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E. R. TAYLOR

2,768,434

TRUSS CONNECTION

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Fig. 1.

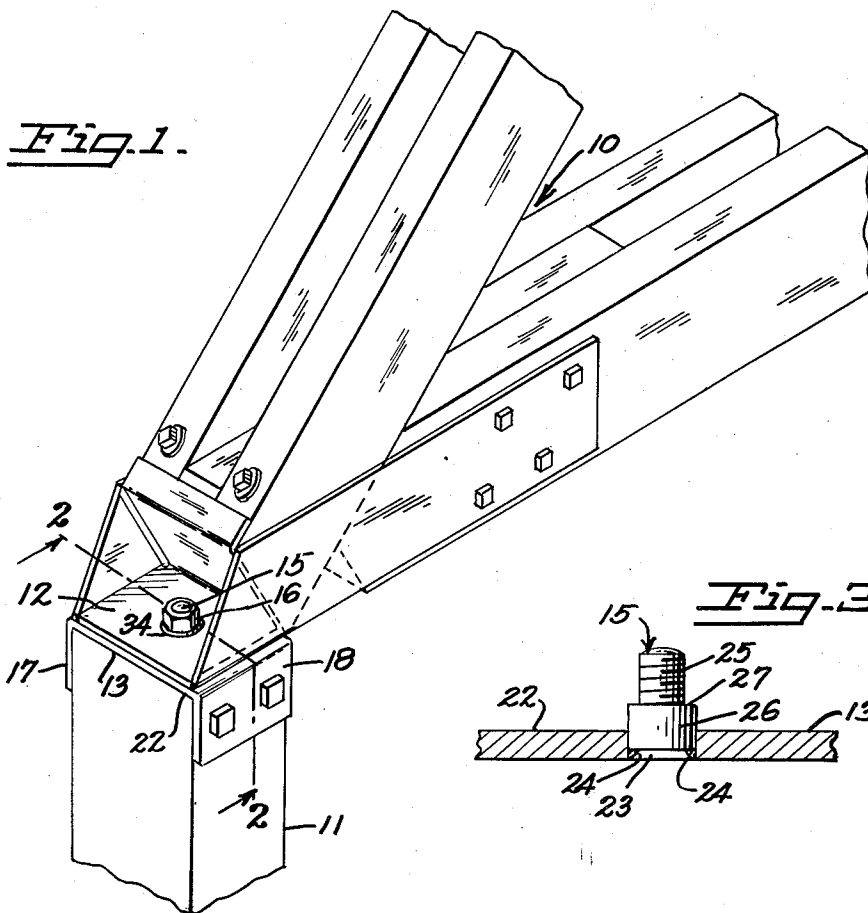


Fig. 3.

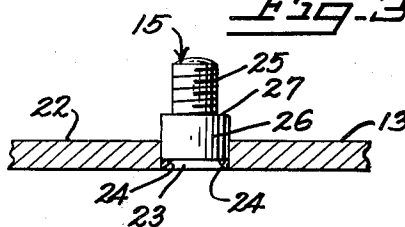


Fig. 2.

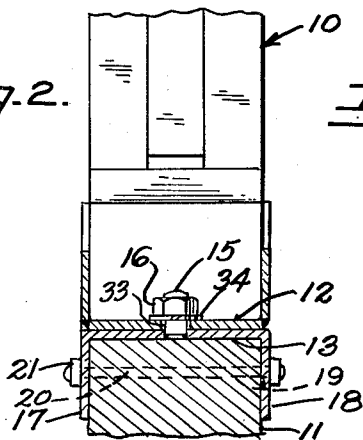
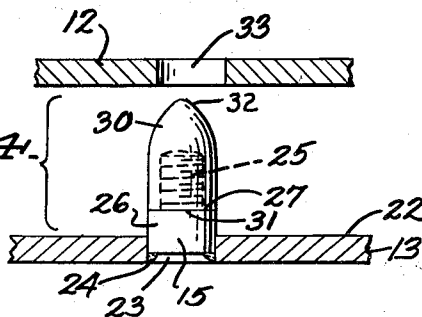


Fig. 4.



INVENTOR.

EVERETT R. TAYLOR

BY

A. D. M. H. C. C.
ATTORNEY.

1

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TRUSS CONNECTION

Everett Ridley Taylor, Diablo, Calif., assignor to Easyhow Engineering & Research Co., Oakland, Calif., a corporation of California

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1 Claim. (Cl. 29—526)

This invention relates to an improved method for securing truss connections to their supports.

The invention solves problems which have arisen in connection with such building construction work as securing a roof truss on top of the side pillars or walls that support it. The usual method of anchoring such a truss is to set down the truss shoe over one or more anchor bolts which project vertically from the concrete masonry or other support. Extreme care must be taken in lowering the truss shoe in order not to burr the threads. The work is often done high in the air, and in many cases slips and misalignment occur. If the threads are burred, the bolts must be re-threaded before the nuts which fit over them can be tightened into place. In previous attempts to solve this problem, the openings through the truss shoe have been made oversize, but this has not eliminated burring and has caused the additional difficulty of making a somewhat loose connection.

