

No. 842,561.

PATENTED JAN. 29, 1907.

C. W. A. KOELKEBECK.

ROOF STRUCTURE.

APPLICATION FILED MAY 8, 1905.

4 SHEETS—SHEET 1.

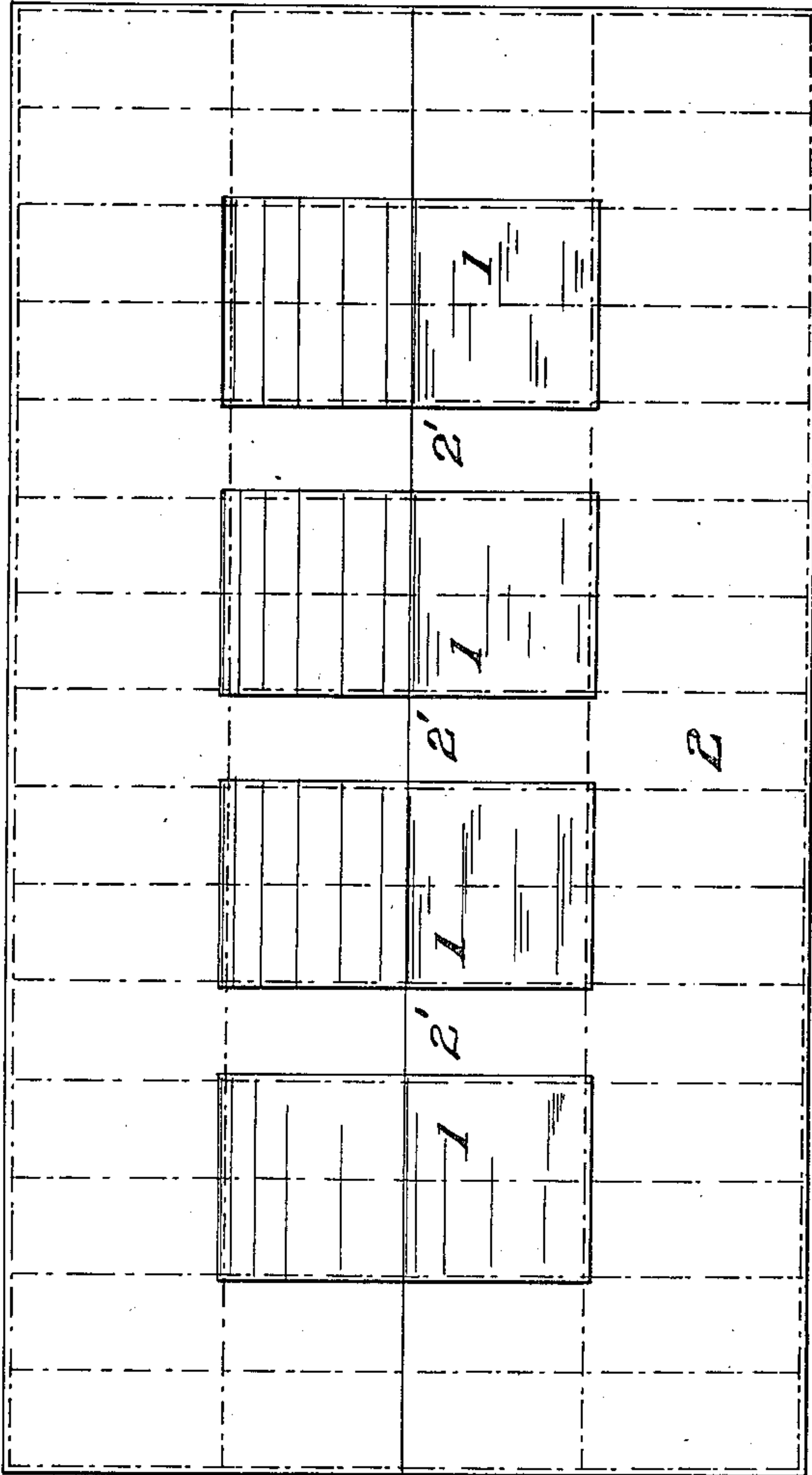
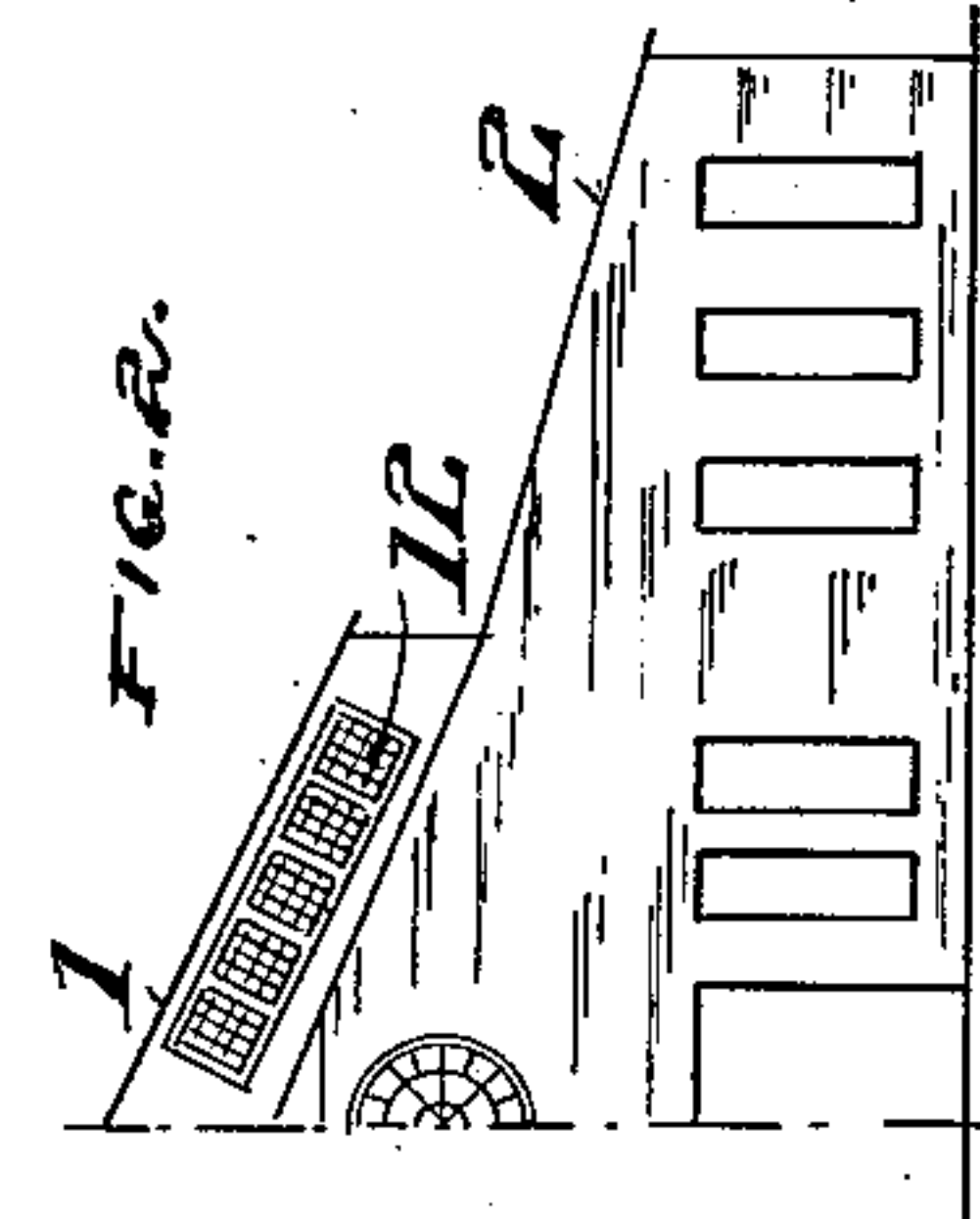
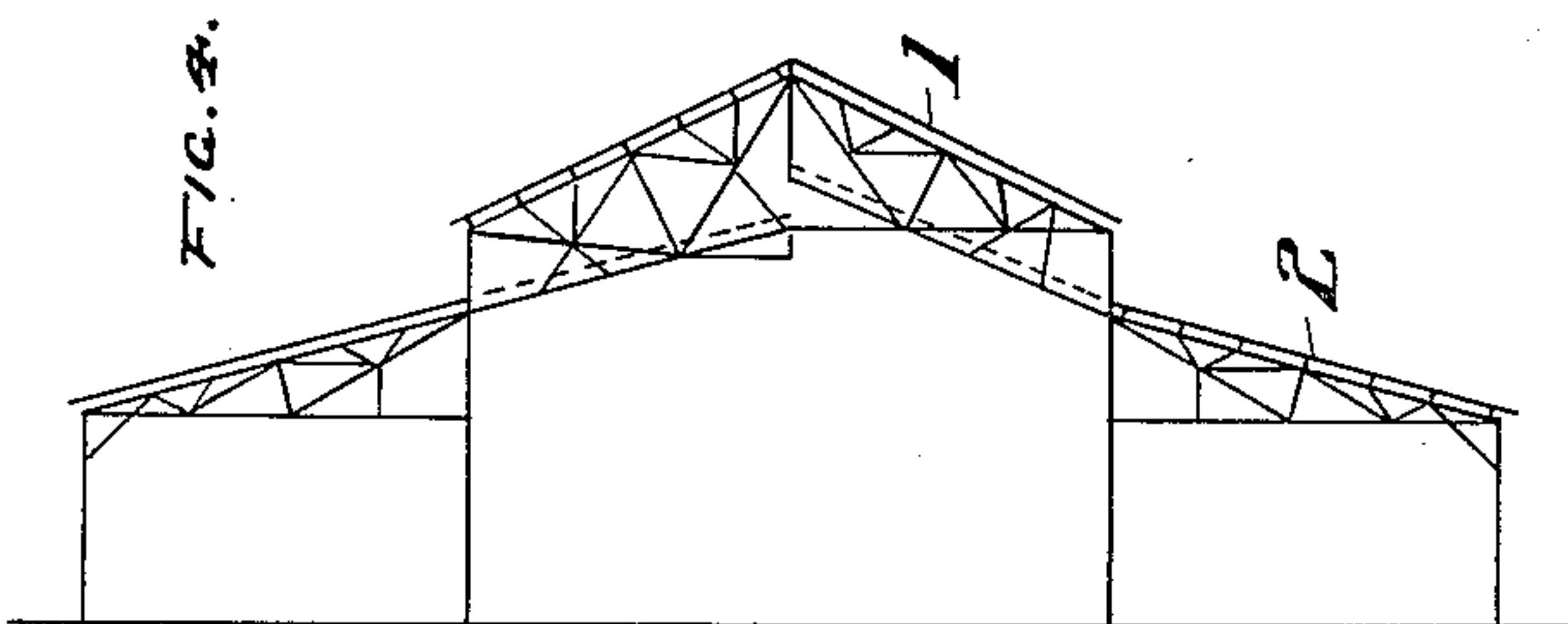
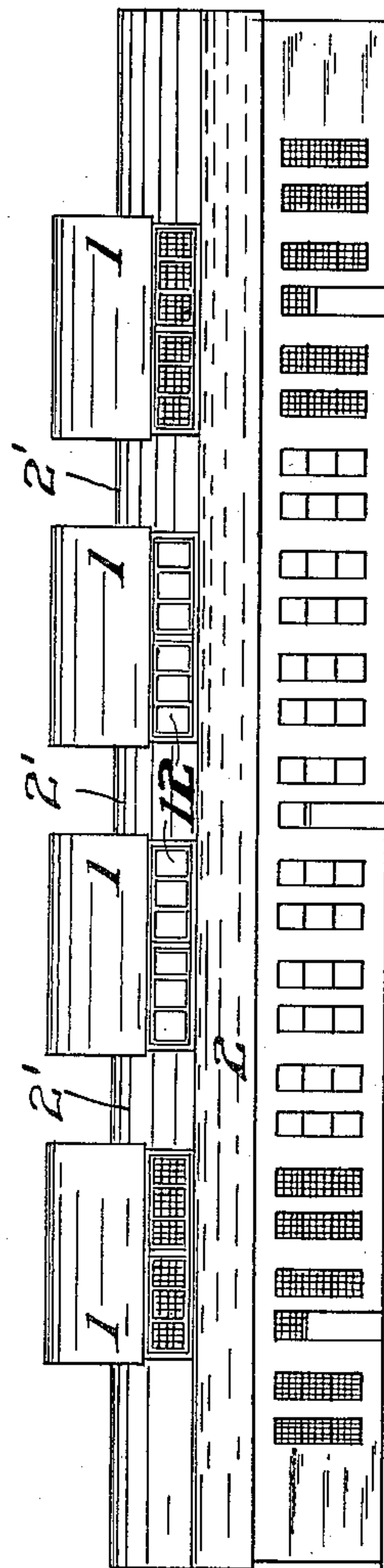


