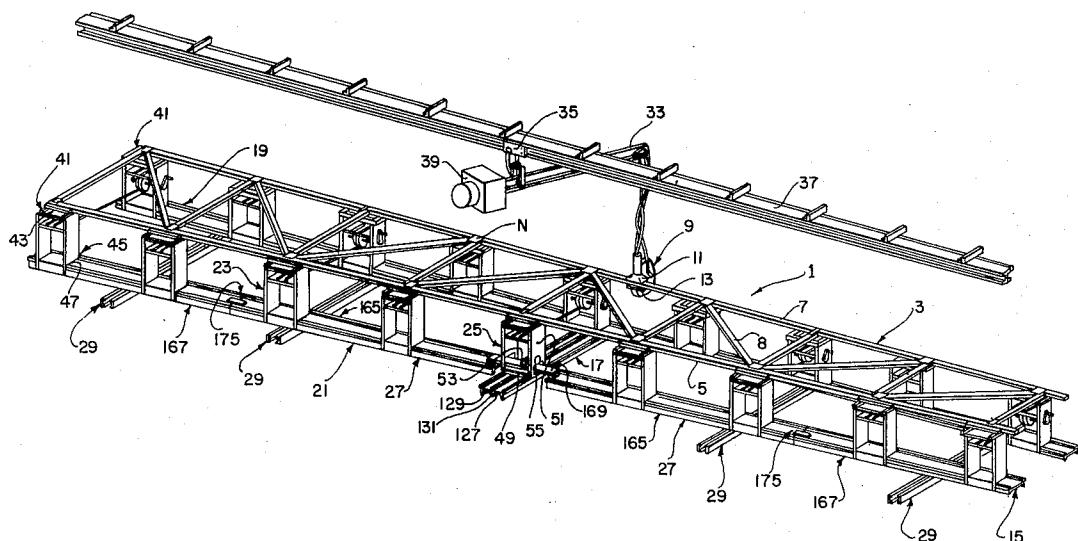
Attorney—**Koenig, Senniger, Powers & Leavitt**

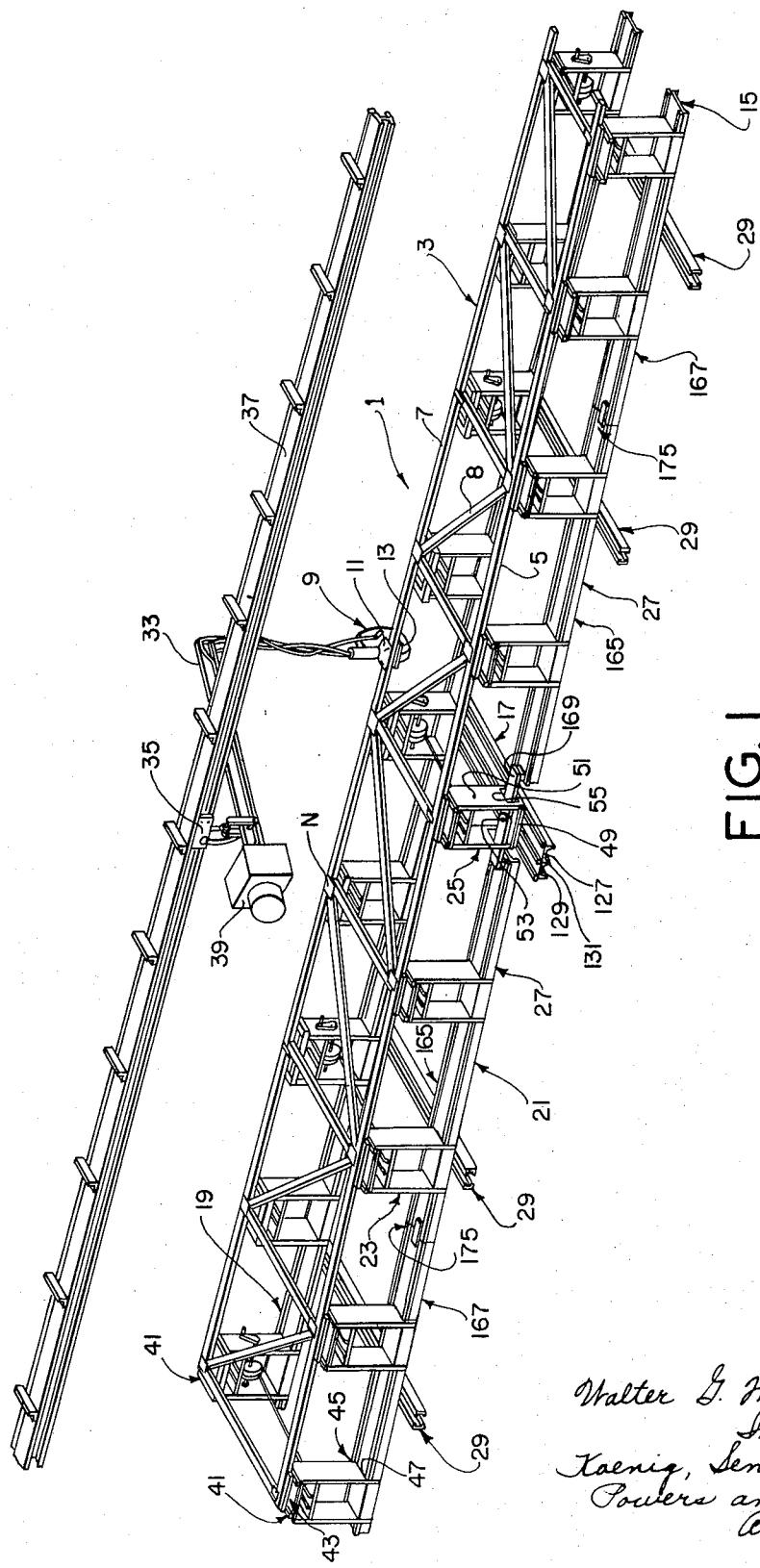
[57] **ABSTRACT**

Apparatus for fabricating wood trusses of the type having lower chord members, upper chord members, and web members extending from the lower chord members to the upper chord members, which utilizes a C-shaped press having an upper platen and a lower

platen which are relatively movable toward and away from each other for driving nailing plates into two or more wood members of a truss from above and below. The apparatus has floor level track means comprising central track means extending heightwise in relation to the truss between the locations of the lower and upper chord members, lower chord track means extending outwardly from both sides of the central track means, and upper chord track means extending outwardly from both sides of the central track means. A plurality of stands are mounted on the track means for holding the wood members to be operated on by the press, with the central track means having at least one of the stands mounted thereon for movement therewith heightwise in relation to the truss. Others of the stands are mounted on the upper and lower chord track means for chordwise movement therewith. The upper chord track means comprises wing track members extending outwardly from the central track means with the inner ends of the wing tracks being pivotally connected to the movable central track stand for swinging movement in a generally horizontal plane relative to the movable central track stand. Additionally, the apparatus includes outboard track means on both sides of the central track means extending generally heightwise in relation to the truss, and carriage means movable on each outboard track means. The wing track members are supported on the carriage means for movement therewith while swinging about their pivotal connection to the central track stand.