The present invention has solved this and other problems by providing a new type of connection in which the upper threaded portion of the anchor bolt is of narrower diameter than the lower unthreaded portion and in which the threaded portion is covered by a protective cap during the time when the truss is being lowered into place. With the present invention there is no need to make an oversize hole through the truss shoe or to re-thread the anchor bolt after the installation. The protective cap helps guide the truss shoe into place and protects the threads so that a standard-size opening can be used. When the truss shoe is in place, the protective cap is removed and the nut threaded on the bolt.

Other objects and advantages will appear from the following detailed description of a device embodying the principles of the invention. This description, given in accordance with United States Revised Statutes, Section 4888, is not intended to limit the invention narrowly to the exact details shown by way of illustration; the scope of the invention is to be gathered from the appended claim.

In the drawings:

Fig. 1 is a view in perspective showing a portion of one end of a truss which has been secured to the upper end of a post by a truss connection embodying the principles of this invention.

Fig. 2 is a view in elevation and in section taken along the line 2—2 of Fig. 1.

Fig. 3 is a view in elevation and in section of a portion of a bearing plate with a projecting anchor bolt of the type used in the Fig. 1 installation.

Fig. 4 is similar to Fig. 3 showing the bolt after its upper threaded portion has been covered by a protective cap and showing a portion of the truss shoe as it appears when the truss is being lowered into place.

Figs. 1 and 2 show one end of a truss 10 anchored in place over a pillar 11. The truss shoe 12 is secured on top of a bearing plate 13 (which covers the upper end of the pillar 11) by an anchor bolt 15 and a nut 16.

The bearing plate 13 has two depending flanges 17, 18

2

which extend a short distance down two opposite sides of the pillar 11. The flanges 17, 18 have one or more openings 19 to receive bolts 20 which secure the bearing plate 13 to the column 11, nuts 21 being used to tighten the connection. It is apparent that there are other ways of securing the bearing plate 13 in place, and this invention is not limited to any particular way of accomplishing this result.

The horizontal portion 22 of the bearing plate 13 is provided with one or more openings 23 adapted to receive the lower end of the stud bolt 15, which may be secured therein by welds 24 (see Fig. 3). The upper, threaded portion 25 of the anchor bolt 15 is of smaller diameter than the lower portion 26, the two portions meeting at a shoulder 27. The height of this shoulder above the top surface of the plate 13 may be slightly less than the thickness of the shoe 12 so that when the nut 16 is screwed down it will tighten the shoe against the plate, or it may be slightly greater in height, in which case a washer 34 would be used. Preferably, however, the height of the shoulder is flush with the upper surface of the shoe.

When a truss connection is to be made, after the bearing plate 13 has been secured in place, a protective hollow cap 30 is placed over the upper portion 25 of the bolt 15. In the preferred construction shown in Fig. 4, the cap 30 has a somewhat bullet-shaped head 32 and is usually referred to as a peen landing pin. The pin or cap 30 preferably has the same outer diameter as the lower bolt portion 26. When the cap 30 is installed, its flat lower end 31 rests on the shoulder 27, and the body of the pin 30 then covers and protects the threaded bolt portion 25.

When the truss 10 is being lowered into place (Fig. 4), the peen landing pin 30 prevents the shoe 12 from coming into any contact with the threads 25 of the bolt 15. Furthermore, the tapered shape of the end 32 helps to guide the pin 30 into the opening 33 in the shoe 12, and speeds the installation. The hole 33 in the truss shoe 12 need not be made oversize; therefore the connection will be strong and tight.

This construction gives an automatic drift pin action—the whole weight of the truss 10 acting to drift onto the peen pin 30 during installation. At the same time, the chance of burring the threads on the anchor bolt 15 is avoided.

When the shoe 12 is in place it rests on the bearing plate 13 and the shoulder 27 is preferably flush with the shoe's upper surface. This means that the shoe 12 abuts only the lower, thicker portion 26 of the bolt 15 and (being completely below the threaded portion 25) exerts no stress on this portion of the bolt. If there is any difference in level between the shoulder 27 and the surface of the shoe 12, the space may be filled by using one or more washers 34. The nut 16 is threaded into place and tightened until the connection is rigid. The resulting connection is tighter and stronger than prior art connections, and considerable time is saved in making each installation.

I claim:

60 The method for anchoring a truss having a truss shoe provided with a bolt receiving opening to a bearing plate positioned on a supporting structure including a substantially vertically projecting anchor bolt having an unthreaded portion and an externally threaded portion which is rigidly secured to the bearing plate against relative movement in relation thereto, comprising the steps of, removably securing a protecting and guiding means over the exposed threaded portion of the bolt to completely cover and protect the threads thereof with a portion of the means projecting longitudinally axially upwardly beyond the outer end of the anchor bolt, elevat-

3

ing the truss shoe above said bearing plate with the truss shoe opening substantially vertically aligned with the anchor bolt, lowering said truss shoe bringing the axially projecting portion of the means into the truss shoe opening, lowering said truss shoe further while the projecting portion of the means guides the truss shoe and the remaining portion of the means protects the threads of the bolt until the truss shoe opening engages the unthreaded portion of the anchor bolt, thereafter removing said means and threading a nut on said threaded portion to anchor the truss shoe to the bearing plate.

5

10

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