FIG. 1.



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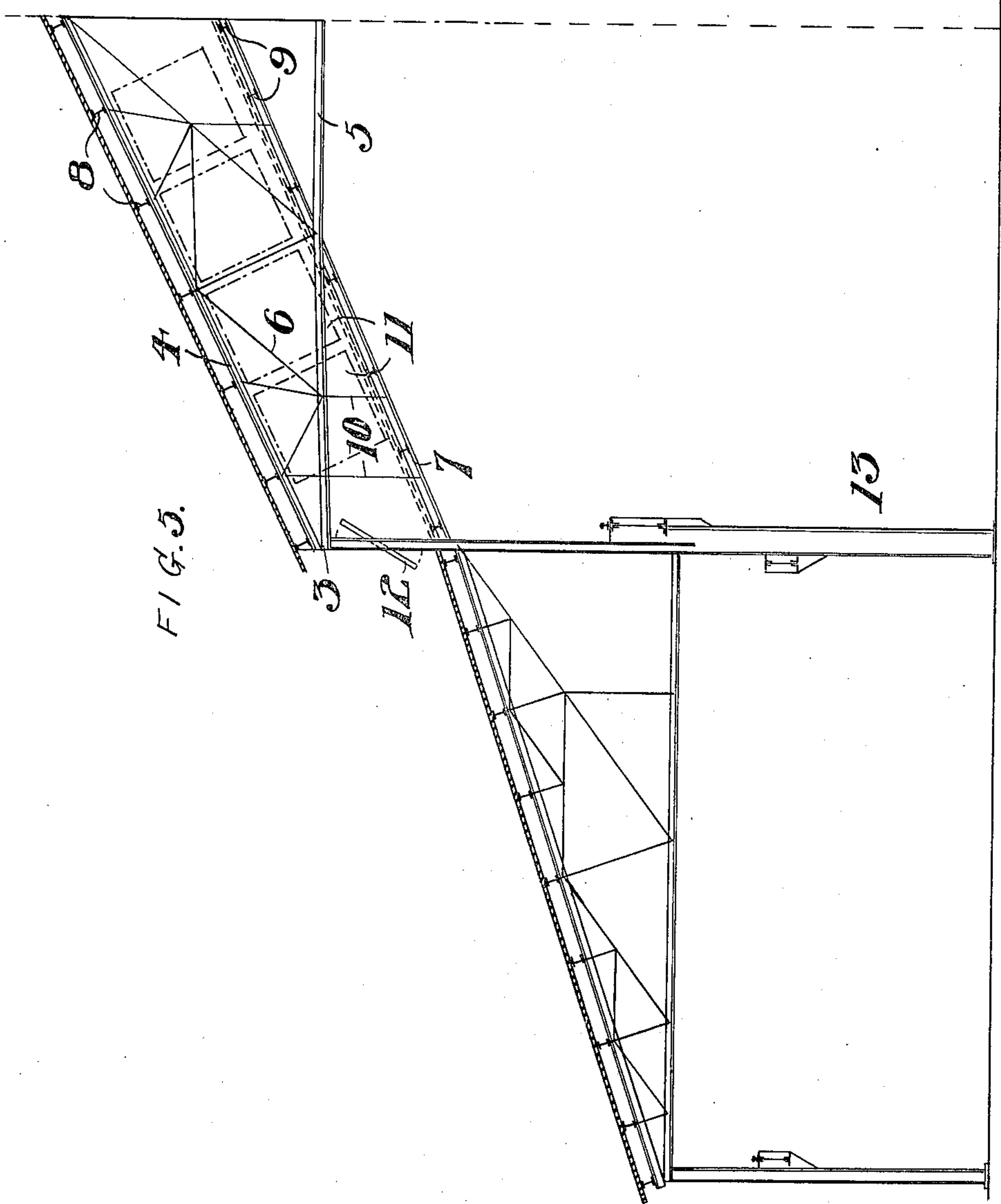
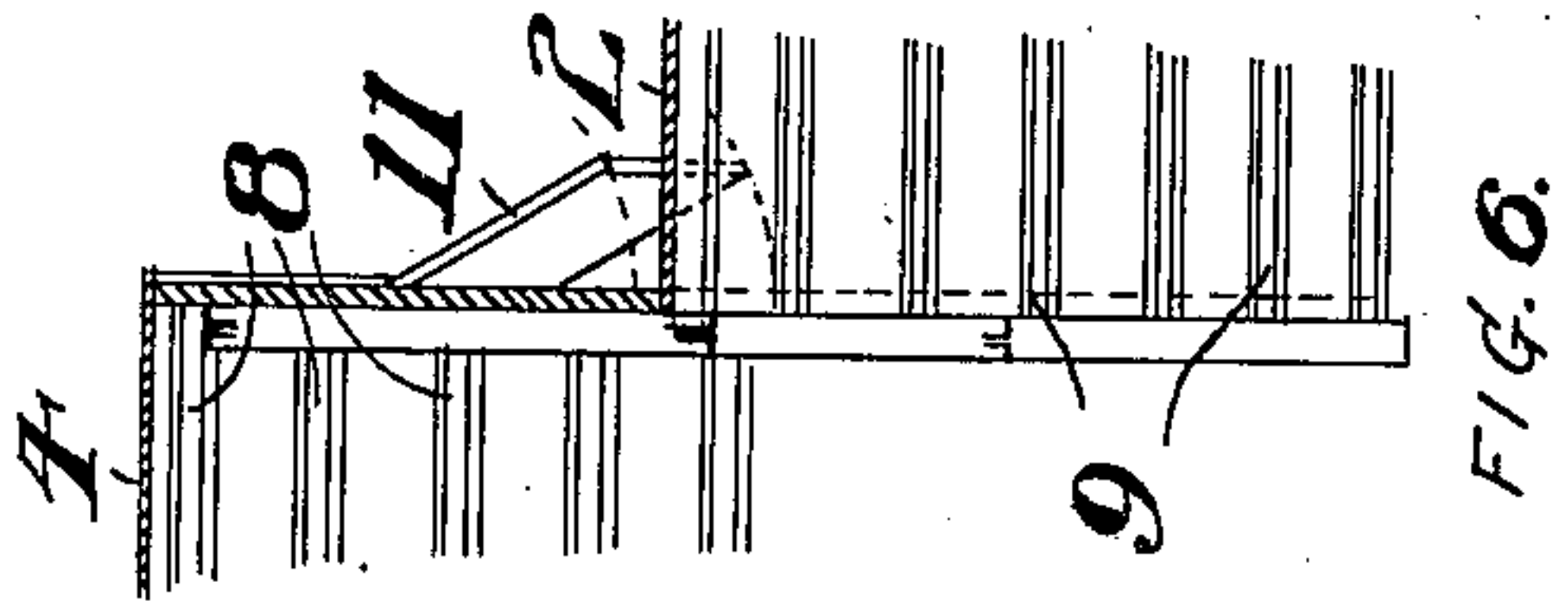
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4 SHEETS—SHEET 2.



