Oct. 16, 1962 G. D. ANDERSON 3,058,549

BUILDING CONSTRUCTION AND METHOD

Filed June 6, 1958 2 Sheets-Sheet 1

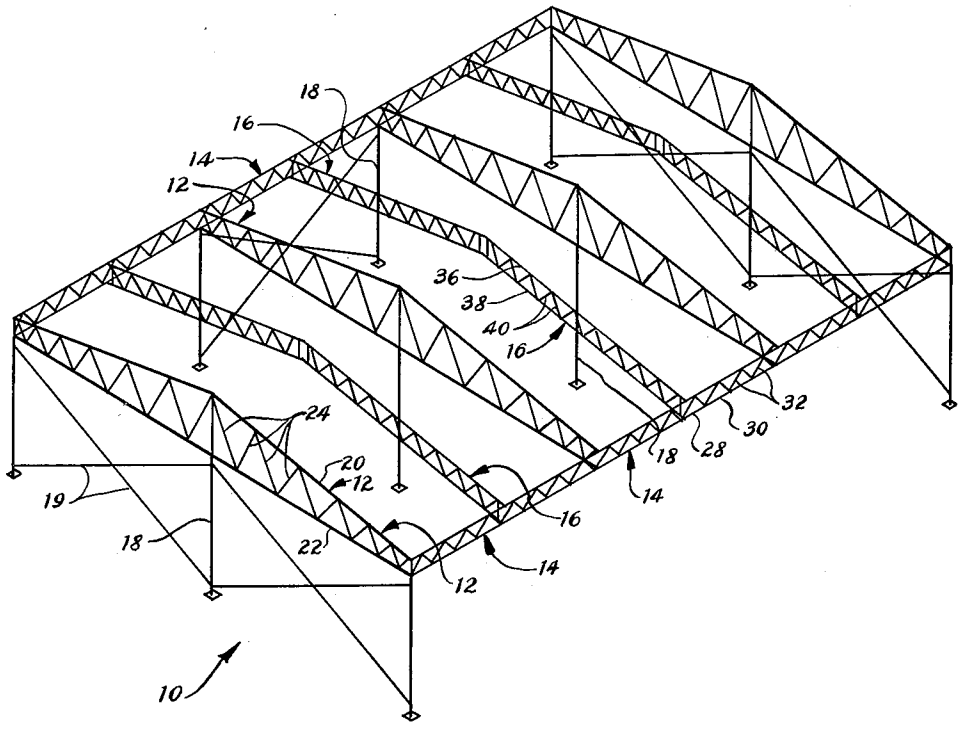


Fig. 1

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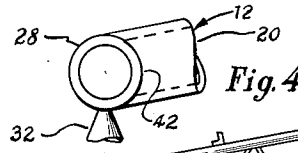


