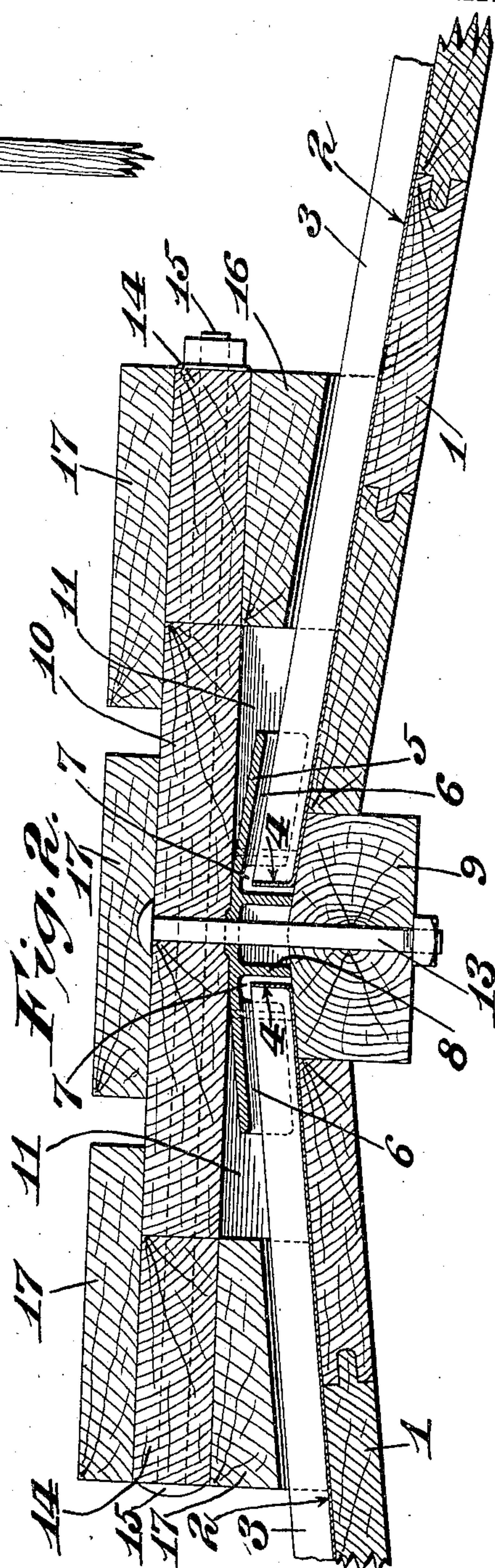
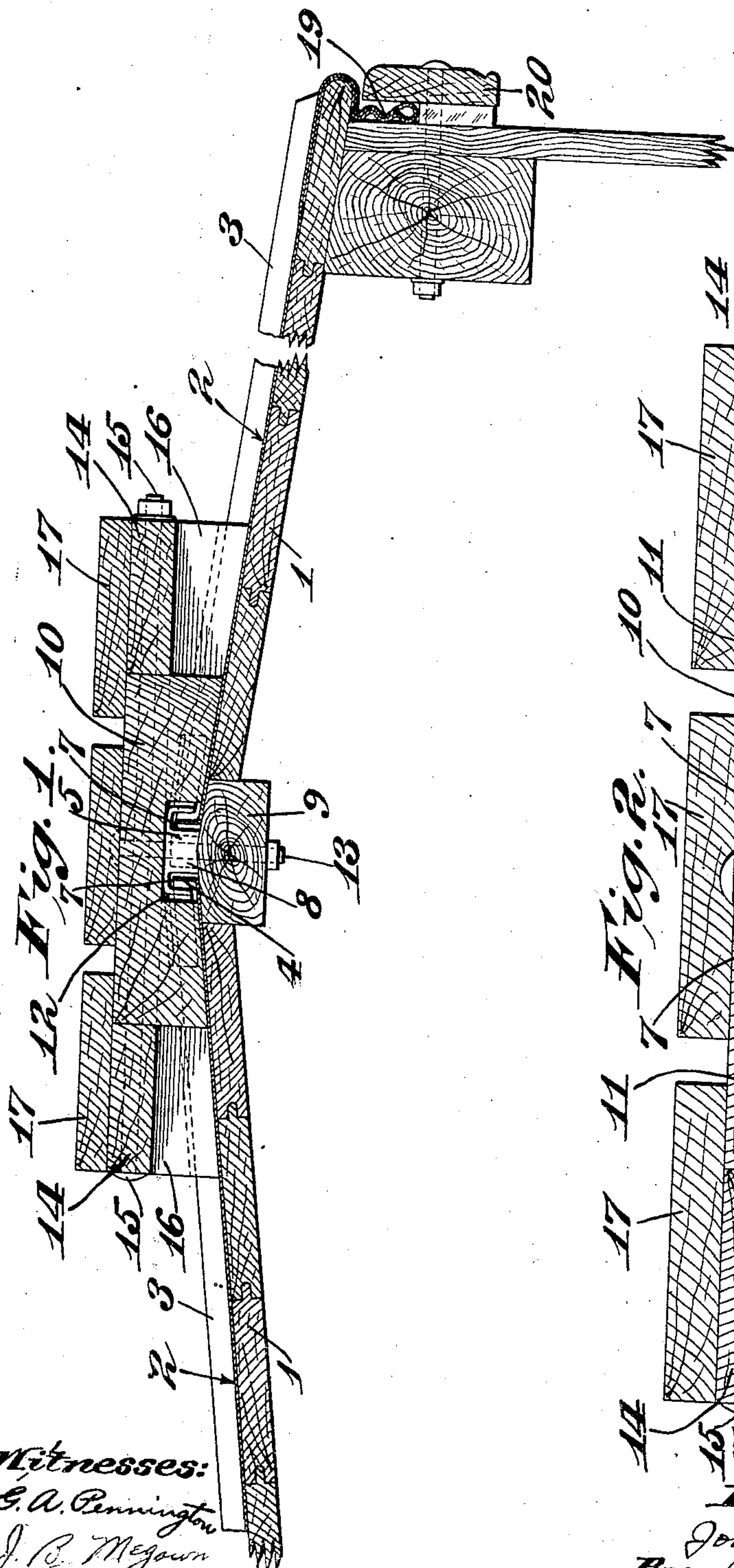


915,350.

J. J. HOFFMAN.
OUTSIDE CAR ROOF.
APPLICATION FILED FEB. 24, 1908.

Patented Mar. 16, 1909.