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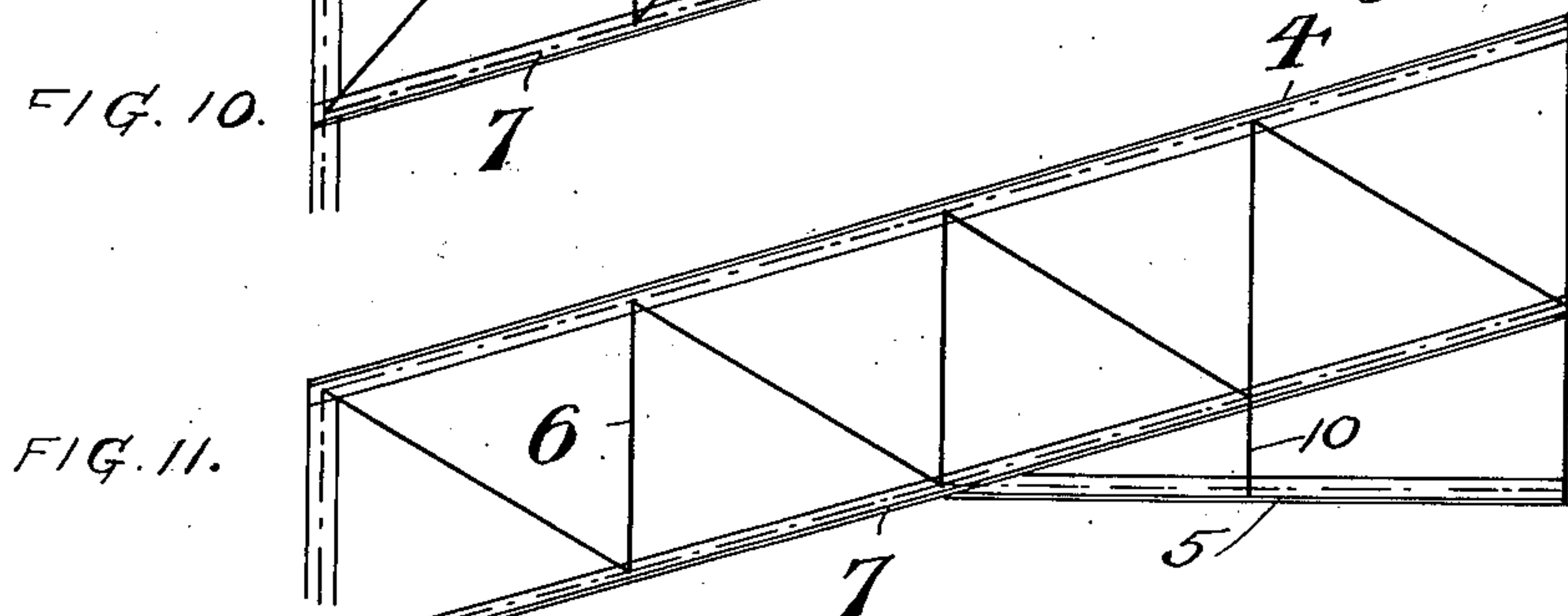
