

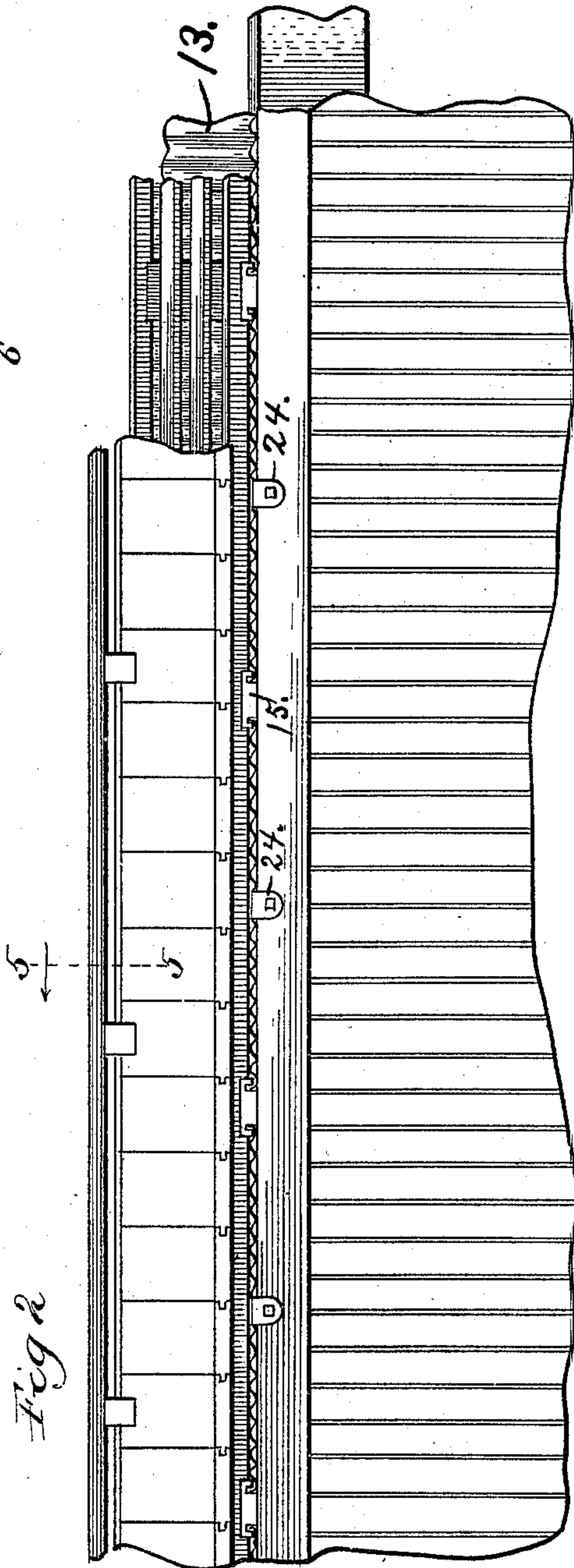
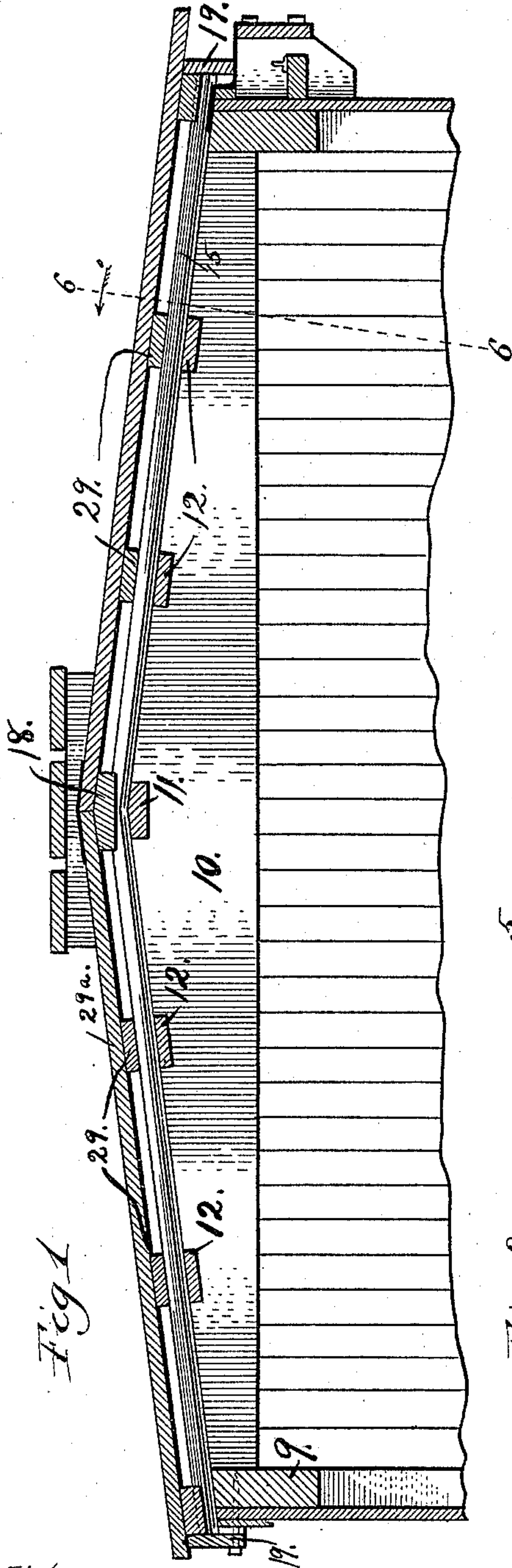
(No Model.)

