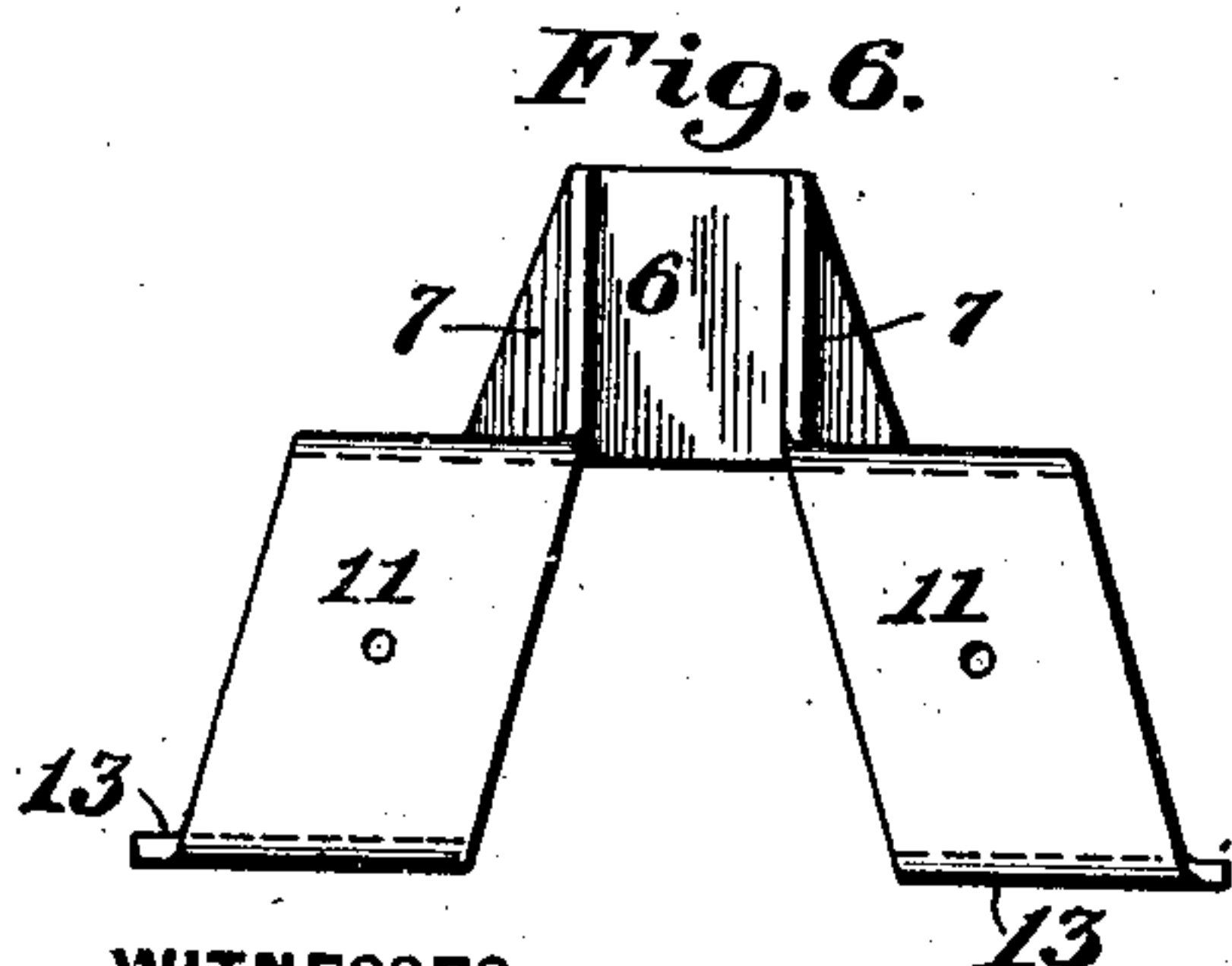