24 Claims, 9 Drawing Figures





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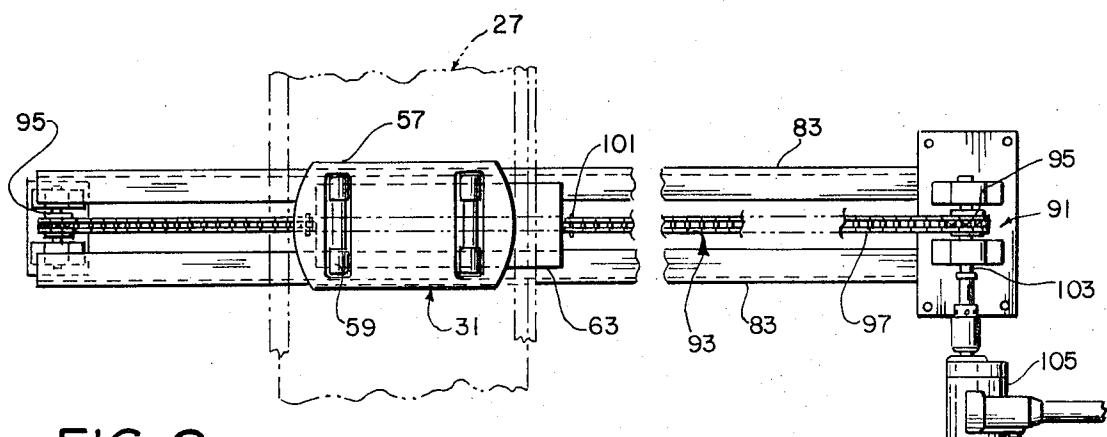


FIG. 2

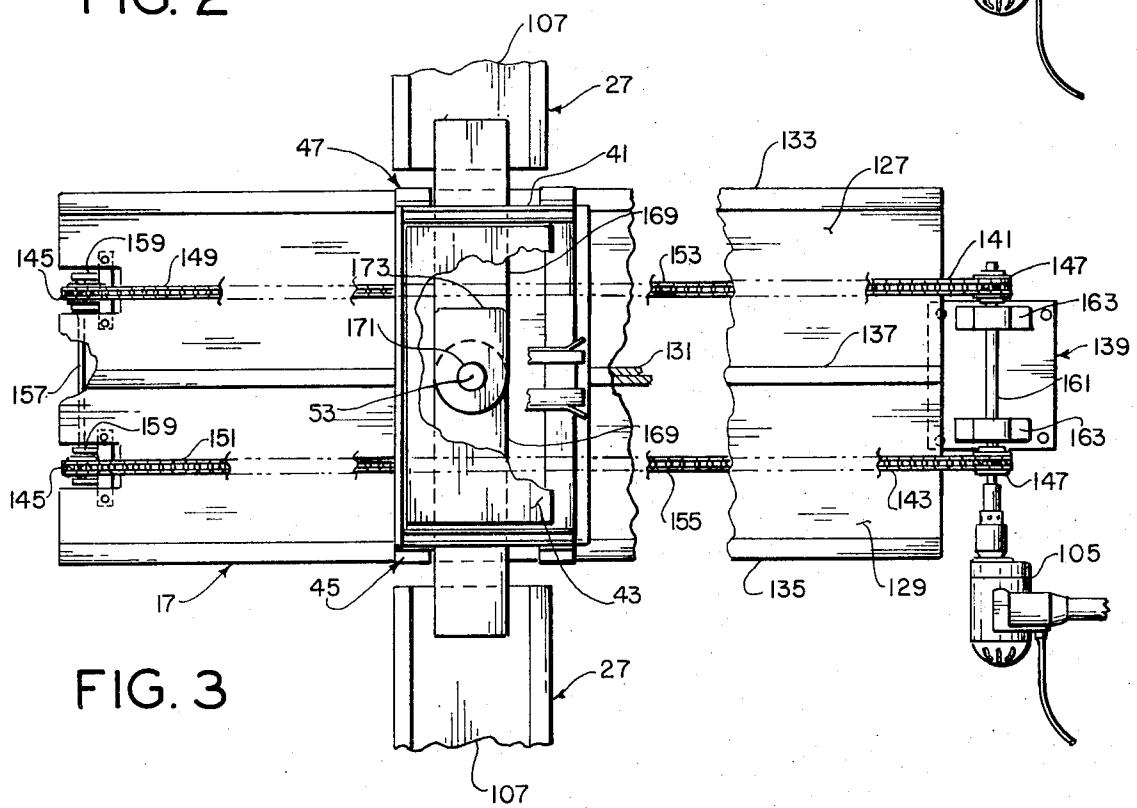


FIG. 3

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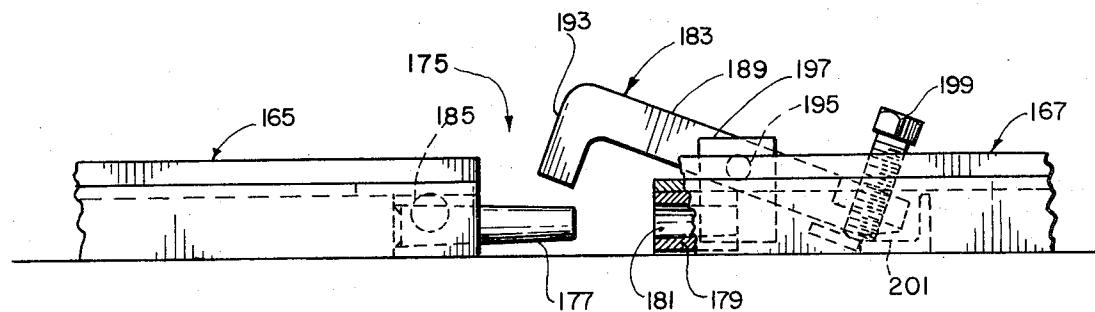