2 Sheets—Sheet 1.

H. C. WILLIAMSON & H. PRIES.
CAR ROOF.

No. 584,836.

Patented June 22, 1897.



Witnesses
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C. A. Crawford

Inventors.
Henry C. Williamson
&
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by atty
Paul Symmestredt.

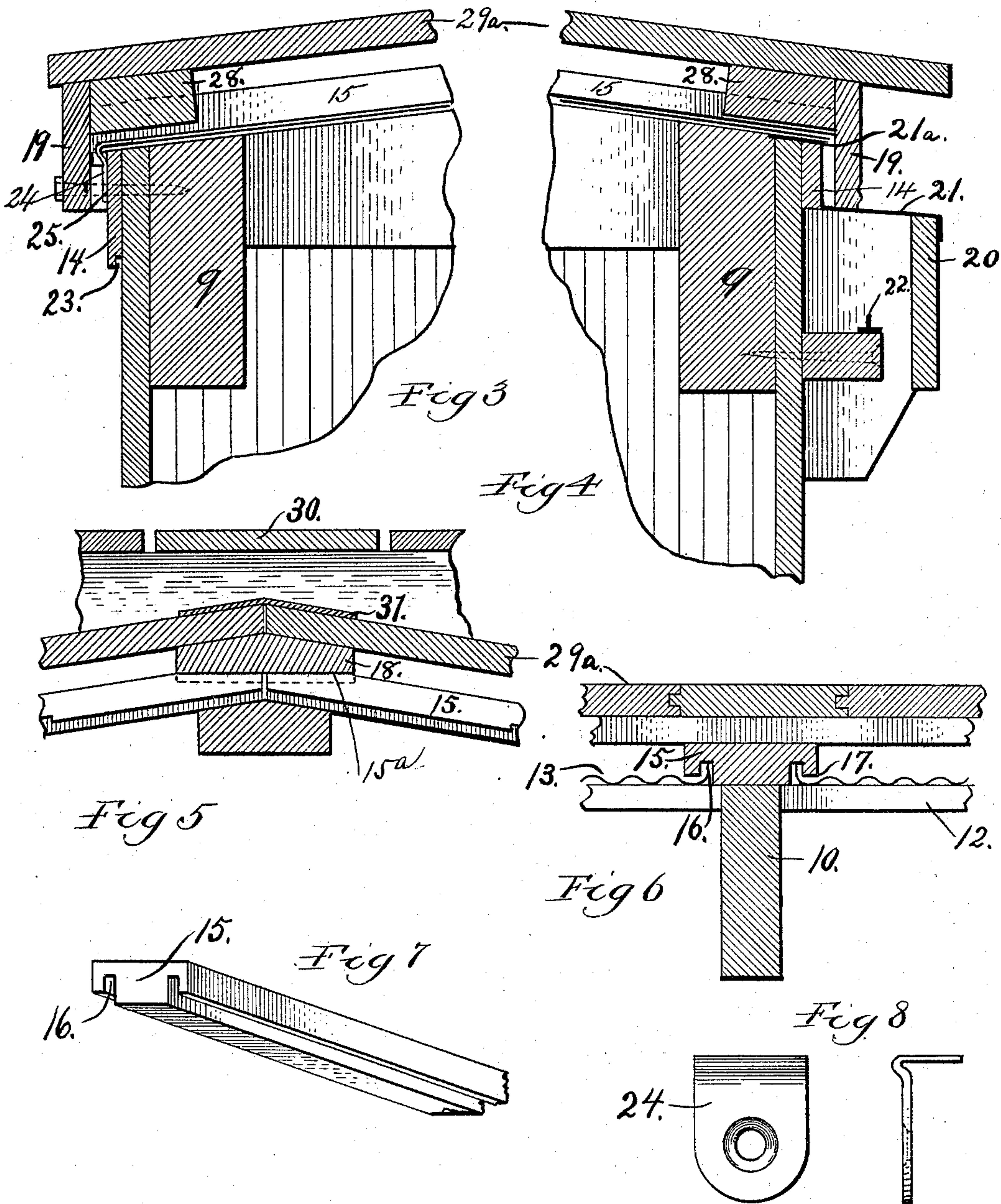
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UNITED STATES PATENT OFFICE.