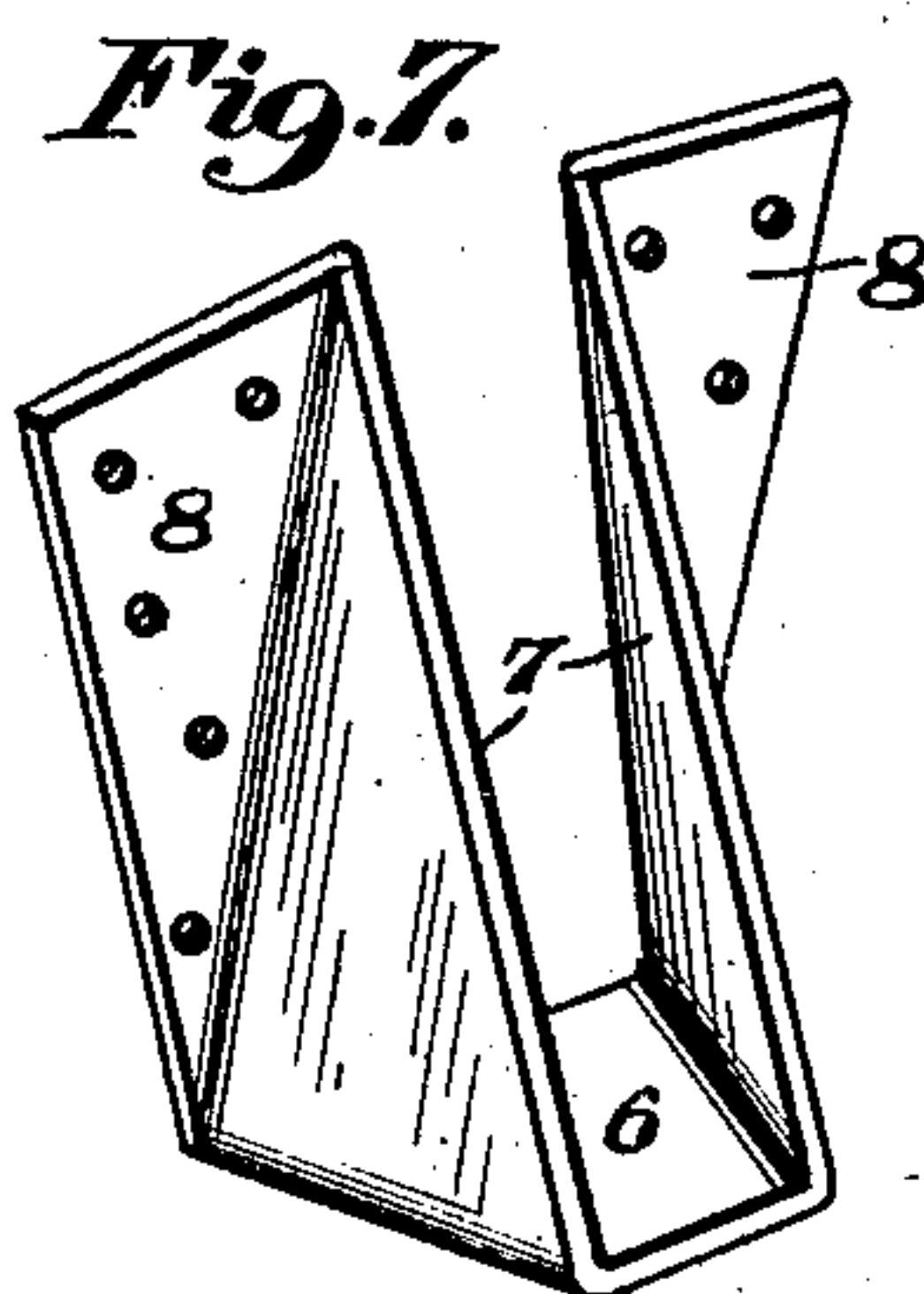
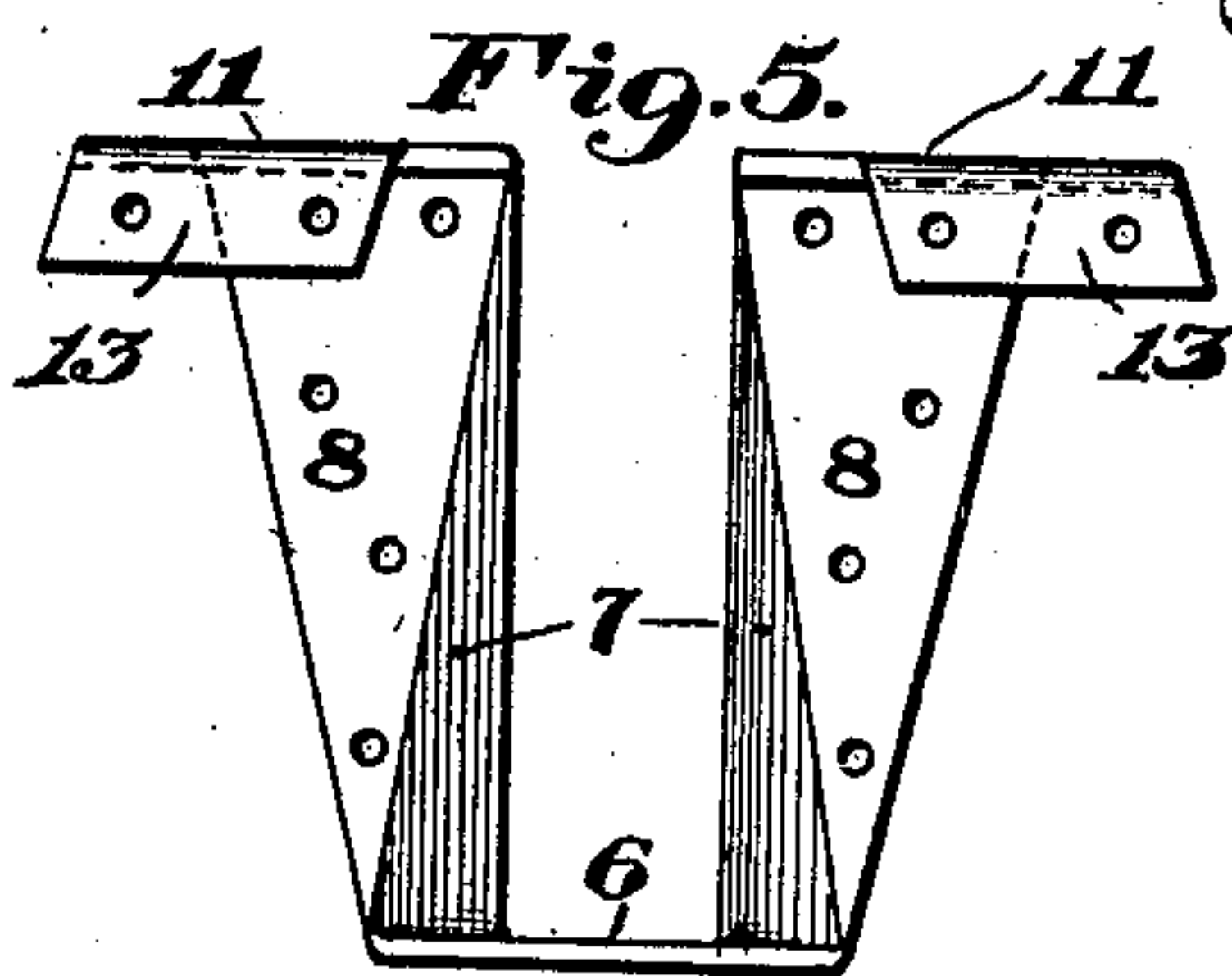