FIG. 4

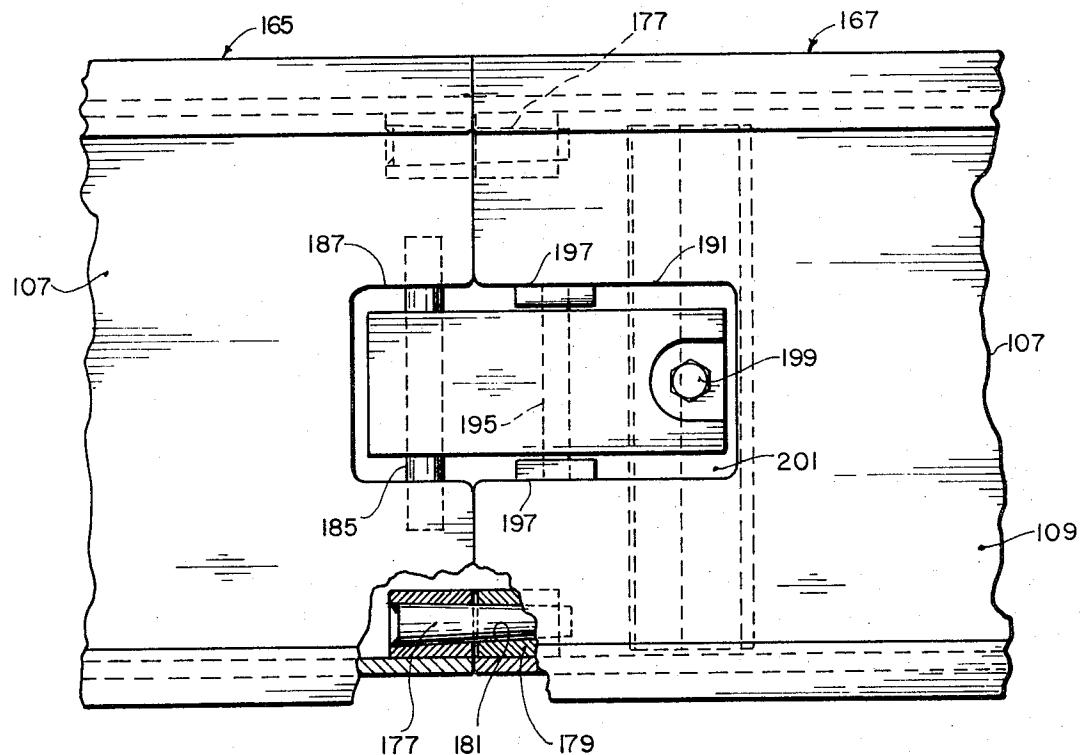


FIG. 5

FIG. 6

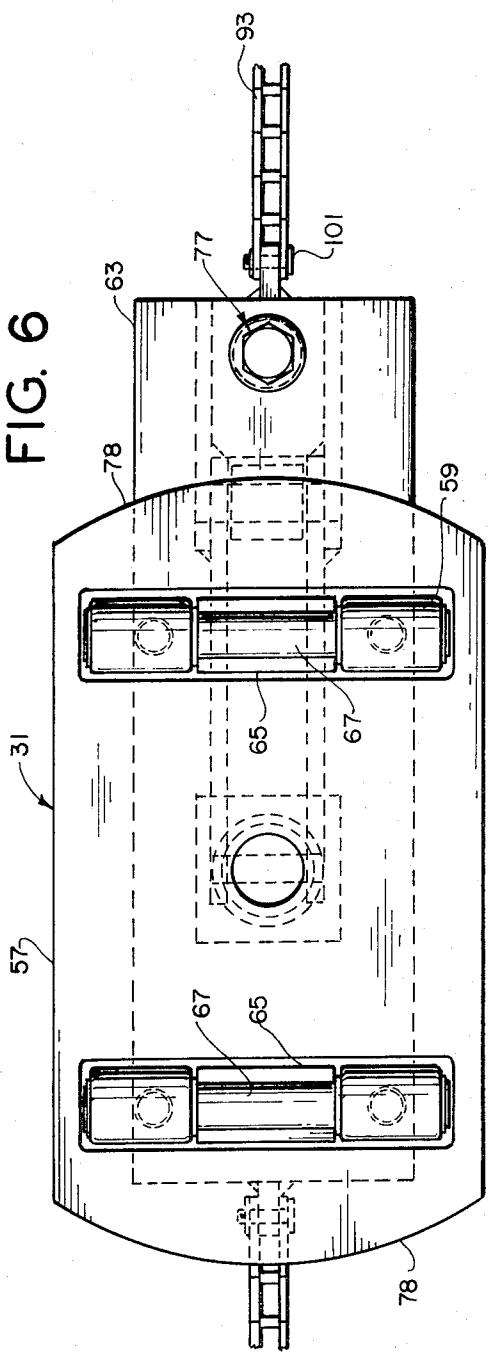
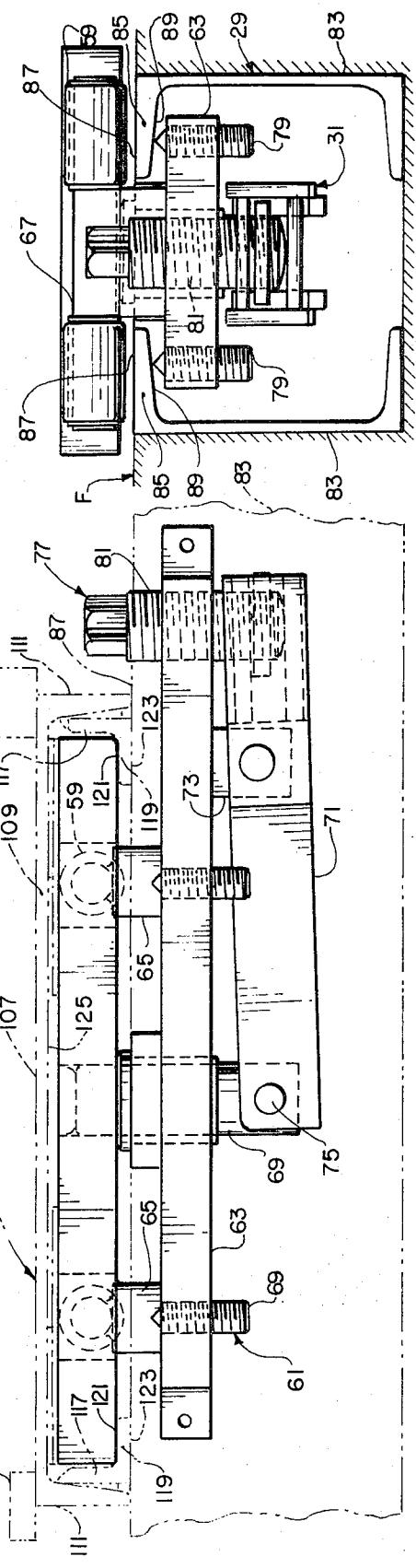