HENRY C. WILLIAMSON AND HERMAN PRIES, OF MICHIGAN CITY, INDIANA.

CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 584,836, dated June 22, 1897.

Application filed March 6, 1896. Serial No. 582,092. (No model.)

To all whom it may concern:

Be it known that we, HENRY C. WILLIAMSON and HERMAN PRIES, residing in Michigan City, county of La Porte, and State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Car-Roofs, of which the following, taken in connection with the accompanying drawings, is a specification.

Our invention relates to roofs of cars, particularly of freight-cars, which are formed of sheets of metal covered or protected on the upper side with wood.

A primary object of our invention is to improve the resistance of car-roofs of the class described to horizontal, transverse, and diagonal strains, such as are unavoidable in everyday service, and in this manner to aid the car-body to retain its original rectangular and rigid shape.

Another object is to arrange and hold the metal sheets in such position as to insure the free drainage of water from their outer ends, while at the same time enabling their removal and replacement when damaged with a minimum amount of trouble.

A further object of our invention is to secure the metal sheets at their edges in such a manner as to allow them a limited amount of lateral movement without chafing or binding.

A still further object of our invention is the efficient protection of the door and its appliances from the water which drips off the ends of those metal sheets which are directly over the doorways.

To secure these various objects, our invention consists, briefly stated, in various improved constructions hereinafter to be more particularly described. To make such description perfectly clear, reference may be had to the accompanying drawings, in which—

Figure 1 represents a section of a car-roof made in accordance with our invention. Fig. 2 is a side elevation of the roof, with the outer fascia removed in order to show more clearly the ends of the metal sheets and the method of securing the same. Fig. 3 is an enlarged section of the left-hand corner of Fig. 1. Fig. 4 is an enlarged section of the right-hand corner of Fig. 1. Fig. 5 is a section taken on the line 5 5 of Fig. 2, but drawn on a somewhat larger scale. Fig. 6 is an enlarged sec-

tion taken on the line 6 6 of Fig. 1. Fig. 7 is a view designed more especially to represent the joint-strips used in securing the edges of the metal sheets in place. Fig. 8 represents, on an enlarged scale, the holder or clip which is used to prevent the metal sheets from working away from their proper places.

Referring now more particularly to Figs. 1 and 2, 9 represents the side plates, and 10 the carlines, both of which may be of the usual form and secured together in the usual manner. In the practice of our invention these carlines are gained on their upper faces to receive the lower ridge-pole 11 and the purlins 12, the gains being preferably made of just sufficient depth to allow the ridge-pole and purlins to be flush with the upper face of the carlines. The lower ridge-pole 11 and purlins 12 are preferably made of liberal width and are securely fastened to the carlines. The construction described adds materially to the rigidity of the roof and its ability to resist the various strains, especially those in a diagonal direction, to which it may be subjected.