Fig. 4

Fig. 2

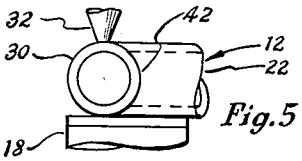


Fig. 5

Fig. 3

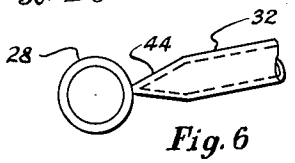


Fig. 6

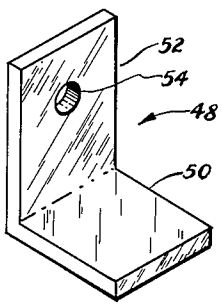


Fig. 7

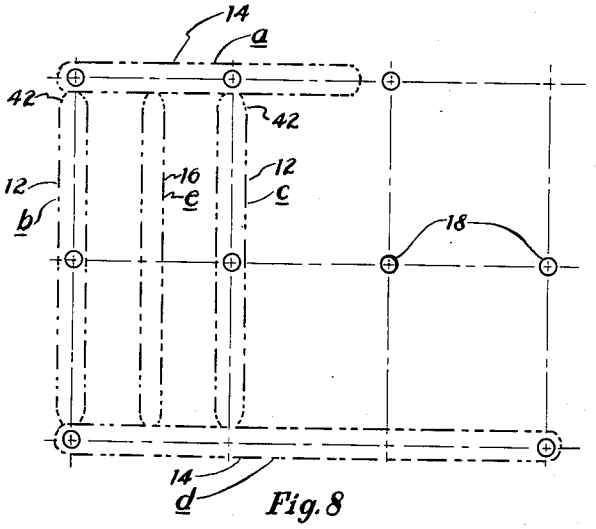


Fig. 8

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3,058,549

BUILDING CONSTRUCTION AND METHOD

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2 Claims. (Cl. 189—1)

This invention relates to building construction, and has particular application to the construction of buildings of the nature of an airplane hangar.

A general objective of my present invention is to provide a novel building construction of economical manufacture and assembly.

Another objective is to provide a novel building construction of sufficient strength but light in weight, utilizing the structural advantages of tubular metal.

In carrying out my invention in an illustrative embodiment, I provide a series of main trusses, spanning trusses, and intermediate trusses, all generally formed from tubular metal welded into the desired truss sections.

The truss sections are formed with various details to achieve the general objects of economy of manufacture and assembly, as to be more fully described in the detailed description to follow. I provide a planned method of erection, utilizing the construction details of the trusses, providing a rapid and efficient assembly of the building, thus adding to the general economy achieved.

These and other objects, features, and advantages of my invention will further appear from the following description of an illustrative embodiment of the construction and assembly method thereof, taken in conjunction with the accompanying drawings, which are generally schematic in nature, and in which:

FIG. 1 is a generally diagrammatic, isometric view of a hangar according to principles of my invention;

FIG. 2 is a broken detail of a portion of a "main truss" of the hangar illustrated in FIG. 1;

FIG. 3 is a broken detail of a portion of an "intermediate truss" thereof;

FIG. 4 is a detail view illustrating upper portions of a typical joint of a "main truss" with a "spanning truss";

FIG. 5 is a view similar to FIG. 4, but illustrating the lower portions of such a joint, and indicating a fragment of one of the supporting columns of the hangar;

FIG. 6 is a fragmental detail of a typical joint used in assembling the trusses;

FIG. 7 illustrates a clip to which the roof purlins may be secured; and

FIG. 8 is a schematic view illustrating a desired sequence of truss assembly.

In the embodiment shown in the drawings, the building construction takes the form of an airplane hangar **10**, having elements herein designated as a series of "main trusses" **12**, "spanning trusses" **14**, and "intermediate trusses" **16**, supported on column-members **18** suitably braced by diagonal braces **19**.

According to concepts of my invention, such elements are formed from tubular metal, and are formed and assembled in a novel and advantageous manner, which provides for sturdiness and strength with economy of manufacture and assembly.

I shall first describe the various major elements of the building shown in the drawings, particularly with reference to the overall schematic representation in FIG. 1, and then describe details and the advantageous assembly of those elements.

Beginning with the laterally extending main trusses **12**, they are shown as comprised of an upper chord **20**, and a lower chord **22** with web-members **24** extending between to form the truss structure.

The longitudinally-extending spanning trusses **14** likewise are shown as having an upper chord **28**, and a lower chord **30** with web-members **32** extending between.

Similarly, the laterally-extending intermediate trusses **16** are shown as having an upper chord **36**, a lower chord **38** and web-members **40**.

As illustrated in FIGS. 4 and 5, the upper chord **20** of main truss **12**, and the lower chord **22** thereof, are formed to have concave seats **42**; thus, as shown in FIGS. 4 and 5, they respectively seat onto the upper and lower chords **28** and **30** of the spanning truss **14**. The manner and sequence of that assembly, yet to be described, bring out particular assembly advantages of the concave seats.

