

No. 665,642.

Patented Jan. 8, 1901.

O. LINK.
CAR ROOF.

(Application filed June 27, 1900.)

(No Model.)

Fig. I.

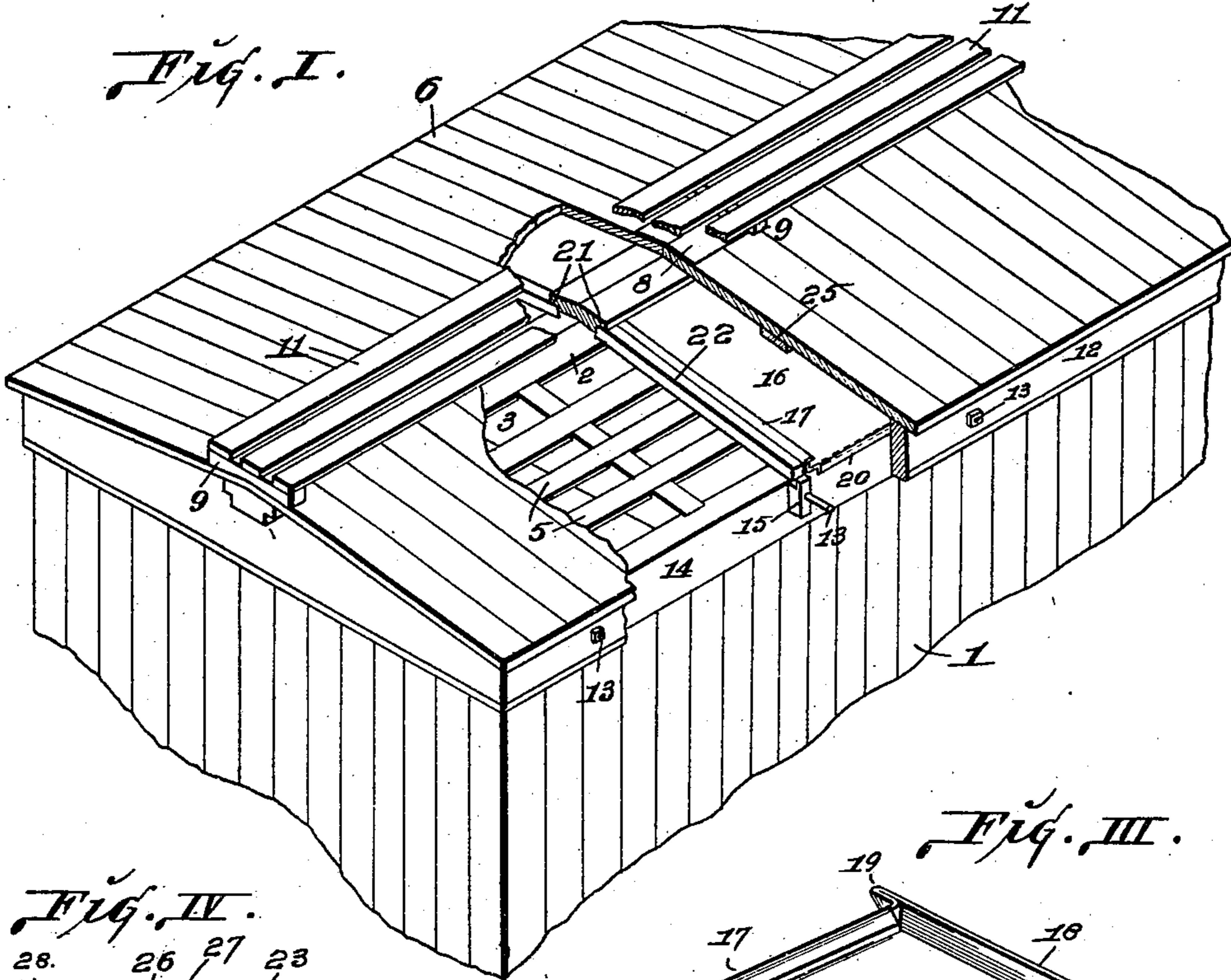


Fig. IV.