The metal sheets 13 may be corrugated in the usual manner and are placed upon the side plates, purlins, and ridge-pole. They extend from the center of the ridge-pole along the lines of the carlines to the outside of the inner fascia 14. Near the edges of the carlines these metal sheets are turned up at their sides for a sufficient distance to prevent water from running over the sides, and also to allow of their being properly held in position in the manner hereinafter described.

An upper frame consisting of a ridge-pole 18, supercarlines 15, and side plates 28, all framed together, is superimposed upon the lower frame already described, the carlines of the two frames corresponding in number and being secured together by nails, screws, or other desired means. The ridge-pole 18 is above the carlines 15 and is gained to fit down upon them.

To simplify the construction the upper ends of the supercarlines 15 are beveled to a horizontal plane, as shown at 15^a 15^a. The supercarlines 15 extend beyond the fascia 14, and the side plates 28 are flush with their lower ends and are gained so as to fit down upon them. The outer edges of the side plates

28 and the lower ends of the supercarlines 15 are trimmed off vertically, so as to afford a proper surface against which to fasten the outer fascia 19. The upper surface of the ridge-pole 18 is beveled to suit the pitch of the roof.

The supercarlines 15 are longitudinally rabbeted along their lower edges, as indicated at 17, and at the inner angle of the rabbet is formed an upwardly-projecting groove 16. By this is formed suitable means to receive the upturned edges of the metal plates 13, and the rabbets are of greater vertical depth and the grooves 16 of greater horizontal width than the thickness of the metal plates, so that the latter lie loosely within these ways and the plates are therefore free to expand and contract, and also to move laterally within limited range, and, furthermore, may be inserted and removed after the two sets of carlines have been secured together and without in the least disturbing their attachment.

The gaining of the ridge-pole 18 and the side plates 28 is of such depth that the lower faces of these parts are brought into close contiguity, but without touching the plates 13, so that the latter are prevented from material vertical vibration without being rigidly secured.

The construction used to protect the door and its fastenings against the drippings from the ends of the corrugated sheets is clearly shown in Fig. 4. Over the top of the hood 20 are placed metal strips 21 of a Z shape, the upper end of the same being inserted underneath the metal sheets at 21^a and resting upon the lower side plates and outer fascia, to the better enable the secure fastening of the metal strips in place and to insure a perfectly impervious construction at this point.

The specific construction of the door and fastening device is immaterial, and therefore here omitted. A track of the usual form is shown in section in Fig. 4 at 22.

Turning now to Fig. 3 it will be seen that the inner fascia 14 is applied with its upper edge resting closely underneath the outer ends of the metal sheets. The lower edges of the inner fascia are rabbeted at their inner sides, as at 23, leaving their outer sides projecting slightly downward, in this manner forming a protection to the sides of the car by shedding the principal part of the water clear of the side boards.

The metal clips 24 (shown on an enlarged scale in Fig. 8) are fastened as indicated at 25 in Fig. 3. The projection of these clips over the top of the corrugated sheets will help to keep the sheets from buckling, and the clips, being narrow, afford but very slight obstruction to the water.

Over the portion heretofore described is fitted a projecting cover of wood, as follows: The outer fascia 19 is secured to the outer edge of the upper side plate, preferably with screws, and none of the boards above are fas-

tened to it, so that it may be readily removed whenever necessary for repairs to any part of the construction. Furring-blocks are placed at intervals between the outer and inner fascia and lag-screws pass through the same into the side plates, maintaining the whole securely in position. This construction provides a suitable drip-space between the inner and outer fascia 14 and 19 for the discharge of water from the corrugated plates. It also not only provides for the holding of the metal plates in the most approved manner and for their easy removal and insertion without disturbing the upper roof of the car, yet positively preventing leakage over the edges of these plates, but it also greatly strengthens the car-body by reinforcing the usual framing of the roof with a rigid superframe and thereby greatly prolongs the life of the car.

The upper purlins 29 are located at approximately equal distances between the ridge-pole 18 and side plates 28, their upper surfaces being in the same plane with the upper surfaces of these parts, thereby forming a suitable support for the upper roof-boards.