FIG. 8



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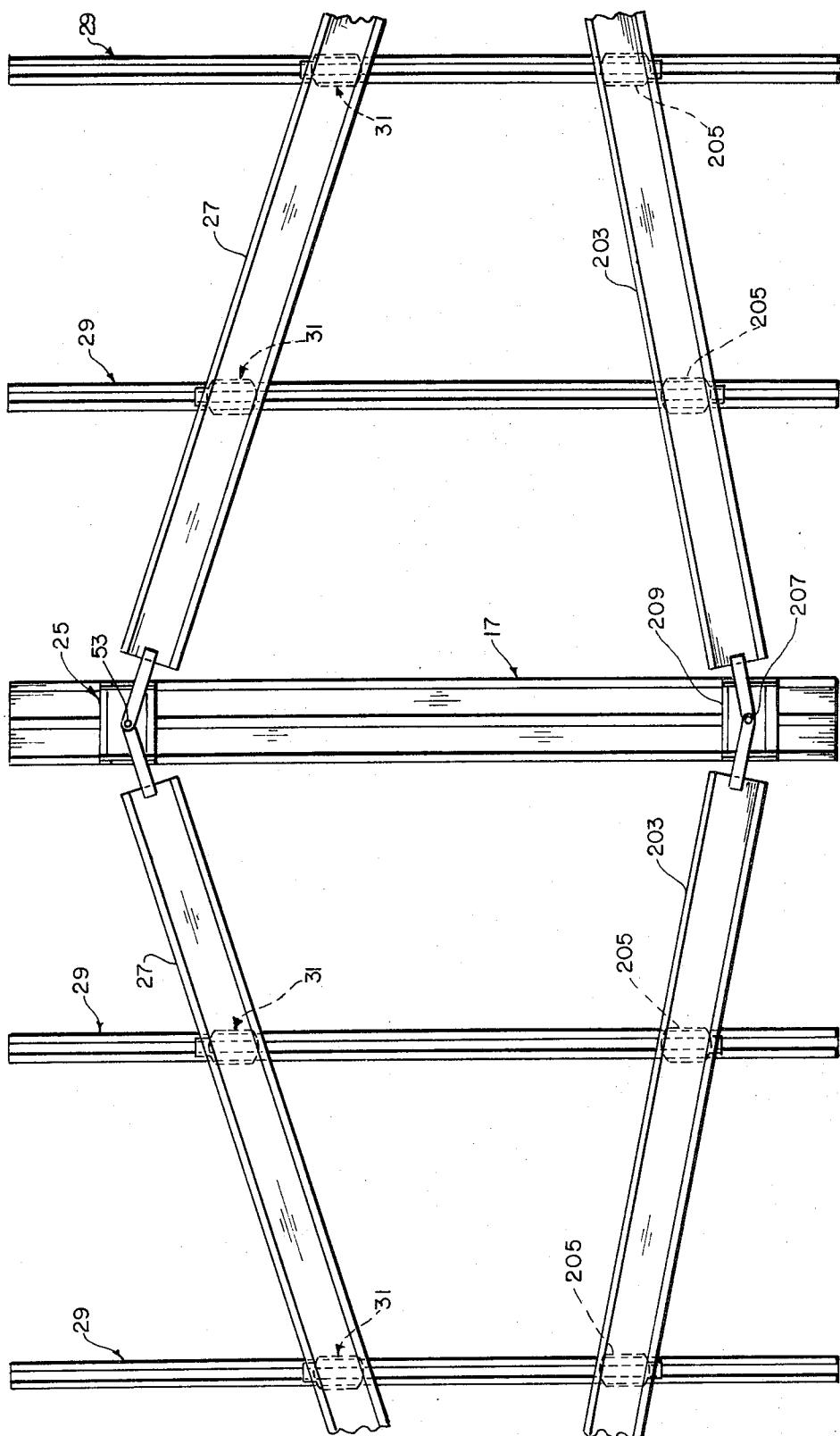


FIG. 9

APPARATUS FOR FABRICATING WOOD STRUCTURES

BACKGROUND OF THE INVENTION

This invention relates to apparatus for fabricating wood structures and more particularly to apparatus for fabricating wood roof trusses.

This invention is especially concerned with wood truss fabricating apparatus having a plurality of stands movable along track means at floor level, the stands together constituting a jig on which precut wood truss members may be assembled and secured together by nailing plates driven into the wood members from above and below by a C-shaped hydraulic press having an upper platen and a lower platen which are movable toward and away from one another for driving the nailing plates. Generally, prior art truss fabricating apparatus such as shown in Moehlenpah et al. U.S. Pat. No. 3,068,484 has been adapted to fabricate triangular roof trusses for residential and commercial buildings. Recent architectural and engineering developments have created a substantial demand for flat, double flat slope, single flat slope, one-half single slope, center drain, and mansard trusses, all of which may be characterized as having relatively long-span lengths (e.g., 60 feet), section heights or depths up to 15 feet (or more), and relatively flat slopes. Generally, prior art truss fabricating apparatus has not been capable of fabricating trusses having such long-span lengths and has not been readily adapted to fabricate long-span flat trusses.

SUMMARY OF THE INVENTION

Among the several objects of this invention may be noted the provision of truss fabricating apparatus adapted for fabricating long-span flat trusses as well as conventional triangular trusses and which may be readily set up to fabricate the various trusses; and the provision of such apparatus which requires a minimum amount of floor space, which is of open construction permitting workmen to walk through the apparatus, and which is of relatively low cost.

In general, truss fabricating apparatus of this invention is adapted to fabricate wood trusses of the type having lower chord members, upper chord members, and web members extending from the lower chord members to the upper chord members, utilizing a C-shaped press having an upper platen and a lower platen which are relatively movable toward and away from each other for driving nailing plates into two or more of the wood truss members from above and below. The apparatus has floor level track means comprising central track means extending heightwise in relation to the truss between the locations of the lower and upper chord members, lower chord track means extending outwardly from both sides of the central track means, and upper chord track means extending outwardly from both sides of the central track means. A plurality of stands are mounted on the track means for holding the wood members to be operated on by the press. The central track means has at least one of the stands mounted thereon for movement therealong heightwise in relation to the truss and others of the stands are mounted on said upper and lower track means for chordwise movement therealong. The upper chord track means comprises wing track members extending

outwardly from the central track means with the inner ends of the wing tracks being pivotally connected to the movable central track stand for swinging movement in a generally horizontal plane relative to the central movable track stand. The apparatus further comprises outboard track means on both sides of the central track means extending generally heightwise in relation to the truss, and carriage means movable on each outboard track means. The wing track members are supported on the carriage means for movement therewith while swinging about their pivotal connection to the central track stand.

Other objects and features will be in part apparent and in part pointed out hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a trimetric view of this invention set up to fabricate a single slope flat truss;

FIG. 2 is a plan view of the inner outboard track means showing the drive chain for effecting movement of the carriage along the outboard track means with a portion of the wing track shown in phantom;

FIG. 3 is a plan view of the central track showing the central track stand mounted thereon connected to its respective drive chain for effecting heightwise movement of the stand along the central track;

FIG. 4 is an enlarged side elevation view of a portion of the wing track showing the outer track section detached from the inner track section and the latching means for securing the track sections together;

FIG. 5 is an enlarged plan view of a portion of the wing track showing the inner and outer track sections secured together in butting relation;

FIG. 6 is a plan view of the carriage means of the invention;

FIG. 7 is a side elevation of the carriage means mounting a portion of the wing track with the carriage clamp means in its clamped position;

FIG. 8 is an end view of the carriage means as shown in FIG. 7 with the wing track portion omitted; and