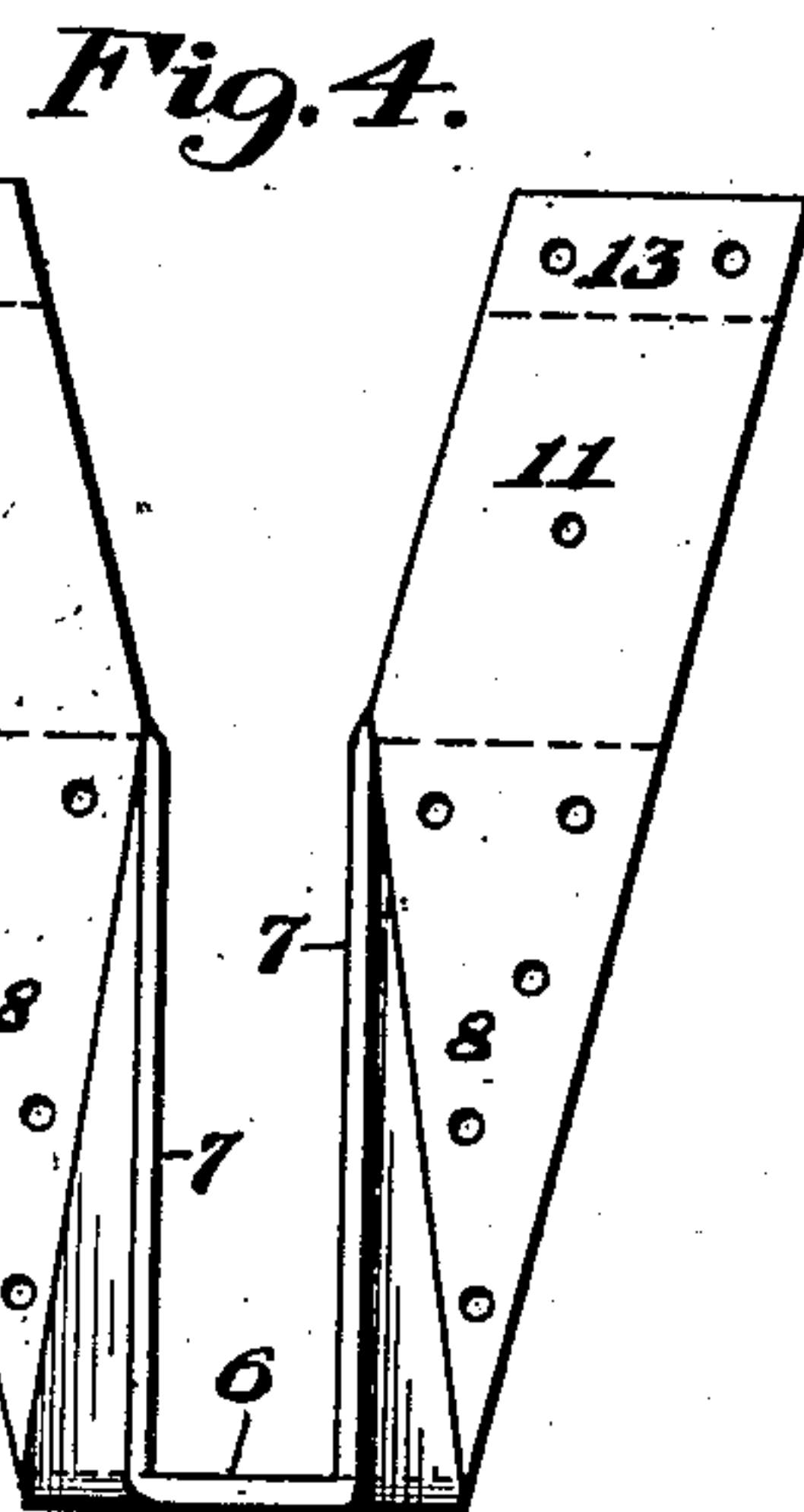