The outer covering of wood 29^a, as well as the running-board 30 and the metal strip 31, are of common construction and too well known to need further description here.

We claim—

1. In a car-roof, the combination of an upper and a lower ridge-pole; purlins; carlines gained on their upper faces to receive said lower ridge-pole and purlins; supercarlines fastened on top of said carlines and purlins; and under and upper side plates, said upper side plates and upper ridge-pole being gained on their under faces to fit down over the supercarlines; substantially as shown and described.

2. In a car-roof, the combination of an upper and a lower ridge-pole, purlins, carlines gained on their upper faces to receive said lower ridge-pole and purlins, metal sheets, supercarlines secured upon said carlines and purlins and securing the edges of said metal sheets, and under and upper side plates, said upper side plates and upper ridge-pole being gained on their under faces to fit down over the supercarlines, all substantially as described and for the purposes set forth.

3. The combination with a car-roof and a door-hood, of metal strips of a Z shape, covering said hood, and having their upper edges inserted under the outer edges of the metal sheets of said roof and resting upon the under side plates and inner fascia, substantially as described.

4. In a car-roof, the combination with the metal sheets, and upper side plate, of an outer fascia removably secured to said upper side plate, and an inner fascia rabbeted at the inner face of its lower edge, substantially as shown and described.

5. In a car-roof, the combination with a series of metal sheets having upturned edges,

of supercarlines grooved, on their under face to engage said upturned edges, a door-hood, and protecting-strips covering said hood, and bent or flanged at their inner edges for insertion under the outer edges of said metal sheets, substantially as shown and described.

6. In a car-roof, the combination with supercarlines, an upper ridge-pole, and upper side plates, of gains on the under faces of said upper ridge-pole and said upper side plates, adapted to fit down over said supercarlines, substantially as described.

7. In a car-roof, carlines provided with gains, lower purlins secured in said gains in said carlines, supercarlines mounted upon said carlines provided with upwardly-extending grooves, roof-plates provided with upwardly-turned edges adapted to enter said grooves in the supercarlines, said grooves being of greater width than the thickness of said plates and the downwardly-pending portion of said supercarlines over said plates being of less extent than the body thereof so as to allow free lateral movement to said plates; an upper ridge-pole and an upper side plate provided with gains adapted to receive the end portions of said supercarlines; and upper purlins adapted to be secured upon said supercarlines in alinement with said lower purlins, substantially as described.

8. The combination with the frame of a car, of two rigid roof-frames mounted one above the other, the lower roof-frame comprising a pair of side plates supported by the car-body, a plurality of carlines uniting such side plates, a ridge-pole and purlins mounted upon and secured to the carlines, the carlines being gained to receive said ridge-pole and purlins so that their upper surfaces are flush; said upper roof-frame comprising supercarlines corresponding in number and relative arrangement with carlines of the lower frame, and having their lower faces longitudinally rabbeted at each edge and having vertical grooves formed within each rabbet, a ridge-

pole and a pair of side plates mounted upon and gained to receive the supercarlines, but having their under surfaces in a plane above the lower surfaces of the supercarlines; said lower and upper frames being joined by having the carlines and supercarlines rigidly united; and metal plates of less thickness than the vertical width of the rabbet of the supercarlines, such plates resting upon the several members of the lower frame and having their side edges upturned and loosely entering the vertical grooves of the supercarlines, substantially as described and for the purposes set forth.

9. In a car-roof, the combination with upper and lower roof-frames, composed each of side plates, a ridge-pole and a corresponding number of carlines, the members of each frame being framed together, and such frames being rigidly united by having the carlines of the upper frame superimposed upon and secured to the carlines of the lower frame, ways formed between the corresponding members of the two frames, metal plates loosely fitted within the ways, and means for holding the plates within such ways.

10. In a car-roof, the combination with upper and lower roof-frames, composed each of side plates, a ridge-pole and a corresponding number of carlines, the members of each frame being framed together, and such frames being rigidly united by having the carlines of the upper frame superimposed upon and secured to the carlines of the lower frame, ways formed between the corresponding members of the two frames, the ways in the carlines extending inwardly and upwardly, metal plates having upturned side edges loosely fitted within the ways, and means for holding the plates within such ways.

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