

917,128.

Patented Apr. 6, 1909.

3 SHEETS—SHEET 2.

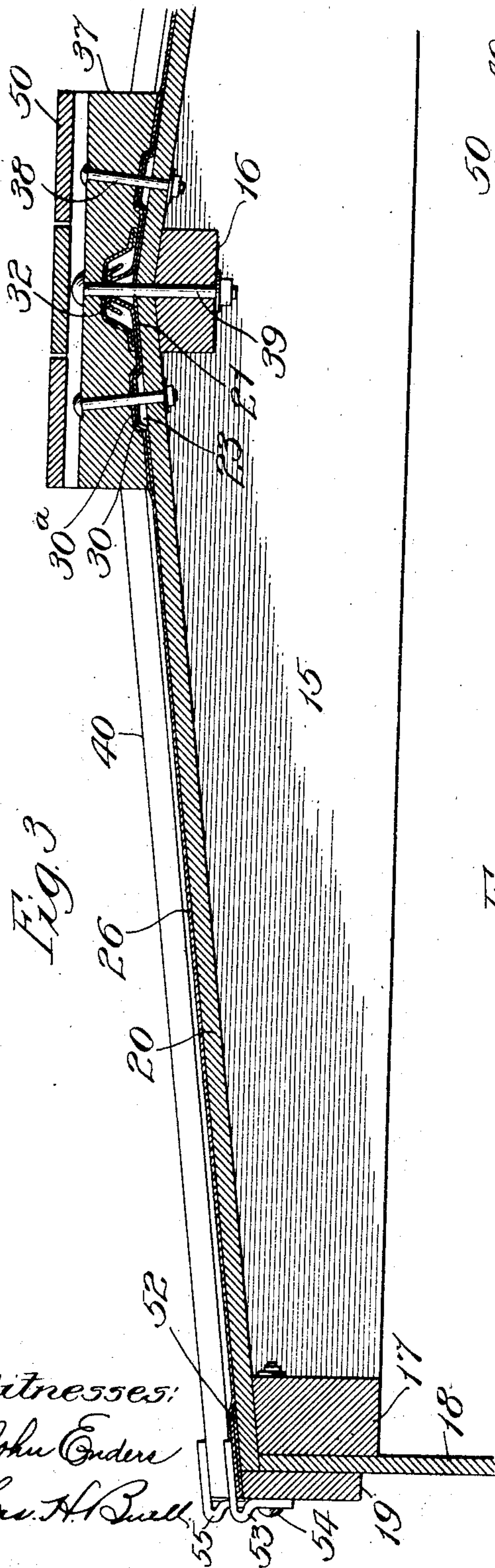