FIG. 9 is a plan view of a modification of the apparatus having pivoted upper and lower chord wing tracks.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In general, apparatus of this invention, generally indicated at 1, for fabricating wood trusses 3 of the type having lower chord members 5, upper chord members 7 and web members 8 extending from the lower chord members to the upper chord members utilizes a C-shaped press 9 having an upper platen 11 and a lower platen 13 which are relatively movable toward and away from each other for driving nailing plates, generally indicated at N, into two or more of the wood members of the truss from above and below. The apparatus has floor level track means, generally indicated at 15, comprising a central track, generally indicated at 17, extending heightwise in relation to the truss between the locations of the lower and upper chord members, lower chord track, generally indicated at 19, extending outwardly from both sides of the central

track, and upper chord track, generally indicated at 21, extending outwardly from both sides of the central track. A plurality of stands, generally indicated at 23, are mounted on the track means for holding the wood members to be operated on by the press. At least one of the stands indicated at 25 is mounted on the central track for movement therealong heightwise in relation to the truss and is hereinafter referred to as a central track stand. Others of the stands are mounted on the upper and lower chord track for chordwise movement therealong. The upper chord track comprises wing track members, generally indicated at 27, extending outwardly from the central track with the inner ends of the wing tracks pivotally connected to the movable central track stand for swinging movement in a generally horizontal plane relative to the movable central track stand. The apparatus further includes outboard tracks, generally indicated at 29, on both sides of the central track means and extending generally heightwise in relation to the truss, and carriage means, generally indicated at 31, movable on each outboard track means. The wing track members are supported on the carriage means for movement therewith while swinging about their pivotal connections to said central track stands.

Referring now to FIG. 1, the apparatus is shown as set up to fabricate a truss 3 of the type referred to as a single slope flat truss. Trusses of this type have relatively long lower and upper chord members 5 and 7 respectively (60 feet long, for example), with little or no pitch of the upper chord members relative to the lower chord members. Such trusses are generally referred to as flat trusses. The wood members comprising the truss are secured together by nailing plates N respectively positioned above and below the intersection of two or more of the wood members. As will be pointed out hereinafter, the apparatus of this invention is particularly adapted to fabricate conventional triangular trusses as well as long-span flat trusses as above described.

As shown in FIG. 1, the press 9 of this apparatus is suspended from a counterbalance beam 33 which is carried by a press carriage 35, movable along an overhead supported I-beam 37, positioned above the apparatus, and running generally chordwise thereof for universal movement of the press permitting the press to be moved from stand to stand for driving the nailing plates. A hydraulic pump and electric motor assembly 39 is mounted on the end of the beam 33 opposite of the press to counterbalance the press and to supply hydraulic fluid under pressure thereto. The press and the overhead mounting corresponds, for example, to the hydraulic press system disclosed in U.S. Pat. No. 3,068,484, at FIGS. 2 and 13-15 therein. The stands 23 of this invention which are mounted on the lower chord track 19 and the upper chord track 21 correspond to the pedestal indicated at 17 and 19 in the abovementioned patent, and the center track stand 25 herein corresponds to the peak pedestal 13. Each stand of this invention has means indicated at 41 for supporting the wood truss members in position to be secured together by the nailing plates N. This wood member support means corresponds to the channel-shaped guides 67, 69, and 71 in the aforementioned patent which are adapted to support, align and clamp the wood members

in position. The stands further include means indicated at 43, for holding a lower nailing plate in position below the wood members for being driven upwardly by the lower platen 13 of the press 9. This nailing plate holding means corresponds, for example, to the locating tray 59 in the above-mentioned patent. Similarly, each stand has mounting means, generally indicated at 45, at its bottom engaging the track means on which the stand is mounted and means indicated at 47 for clamping the stand in adjusted position along the track means. The stand mounting means 45 and the clamping means 47 may be of any suitable design, but are preferred to be similar to those described in the copending application of Walter G. Moehlenpah et al. for Carriage with Track Clamp, Ser. No. 81,484, filed Oct. 16, 1970.

The central track stand 25 has a base 49 carrying the mounting and clamping means 45 and 47, respectively, and side walls 51 extending up from the sides of the base carrying the wood member support means 41. The base has means at its center for pivotally attaching both wing track members 27 thereto comprising a pivot pin 53 extending upwardly from the center of the base through openings in the innermost ends of the wing track members thereby enabling the latter to pivot in a substantially horizontal plane about the pin 53. The side walls 51 of the stand 25 each have an opening 55 adjacent their bottom edges for the passage therethrough of a respective wing track member for being attached to the pin 53. The size of the openings 55 is such that the wing track member passing therethrough may swing through an arc sufficient to permit the fabrication of triangular trusses having a steep slope without contacting the side walls 51.

Referring now to FIGS. 6-8, the carriage means 31 is shown to comprise a platform 57 supporting a respective wing track member 27 with the latter being slidable and swingable on the platform. The carriage means has rollers, generally indicated at 59 for rolling the carriage means along the respective outboard track 29, and means, generally indicated at 61, for clamping each wing track member to the respective outboard track and for raising and lowering the respective rollers. The clamp means is operable in one direction to clamp the wing track member down on the outboard track, while raising the rollers clear of the outboard track to relieve the rollers of clamping forces, and operable in the opposite direction to release the wing track member from the outboard track and to lower the rollers into engagement with the outboard track for rolling the carriage along the outboard track.

More particularly, the carriage means 31 comprises a base 63 having blocks 65 welded to its upper surface carrying axles 67 which are rigidly secured to the blocks and on which are journalled the rollers 59. The platform 57 is mounted above the base on a support post 69 which extends downwardly from the platform through an opening in the base for relative vertical movement of the base and the platform. The platform is moved vertically relative to the base by a lever 71 pivotally connected intermediate its ends to a lug 73 welded to the bottom of the base for up and down pivotal movement of the lever. The latter has one end (its left end as shown in FIG. 7) pin-connected to the lower end of the post as indicated at 75 and its other end engaging actuating means, generally indicated at

77, for effecting up and down pivotal movement of the lever for moving the platform upwardly relative to the base for lifting the wing track member 27 clear of the outboard track and bringing the rollers down into engagement with the outboard track, and for moving the wing track member downwardly relative to the outboard track for engaging a lower surface of the wing track members on the upper surface of the outboard track (as will be described hereinafter) and bringing the clamping means 61 on the base into engagement with a lower surface on the outboard track. The platform 57 has arcuate ends as indicated at 78 adjacent the sides of the wing track member enabling angular movement of the wing track member relative to the platform as well as chordwise sliding movement of the wing track member on the platform. The clamping means 61 comprises set screws 79 carried by the base and projecting upwardly therefrom adapted to engage the lower surface of the outboard track for carriage clamping purposes. The actuating means 77 comprises a screw 81 threaded through the base and engaging one end of the lever 71. As shown in FIG. 7, the lower end of the screw 81 is captively held by the lever to permit turning of the screw relative to the lever and for effecting up and down pivotal movement of the lever as the screw is moved vertically relative to the base.