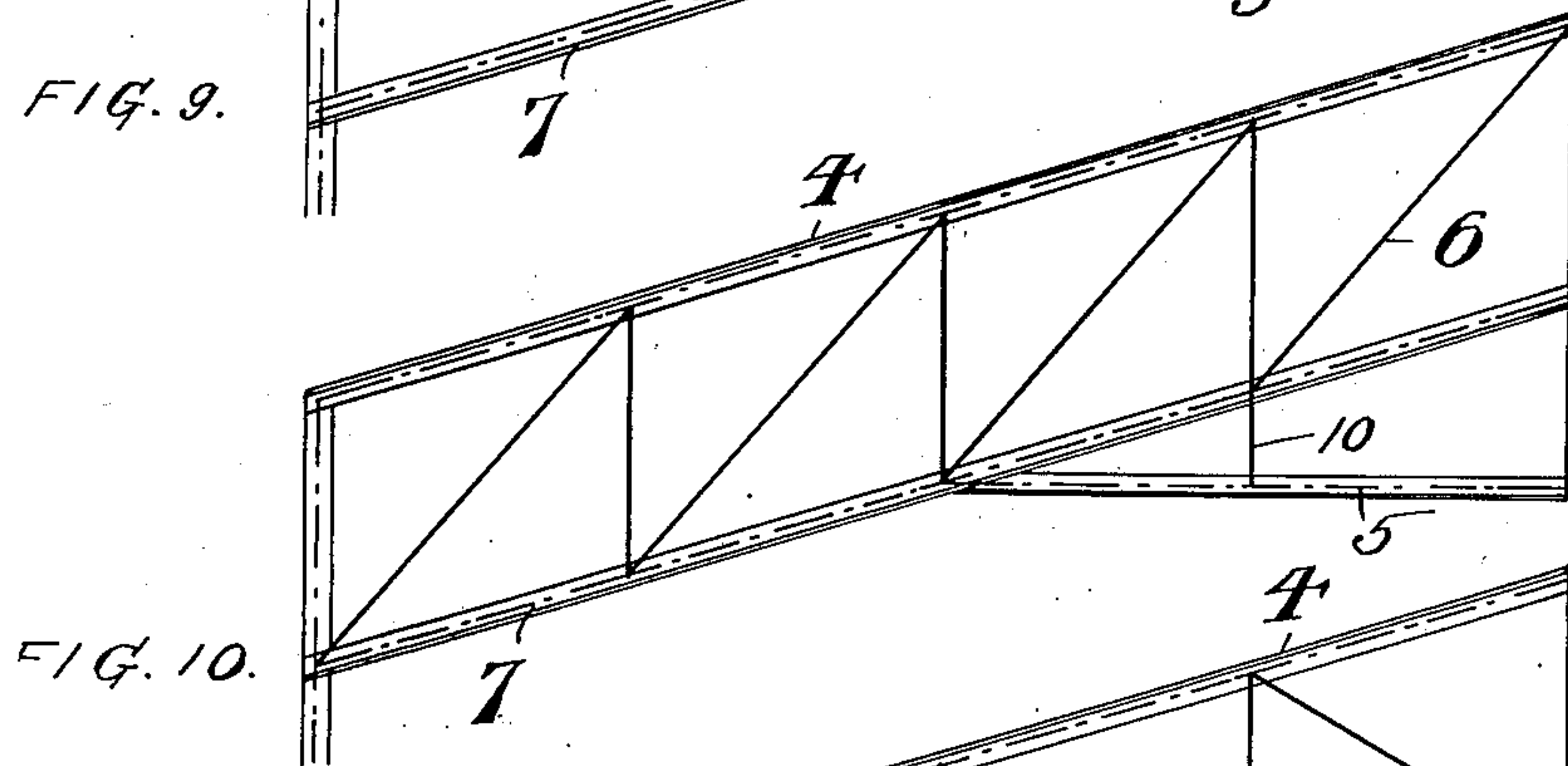
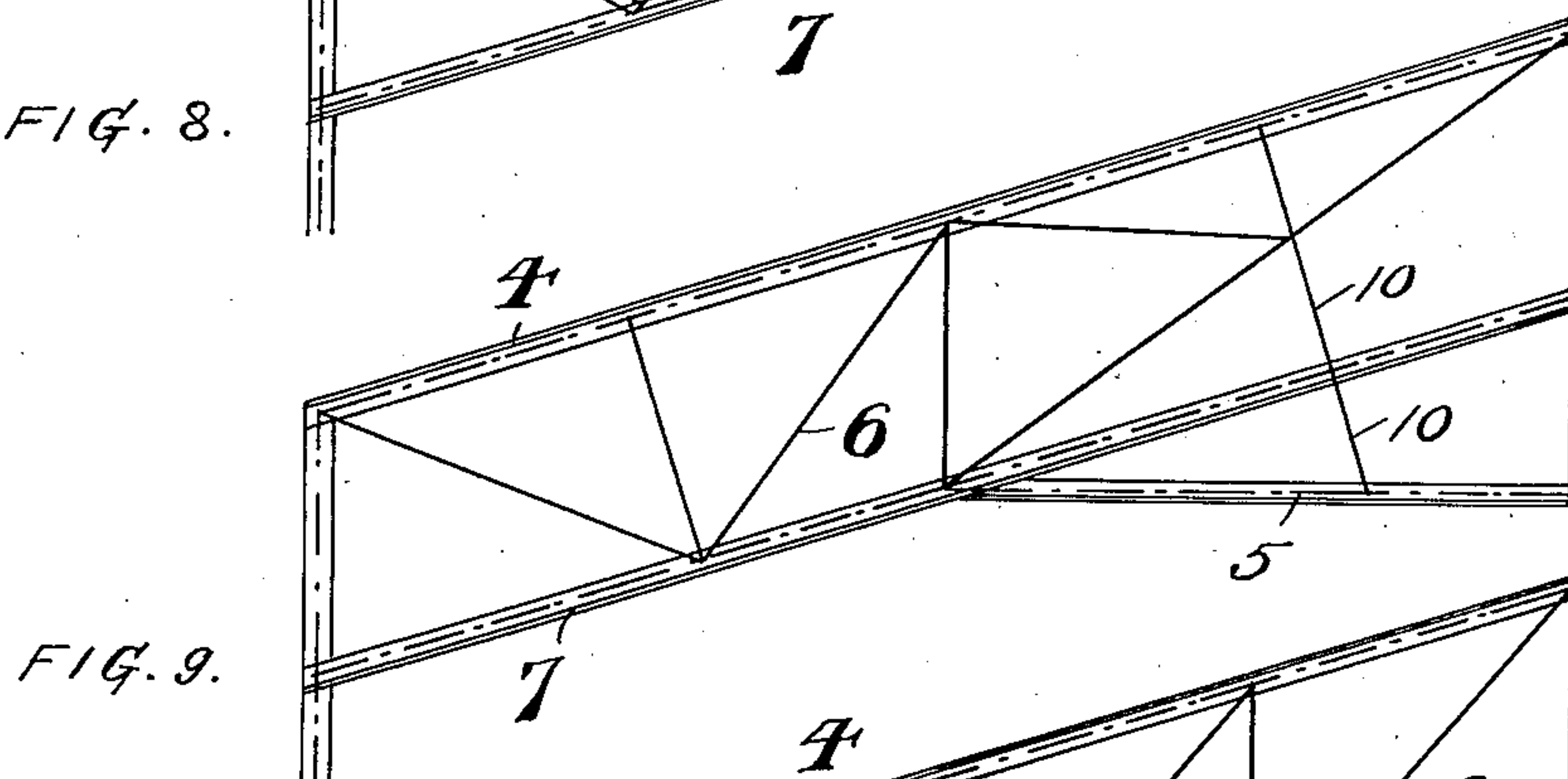
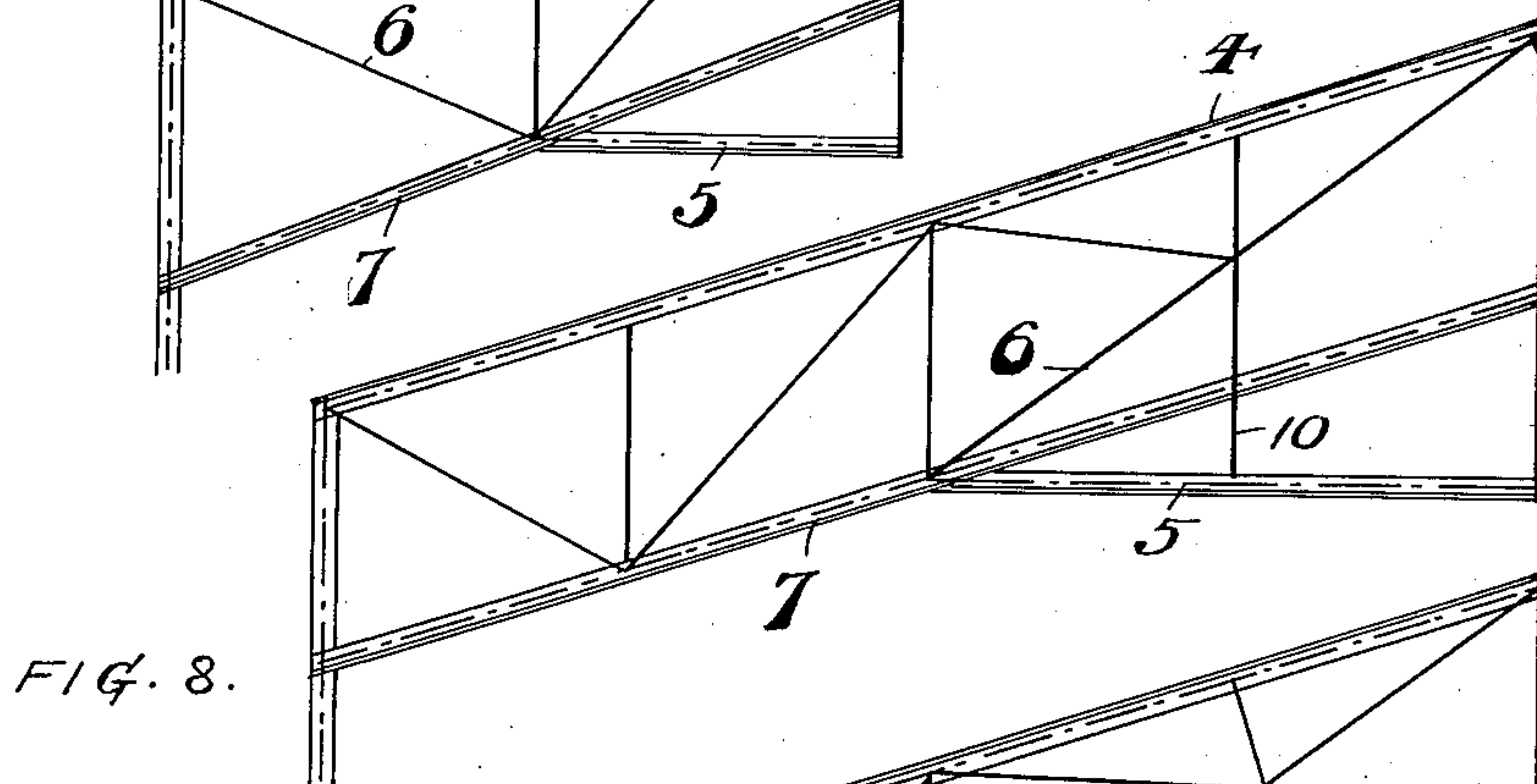
