

No. 698,605.

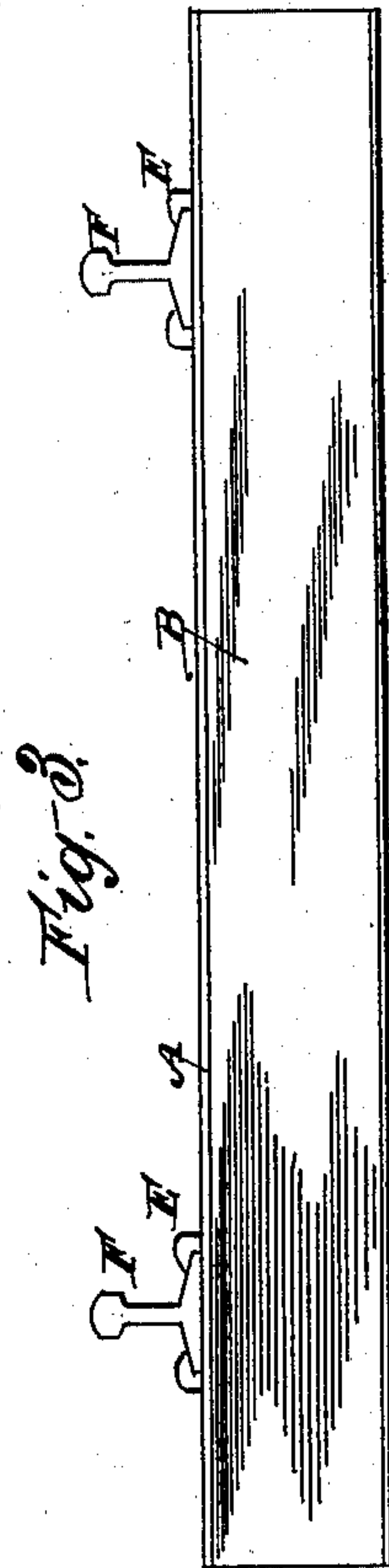
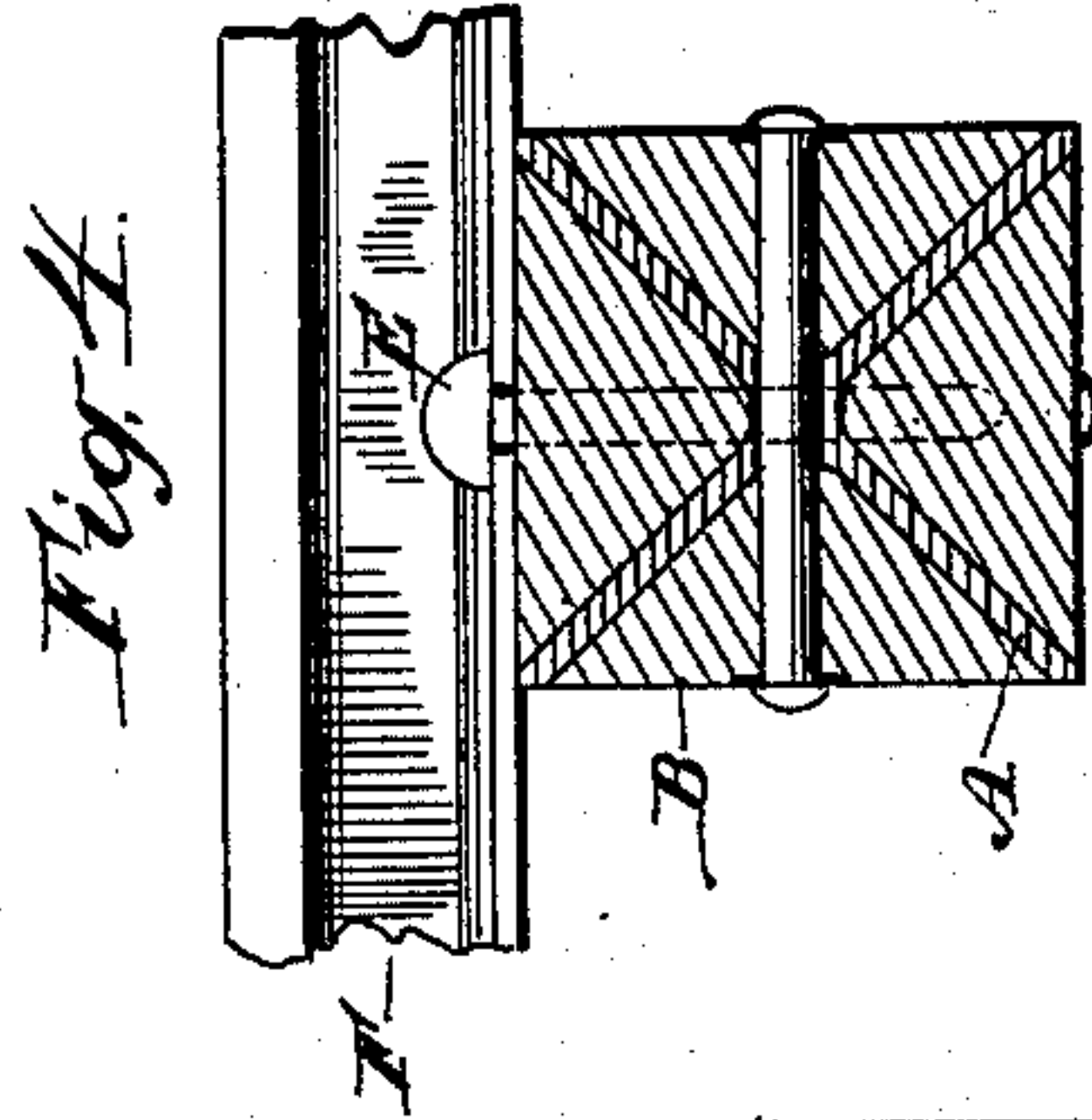