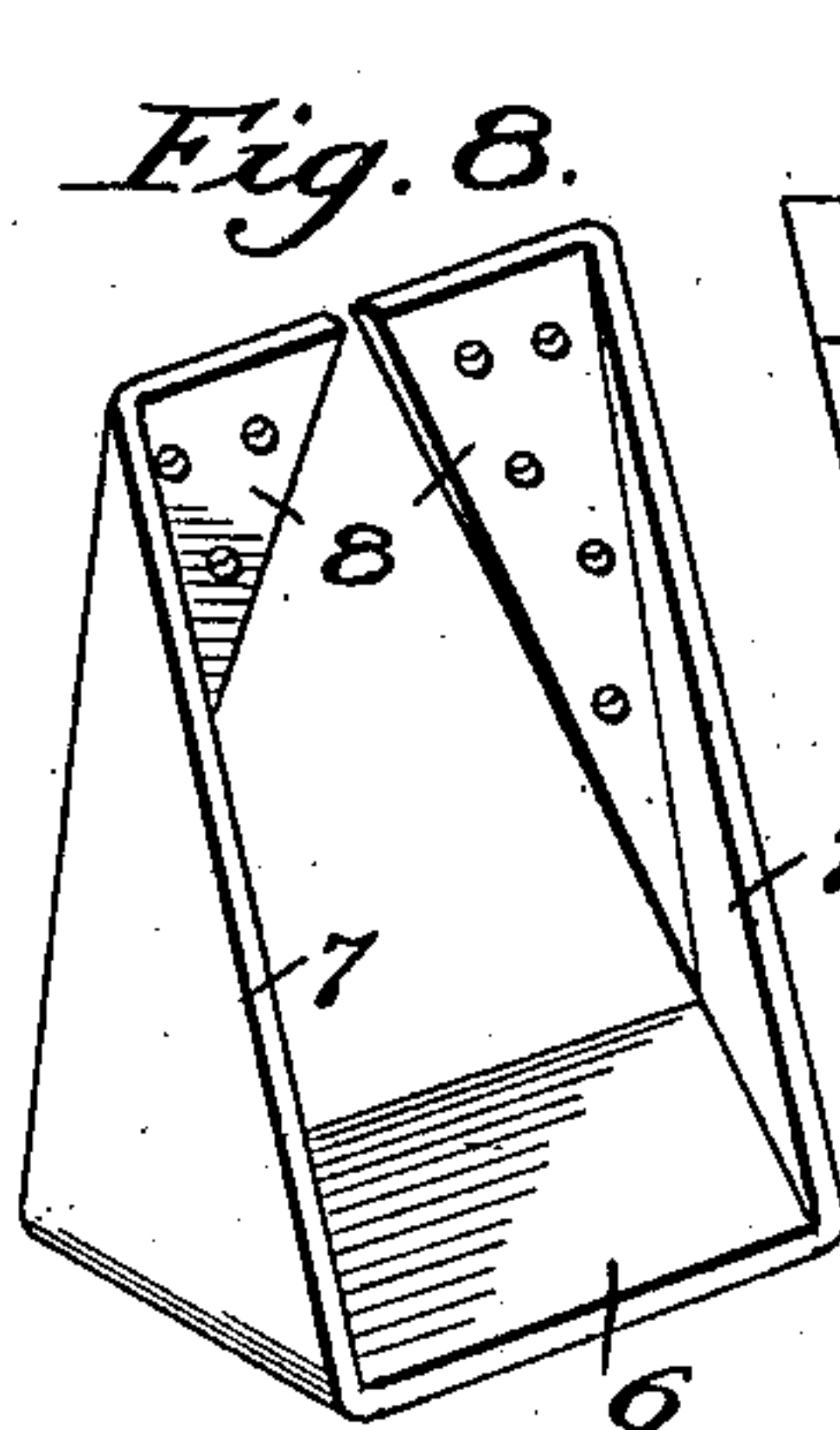