Fig. 3

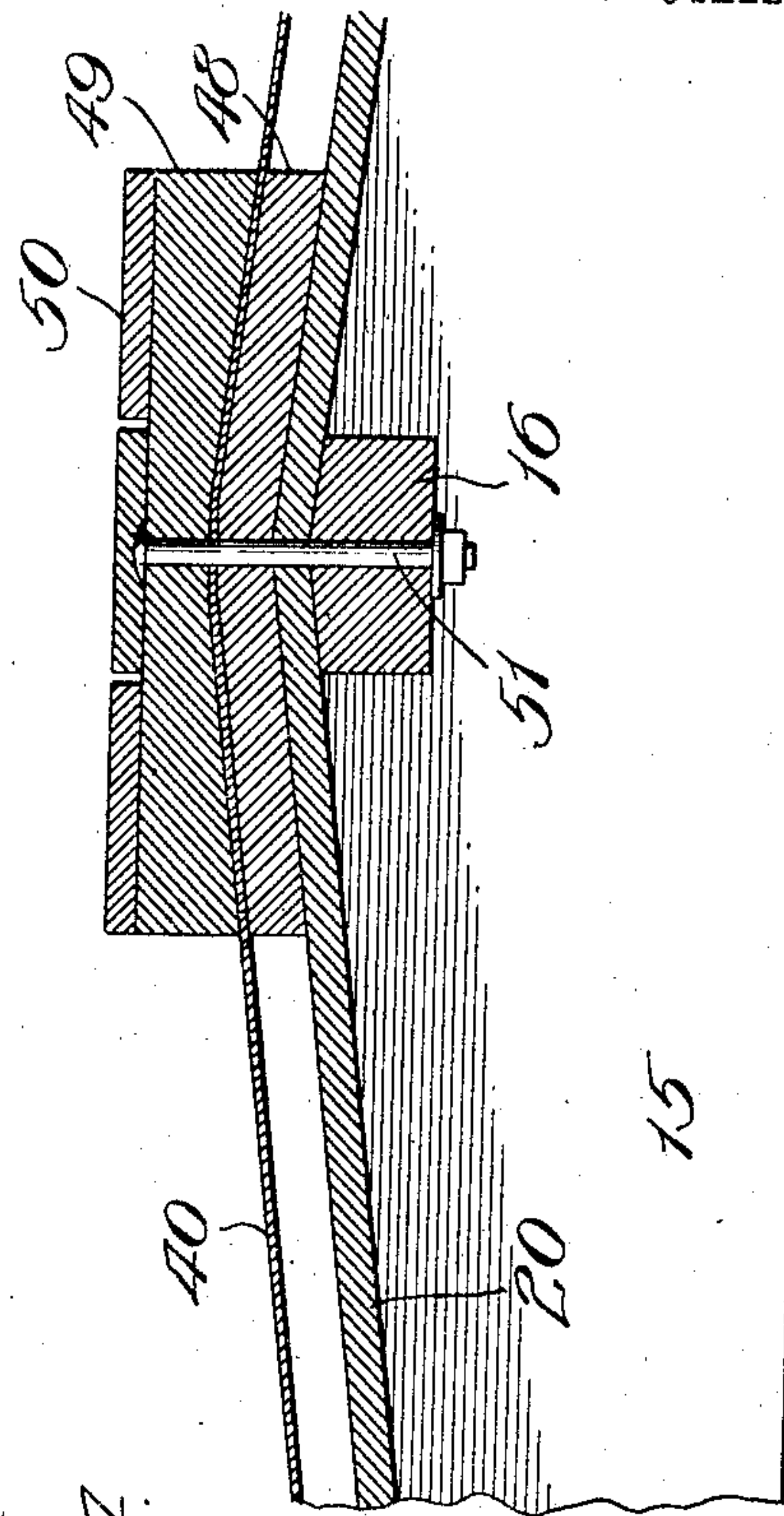
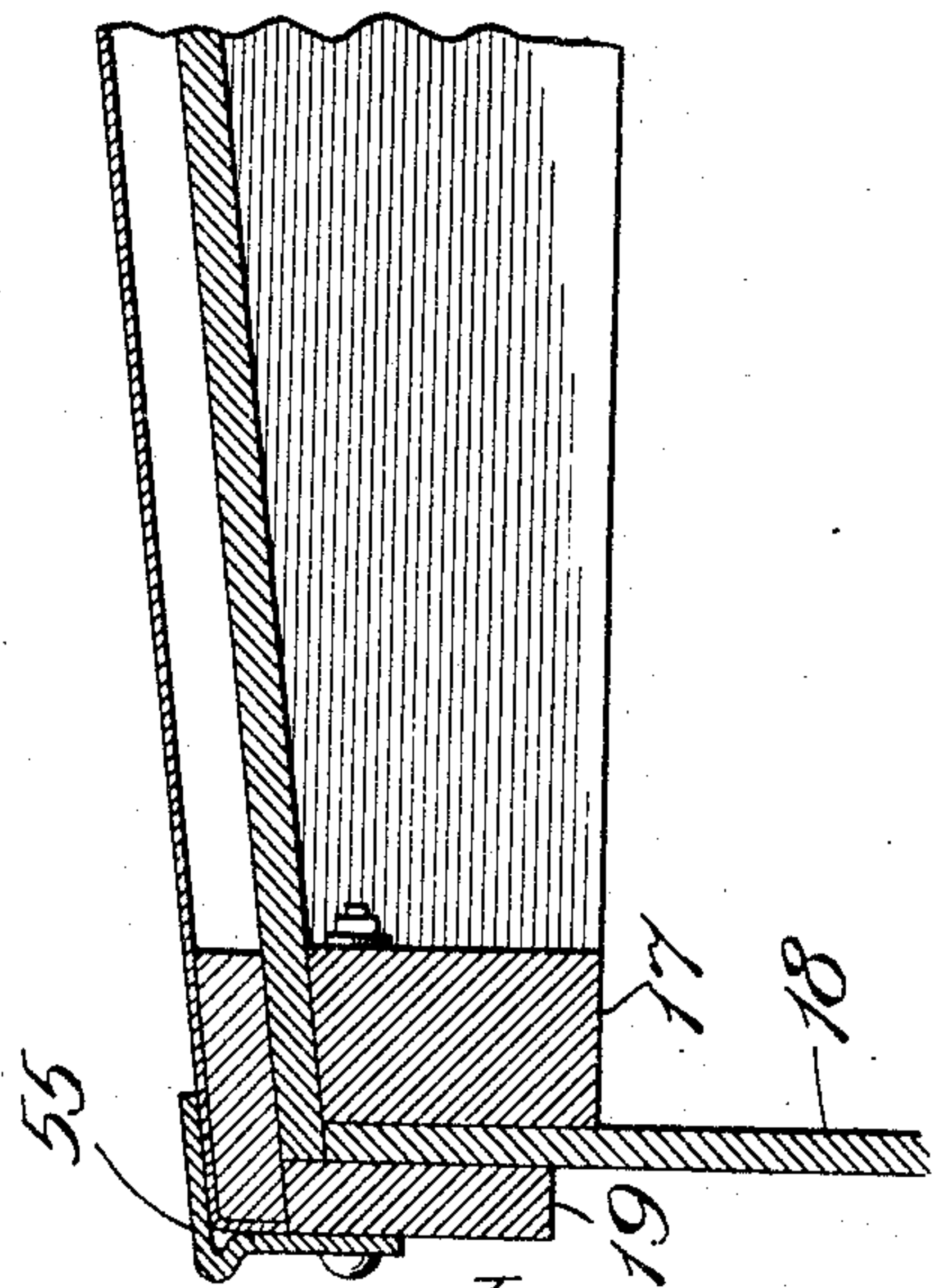