4 SHEETS—SHEET 1.

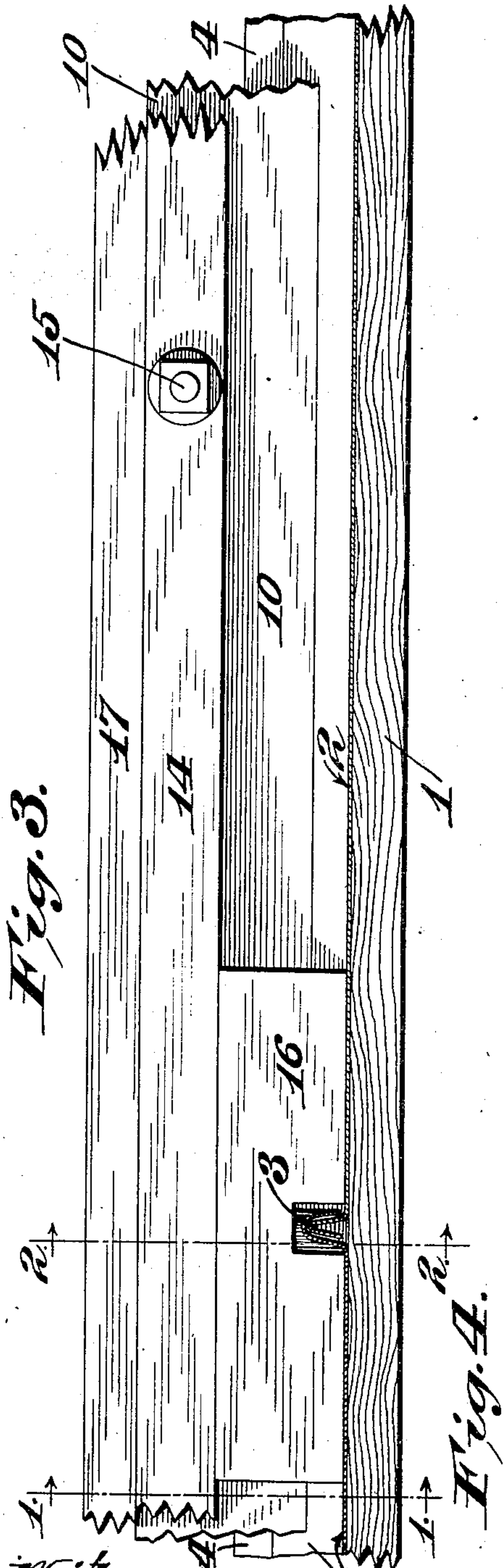


Witnesses:
G. A. Pennington
J. B. Megown

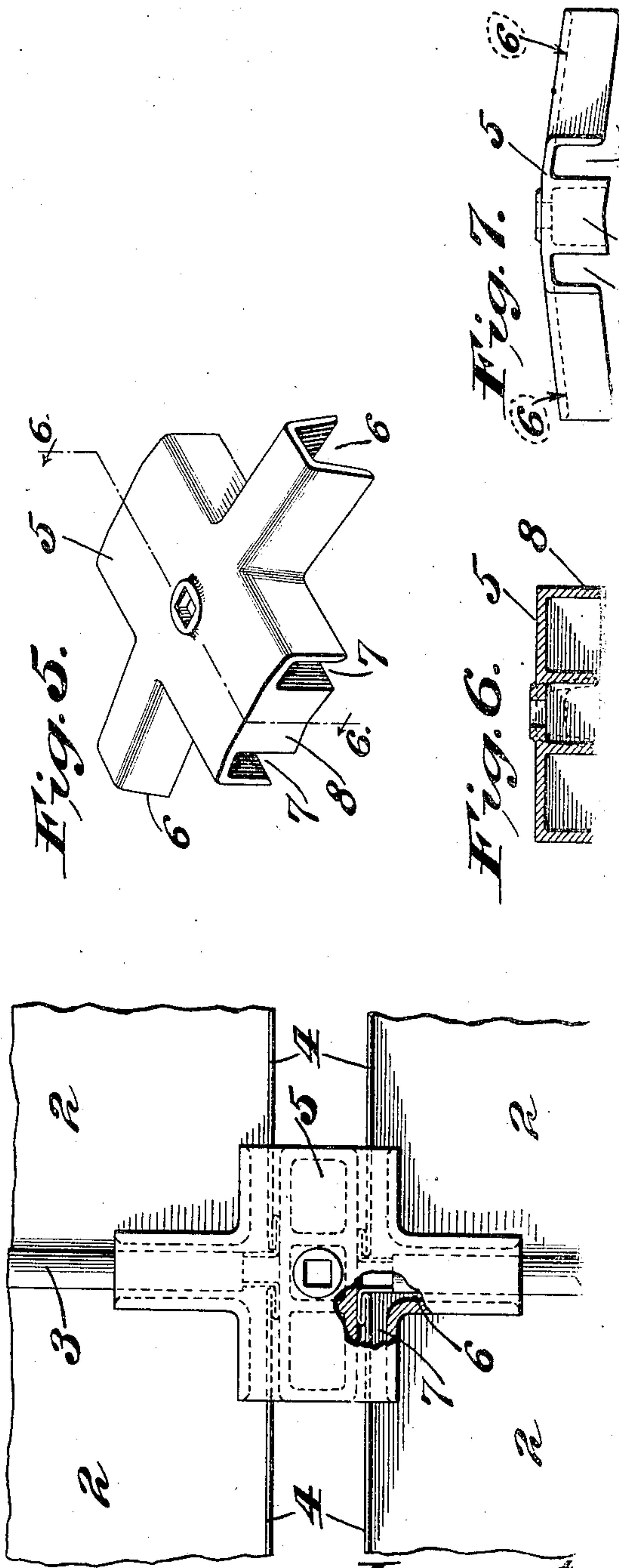
Inventor:
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915,350.