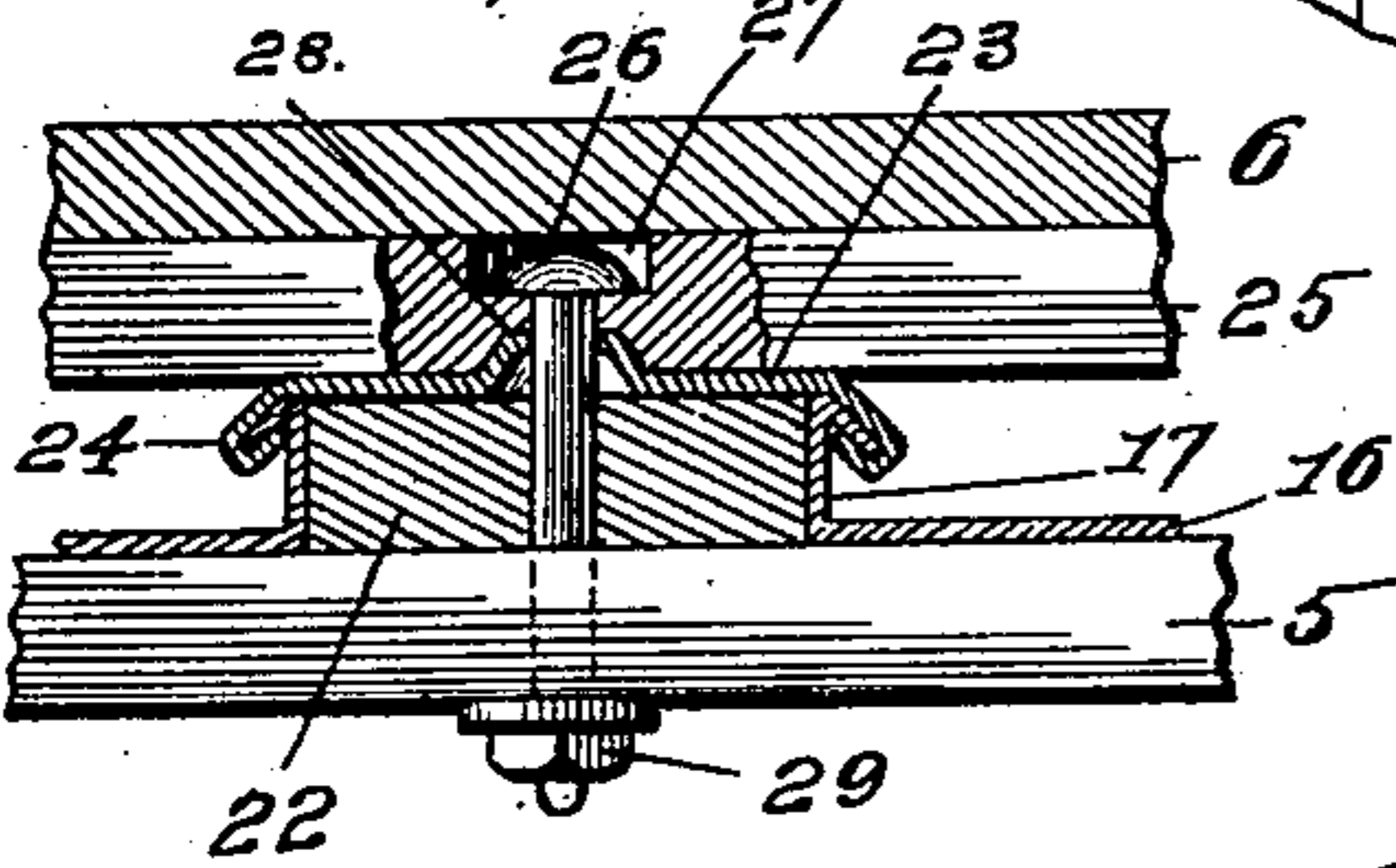


Fig. V.