Fig. 4



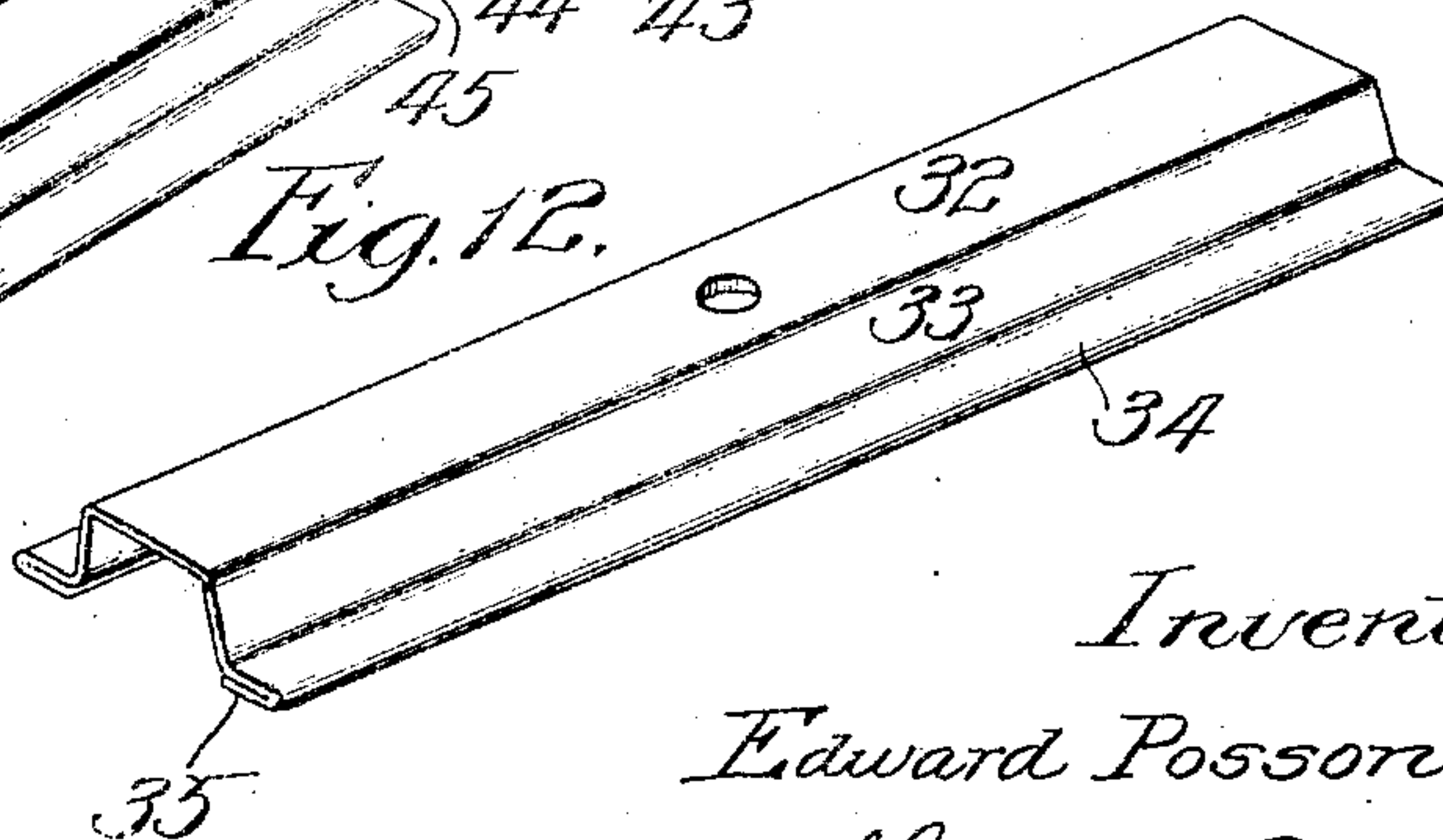
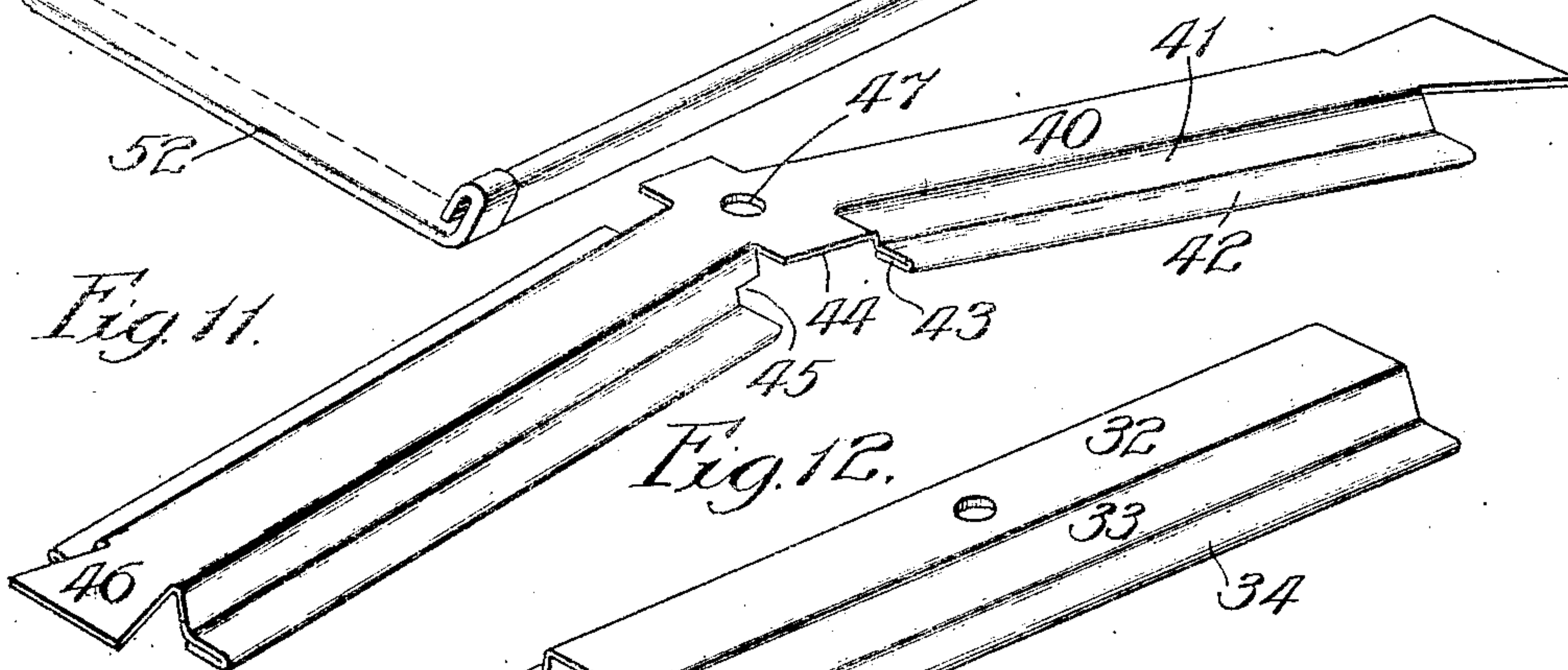