FIG. 6 indicates a typical joint, illustrated here by one of the web-members **32** collapsed as at **44** and welded to a chord-member **28** of the spanning truss.

FIG. 7 illustrates a clip **48** by which the roof purlins **49** (see FIGS. 2 and 3) are secured. Clip **48** is shown as formed into an angle shape, having a horizontal leg **50** to lie along upper chord **20** of the main truss, and an upright leg **52**, the horizontal clip-leg **50** being welded onto the upper truss chord with the vertical clip-leg **52** extending upwardly to support the purlin **49** seated thereagainst. Vertical clip-leg **52** is shown as provided with an opening **54** through which may extend a suitable fastening means (not shown) for holding the purlin.

One of the novel concepts of my invention is the method of assembly of the various parts and sections, as will now be described.

Referring to FIG. 2 again, in the situation of large spans of the main trusses, the main trusses **12** are formed of two half-sections **54** and **56**, each shown as comprising the web-members **24** and chords **20** and **22** as above described. A central upright member **58** is welded to one of the half-sections **54** or **56** before transport to the construction site. Then, at the site, the other of the half-sections **54** or **56** is brought into position as shown in FIG. 2, and welded to form the complete main truss **12**.

Likewise, intermediate trusses **16** are shown as formed as half-sections **60** and **62** (see FIG. 3). To assemble one of these trusses **16**, I lay those sections **60** and **62** on top of one of the main trusses **12**, the latter serving as a template defining the angular relation of the half-sections **60** and **62**. Their abutting ends are then welded, forming the intermediate truss **16**.

A novel assembly of the sections is illustrated diagrammatically in FIG. 8, the letters *a–e* indicating the sequence of assembly.

As there indicated, the first section (*a*) to be erected onto the braced column structure **18—19** is shown as one of the spanning trusses **14**.

Then (*b*) the full main truss **12** is shown as installed, its concave seats **42** fitting to the spanning truss **14** of step *a*, and helping to orient those two trusses, which are then tack-welded.

Next (*c*) the second main truss **12** is shown as erected, its seats **42** aiding the orientation of it with the spanning truss **14** of step *a*, and those members are tack-welded.

Now it will be recognized that the main truss seats **42** opposite the first spanning truss **14** of step *a* provide spaced receiving stations to guide the location of the second spanning truss **14** now installed as section *d* of the assembly.

Succeeding steps follow in a like sequence, with intermediate braces **16** being added as step *e* as desired, with the assembly being plumbed and the tack welds made permanently secured.

The number of such added patterns depends upon the size of the hangar desired, the pattern of FIG. 8 contemplating a single airplane sized hangar.

It will thus be seen from the following description of

my invention according to an illustrative embodiment, considered with the accompanying drawings and claims, that the present invention provides a new and useful building construction and method, having desired advantages and characteristics and accomplishing its intended objects, including those thereinbefore mentioned and others which are inherent in the invention.

It will be understood that modifications and variations may be effected without departing from the novel concepts of my invention.

I claim as my invention:

1. A building construction, comprising a main truss section adapted to extend between spanning members, a series of purlin-supporting means carried thereon, a second truss section also for extending between spanning members in a generally parallel relation to the main truss section and being formed of a plurality of partial sections, the several purlin-securing means carried on the main truss extending uniformly above the main truss and providing thereby a template defining the angular relationship of the partial sections of the second truss section.

2. A method of building erection, including the steps of: erecting a spanning truss running longitudinally and horizontally extending along one length of the building, erecting a lateral truss extending laterally and generally horizontally extending from the spanning truss, erecting a second lateral truss extending laterally and generally horizontally extending from the said spanning truss but spaced from the said first lateral truss, the extending ends of said first and second lateral trusses providing spaced stations horizontally removed from the said spanning truss and adapted to locate and support a second spanning truss, and erecting a second longitudinally-extending and horizontally extending spanning truss located with reference to the spaced locating stations provided by the said first and second lateral trusses and supported thereby.

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