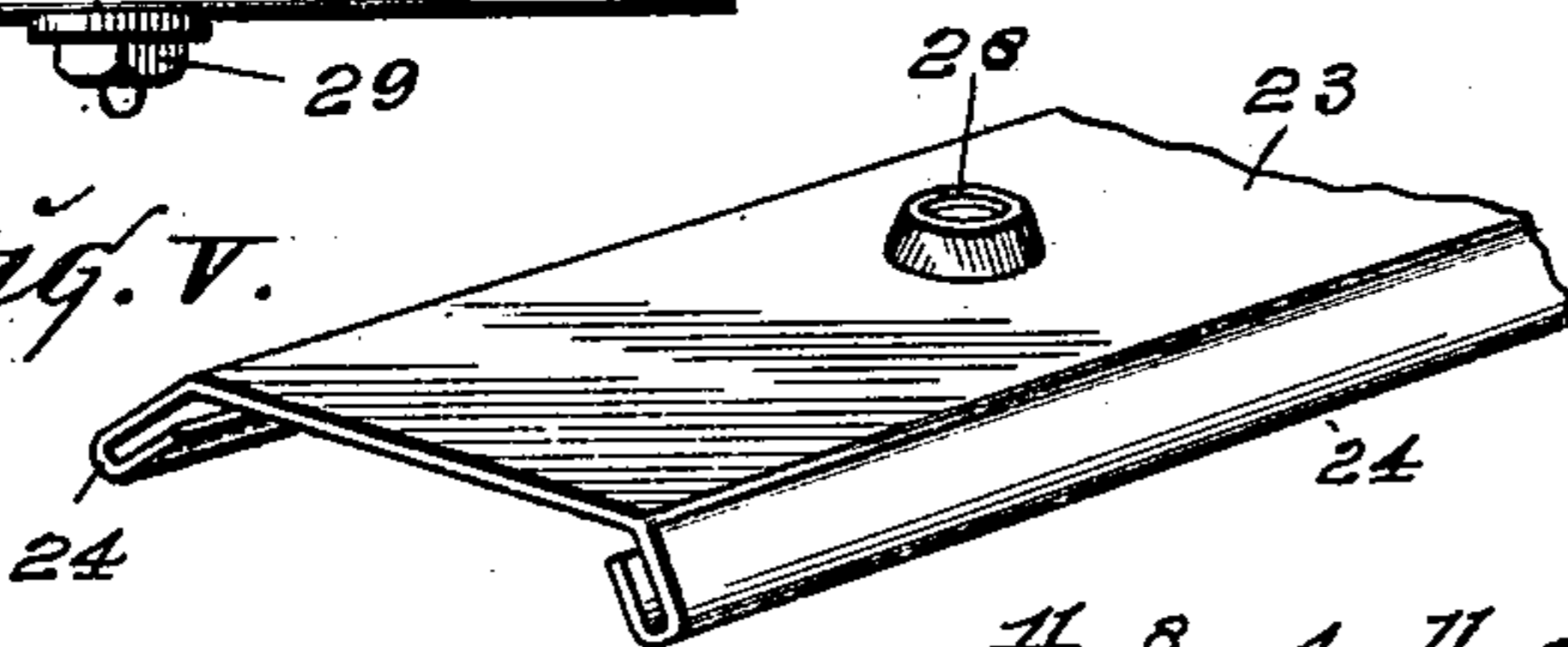


Fig. III.