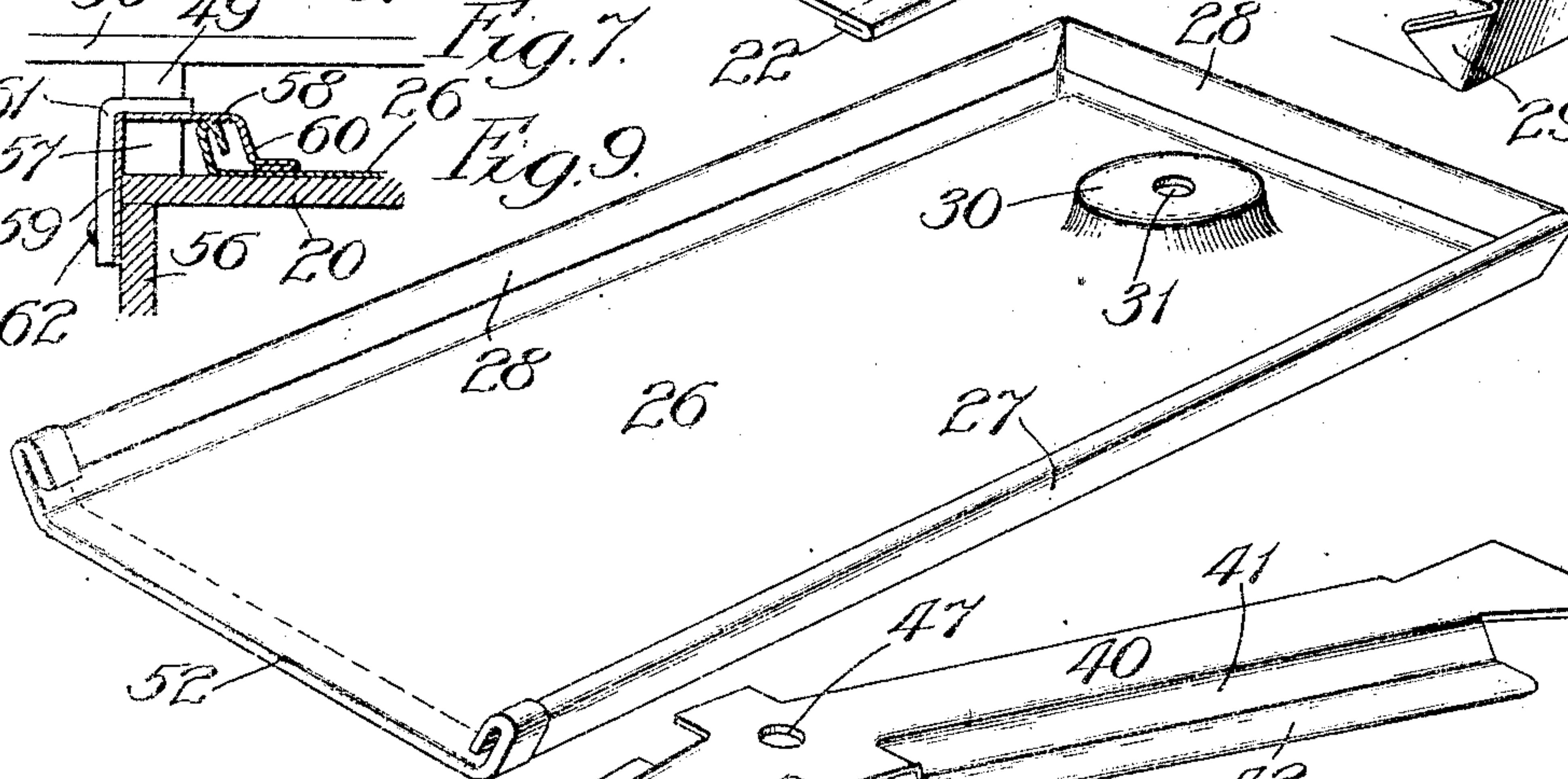
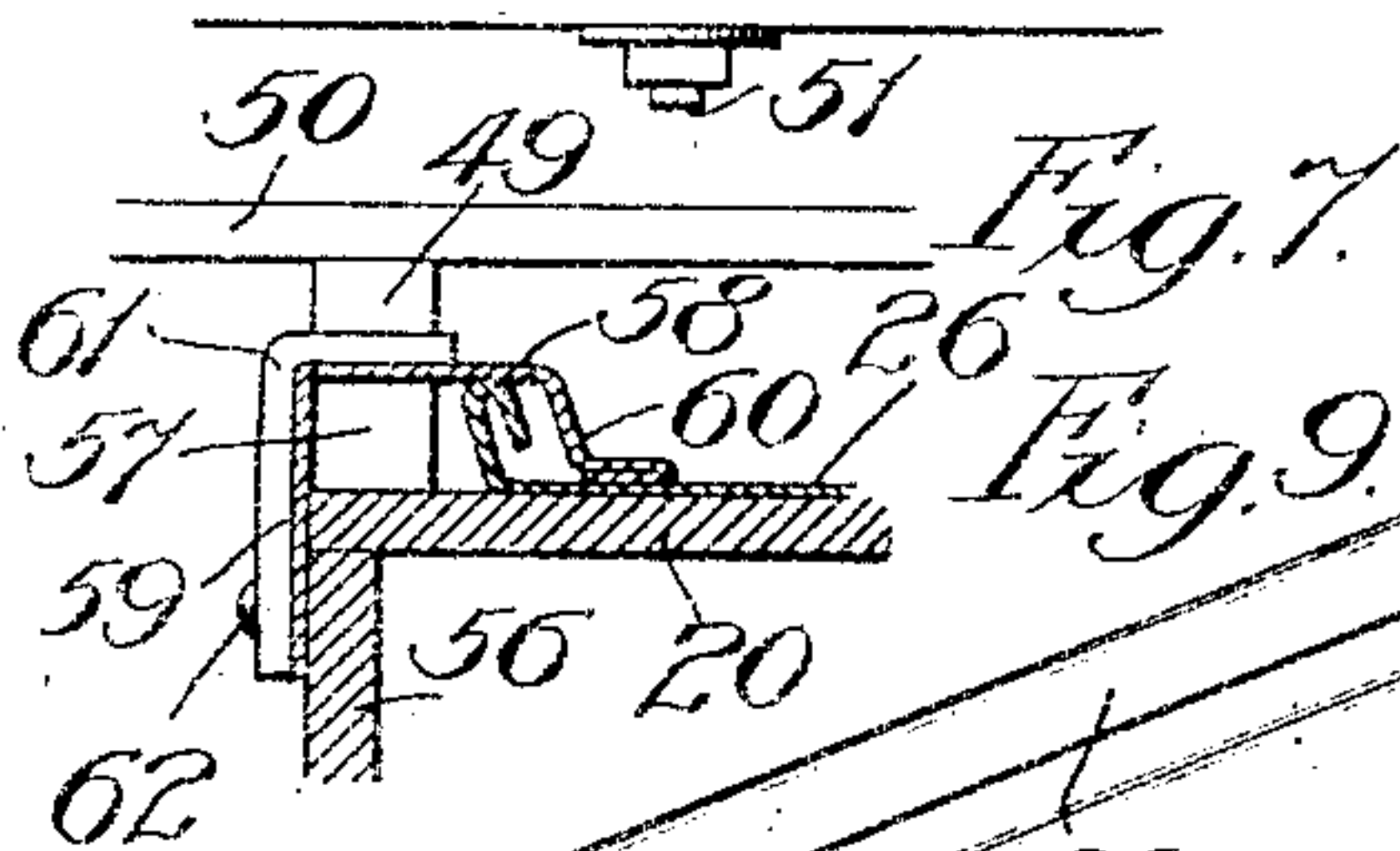