Referring now to FIG. 8, each outboard track 27 comprises a pair of spaced apart rail members 83 having inwardly directed upper flanges 85 with the upper flange surface 87 constituting an upwardly facing rail surface and the lower surface 89 of the upper flange constituting a downwardly facing rail surface. The upper flange surface 87 is also referred to as the upper outboard track surface and the lower flange surface 89 is also referred to as the lower outboard track surface. The pairs of rail members 83 are disposed to be substantially parallel to the central track means and spaced outwardly therefrom and are recessed in the floor with the outboard track surface 87 substantially at floor level F. The inner edges of the upper flanges 85 are spaced apart a sufficient distance to permit the lower portion of the carriage 31 to pass therebetween as the carriage is moved along the rail members.

As shown in FIG. 1, there are two inner outboard tracks 27 and two outer outboard tracks 27, each comprising a pair of the rails 83. The rails of the inner outboard tracks have means generally indicated at 91 for effecting movement of the carriage 31 mounted thereon along the rail members. This means comprises an endless chain, generally indicated at 93, extending heightwise of the apparatus and disposed between the pair of rail members trained around a sprocket 95 at each end of the rail members. The chain 93 has an upper reach 97 connected to the carriage base 63 as indicated at 101. One of the sprockets 95 is fixed on a shaft 103 adapted to have a low-speed electric drill motor 105 connected thereto for driving the chain.

Referring now to FIG. 7, each of the wing track members 27 comprises a downwardly facing channel member 107 having a horizontal web member 109, a pair of flange members 111 extending down from the sides of the web member, and a pair of spaced rails 113 and 115. Each rail is secured along the outer margins of the top surface of the channel web and projects out beyond the sides of the channel such that the upwardly

facing rail surfaces constitute an upper track surface engageable by stand mounting means 45, and the downwardly facing surface of the rails which project outwardly beyond the channel constitutes a lower track surface engageable by the stand clamp means 47. Angle members 117 are secured to the inner faces of the flange members 111 and have lower flanges 119 extending in under the carriage platform 57 with the upper surface 121 of the lower flange engageable by the carriage platform and the lower surface 123 of the lower flange engageable with the upper outboard track surface 87 for clamping the wing track members to the rail members. The lower surface 125 of the wing track channel web member 109 constitutes a downwardly facing track surface engaging the carriage platform 57 when the carriage clamp means is moved to release the wing track member from the upper outboard track surface.

20 The central track 17 (as shown in FIG. 3) comprises two downwardly facing channel members 127 and 129 having their adjacent flanges 131 welded together, with outer rails 133 and 135 secured to the upper outside edges of the channel members, and a center rail 137 secured to the center of the central track immediately above the adjacent inner flanges. Each of the outer rails has an upper surface adapted to engage the stand mounting means 45 and a lower track surface adapted to engage the stand clamp means 47. Means generally indicated at 139 is provided for effecting heightwise movement of the center track stand 25 along the central track comprising a pair of endless chains 141 and 143 extending the length of the central track trained around sprockets 145 at the lower chord end of the central track and over sprockets 147 at the upper chord end. The chains 141 and 143 each have an upper reach as indicated at 149 and 151, respectively, extending along the top of the central track and a lower reach 153 and 155, respectively, below the web of the channel members. The sprockets 145 at the lower chord end of the central track are fixed on a shaft 157 carried on bearings 159 secured to the central track, and the sprockets 147 at the upper chord end of the central track are fixed on a shaft 161 carried in bearings 163. The shaft 161 is adapted to have a conventional hand-held low-speed electric drill motor 105 connected thereto for effecting movement of the central track stand along the central track.

50 Referring now to FIG. 1, the wing track members 27 each have an inner track section, generally indicated at 165, which is pivotally connected to the pivot pin 53 on the central track stand 25 and an outer track section 167 which is readily detachable from the outer end of 55 the inner track section. The inner ends of the inner track section 165 have plates 169 welded to the upper web surface of the channel member 107. Each of the plates 169 extends in beyond the end of the channel members through the opening 55 in the side walls 51 of the central track stand 25, and has a hole 171 at its inner end for receiving the pivot pin 53. One of the plates 169 (the upper plate as shown in FIG. 2) has its inner end vertically offset as indicated at 173 to enable both of the wing tracks to be at the same elevation when they are pivotally connected to the pin. Indicated at 175 is means mounting the outer end of the inner track section and the inner end of the detachable outer track

section which is readily operable for securing the inner and outer track sections together in end-to-end butting relation and reversely operable for detaching the track sections. As shown in FIGS. 4 and 5, the detachable connection means 175 comprises a pair of tapered pins 177 secured to the outer end of the inner track section extending out therebeyond, and a pair of receptacles 179 secured to the inner end of the outer track section with each receptacle having a tapered hole 181 therein adapted to receive a respective tapered pin. Each tapered pin 177 is adapted to have a close fit within its respective tapered hole 181 for aligning the inner and outer track sections relative to one another.

The inner and outer track sections 165 and 167 are secured together by latching means, generally indicated at 183, comprising a horizontal latch bar 185 transverse of the channel members 107 secured to the outer end of the inner track section within a cutout 187, and a latch 189 pivotally connected intermediate its ends for up-and-down pivotal movement. The web 109 immediately below the latch is cut out as indicated at 191 to permit the latch to be pivoted between a latched and an unlatched position. The latch carries a locking catch 193 at its outer end adapted to engage the latch bar 185 for securing the inner and outer track sections together when the track sections are in end-to-end butting relation. The latch is pivotally supported on a pin 195 which is carried by a pair of support members 197 secured to the top of the outer track section adjacent the sides of cutout 191. A bolt 199 is threaded in the latch at the end opposite the locking catch 193 operable for pivoting the latch to engage the latch bar 185 to secure the inner and outer track sections in end-to-end butting relation and reversely operable for detaching the outer track section from the inner track section. A stop 201 is welded to the outer track section immediately below the bolt 199 to engage the bolt as the latter is vertically threaded in the latch to effect up-and-down pivotal movement of the latch. The dimension of the latch from the pin 195 to the inner face of the locking catch 193 is such that when the latch is moved to its latching position the inner and outer track sections are securely held in end-to-end butting relation.

In operation, the apparatus 1 may be set up to fabricate a single slope long-span flat truss, for example as shown in FIG. 1, in the following manner:

The stand clamp means 47 on the central stand 25 is unclamped to permit the central stand to be moved heightwise along the central track 17, and the carriage actuating screw 81 on each of the carriages 31 is rotated to lift the wing tracks 27 clear of the upper outboard track surface 87 and to lower the carriage rollers 59 onto the upper outboard track surface thereby permitting the wing track members to move with the carriages while swinging about their pivotal connections (pivot 53) to the central stand. The drill motor 105 is applied to the shaft 161 for moving the central stand heightwise along the central track to assume a position therealong corresponding to the desired section depth of the truss to be fabricated. The stand clamp means on the central stand is then actuated to securely clamp the central stand to the central track. The drill motor is then applied to the shaft 103 at one of the inner pairs of rail members 83 comprising the outboard tracks for

driving the carriage mounted thereon along the rail members via the endless chain 93 connected to the carriage 31. The movement of the carriage along the outboard tracks causes the wing track to swing in a generally horizontal plane relative to the central stand 25. Thus, the upper chord wing tracks can be moved to their desired positions to hold the upper chord wood members 9 in position to be secured together by nailing plates N. The channel members 107 comprising the wing tracks 27 are disposed to have their webs 109 horizontal to resist bending of the wing tracks as the latter are swung relative to the central stand on the carriages.