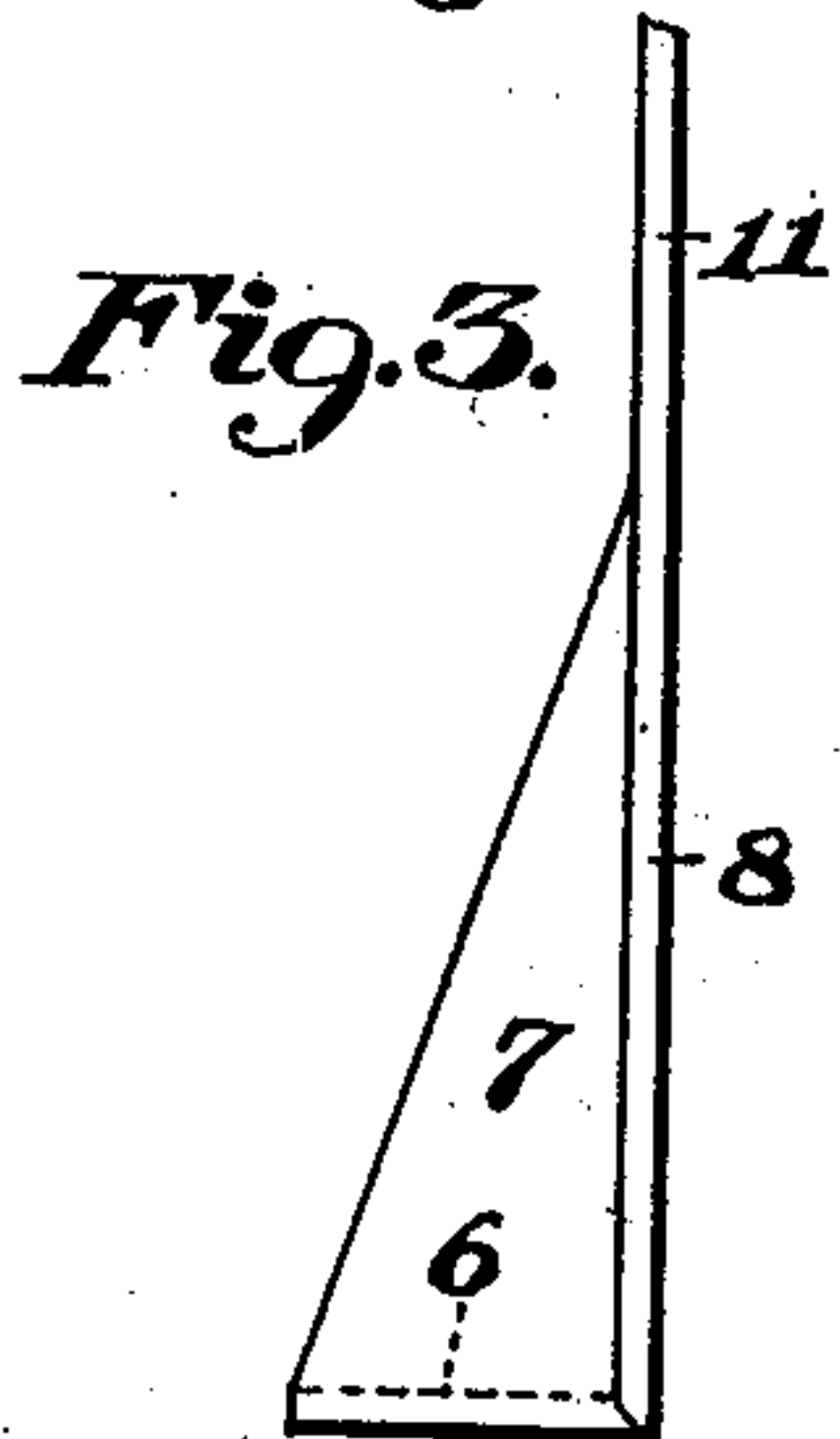
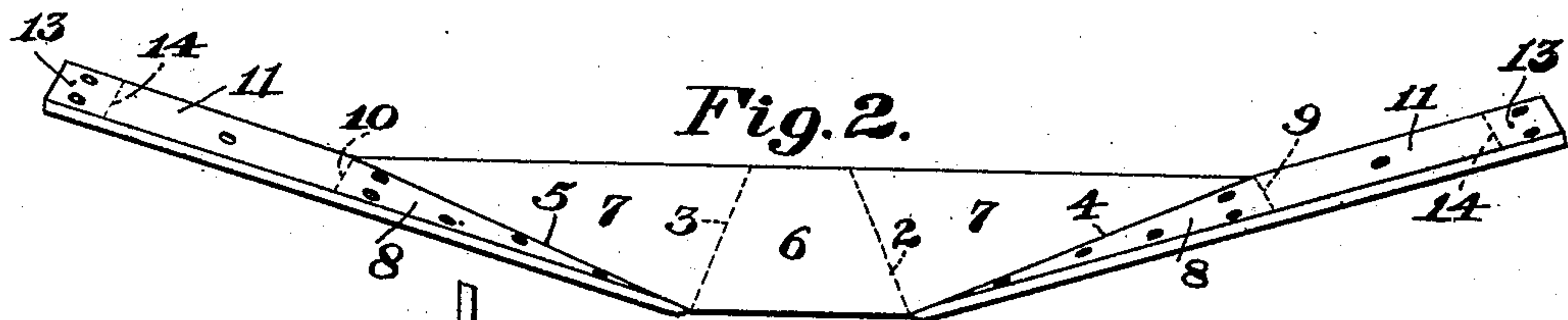