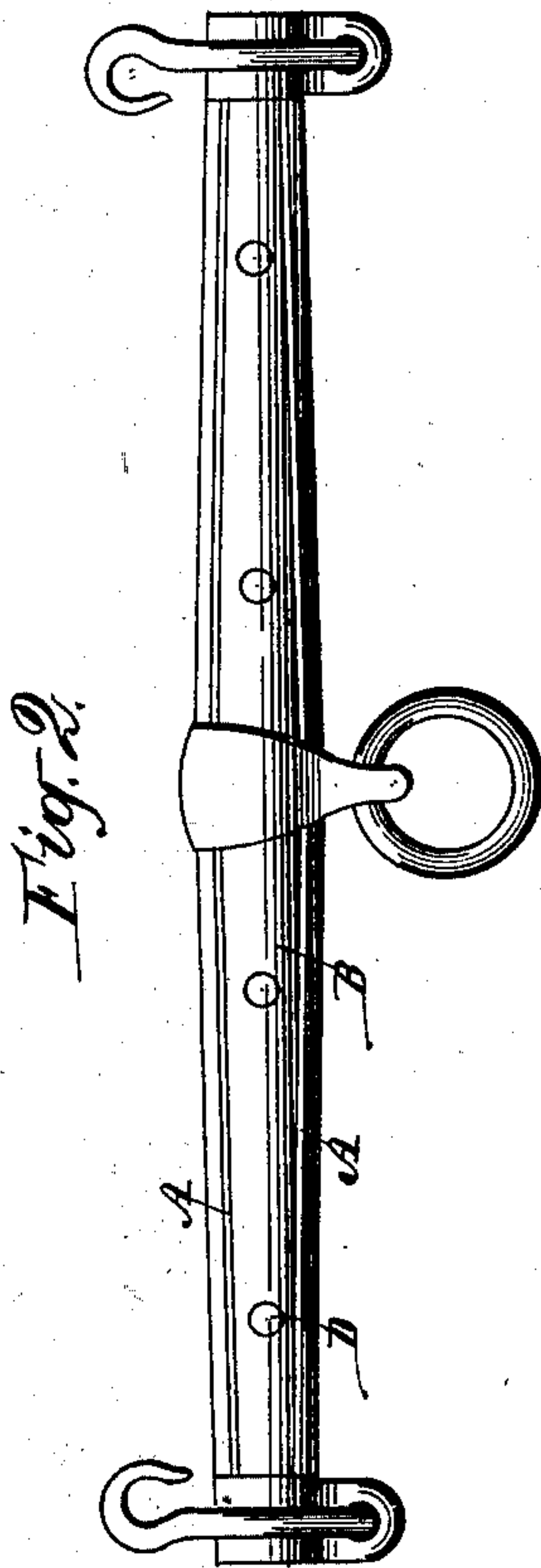
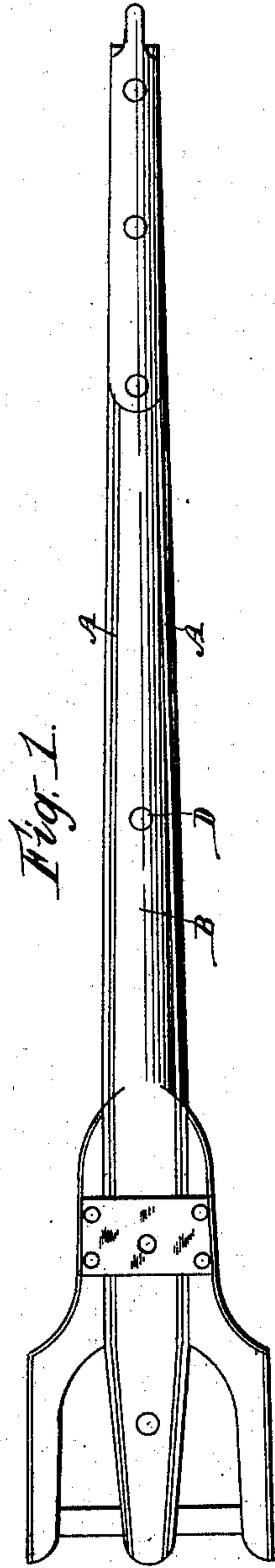
Patented Apr. 29, 1902.