15 The actuating screws 81 are then backed off upward relative to the carriage base 63 to pivot the respective levers 71 down, which in turn moves the platform 57 and wing track 27 carried thereon downwardly until the lower surface 123 of the wing track angle member 20 lower flange 119 engages the upper outboard track surface 87. Further backing off of the actuating screw causes the base 63 to move upwardly relative to the outboard track rail members 83 until the upper ends of the set screws 79 (which constitute clamping means 61) engage the lower outboard track surface 89. Thus, the lower flanges 119 of the wing track angle members are firmly clamped between the bottom of the platform and the upper outboard track surface. With the wings 30 clamped to the outboard tracks, the bottom edges of the wing track member are disposed to be substantially at floor level thereby enabling the wing track to support the weight of the stands 23 and to support the weight of a fork-lift truck, for example, if the latter should be inadvertently driven across the wing track member. Furthermore, the wing track members are of relatively low height above the floor (two inches, for example) permitting workmen to easily walk through the apparatus to facilitate the placement of the wood truss 35 members on the stands 23.

40 After the wing tracks 27 have been clamped to the outboard tracks 29 in their desired positions, the stand clamp means 47 on the stands mounted on the wing track members and on the lower chord track 19 are unclamped to enable the stands to be moved along the wing tracks and the lower chord tracks to position the stands for supporting the wood members in position to be secured together by nailing plates, N. The stand clamp means are then actuated to clamp the stands in their desired locations along the tracks.

45 The precut wood truss members are then placed on the wood member support means 41 carried by stands 23. The lower nailing plates N are placed on the locator 55 trays 43 below the wood members and the upper nailing plates N are placed on the upper surfaces of the wood members above the lower nailing plate therebelow. The press 9 is moved into position within one of the stands with its lower platen 13 below the locator tray 43 and its upper platen 11 above the upper nailing plate. The press is actuated to move the upper and lower platens toward each other to drive the nailing plates into the wood members from above and below. The press is then actuated to open the platens 60 and then moved along the overhead I-beam 37 on carriage 35 to another stand to repeat the above-described operation.

The open construction of the apparatus, i.e., the spacing between the stands 23 and the floor level upper and lower chord tracks, permits several workmen to lift the fabricated truss clear of the stands and to walk through the apparatus carrying the truss to a location remote from the apparatus for storage.

In accordance with this invention, the apparatus 1 may be readily adapted to fabricate conventional triangular trusses as well as flat trusses. Generally, the chord length of flat trusses is considerably longer than the chord length of triangular trusses. Thus, most triangular trusses do not require the relatively long (e.g., 30-foot) wing tracks. The outer section 167 of the wing track may be detached from the inner track section 165 by loosening bolt 199 threaded in the latch 189 to permit the latch to pivot upwardly so that the locking catch 193 clears the latch bar 185 on the inner track section. The outer track section (which is approximately 12 feet long) may then be detached from the inner track section (which is approximately 18 feet long). The apparatus thus requires significantly less floor space when fabricating triangular trusses with the outer track sections removed.

A modification of the apparatus of this invention is shown in FIG. 9 to comprise apparatus such as heretofore described wherein the lower chord track 19 as well as the upper chord track 21 are constituted by wing track members extending outwardly from the central track 17 and pivotally attached to a respective central stand. The lower chord wing track members 203 are supported on lower chord carriages 205 movable on the outboard tracks for movement with the carriages while swinging in a generally horizontal plane about their pivotal connection 207 to their respective lower chord central track stand 209. The lower chord wing track members, lower chord central stand, and lower chord carriages are similar to the corresponding parts heretofore described. Thus, the apparatus may be further adapted to fabricate diamond-shaped trusses and scissors trusses, as well as flat and triangular trusses.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. Apparatus for fabricating wood trusses of the type having lower chord members, upper chord members, and web members extending from the lower chord members to the upper chord members, utilizing a C-shaped press having an upper platen and a lower platen which are relatively movable toward and away from each other for driving nailing plates into two or more wood members of a truss from above and below, said apparatus having floor level track means comprising central track means extending heightwise in relation to the truss between the locations of said lower and upper chord members, lower chord track means extending outwardly from both sides of said central track means, upper chord track means extending outwardly from

both sides of the central track means, a plurality of stands mounted on said track means for holding the wood members to be operated on by the press, with said central track means having at least one of said stands mounted thereon for movement therealong heightwise in relation to the truss, others of said stands being mounted on said upper and lower chord track means for chordwise movement therealong, said upper chord track means comprising wing track members extending outwardly from said central track means with the inner ends of the wing tracks being pivotally connected to said movable central track stand for swinging movement in a generally horizontal plane relative to said movable central track stand, outboard track means on both sides of said central track means extending generally heightwise in relation to the truss, and carriage means movable on each said outboard track means, said wing track members being supported on said carriage means for movement therewith while swinging about their pivotal connection to the said central track stand.

2. Apparatus as set forth in claim 1 wherein said lower chord track means comprises wing track members extending outwardly from the central track means pivotally attached to a respective central track stand and second carriage means movable on said outboard track means, said lower chord wing track members being supported on said carriage means for movement therewith while swinging in a generally horizontal plane about their pivotal connection to the said respective central track stand.

3. Apparatus as set forth in claim 1 wherein each said stand has means for supporting said wood members, means for holding a nailing plate in position below the wood members for being driven upwardly by the lower platen of said press, mounting means at the bottom of said stand engaging said track means, and means for clamping the stand in adjusted position along said track means.

4. Apparatus as set forth in claim 3 wherein the movable central track stand has a base carrying said mounting and clamping means, and side walls extending up from the sides of the base carrying said wood member supporting means, said base having means at its center for pivotally attaching both respective wing track members thereto, and said side walls each having an opening for passage therethrough of a respective wing track member for being attached to said pivotal attachment means and permitting swinging movement of the wing track member about its pivotal attachment point.

5. Apparatus as set forth in claim 1 wherein each said carriage means comprises a platform supporting a respective wing track member with the latter being slidable and swingable on the platform, and wherein each said carriage means has roller means for rolling of the carriage means along the respective outboard track means, and means for clamping each wing track member to the respective outboard track means and for raising and lowering the respective roller means, said clamping means being operable in one direction to clamp the wing track member to the outboard track means while relieving the rollers of substantial clamping forces, and operable in the opposite direction to release the wing track member from the outboard track

means and to permit rolling the carriage means along the outboard track means on the rollers.

6. Apparatus as set forth in claim 5 wherein said clamping means are operable in said one direction to raise the roller means clear of the outboard track and are operable in the other direction to lower the rollers into engagement with the outboard track means.