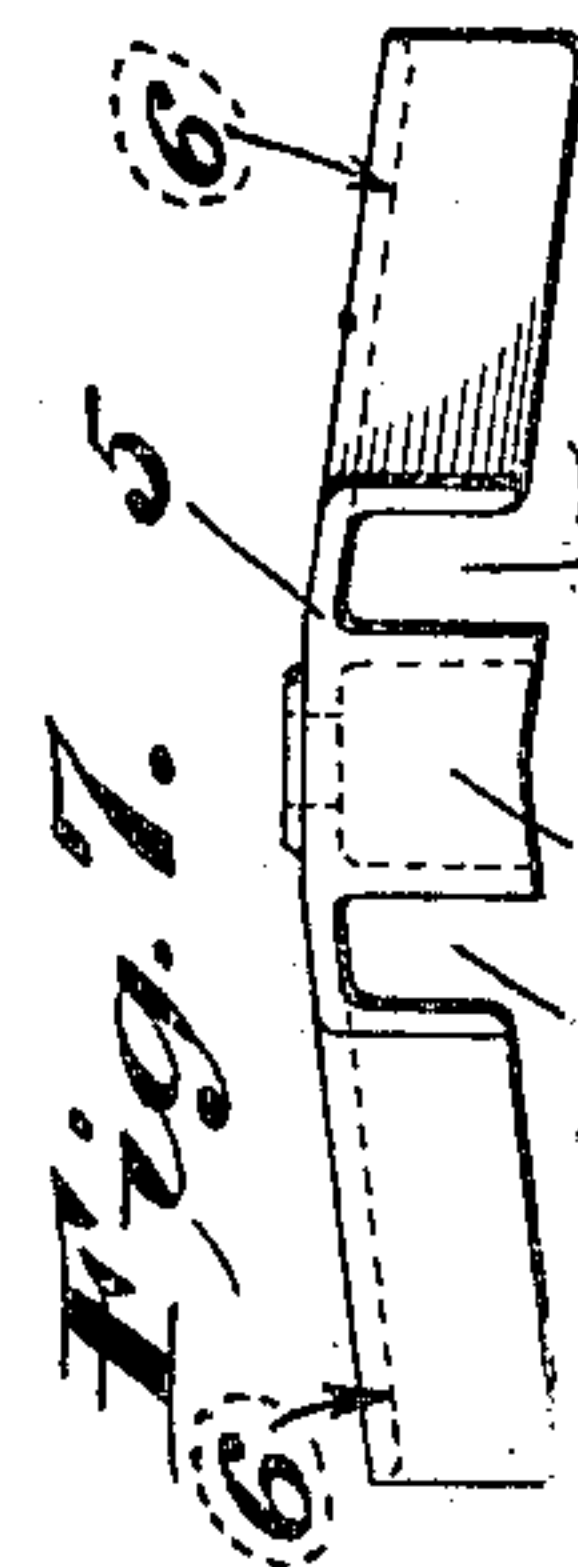
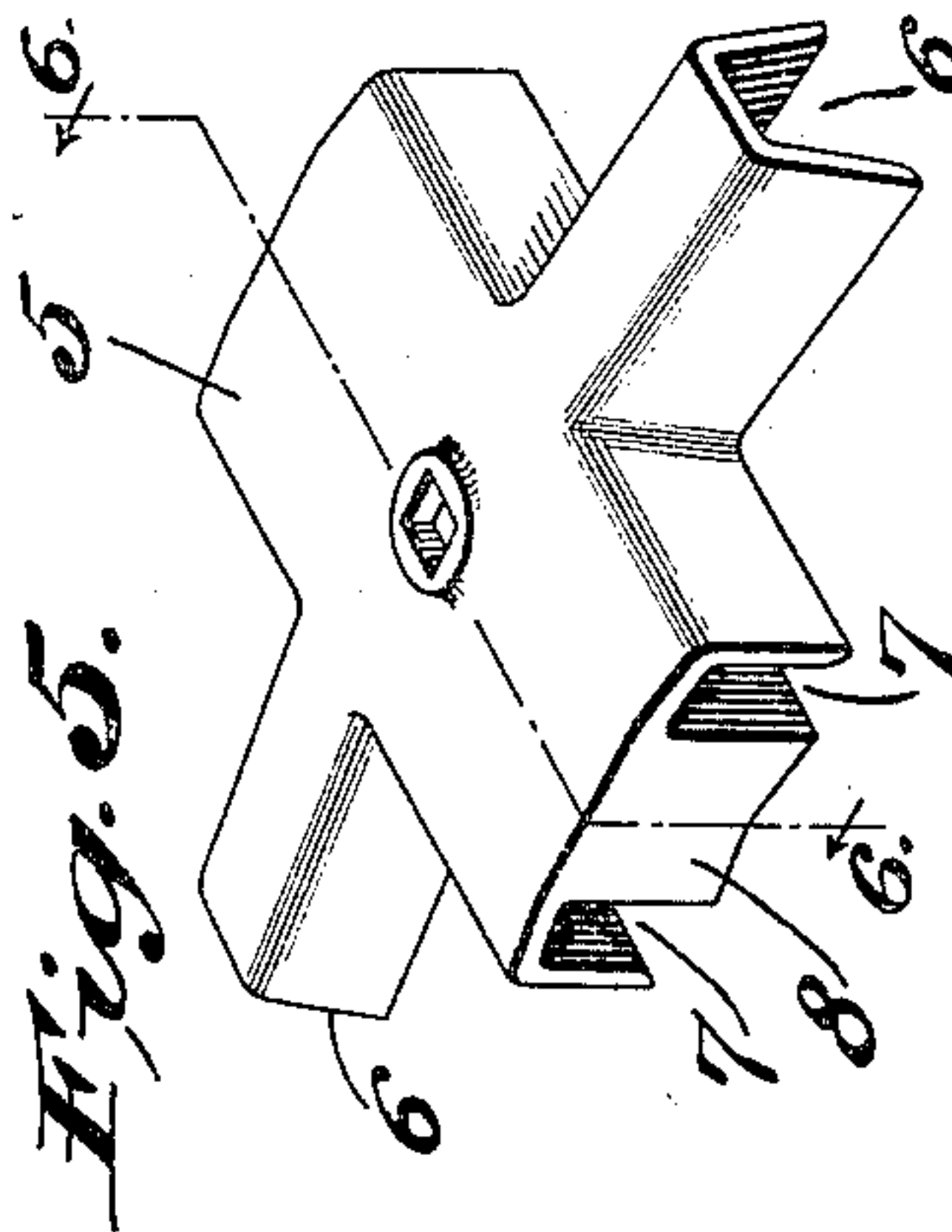
Patented Mar. 16, 1909.
 4 SHEETS—SHEET 2.



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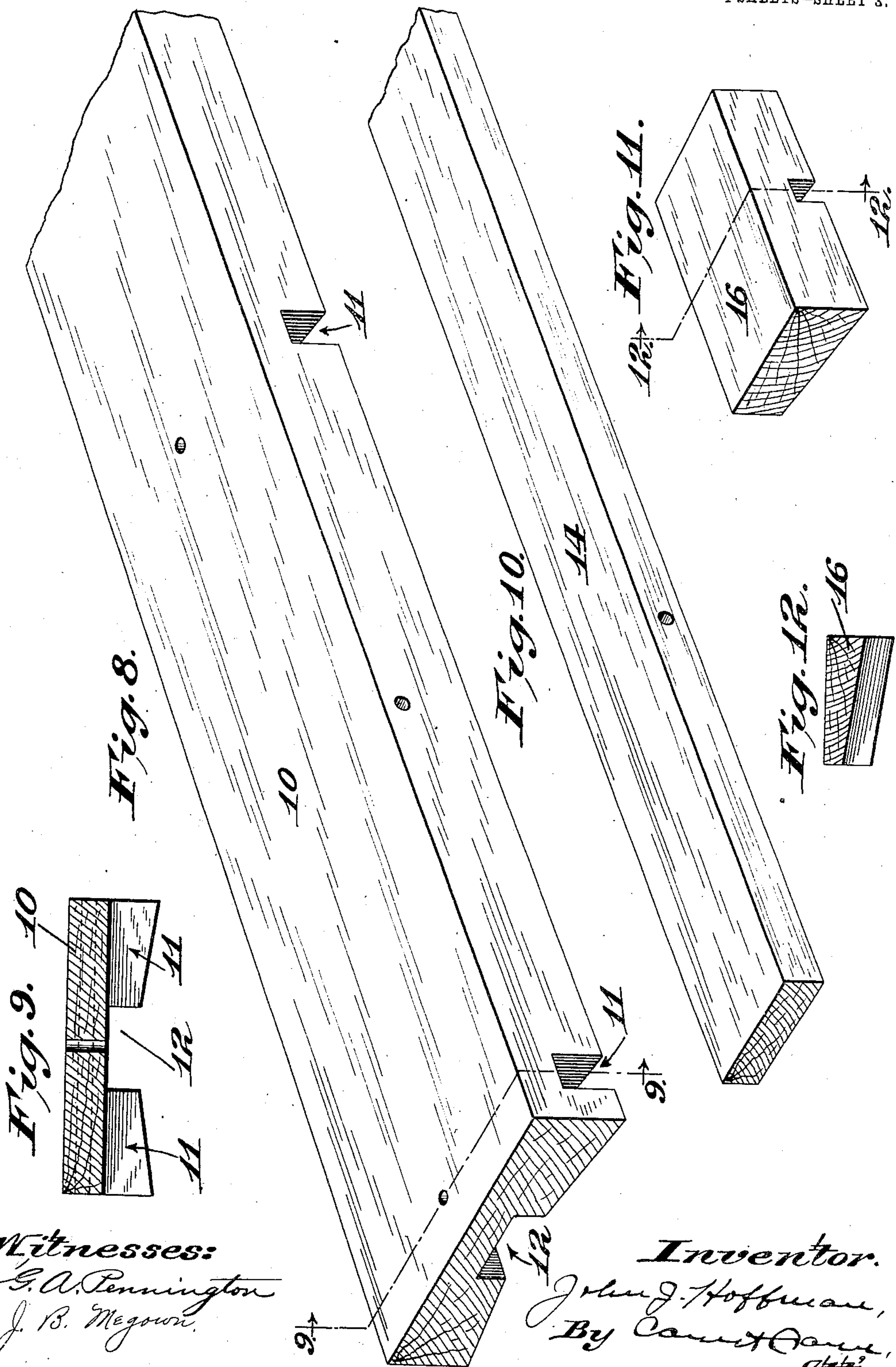
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4 SHEETS—SHEET 3.



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915,350.

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4 SHEETS—SHEET 4.

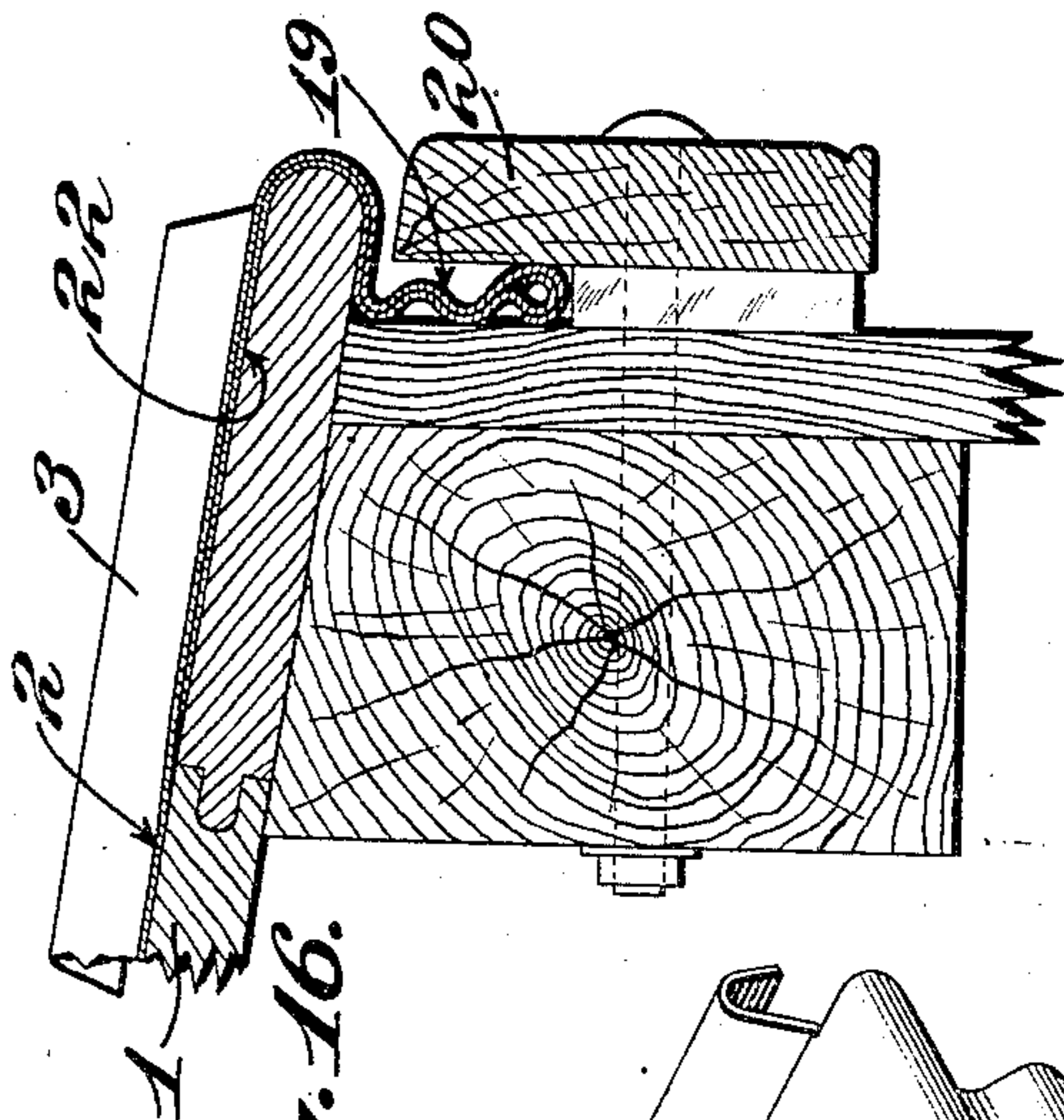


Fig. 16.

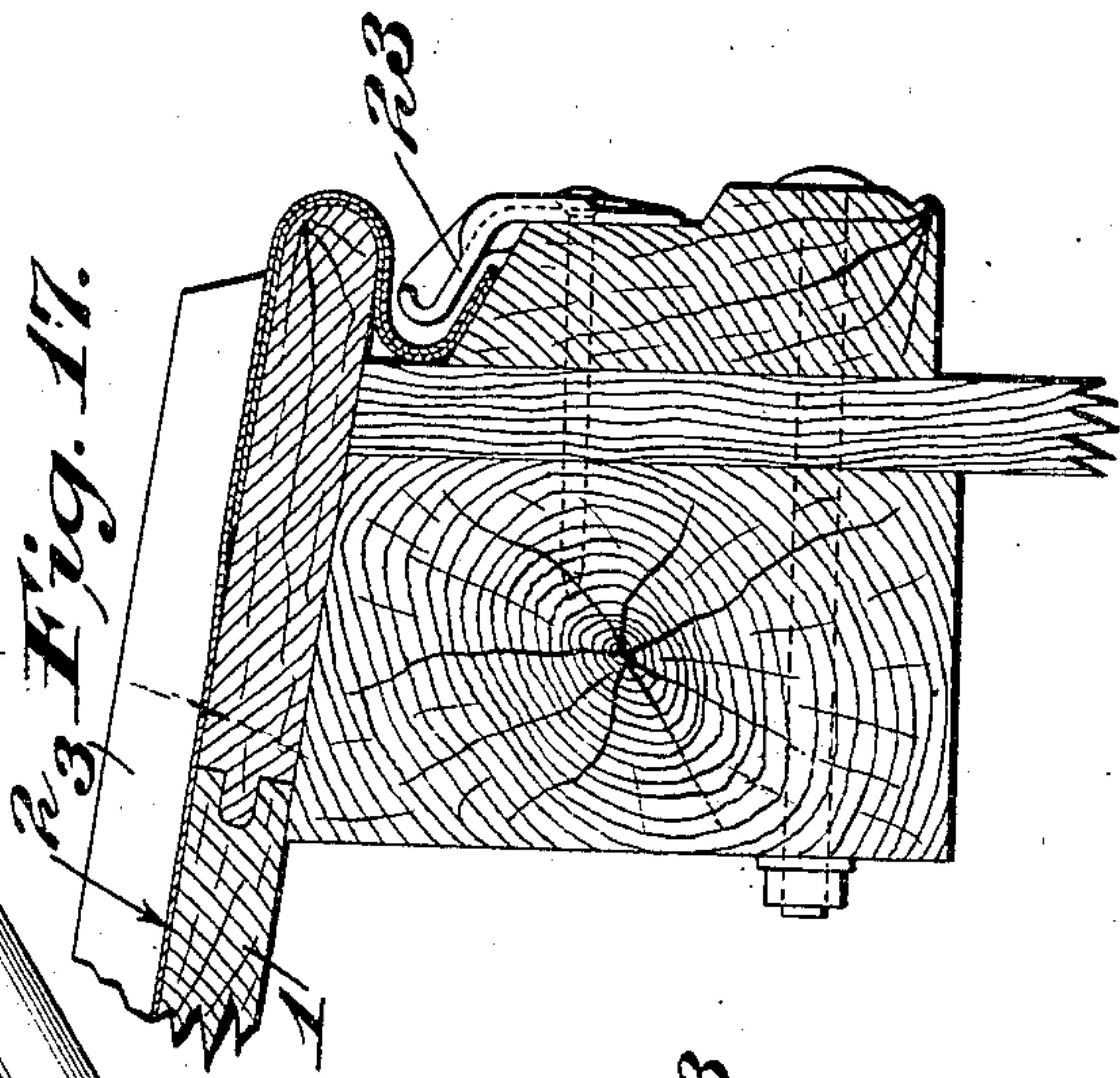


Fig. 17.

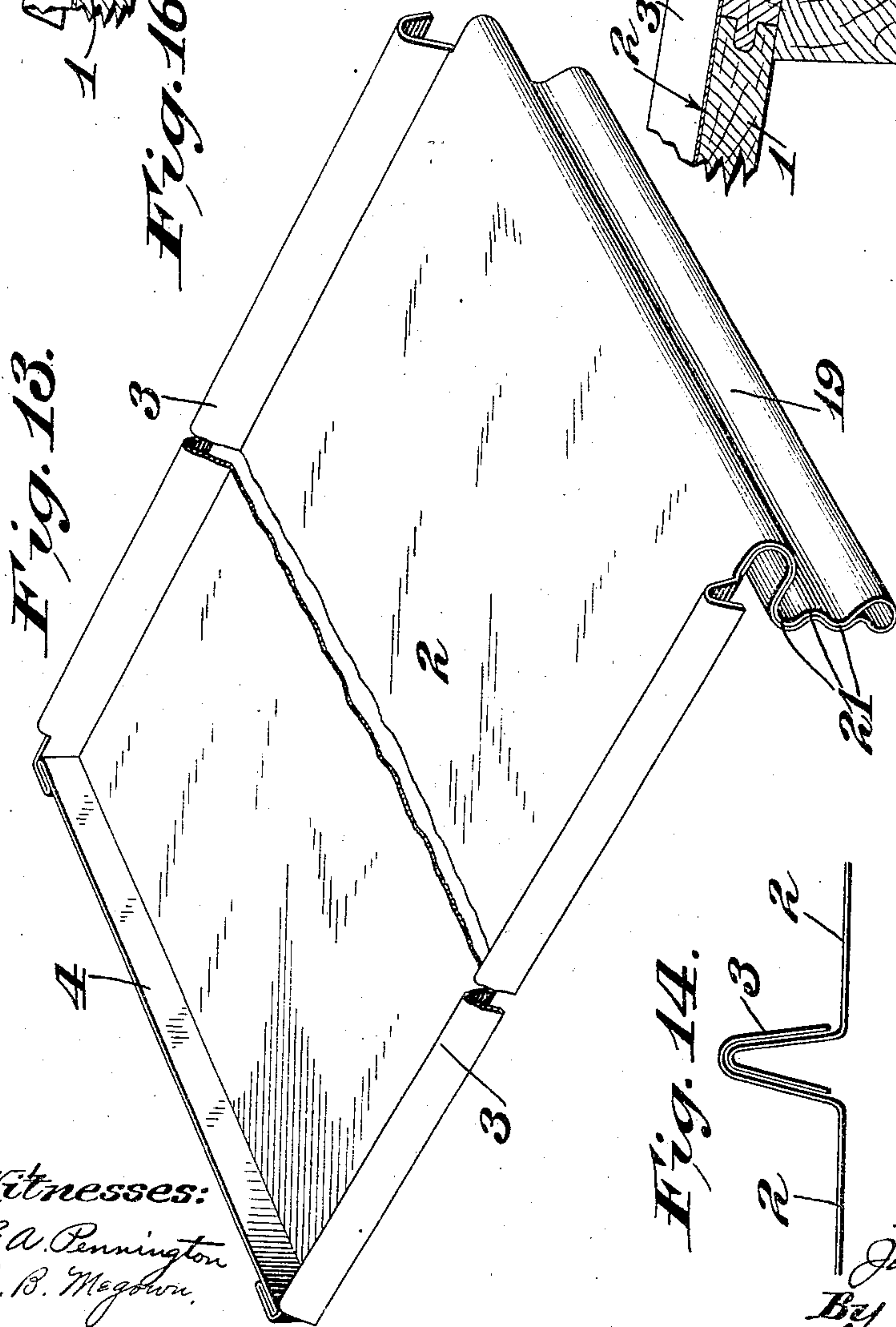


Fig. 13.

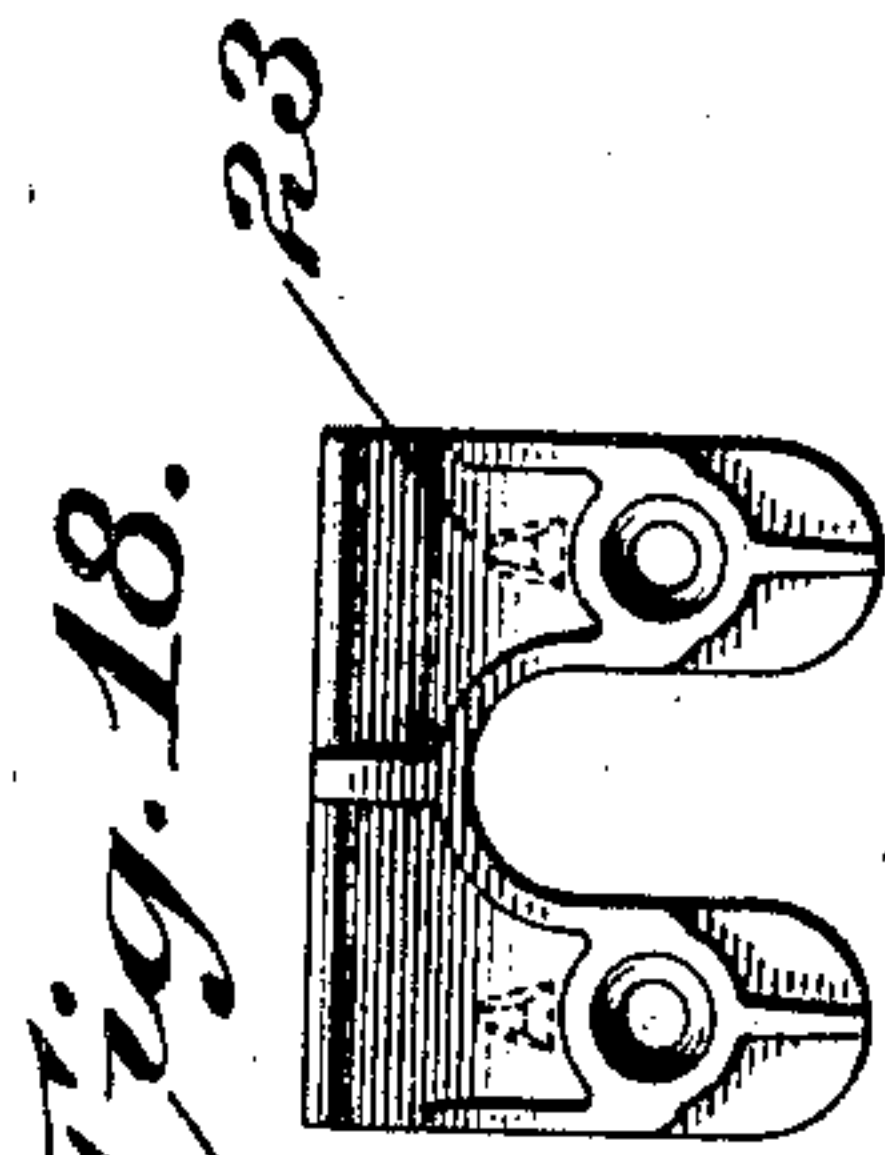


Fig. 18.

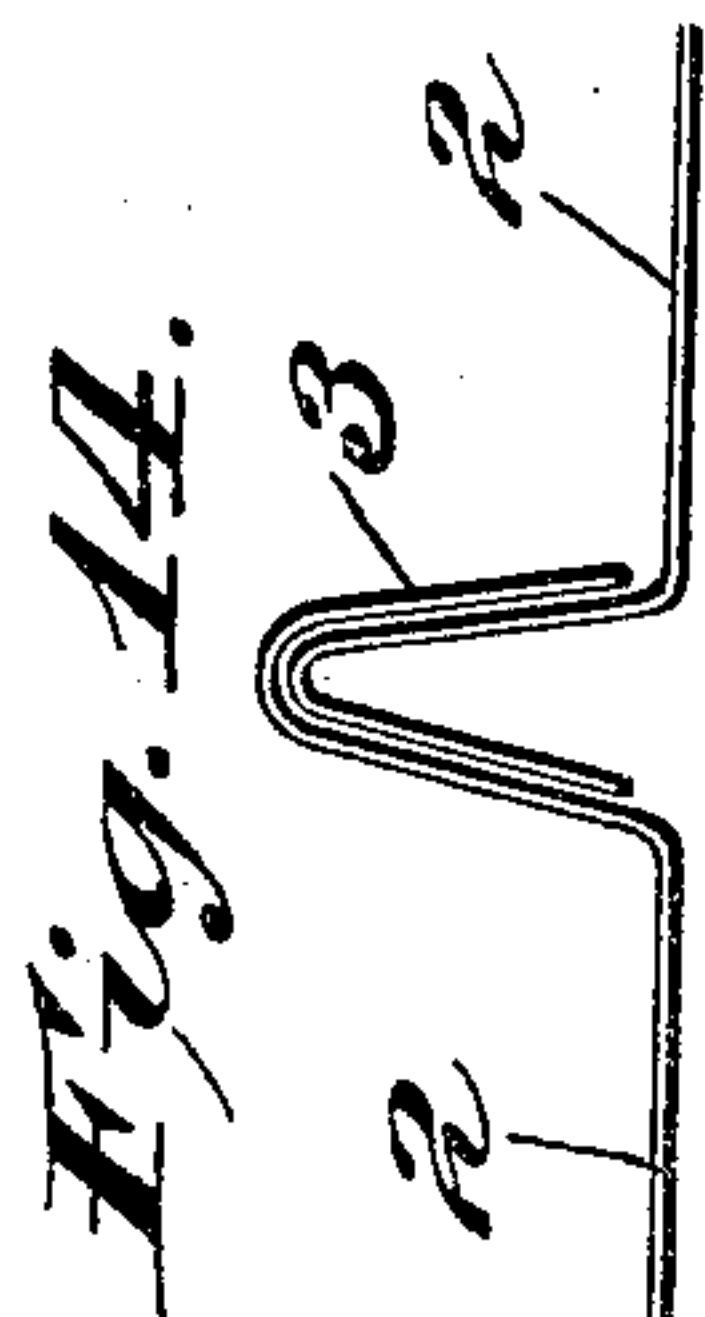


Fig. 14.