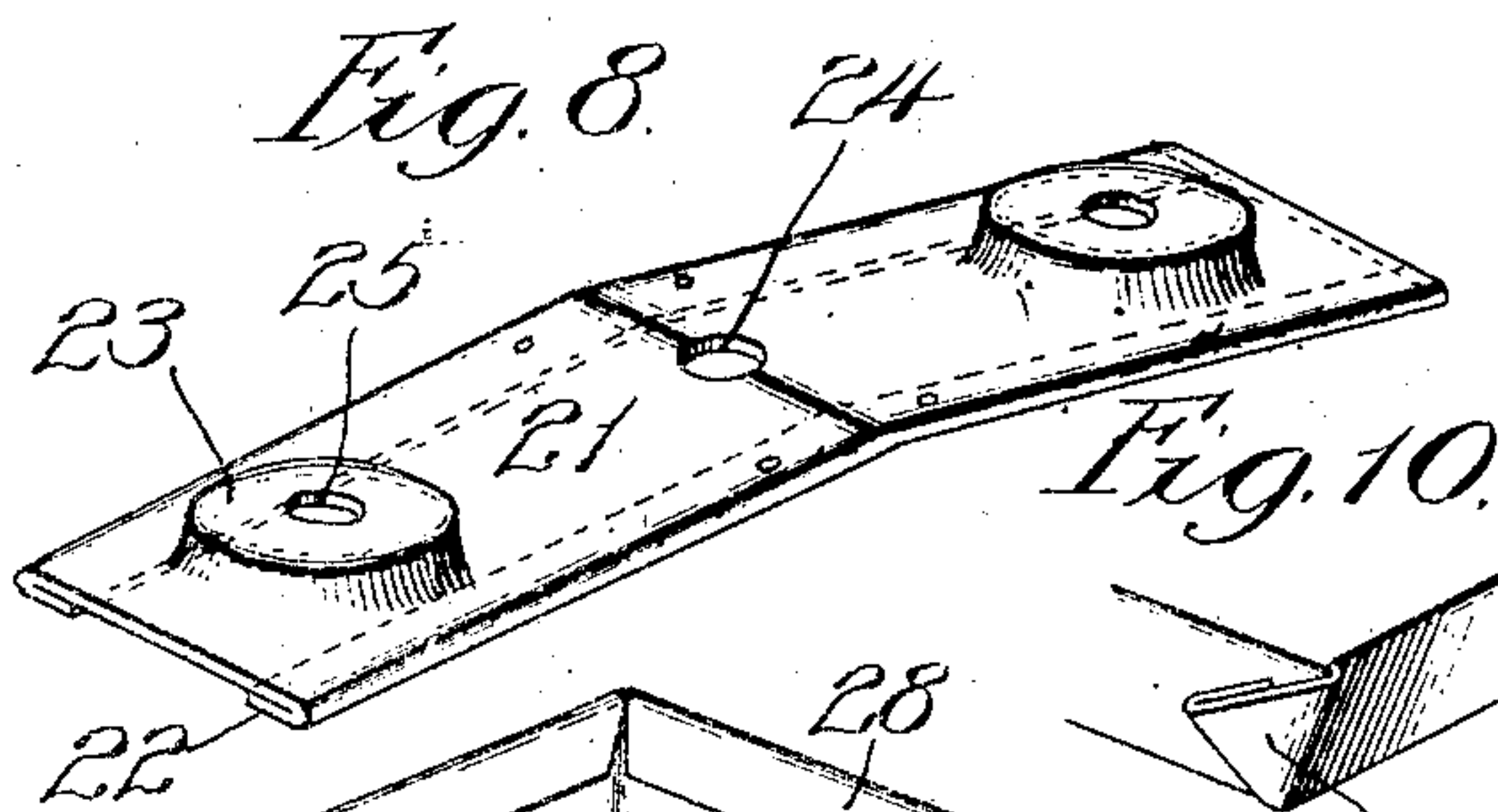
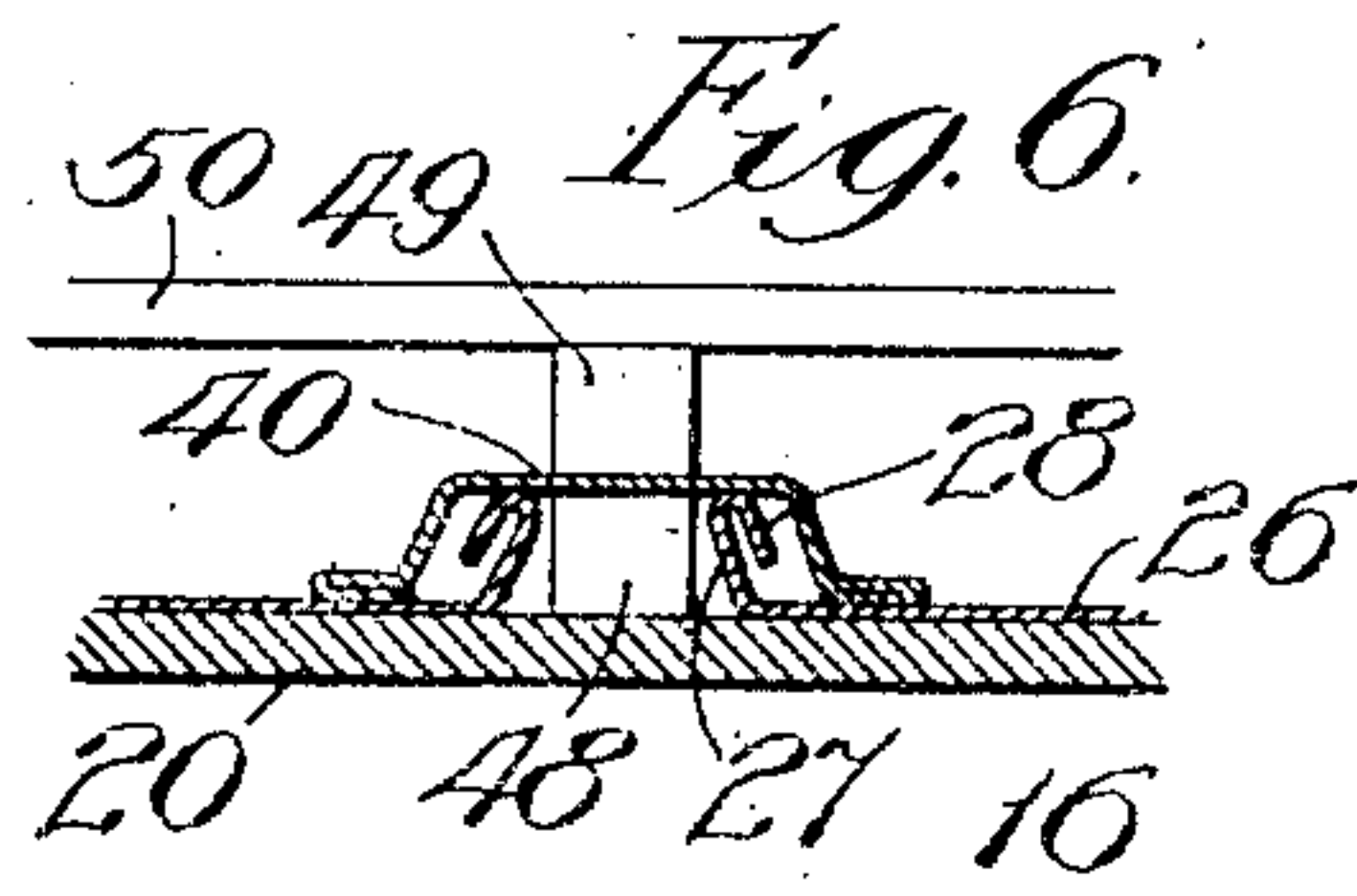
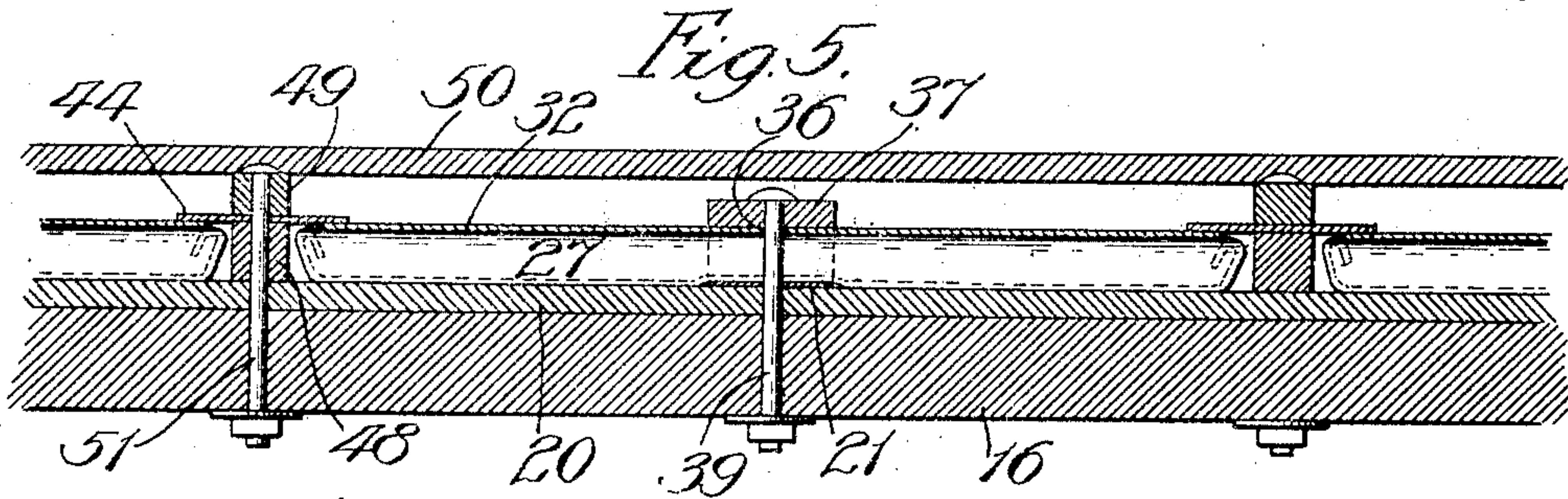
Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF CHICAGO, ILLINOIS.