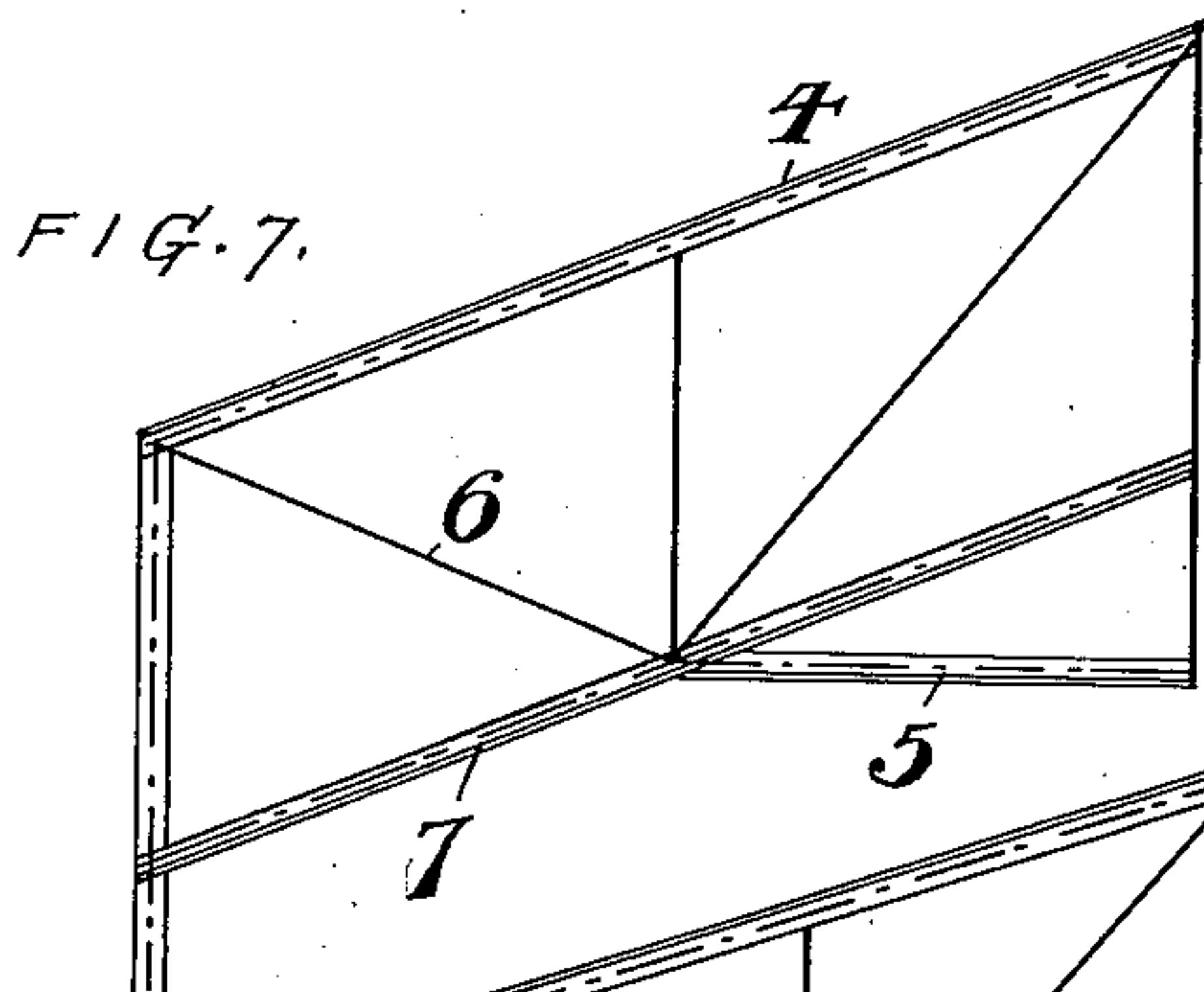
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