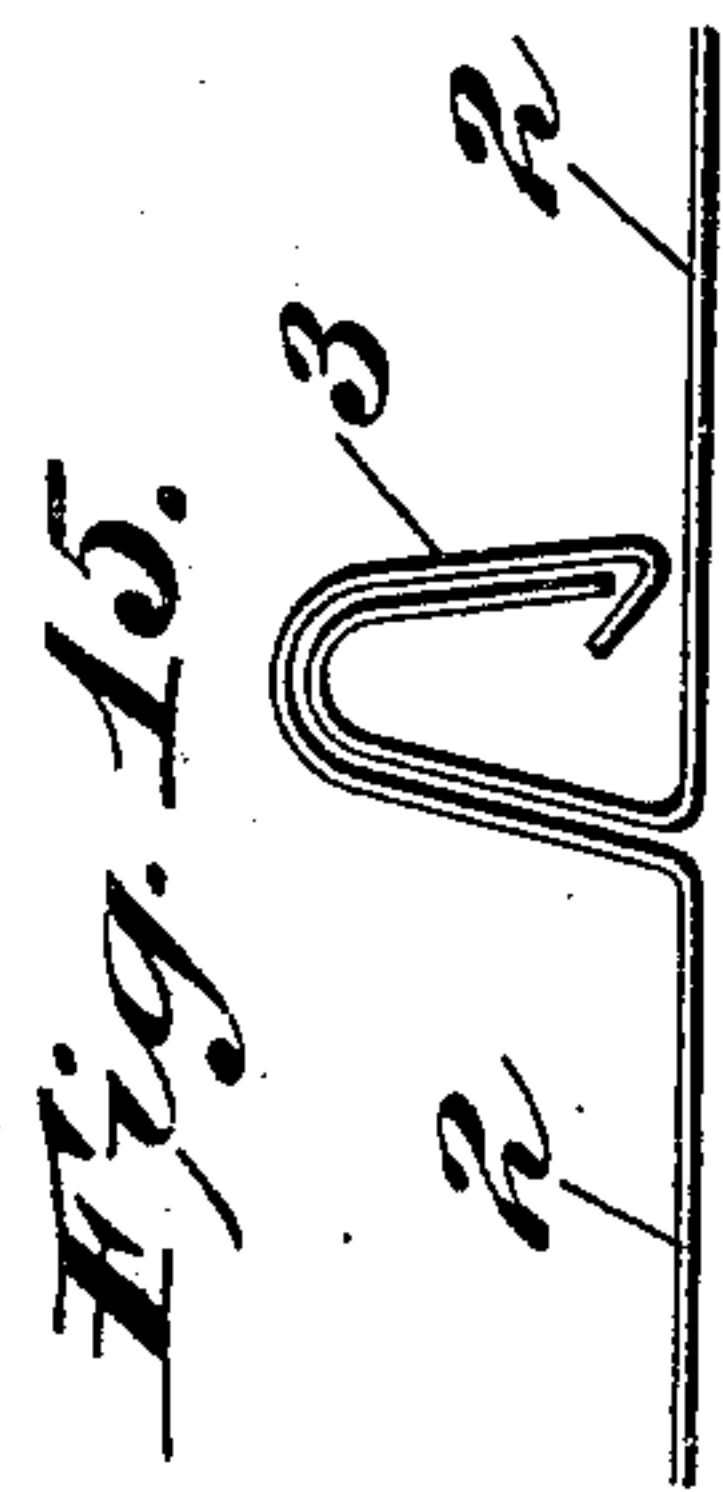


Fig. 15.

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UNITED STATES PATENT OFFICE.

JOHN J. HOFFMAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO PETER H. MURPHY, OF ST. LOUIS, MISSOURI.

OUTSIDE CAR-ROOF.

No. 815,350.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed February 24, 1908. Serial No. 417,232.

To all whom it may concern:

Be it known that I, JOHN J. HOFFMAN, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Outside Car-Roofs, of which the following is a specification.

My invention relates to outside car roofs and has for its principal objects to secure the sheets in such a way as to minimize the destructive effects arising from the "weaving" of the car and other changes from its normal shape.

My invention consists in the construction and arrangements of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification, and wherein like symbols refer to like parts whenever they occur, Figure 1 is a partial vertical cross section of a car roof embodying my invention, said section being taken on the line 1—1 of Fig. 3; Fig. 2 is an enlarged vertical cross section of the middle portion of the car roof on the line 2—2 of Fig. 3; Fig. 3 is a fragmentary longitudinal section and elevation of the ridge saddle and associated parts; Fig. 4 is a plan view of corner portions of sheets with a corner cap in position; Fig. 5 is a perspective view of a corner cap; Fig. 6 is a longitudinal section of a corner cap on the line 6—6 of Fig. 5; Fig. 7 is an end elevation of a corner cap; Fig. 8 is a perspective view of the ridge saddle; Fig. 9 is a cross section of the ridge saddle on the line 9—9 of Fig. 8; Fig. 10 is a perspective view of one of the ridge saddle side strips; Fig. 11 is a perspective view of one of the supporting blocks for the ridge saddle side strips; Fig. 12 is a cross section of a supporting block on the line 12—12 of Fig. 11; Fig. 13 is a perspective view of a roof sheet; Fig. 14 is an end view of one form of side seam for the roof sheets; Fig. 15 is a similar view of another form of side seam for the roof sheets; Fig. 16 is a cross section of the roof at the eaves showing a modified form of device for holding the metal sheets in place; Fig. 17 is a cross section of the roof at the eaves showing a modified form of device for holding the metal sheets in place at the eaves; and, Fig. 18 is a detail elevation of the clip used in the device shown in Fig. 17.

My roof comprises a wooden sheathing 1 and a covering of metal sheets 2 therefor.

The sheets are connected at their sides by standing seams or ribs 3 which run from the eaves toward the ridge. The sheets are arranged in two series that extend the full length of the car, but the sheets of each series terminate short of the ridge thereby leaving a space between them. The upper or ridge ends of the sheets have turned up or vertical flanges 4 thereon, and these flanges are reinforced by bending the surplus metal at the corner of the sheet inwardly back of said flanges, without slitting the sheet.

As stated above, the sheets of one series do not interlock with the sheets of the other series, but the sheets of each series have side flanges that interlock with each other. In order to hold the sheets at the ridge, suitable corner caps 5 are applied thereto. As usual with roofs of the type to which the present invention relates, the corner caps are made of metal. These corner caps have transverse grooves 6 arranged to receive the side seams or ribs and longitudinal grooves 7 adapted to receive the upstanding flanges 4 at the ridge ends of the sheets. The grooves are of sufficient width to prevent binding and to permit slight movement of the sheets. In order to prevent binding of the roof sheets against the roof, the middle portion of the corner cap is provided with a distance piece 8 integral therewith which projects downwardly a little farther than the portions which interlock with the ridge flanges of the sheets. By this arrangement, the distance piece bears against the ridge pole 9, while the interlocking portions clear the roof sheets. The corner cap is perforated to accommodate the fastening bolt hereinafter mentioned.

Extending longitudinally of the car at the ridge is a continuous wooden member 10 which constitutes a ridge saddle and whose underside is shaped to conform to the roof. The lower side of this ridge saddle has transverse grooves 11 therein arranged to receive the side seams of the sheets and the transverse members of the corner caps which inclose said seams. It also has a continuous longitudinal groove 12 which receives the ridge flanges of the sheets and the longitudinal members of the corner caps. The longitudinal groove is of such depth that the ridge member will rest on the corner caps, while the lower portions of the ridge saddle just clear the roof sheets; that is to say, the main

weight of the ridge saddle is transmitted through the corner caps to the ridge pole instead of resting upon the roof sheets.

The ridge saddle is held in place by means of bolts 13 which extend downwardly through it and the perforations provided therefor in the corner caps and through the ridge pole. At each side of the ridge saddle is secured a longitudinal strip or stringer 14 by means of bolts 15 which extend transversely through said side strips and the ridge saddle. These side strips are provided on their underside with blocks 16 which are grooved to fit over the side seams of the sheets. On the top of the ridge saddle and the side strips are mounted run boards 17. Preferably, the inner margin of the outer run boards rest on the ridge saddle. This construction gives considerable rigidity and relieves the roof sheets of considerable portion of the weight, and leaves the sheets free to move to a limited extent.

The lower end portions of the roof sheets are bent around and under the eaves and then downwardly along the side of the car. In order to hold said downturned portion 19 without binding, the fascia 20 is spaced from the side of the car by means of spacing blocks intervening between the side and the fascia; and the fascia is mounted with its top portion slightly below the eaves. Preferably, the lower downturned portion of the sheets has transverse corrugations 21 therein of sufficient width to bear against both the side of the car and the back of the fascia. Such corrugations stiffen the marginal portion of the sheets and operate as friction members, which tend to hold the sheets in position but yield when the stresses require it. It is preferable to make the recess back of the fascia wider than the distance between the top of the fascia and the eaves in order to prevent the sheets being pulled out of the recess. In some instances, it is desirable to use longer roof sheets and double back the outer portion thereof far enough for the endmost portion to rest on top of the wooden sheathing. The depending portion thus doubled back is corrugated and the double corrugations afford a greater resistance to the withdrawal of the roof sheets from the recess and increase the tendency of the sheets to resume their normal positions. In like manner, flexible strips 22 corrugated transversely may be secured to the wooden sheathing and have their free ends bear downwardly against the curved end portions of the roof sheets, whereby said strips tend to maintain said roof sheets in their proper normal positions in the recess.