CAR-ROOF.

No. 917,128.

Specification of Letters Patent.

Patented April 8, 1909.

Application filed October 5, 1908. Serial No. 456,273.

To all whom it may concern:

Be it known that I, EDWARD POSSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Roofs, of which the following is a specification.

The object of my invention is to provide a new and improved sheet metal roof for freight cars.

Another object is to provide such a roof comprising metal sheets overlying the roof framework and secured thereto in a manner to permit straining of the roof framework without distortion of the roof sheets.

These objects and others will be made apparent in the following specification and claims, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my improved car roof. Fig. 2 is a top plan view of the same showing the assembling of the roof in various stages. Fig. 2^a is a detail view of part of the roof construction. Fig. 3 is a transverse section of the car roof, taken on the line 3 in Fig. 1. Fig. 4 is a similar section, taken on the line 4 in Fig. 1. Fig. 5 is a central longitudinal section, taken on the line 5 in Fig. 2. Figs. 6 and 7 are sectional details, taken, respectively, on the lines numbered 6 and 7 in Fig. 2. Figs. 8, 9, 10, 11 and 12 are perspective views of various elements of the roof structure.

In the particular embodiment of my invention which I have chosen to illustrate in the drawings, the roof framework comprises the ordinary earlines 15, ridge beam 16, side plates 17 and roof boards 20. The upper ends of the boards 18, which comprise the side walls, are attached to the side plate 17 between the same and the fascia 19.

The various elements which comprise the sheet metal roof will now be described in approximately the order in which they are applied to the ordinary board roof or sheathing 20. Fig. 2 shows the roof in various stages of completion, the completed roof being shown at the left-hand end of the figure.

A sheet metal saddle 21 (Fig. 8) has its lateral edges 22 bent under and at each end a boss 23 is struck up, having a central hole 25. This saddle 21 is bent at an obtuse angle to conform to the angle of the roof and is then laid across the ridge of the roof, as shown at the right of Fig. 2. A hole 24 through the middle of the saddle 21 regis-

ters with a hole extending down through the ridge beam 16 of the roof.

The roof sheets 26 (Fig. 9) are stamped in the shape shown in the drawings by means of a die. On three sides, the edges 27 are turned up obliquely and then the extreme edges 28 are rolled over (see Fig. 6). At the corners, the metal is folded as indicated by the reference numeral 29 in Fig. 10. The remaining edge or end of the roof sheet is folded back on the opposite or under side, for the purpose of reinforcing the same, as indicated at 52. Near the end of the roof sheet 26, a boss 30 is struck up having a central hole 31. The sheets 26 are applied to the roof 20, so that the bosses 30 on the roof sheets shall register with the bosses 23 on the saddles.

The ridge caps 32 (Fig. 12) have the edges 33 bent down to form channels. The extreme edges 34 are bent out in the same plane and folded under, as indicated by the reference numeral 35. These caps 32 are laid over the ridge of the car roof, overlapping the adjacent turned edges of opposite roof sheets 26 on either side of the car (see Fig. 3). Each ridge cap 32 has a central hole 36 which registers with a hole in the ridge beam 16. A block 37 having the shape shown in Fig. 3 is laid across the ridge cap 32 at its center. This block has pockets 38 which fit down over the bosses 30. The bolts 39 pass through the block 37 and the registering bosses 30 and 23, the nuts being applied inside the board roof 20. The bolt 39 passes down through the center of the block 37, the ridge cap 32, the sheet metal saddle 21 and the ridge beam 16.

The transverse caps 40 (Fig. 11) have their sides 41 bent down to form a channel, the extreme edges 42 being bent out in the same plane and doubled under, as indicated by the reference numeral 43. At the center, the flanges 41—42—43 are interrupted, projections 44 being left in the plane of the main part 40. Notches 45 are cut in the central ends of the flanges 41. At the ends, projecting leaves 46 are left in the same plane with the main part 40. There is a central perforation 47. The block 48 having the shape shown in Fig. 4, is placed across the ridge of the roof between the edges of adjacent roof sheets 26. The transverse cap 40 is laid down across the adjacent edges of the roof plates 26 and over the block 48 (see Fig. 6). The projections 44

overlap the ends of the ridge caps 32 and the notches 45 abut against the edges 34 of the roof caps 32. After being applied as described, the ends 46 are bent down, thus closing the ends of the transverse caps. Next, the saddle blocks 49 are placed on top of the transverse caps 40 directly over the blocks 48. The bolts 51 are passed down through the two blocks 48 and 49, having the transverse cap 40 between them, and through the ridge beam 16. The running board 50 is supported by the saddle blocks 49. When assembled as above described the caps 40 form a water tight joint and at the same time the edges 42 of the caps, while firmly holding the metal sheets against the board sheathing, do not interfere with the freedom of movement of said sheets in the plane of the roof.

The lower or outer edges of the roof sheets 26 are simply doubled under as indicated by the reference numeral 52. Clips 53 are fastened by means of bolts 54 to the fascia 19, and each clip has a prong which reaches up over the edge 52 of the roof sheet 26. Other similar clips 55 each have a prong that reaches up over the outer end of the transverse cap 40.

At the end of the car, a strip is laid across above the end wall 56. This strip 57 corresponds to the blocks 48 already described. A special cap 58 having the cross section shown in Fig. 7 has a flange 60 that extends over the upturned edge of the adjacent roof sheet 26 and another flange 59 that extends over the end of the car. Clips 61 are fastened by bolts 62 to the end wall of the car and each clip has a prong which extends above the cap 58, thus holding it in place.