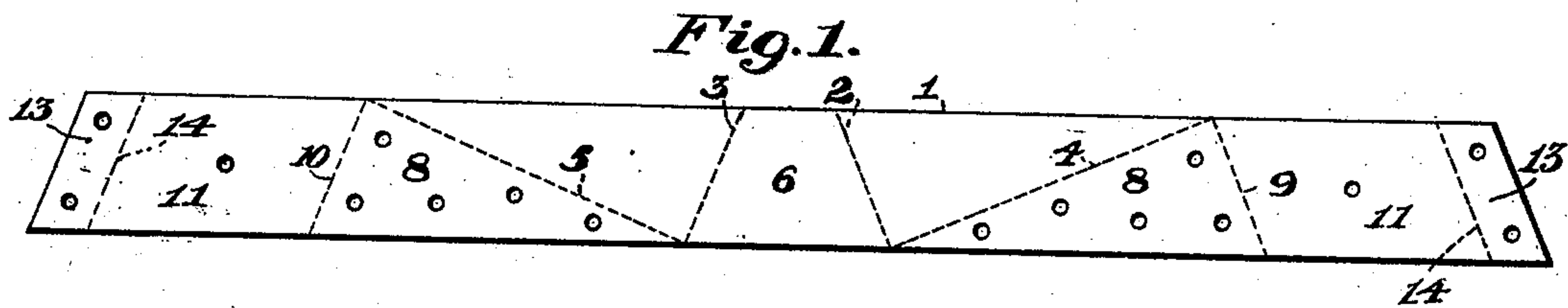