Instead of having the fascia spaced from the side of the car, it is practicable to use the construction illustrated in Fig. 17. As illustrated in this figure, the upper portion of the fascia is thinner than the lower portion and the top thereof is at a distance below the

eaves. Mounted upon the upper thin portion of the fascia are a series of clips 23 which extend above the top of the fascia and are bent inwardly above the same. The roof sheets are bent around and under the eaves and thence rebent under the clips. As before stated, the ends of the roof sheets may be crimped or corrugated transversely.

Obviously, my device admits of considerable variation without departing from my invention, and therefore I do not wish to be limited to the specific construction shown and described.

What I claim is:

1. An outside car roof comprising roof sheets whose ridge ends are provided with upturned flanges, the ridge flange of one sheet being spaced from that of the opposite sheet, and means for holding said roof sheets in position, said means comprising a longitudinal ridge member having a groove adapted to loosely engage said upturned flanges of the roof sheets on both sides of the ridge and metal spacing members at intervals between said ridge member and the ridge pole for relieving the weight of said ridge member.

2. An outside car roof comprising roof sheets whose sides are movably connected by interlocking flanges and whose ridge ends have upturned flanges, the ridge flange of one sheet being spaced from that of the opposite sheet, a longitudinal ridge saddle having a longitudinal groove in its underside to receive the upturned flanges of the roof sheets, and metal spacing members resting on the ridge pole and supporting said ridge saddle clear of the roof sheets, said spacing members being narrower than the groove in the ridge saddle and arranged to permit inward movement of the roof sheets.

3. An outside car roof comprising a ridge pole and wooden sheathing, metal roof sheets whose sides are connected by overlapping flanges and whose ridge ends are provided with upturned flanges which are spaced apart, corner caps having a spacing member abutting against the ridge pole and provided with longitudinal and transverse grooves adapted to receive said flanges, and a ridge saddle having transverse grooves to receive the side flanges of the roof sheets and having a single wide longitudinal groove adapted to receive said corner caps and the ridge flanges of said sheets.

4. An outside car roof comprising roof sheets whose sides are connected by overlapping flanges and whose ends are provided with upturned flanges which are spaced apart, and means for holding said roof sheets in position, said means comprising corner caps located at the ridge and adapted to engage the ridge flanges and the side seams of said sheets, said corner caps having a spacing member located between said up-

turned flanges and adapted to abut against the ridge pole and a ridge saddle supported on said spacing members clear of the roof sheets.

5 5. A corner cap for an outside car roof having transverse grooves adapted to engage the side seams and longitudinal channels adapted to engage the ridge seams and a
10 spacing member between said longitudinal channels adapted to abut against the ridge pole and support a ridge saddle.

6. An outside car roof comprising roof sheets whose sides are connected by overlapping flanges and whose ridge ends are provided with upturned flanges which are
15 spaced apart, and means for holding said roof sheets in position, said means comprising corner caps located at the ridge and adapted to engage the ridge flanges and the
20 side means of said sheets, and a longitudinal ridge saddle adapted to bear on said corner caps and having a longitudinal groove adapted to engage the upturned ridge flanges of said sheets.

25 7. An outside car roof comprising roof sheets whose sides are connected by overlapping flanges and whose ridge ends are provided with upturned flanges which are spaced apart, and means for holding said
30 roof sheets in position, said means comprising corner caps located at the ridge and adapted to engage the ridge flanges and the side seams of said sheets, and a longitudinal ridge saddle adapted to bear on said corner
35 caps and having a longitudinal groove adapted to engage the upturned ridge flanges of said sheets, all arranged to permit slight relative movement of the sheets.

40 8. An outside car roof comprising roof sheets whose sides are movably connected by interlocking flanges and whose ridge ends have upturned flanges, the ridge flange of one sheet being spaced from that of the opposite
45 sheet, and means for holding said roof sheets in position, said means comprising a longitudinal ridge saddle having a single longitudinal groove on its underside to engage said upturned flanges of the roof sheets and
50 having transverse grooves arranged to engage the side seams thereof, and saddle blocks located at the side of said ridge saddle and grooved to straddle the side seams, stringers mounted on said saddle blocks and secured
55 to the ridge saddle, and run boards mounted on said ridge saddle and said stringers.

9. An outside car roof comprising roof sheets whose sides are movably connected by interlocking flanges and whose ridge ends have upturned flanges, the ridge flange of one
60 sheet being spaced from that of the opposite sheet, and means for holding said roof sheets in position, said means comprising a longitudinal ridge saddle grooved on its underside to engage said upturned flanges of the roof

sheets and the side seams thereof, and saddle blocks located at the side seams, stringers mounted on said saddle blocks and secured to the ridge saddle, and run boards mounted on said ridge saddle and said stringers, said
70 stringers being secured to said ridge saddle by bolts extending transversely through them.

10. An outside car roof comprising wooden sheathing, roof sheets having their lower portions curved around the eaves and their
75 ends bent downwardly and corrugated, and means located on the side of the car below the edge of the sheets and adapted to engage the marginal portion of the sheet without perforating it the upper edge of said means
80 being closer to the eaves than the width of the corrugations.

11. An outside car roof comprising wooden sheathing, roof sheets having their lower portions curved around the eaves and their ends
85 bent downwardly, said ends having transverse corrugations thereon, and means for holding said roof sheets in position, said means comprising a fascia mounted on the side of the car below the eaves, the upper
90 portion of said fascia being removed from the side of the car a distance less than the width of said corrugations, thereby forming a recess adapted to receive the ends of the roof sheets.
95

12. An outside car roof comprising wooden sheathing, roof sheets having their lower portions curved around and under the eaves and their ends bent downwardly and then
100 doubled back over the eaves, and means for holding said roof sheets in position, said means comprising a fascia mounted on the side of the car, the top of said fascia being slightly below the eaves and the upper portion of said fascia being slightly distant from
105 the side of the car to form a recess to receive the ends of the roof sheets, the portions of the roof sheets inside of said recess having a transverse corrugation.

13. An outside car roof comprising a
110 wooden sheathing, roof sheets having their lower portions curved around and under the eaves and their ends bent downwardly and corrugated transversely, a member extending under the eaves portions of each two adjacent roof sheets and engaging the lower
115 ends of the sheets, and means comprising a fascia mounted on the side of the car slightly below the eaves, the upper portion of said fascia being slightly removed from the side
120 of the car, thereby forming a recess adapted to receive the ends of the roof sheets.

14. An outside car roof comprising wooden sheathing, roof sheets having their lower
125 ends curved around and under the eaves and bent downwardly and having at their ridge ends upturned flanges which are spaced from each other, and means for holding said roof

sheets in position, said means comprising a member mounted on the side of the car and having its upper portion spaced from the side and roof sheathing and inclosing loosely the lower ends of the roof sheets, metal distance pieces at the ridge and a longitudinal ridge member supported by said distance pieces, said longitudinal ridge member having a single groove inclosing loosely the up-

turned flanges of the roof sheets on both sides of the ridge.

Signed at St. Louis, Mo., this 20th day of February, 1908.

JOHN J. HOFFMAN.

Witnesses:

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J. B. MEGOWN.