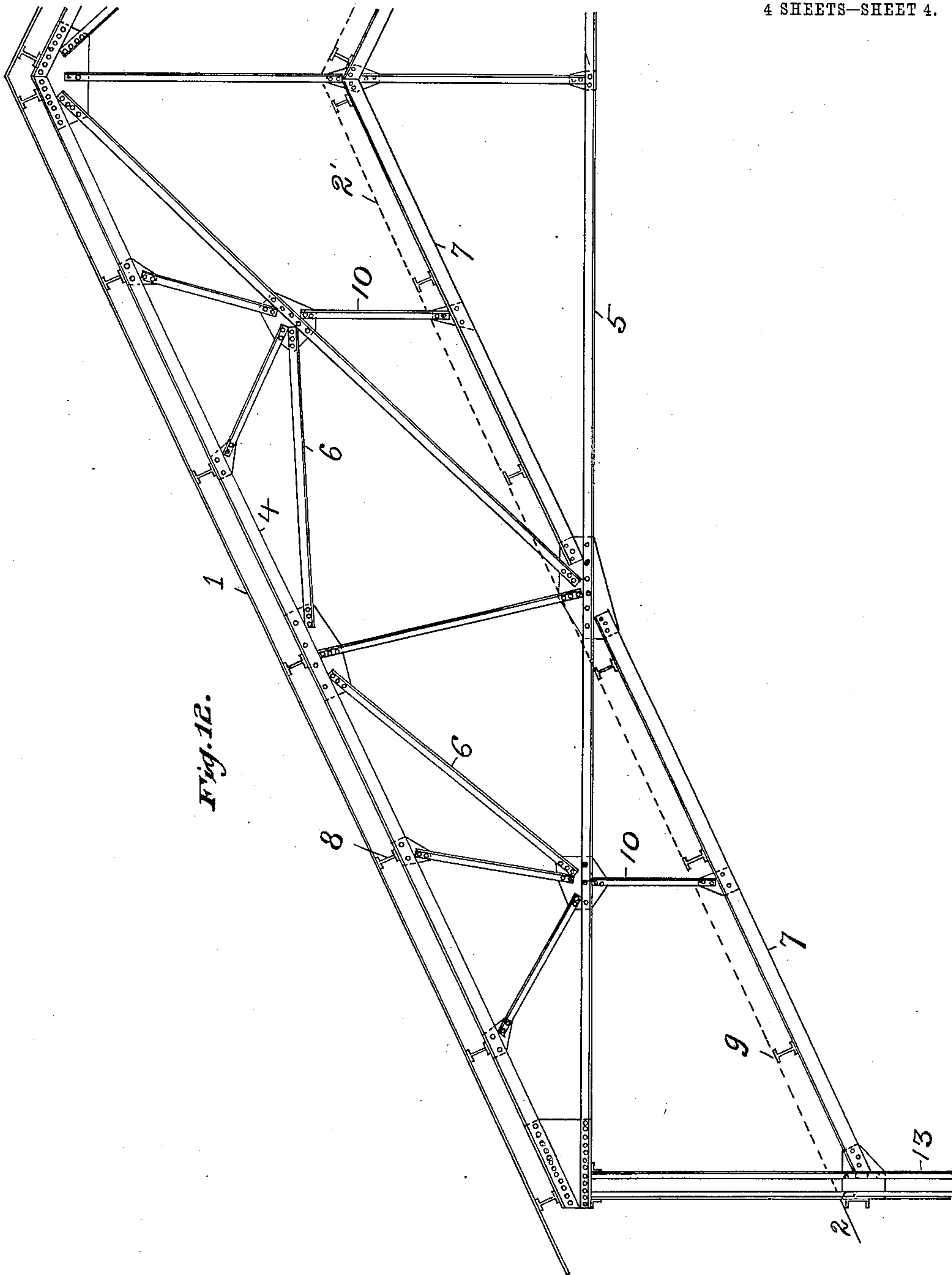


Fig. 12.

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UNITED STATES PATENT OFFICE.

CARL W. A. KOELKEBECK, OF EAST CLEVELAND, OHIO.

ROOF STRUCTURE.

No. 842,561.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 8, 1905. Serial No. 259,383.

To all whom it may concern:

Be it known that I, CARL W. A. KOELKEBECK, a citizen of the United States, residing at East Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Roof Structures, of which the following is a specification.

This invention relates to building construction especially designed for manufacturing plants, and more particularly to a new and improved roof construction in which provision is made for a thorough ventilation of building and an ample supply of light thereto.

In the accompanying drawings, which illustrate applications of my invention, Figure 1 is a side elevational view of a building constructed in accordance with my invention; Fig. 2, an end view of one-half of the building; Fig. 3, a plan; Fig. 4, a sectional view, one half of the view showing one form of construction and the other half a modified form; Fig. 5, an enlarged vertical sectional view of one-half of a structure embodying my invention; Fig. 6, a detail sectional view showing upper chord carrying purlins for raised surfaces of roof and secondary bottom chord carrying purlins for roof; and Figs. 7, 8, 9, 10, and 11, sectional detail view showing various modifications of my triangular truss, and particularly showing the great depth of the trusses at the center; and Fig. 12 is an enlarged view of triangular truss of the main roof.

Referring to the drawings, 1 designates the upper surfaces of the roof, and 2' the lower surfaces of the main roof. These surfaces are supported by a series of triangular trusses 3, each truss comprising an upper chord 4, lower chord 5, diagonal members 6, and an inclined or sloping secondary or supplemental bottom chord 7. This secondary bottom chord forms a characteristic and important feature of the present invention.

The primary objects of the inclined chords 7 are to carry those portions 2' of the roof located between the upper surfaces 1 and, further, to act as knee-braces.

The "lean-to" portion of the roof is designated by 2, and as this portion is supported in a well-known manner and forms no part of my invention I have not deemed it necessary to fully describe the same.

As shown, 8 designates purlins carried by the upper chords 4, which purlins in turn support the upper surfaces of the main roof, and 9 represents purlins for the lower sur-

faces, carried on the supplemental bottom chords 7.

In Figs. 8, 9, 10, and 11 I have shown tension members or hangers 10, forming additional supports for the chords 7.

11 are windows in the sides of the elevated portions, and 12 represents windows in the ends of said portions.

13 designates columns of the usual form.