7. Apparatus as set forth in claim 6 wherein each said outboard track means has an upwardly facing surface engageable by the respective roller means and a downwardly facing surface engageable by elements of the respective clamping means.

8. Apparatus as set forth in claim 7 wherein said outboard track means comprises a pair of spaced apart rail members having inwardly directed upper flanges with the upper flange surface constituting said upwardly facing rail surface and the lower flange surface constituting said downwardly facing rail surface.

9. Apparatus as set forth in claim 8 wherein said pairs of rail members are disposed substantially parallel to said central track means and spaced outwardly therefrom and are recessed in the floor with the upper surface of said upper flanges substantially at floor level.

10. Apparatus as set forth in claim 9 wherein said wing track members have upper track surfaces engageable by said stand mounting means, lower track surfaces engageable by said stand clamp means, a downwardly facing surface engaging said carriage platform, members at each side of the wing track member having lower flanges extending in under said carriage platform with the upper surface of said lower flanges engageable by the carriage platform and the lower surface of said lower flanges engageable with the upper rail surface for clamping the wing track members to the rail members.

11. Apparatus as set forth in claim 10 wherein each said wing track member comprises a downwardly facing channel member having a horizontal web member, a pair of flange members extending down from the sides of the web member, and a pair of spaced rails with each rail being secured along the outer margin of the top surface of the channel web and projecting outwardly beyond the sides of the channel such that the upwardly facing rail surface constitutes said upper track surface engageable by said stand mounting means and the downwardly facing surface of the rail which projects outwardly beyond the channel constitutes said lower track surface engageable by said stand clamp means, and said lower flanges being secured to the lower portions of said flange members, with the lower surface of said web member constituting said downwardly facing track surface engaging said carriage platform when said carriage clamp means is moved to release the wing track member from the outboard track means.

12. Apparatus as set forth in claim 11 wherein said carriage means comprises a base carrying said roller means, said clamp means, and means mounting said platform above the base for relative vertical movement of the base and platform.

13. Apparatus as set forth in claim 12 wherein said platform is carried by a support post extending downwardly therefrom through an opening in the base, the post being slidable in said opening, and having a lever pivotally connected intermediate its ends to said

base for up-and-down pivotal movement having one end pin-connected to the lower end of said post and its other end engaging actuating means for effecting up-and-down pivotal movement of said lever for moving said platform upwardly relative to said base for lifting the wing track member clear of the rail members and bringing said roller means down into engagement with said upper rail surface and for moving said wing track member downwardly relative to said rail members for engaging the lower surface of said lower flanges on said upper rail surface and bringing clamping means on said base into engagement with the lower surface of said rail members.

14. Apparatus as set forth in claim 13 wherein said platform has arcuate ends adjacent the flange members of said wing track member enabling angular movement of the wing track member relative to the platform as well as chordwise sliding movement of the wing track member on the platform.

15. Apparatus as set forth in claim 14 further having means for effecting movement of said carriage means along the respective rail members comprising endless chain means extending heightwise of the apparatus disposed between said pair of said rail members, said endless chain being trained around a sprocket at each end of said rail members and having an upper reach and a lower reach, said upper reach being connected to said carriage means, one of said sprockets being on a shaft adapted to have drive means connected thereto for effecting movement of said chain.

16. Apparatus as set forth in claim 1 further having means for effecting heightwise movement of said movable central track stand comprising endless chain means extending the length of said central track means and sprockets at each end thereof around which said chain means is trained, said chain means having an upper reach extending along the top of said central track means and a lower reach, said central track stand being connected to said upper reach, and one of said sprockets being on a shaft adapted to have driving means connected thereto for effecting movement of said movable central stand along the central track means.

17. Apparatus as set forth in claim 1 wherein each said wing track member comprises an inner track section pivotally attached to its respective center track stand, an outer track section detachable from the outer end of said inner track section, and means detachably connecting together the outer end of said inner track section and the inner end of said outer track section with said track sections in end-to-end butting relation.

18. Apparatus as set forth in claim 17 wherein said detachable connection means comprises means for aligning said outer track section relative to said inner track section and latching means for securing them together.

19. Apparatus as set forth in claim 18 wherein said alignment means comprises at least one tapered pin secured to and extending out beyond the end of one of the track sections and at least one receptacle secured to the adjacent end of the other track section, said receptacle having a tapered hole therein for receiving said tapered pin as said inner and outer track sections are in end-to-end butting relation with each tapered pin being adapted to have a close fit within said tapered

hole for aligning said inner and outer track sections relative to one another.

20. Apparatus as set forth in claim 19 wherein said latching means comprises a latch bar secured to the end of one of the track sections, and a movable clasp pivotally connected to the end of the end of the other track section, said clasp having actuating means operable for pivoting it to engage said latch bar to secure said inner and outer track sections in end-to-end butting relation and reversely operable for detaching the outer track section from the inner track section.

21. A carriage having roller means adapted to roll on a track for rolling the carriage to different positions along the track, means for clamping the carriage to the track, actuating means operable for moving the clamping means between an unclamped position in which the clamp means is clear of the track and the roller means is in engagement with the track for rolling the carriage along the track and a clamped position in which the clamp means is in engagement with the track and the roller means is substantially free of clamping stress, said actuating means being reversely operable for moving the clamp means from its clamped position to its unclamped position, said carriage further comprising a platform and a base carrying said roller means, and means mounting the platform above the base for relative vertical movement of the base and platform, said mounting means including a support post carried by the platform extending downwardly therefrom through an opening in the base, the post being movable in said opening and having a lever pivoted intermediate its

ends to said base for up-and-down pivotal movement with one end of said lever pin-connected to the lower end of said post and with its other end engaging said actuating means for effecting up-and-down pivotal movement of said lever for moving the platform upwardly relative to said base for unclamping said carriage from said track and for bringing said roller means down into engagement with said track and for moving said platform downwardly relative to said base, moving said roller means clear of said track, and bringing said clamp means into engagement with said track for clamping said carriage thereto.

22. A carriage as set forth in claim 21 wherein said track has an upwardly facing track surface engageable by the roller means and a downwardly facing surface engageable by elements of the clamp means.

23. A carriage as set forth in claim 22 wherein said platform mounts a member movable thereon having a downwardly facing surface engaging said platform and lower flanges extending in under the platform, said lower flanges each having an upper surface engageable by said platform and a lower surface engageable with said upwardly facing track surface when said carriage is in its clamped position.

24. A carriage as set forth in claim 23 wherein said actuating means comprises a screw threaded through said base and projecting downwardly therefrom for engaging the end of said lever opposite said support post for effecting up-and-down pivotal movement of the lever as said screw is threaded in and out of the base.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,693,542 Dated September 16, 1972

Inventor(s) Walter G. Moehlenpah

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Front page, item "72", "Laude, Mo. 64758" should read
--9906 Old Warson Road, Ladue, St. Louis County, Missouri 63124-

Signed and sealed this 24th day of September 1974

(SEAL)

Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents