

Dec. 6, 1938.

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2,139,363

TRUSS STRUCTURE

Filed Nov. 17, 1937

Fig. 1.

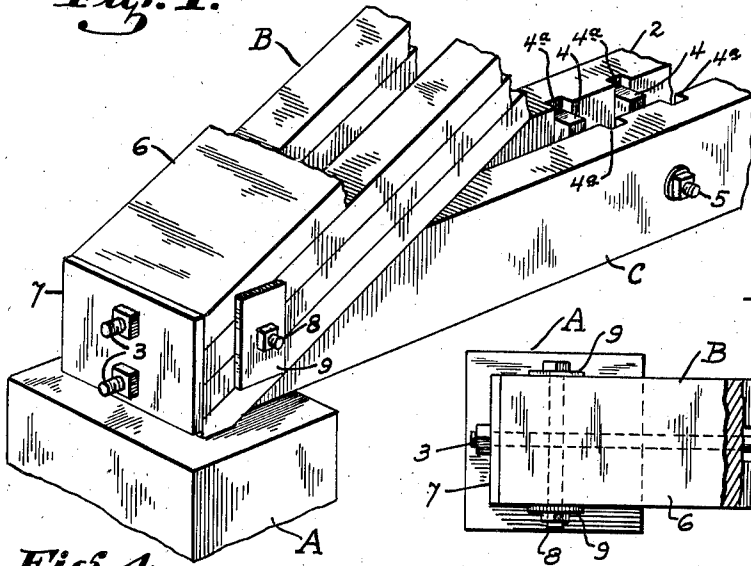


Fig. 2.

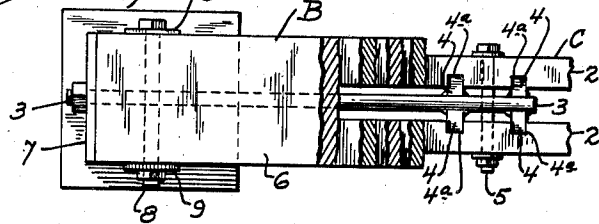


Fig. 4.

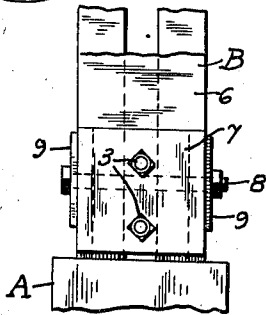


Fig. 3.

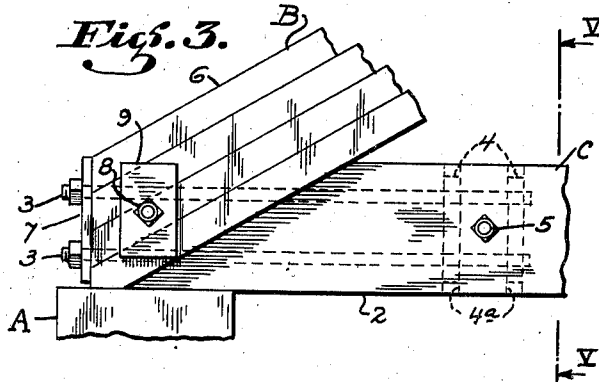


Fig. 5.

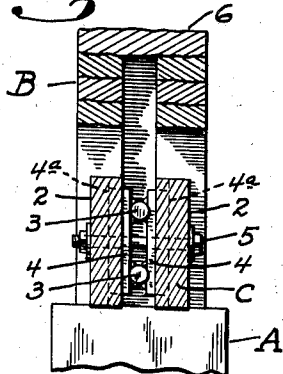
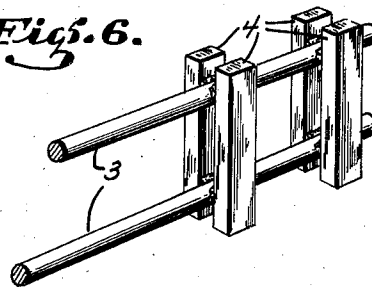


Fig. 6.



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UNITED STATES PATENT OFFICE

2,139,363

TRUSS STRUCTURE

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Application November 17, 1937, Serial No. 175,076

4 Claims. (Cl. 108—23)

This invention relates to trusses built up from wood and timbers, and especially to the end construction where the top and bottom chords of the truss are connected.

The object of the present invention is generally to improve and simplify the construction and operation of trusses of the character described; to provide an end construction which gives more upper chord bearing surface, both end-bearing and on the post or wall upon which the truss rests; to provide an end structure which eliminates cutting away the sides of the upper chord and which permits a more positive securing of the upper chord to the lower chord; to provide an end structure embodying one or more tension rods anchored at each end of the lower chord, said rods extending through the ends of the upper chord and being threaded to receive thrust plates and nuts whereby the thrust plates may be drawn up tight against the end grain of the upper chord and to that extent form an adjustable connection between the ends of the upper and lower chords; and further, to provide a structure which makes the fitting and trimming of the ends of the truss to an exact length a simple matter and at the same time insures a substantially perfect joint.

The end construction of the truss is shown by way of illustration in the accompanying drawing, in which

Fig. 1 is a perspective view showing the end construction of the truss;

Fig. 2 is a plan view of the same, partly broken away;

Fig. 3 is a side elevation;

Fig. 4 is an end view of Fig. 3;

Fig. 5 is a cross section on line V—V of Fig. 3; and

Fig. 6 is a perspective view of the tension rods and the anchor member secured thereto.

The truss shown in the accompanying drawing is a roof truss and is designed to rest at its opposite ends on the bearing walls of a building or on posts or similar means such as indicated at A in Fig. 1. The truss consists of an upper chord B and a lower chord C which, in this instance, is constructed of two parallel members 2—2 spaced to receive one or more comparatively short tension rods 3—3 and anchor members 4—4 welded or otherwise secured to the inner ends of the rods. The spacing between the members 2—2 of the lower chord may also be utilized to receive web members not here shown whereby the upper and lower chords may be connected in the usual manner. The inner faces of the

members 2—2 of the lower chord are mortised or notched as shown at 4a—4a adjacent the end to receive the anchor members 4—4, and when the tension rods, together with the anchor members, are placed between the members 2—2 of the lower chord, they will be tightly clamped in that position by one or more cross bolts such as shown at 5.

The upper chord is preferably built in laminated form as shown, the individual laminations being nailed to the beveled ends of the lower chord and to each other, and they are covered, if desired, by a cap piece 6. After the laminations have been cut on the bottom and ends to the proper dimensions, or in other words to the exact length of the truss, thrust plates 7 will be slipped over the ends of the tension rods 3—3 and nuts will then be applied to draw the plates snugly against the end grain of the laminations, and, if desired, one or more cross bolts 8, together with large washers or plates 9 may be applied.

Common practice when constructing trusses of the type herein disclosed is to extend the tension members from one end of the truss to the other, that is, the full length of the lower chord. In this instance, this becomes unnecessary as the tension members are short rods anchored at their outer ends to the thrust plates 7 and at their inner end to the lugs 4.

It should be remembered that wooden trusses of the character here disclosed are usually built on a building site. In this truss, the members forming the lower chord must be notched to receive the anchor members and must be beveled at the ends to receive the laminations of the upper chord. These laminations, as previously stated, are nailed to the beveled ends of the lower chord and, after they are nailed in position, they must be squared off at the ends and cut so as to produce a truss of exact length. This is readily accomplished in the present instance as it is only necessary to measure the truss for its exact length and then to cut off the ends of the laminations at right angles to the base of the truss along the line indicated. This is only a sawing operation and can be accomplished by almost anyone, and as trimming of the sides is not required in this structure, the need for skilled labor is practically eliminated. Any slight inaccuracies as to length when cutting off the ends of the laminations are immaterial as such inaccuracies will be taken up in compression when the thrust plates 7 are drawn up tightly against the end grain by means of the tension rods and the nuts applied thereto. A structure of this character insures a substantially

perfect joint between the upper and lower chords and to produce a truss beam of exact length becomes a simple matter.

A greater bearing surface on the wall or post is insured and greater strength is obtained as more nails can be employed when nailing the laminations to the ends of the lower chord. The reason more nails can be employed is the fact that only one cross bolt 8 is required, and this may in many instances be eliminated. The anchor members 4—4 which are applied to the tension rods 3—3 are nothing more nor less than lugs or strips which are welded to the opposite sides of the rods. Obviously, round washers or other lug-type members may be employed. Construction and assembly in all instances is a simple matter, and the notching of the timbers to receive the anchor member is also a simple matter and readily accomplished. Any inaccuracy in this work is eliminated by applying tension by means of the nuts on the rods 3.

While certain features of the present invention have been more or less specifically described and illustrated, we wish it understood that various changes may be resorted to within the scope of the appended claims, and that the materials and finish of the several parts employed may be such as the judgment and experience of the manufacturer may dictate or other conditions may demand.

Having thus described and illustrated our invention, what we claim and desire to obtain by Letters Patent is:

1. In a truss of the character described, the combination with top and bottom chords, said bottom chord being constructed of spaced parallel timbers, of a pair of tension members disposed between the timbers of the lower chord, one adjacent each end thereof, anchor means securing one end of each tension member between the timbers, the opposite end of each tension member projecting beyond the adjacent end of both chords, means securing the end of the top chord to the bottom chord, a thrust plate engaging each end of the top chord and perforated for the ends of the tension members to extend through, and means on the ends of the tension members to pull the thrust plate against the end grain of the top chord.

2. In a truss of the character described, the combination with top and bottom chords, said bottom chord being constructed of spaced parallel timbers, of a pair of tension members disposed between the timbers of the lower chord, one adjacent each end thereof, anchor means securing one end of each tension member between the

timbers, the opposite end of each tension member projecting beyond the adjacent end of both chords, means securing the end of the top chord to the bottom chord, a thrust plate engaging each end of the top chord and perforated for the ends of the tension members to extend through, means on the ends of the tension members to pull the thrust plates against the end grain of the top chord, and means adjacent the thrust plates engaging opposite sides of the top chord to strengthen the ends of the chord laterally.

3. In a truss of the character described, the combination with top and bottom chords, said bottom chord being constructed of spaced parallel timbers, of a pair of tension members disposed between the timbers of the lower chord, one adjacent each end thereof, notches or grooves formed in the inner faces of the timbers adjacent each end thereof, anchor members on one end of each tension member projecting into the notches, transverse members securing the anchor members in the notched portions of the timbers forming the lower chord, the opposite ends of the tension members projecting beyond the outer ends of both chords, means securing the ends of the top chord to the bottom chord, a thrust plate engaging each end of the top chord and perforated for the ends of the tension members to extend through, and means on the ends of the tension members to pull the thrust plates against the end grain of the top chord.

4. In a truss of the character described, the combination with top and bottom chords, said bottom chord being constructed of spaced parallel timbers, of a pair of tension members disposed between the timbers of the lower chord, one adjacent each end thereof, notches or grooves formed in the inner faces of the timbers adjacent each end thereof, anchor members on one end of each tension member projecting into the notches, transverse members securing the anchor members in the notched portions of the timbers forming the lower chord, the opposite ends of the tension members projecting beyond the outer ends of both chords, means securing the ends of the top chord to the bottom chord, thrust plates engaging the ends of the top chord and perforated for the ends of the tension members to extend through, means on the ends of the tension members to pull the thrust plates against the end grain of the top chord, and transverse members extending through the ends of the top chord at a point adjacent the thrust plates to strengthen the ends of the top chord laterally.

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