M. WEIRES.

CONSTRUCTION OF STRUCTURES SUSTAINING CROSS STRAINS.

(Application filed Jan. 24, 1902.)

(No Model.)



Witnesses.

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# UNITED STATES PATENT OFFICE.

MICHEL WEIRES, OF ALLISON, IOWA.

CONSTRUCTION OF STRUCTURES SUSTAINING CROSS STRAINS.

SPECIFICATION forming part of Letters Patent No. 698,605, dated April 29, 1902.

Application filed January 24, 1902. Serial No. 91,138. (No model.)

*To all whom it may concern:*

Be it known that I, MICHEL WEIRES, a citizen of the United States, residing at Allison, in the county of Butler and State of Iowa, have  
5 invented certain new and useful Improvements in the Construction of Structures Sustaining Cross Strains; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable  
10 others skilled in the art to which it appertains to make and use the same.

This invention relates to a composite structure of angular flanged metal and wood so constructed and arranged with relation to each  
15 other as to mutually strengthen and stiffen the connecting parts and as to admit of the attachment of other parts to the structure, as by the use of nails or screws, in substantially the same manner as though the entire structure  
20 were of wood.

The invention is illustrated as applied to a variety of different uses, and its nature will clearly appear by reference to the drawings and the description and claim following.

25 In the accompanying drawings, Figure 1 illustrates the invention as applied to the construction of a wagon-tongue. Fig. 2 shows the application of the same to the construction of a singletree. Fig. 3 shows the same  
30 applied to a railroad-tie. Fig. 4 is a cross-section of said tie.

Referring to the drawings, A designates the metal portion of the structure, which is flanged material in the form of a cross in cross-section.  
35 In the triangular spaces between the flanges of this metal part are mounted wood filling-strips B. These are attached to the metal part in some suitable way, as by rivets D passing through the opposite wood strips  
40 and central holes formed in the metal part at the junction of its radiating flanges. In the case of the railroad-tie illustrated the metal should also be perforated with suitable holes or slots in addition to those provided for the  
45 rivets, so as to allow for the passage through the metal of the spike E, by which the rail F is attached to the tie in the usual way. Prac-

tically the same construction applies in the case of structures analogous to those illustrated in Figs. 1 and 2. In the case of the  
50 wagon-tongue or singletree illustrated, however, the structure is preferably of circular or rounded form in cross-section and is tapered endwise, as illustrated. In this case the metal flanges take the same taper as the wood and  
55 terminate flush with the surface thereof. So, also, at the ends of the singletree shown it will be understood that the terminal portions of the angle-iron are shouldered down to receive the terminal rings of the singletree. 60

The construction is specially desirable in the case of such articles as singletrees and the like, inasmuch as it gives extraordinary strength to the structure, while at the same time the wood filling in the interspaces between the metal flanges gives a suitable external formation to the article, so that it does not chafe or bruise the animal hitched thereto. 65

It is to be noted that the attachment of the wood strips is such that there is practically  
70 no weakening of the metal structure, since the holes pass through it at the junction of the radiating flanges, which are thus left with practically their full strength.

Having thus described my invention, what  
75 I claim as new, and desire to secure by Letters Patent, is—

As a new article of manufacture, a composite structure of angle-iron and wood, the angle-iron being substantially cross-shaped  
80 in cross-section, and tapered endwise, and attached filling-strips of wood secured in the interspaces between the flanges as by rivets passing through the opposite wood strips and through holes in the angle-iron at the junction  
85 of its flanges, substantially as and for the purpose set forth.

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

MICHEL WEIRES.

Witnesses:

W. F. RAY,  
W. E. HYDE.