In Fig. 4 I have shown in the half-sectional views modified forms of construction—that is to say, in one half of the figure the bottom chord is shown sloped downwardly and in the other half this chord is level. In Fig. 5 I have shown a camber in bottom chord.

All the chords of each truss are located in the same vertical plane.

Attention is called to the depth of my triangular truss at the center of truss. The advantages of this form of truss, requiring much less metal where the strains are less, over a truss having top and bottom chords parallel will be readily appreciated.

What I claim is—

1. In a roof structure having roof-surfaces of different levels, a triangular truss having a top and bottom chord, diagonal members, and an inclined secondary or supplemental bottom chord coextensive with the truss and crossing the direction of the bottom chord, substantially as set forth.

2. In a roof structure having roof-surfaces of different levels, a triangular truss having a top and bottom chord, diagonal members, an inclined secondary or supplemental bottom chord coextensive with the truss and crossing the direction of the bottom chord, all chords located in a vertical plane, substantially as set forth.

3. A triangular truss having a top chord, a bottom chord, diagonal members, and an inclined secondary or supplemental bottom chord coextensive with the truss and crossing the direction of the bottom chord, substantially as set forth.

4. In a roof structure having roof-surfaces of different levels, a triangular truss having a top and bottom chord, diagonal members, an inclined supplemental chord coextensive with the truss and crossing the direction of the bottom chord; and purlins carried on the supplemental chord, substantially as set forth.

5. In a roof structure having roof-surfaces of different levels, a triangular truss having a top and bottom chord, diagonal members, an inclined supplemental bottom chord coexten-

sive with the truss and crossing the direction of the bottom chord, purlins carried by the top chord, and purlins carried by the supplemental bottom chord, substantially as set forth.

6. In a roof structure having roof-surfaces of different levels, a triangular truss having a top and bottom chord, an inclined supplemental bottom chord coextensive with the truss and crossing the direction of the bottom chord and tension members or hangers for said latter chord, substantially as set forth.

7. In a roof structure having roof-surfaces of different levels, a triangular truss having a

top chord, purlins for the upper roof-surfaces carried by the top chord, a bottom chord, an inclined supplemental bottom chord, coextensive with the truss and crossing the direction of the bottom chord, and purlins for the lower roof-surfaces carried by the supplemental bottom chord, substantially as set forth.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

CARL W. A. KOELKEBECK.

Witnesses:

E. W. COE,

S. F. OWEN.