It is to be observed that the parts are so proportioned and assembled that the upturned edges 27—28 of the roof sheets 26 are given a certain amount of clearance (see Figs. 3 and 6). Thus, it will be seen that each plate 26 is pivotally attached to the board roof 20 by means of the interlocking bosses 23 and 30, and that it is possible to rotate each plate 26 within narrow limits about the bolt 38, as an axis. It accordingly follows that if the car roof is strained from any cause, whether this be due to sagging at the center or to diagonal stresses, or any other cause, such distortion of the board roof 20 will not be communicated to the metal roof sheets 26. Thus, it will be seen that I have provided a sheet metal car roof which will not become broken and bent by reason of strains to which the roof support may be subjected.

Of necessity, in carrying out the aim stated in the foregoing paragraph, I have been obliged to provide for relative displacement between adjacent roof sheets 26, but it will be seen on referring to Fig. 6 that this has

been done without affording any access for rain water. The caps 32 and 40 fit over the adjacent edges of the roof sheets so as to practically exclude rain water. Then if any water should drive under the edges of these caps, it will be caught by the hooked edges 28 of the roof sheets 26 and no water will succeed in getting between the edges of adjacent roof sheets 26.

It will be observed that the blocks 37 with their sockets 30^a engaging the bosses 30 give a very secure pivotal support for the roof sheets 26. The running board is supported on the blocks 48 and 49, which in turn rest upon the board roof 20 between the roof sheets 26. Thus, it will be seen that the weight of the running board is not transmitted through the roof sheets 26, thus leaving them free to be rotated around their pivotal bosses 30. The clips 53 and 55 at the edges of the roof simply keep the edges down in place, but do not prevent a slight displacement of the roof sheets under the clips.

I would have it understood that I do not desire to limit myself to the precise construction and arrangement of parts shown in the drawings and herein described, as various alterations or modifications may be made without departing from the spirit of my invention as defined in the appended claims.

I claim:

1. A car roof, comprising a supporting sheathing, metal sheets laid thereon side by side, a boss in each sheet near the ridge of the roof, blocks peripherally engaging the bosses and permitting pivotal movement of said sheets, and means to secure said blocks in fixed position relatively to the roof sheathing.

2. A car roof, comprising a supporting framework, metal sheets laid thereon side by side, a boss struck up in each sheet, a projection into each boss from the roof framework beneath the sheets, and means to clamp the said bosses down on said projections.

3. A car roof, comprising a supporting framework, sheet metal saddles laid across the ridge thereof, upwardly projecting bosses at the ends of each saddle, metal roof sheets having bosses struck up therein, said last named bosses registering with those in the said saddles, and means to hold the registering bosses in place.

4. A car roof, comprising a supporting framework, upward projections therefrom on the sides of the ridge, metal roof sheets laid on said framework, bosses struck up in said roof sheets and registering with said projections, and blocks extending across the ridge and having sockets to fit over the bosses in the roof sheets.

5. A car roof, comprising a supporting sheathing, rectangular metal sheets pivot-

ally mounted thereon and spaced apart along the longitudinal center line and in lines transverse thereto, transverse furring blocks between adjacent sheets, transverse caps over said furring blocks, the edges of the sheets having play between the furring blocks and caps, saddle blocks on top of said caps, and a running board supported thereby.

6. A car roof, comprising a supporting framework, metal sheets laid thereon meeting along the ridge of the roof, a longitudinal cap overlapping said meeting edges, a transverse block across said cap, means in the ends of said block pivotally engaging the respective roof sheets, and a bolt through the block and the framework beneath, the said bolt passing between the two roof sheets.

7. A car roof, comprising a supporting sheathing, metal sheets pivotally laid thereon side by side and separated by spaces extending transversely of the car, blocks between said sheets resting on the sheathing in said spaces, the sheets having play between said blocks, and a running board supported by said blocks.

8. In a car, a roof comprising a sheathing, metal plates superposed thereon, the adjoining edges of said plates having flanges turned upwardly and then downwardly and inwardly, caps overlying the edges of adjoining sheets, said caps having side flanges extending downwardly and then outwardly, said outwardly extending parts being doubled under and resting on said metal plates inside the flanges thereon.

9. A car roof, comprising a sheathing, a series of pivotally secured metal roof plates resting on said sheathing, the inner end of each of said plates lying adjacent the longitudinal center of the car and the sides of said plates being separated by spaces extending transversely of the car, caps overlying and loosely engaging said spaced edges of said plates, blocks resting upon said sheathing between said plates and a running board supported by said blocks.

10. In a car a roof comprising a sheathing, metal roof plates each extending from

a point near the longitudinal center of the roof to the edge thereof, a pivotal connection adjacent the longitudinal center of the car between each of said plates and said sheathing, said plates being spaced apart and caps overlying the adjacent edges of said plates but permitting pivotal movement thereof.

11. In a car a roof comprising a sheathing, metal roof plates each extending from a point near the longitudinal center of the roof to the edge thereof, a pivotal connection adjacent the longitudinal center of the car between each of said plates and said sheathing, said plates being spaced apart and having their side and inner edges upturned, caps overlying the adjacent edges of said plates and having downturned flanges spaced from said upturned edges, and clips secured to the car side and extending upwardly and inwardly into engagement with the upper side of said plates, said clips being spaced from the edges of said plates.

12. In a car a roof comprising a sheathing, metal roof plates pivoted to said sheathing and lying above the upper surface thereof at all points, said plates having their outer edges bent under, clips secured to the car sides below the edges of said plates and extending upwardly and inwardly over said plates, said clips engaging the upper surface of said plates but being spaced from the edges thereof.

13. In a car a roof comprising a sheathing, metal plates pivotally mounted on and at all points lying close to the upper surface of said sheathing, connections between said plates permitting movement thereof in the plane of the roof, and fasteners extending from the car side to the upper surface of said plates, said fasteners being spaced from the edge of said plates.

In testimony whereof, I have subscribed my name.

EDWARD POSSON.

Witnesses:

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LILLIAN A. KIBBY.