No. 828,488.

PATENTED AUG. 14, 1906.

J. LANZ.
METHOD OF MAKING JOIST HANGERS.
APPLICATION FILED MAY 6, 1905.



WITNESSES

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METHOD OF MAKING JOIST-HANGERS.

No. 828,488.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed May 6, 1905. Serial No. 259,249.

To all whom it may concern:

Be it known that I, JOHN LANZ, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Methods of Making Joist-Hangers; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a method of making joist and timber hangers and similar devices.

The object of my invention is to provide a method of making articles of the character specified which is simple, which is applicable to any size of hanger and to any width of blank without variation either of procedure or of dies or apparatus for forming the same, and whereby the articles in question can be made from straight bands or pieces of metal of the required length cut without waste of material from merchant steel or iron bars of multiple length.

The invention consists, generally stated, in taking a straight blank of suitable length, preferably a section of rolled bar, and bending the same upon four lines, all of which extend obliquely across the blank, two of said bends forming a horizontal seat which is wider at the back than at the front, thereby giving to the upright side members a backward slope, said side members being bent on lines substantially at right angles to the lines of the bends forming the sides of the seat, thereby to form bearing-flanges perpendicular to and in a plane transverse to the plane of the seat.

The resultant hanger has a horizontal dovetailed seat and upright side members provided with lateral wings or flanges perpendicular to the seat and having their faces lying practically in the plane of the rear edge of the seat, so as to bear against the beam, girder, or wall and serve to receive securing means.

In the accompanying drawings, Figure 1 is a plan view of a blank suitable for making one form of my timber-hanger, the dotted lines indicating the lines of bending. Fig. 2 is a similar view after the first bending operation. Fig. 3 is a side view, and Fig. 4 a front view, after the second bending operation. Fig. 5 is a rear elevation, and Fig. 6 a plan view, of the finished hanger. Fig. 7 is a perspective view showing a modified form of hanger, and Fig. 8 is a similar view showing still another modification.

The peculiarity of my process consists in the use of a straight blank which preferably will be a section of a commercial steel or iron bar or band. Such a blank is shown at 1 in Fig. 1 and can be cut in the desired lengths from any commercial stock at hand. I bend this blank on the lines 2, 3, 4, and 5. The lines 2 and 3 extend obliquely across the blank in opposite directions—that is, diverging from one side to the other—the portion between said lines forming a seat for the timber or joist, which is wider at its back than at its front. The lines 4 and 5 also extend obliquely along and across the blank in opposite directions and preferably intersect the lines 2 and 3 at that edge of the blank forming the back edge of the timber-seat. The lines 4 and 5 form substantially right angles with the lines 2 and 3, respectively. As a consequence of these two bending operations the blank assumes the form shown in Figs. 3, 4, and 7. The effect of bending on the diagonal lines 2 and 3 is to form a timber-seat wider at its back than at its front and to give to the upwardly-projecting side members a backward slope, so that those portions thereof back of lines perpendicular to the base when bent laterally form wings or flanges, whose faces are perpendicular and lie in a plane transverse to the plane of the timber-seat 6 and practically in the same plane as the rear edge of said timber-seat. As a consequence these laterally-projecting flanges 8 give a broad bearing-surface against the face of the wall, girder, or beam to which the hanger is to be attached. They will be provided with the necessary holes for receiving spikes, lag-screws, or other fastening means.

The operation so far described forms the simplest form of my hanger, such as shown in Fig. 7, and which is adapted to be attached only to the side face of a beam, girder, or wall. The blank shown in Figs. 1 and 2, however, is of greater length than necessary to make this simplest form of hanger, and the end portions thereof are bent on the lines 9 and 10, which also extend obliquely across the blank and preferably parallel with the lines 2 and 3, so that the faces of the end portions 11 will be horizontal and form bearing portions for resting on the top of the wall, beam, or girder. In some forms also the extreme ends 13 of the legs will be bent on the lines 14 either downwardly, as shown in Figs. 5 and 6, to form lips to hook over the beam or girder or upwardly to form retaining

means when the hanger is to be laid into a brick or similar wall.

In the particular form of hanger shown in the drawings the bends on the lines 2 and 3 are made in one direction—that is, toward one face of the blank—while those on the lines 4 and 5 are made in the opposite direction, thus throwing the lateral flanges 8 outwardly. This, however, is not necessary, as the bends 4 and 5 may be made in the same direction as the bends 2 and 3, in which event the flanges or wings 8 will project inwardly instead of outwardly, as shown in Fig. 8.

In carrying out my invention the bends 4 and 5 will preferably be made first at one stroke of bending-press. In so doing the portions 8 are not brought at right angles to the body of the blank. Then the blank is bent on the lines 2 and 3, either in the same direction as the former bends or in the opposite direction, as shown in the drawings. As these bends are not transverse to the length of the blank, but are at right angles to the bends 4 and 5, this will throw the flanges 8 into exact perpendicular position and in a plane transverse to the timber-seat, so as to provide a broad bearing against the side face of the wall, beam, or girder and suitable for the reception of securing means.

Various forms of stirrup-hangers may be made according to this invention, those shown in the drawings being merely two of the possible forms. If desired, a pair of hangers, such as shown in Fig. 5, may have the ends of the portions 11 thereof welded or otherwise secured together, so as to form, in effect, a double hanger. In the process of making, however, each of the individual hangers would be made by the process above described. The end portions 13 may be bent upwardly or downwardly in a straight direction, as shown in the drawings, or downwardly and inwardly to form a hook, the latter form being especially adapted for use where the hanger is to be supported by a flanged beam or girder.

As is well known, joist-hangers must be made of varying heights and from varying widths of blanks. My process adapts itself without variation to all conditions. Given the height of the desired hanger then the lines 4 and 5 will be taken of a length equal to the height of the hanger and will be laid diagonally across the blank, with one end at one edge and the other end at the other edge, and the lines 2 and 3 will be laid at right angles to these two lines. The height of the desired hanger, therefore, is the basis from which to start, and the lines 4 and 5 will be substantially equal to this height. It is therefore obvious that no matter what the height of the hanger or the width of the blank may be it is always possible to lay off the lines 4 and 5 in length equal to the height of the hanger and coinciding at their ends with the edges

of the blank. With a short hanger made from a wide blank these lines will form fairly wide angles with the edges of the blank, whereas with long hangers formed from narrow blanks these lines would form comparatively sharp angles with the edges of the blank. All of the bending operations can be made by simple apparatus, and the same dies may be used for making all of the bends and irrespective of the length of the bends or width of the blank. My process therefore lends itself to the ready manufacture of all sizes and shapes of hangers and without the necessity of either varying the procedure or changing the dies or apparatus. Inasmuch as the blanks are straight, they may be cut in suitable lengths from any commercial bar or other stock on hand. This not only simplifies the cutting of the blank, but produces no waste, as occurs when irregular-shaped blanks are employed.

While it is preferred to bend the blank on the lines 4 and 5 before bending it on the lines 2 and 3, this is not essential, as the blank can be bent first on the lines 2 and 3. I intend both ways to be included in terms of the claims hereinafter made. By varying the angles on the lines 2 and 3 the upright side members 7 can be thrown either forward or back. By sufficiently increasing the angles of these lines—that is, by increasing the distance between the lines at the rear edge of the blanks—the side members 7 may be thrown sufficiently far back so that their upper ends can be riveted to the web of an I or other flanged beam, while the seat or lower end of the hanger will bear against the edge of the flange of said beam.

The joist-hanger is not claimed in this application, but is claimed in my application, Serial No. 307,514, March 22, 1906.

What I claim is—

1. The method of making joist or timber hangers and the like, which consists in taking a substantially straight blank and bending the same on two pairs or sets of lines, all extending obliquely across the blank, the intermediate pair of lines diverging toward the rear of the seat, whereby in bending the blank on these lines the side portions are thrown backwardly, (and the other pair of lines being at right angles to the intermediate lines and extending diagonally across the blank from that edge of the blank on which the intermediate pair of lines are farthest apart, whereby in bending on these lines those parts of the side portions which lie back of the plane perpendicular to the plane of the seat at its rear edge are thrown laterally to form bearing-faces.)

2. The method of making joist or timber hangers and the like, which consists in taking a substantially straight blank and bending the same on two pairs or sets of lines, all extending obliquely across the blank, the inter-

mediate pair of lines diverging toward the rear of the seat, whereby in bending the blank on these lines the side portions are thrown backwardly, and the other pair of lines being
5 at right angles to the intermediate lines and extending diagonally across the blank from that edge of the blank on which the intermediate pair of lines are farthest apart, whereby in bending the blank on these lines those
10 parts of the side portions which lie back of the plane perpendicular to the plane of the seat at its rear edge are thrown laterally to form bearing-faces, and also bending the end portions of the blank on oblique lines to bring
15 the faces of said end portions at right angles to the lateral bearing-faces.

3. The method of making joist or timber hangers and the like, which consists in taking

a plain blank, laying off on the same two lines extending obliquely across the same from 20 one edge to the other and of a length substantially equal to the height of the proposed hanger, and laying off two other lines, each at right angles to one of the first-named lines and extending obliquely across the blank in- 25 termediate the two first-named lines and being a distance apart equal to the width of the seat of the hanger, and bending the blank on the four lines specified.

In testimony whereof I, the said JOHN 30 LANZ, have hereunto set my hand.

JOHN LANZ.

Witnesses:

F. W. WINTER,
ROBERT C. TOTTEN.