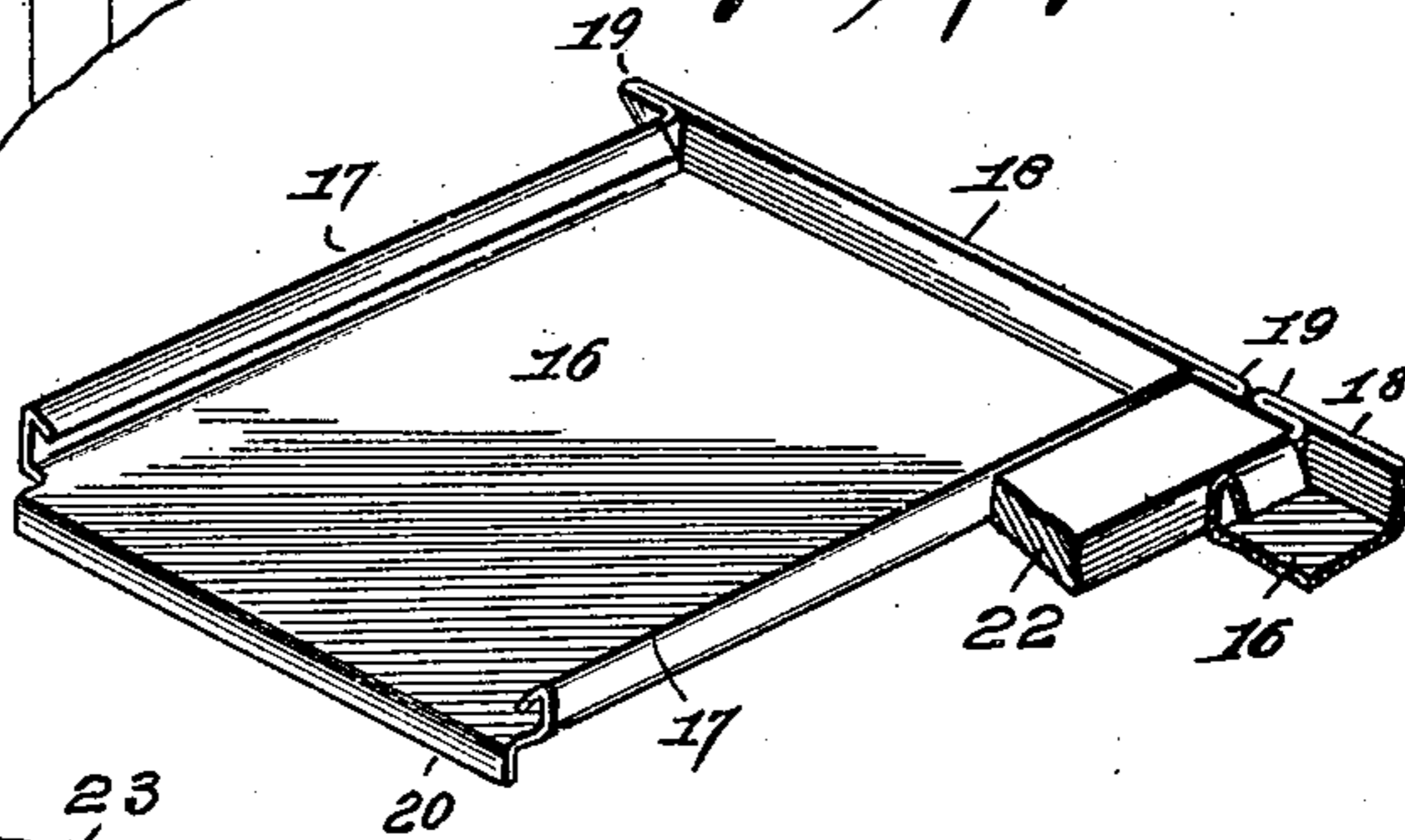
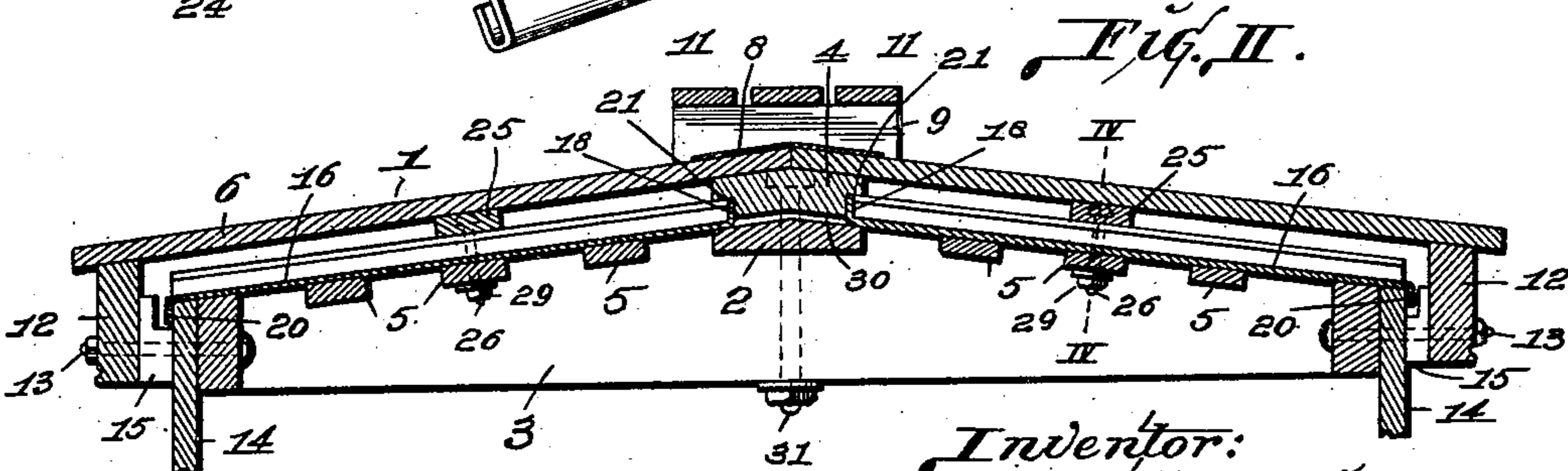


Fig. II.



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UNITED STATES PATENT OFFICE.

OLIVER LINK, OF ST. CHARLES, MISSOURI, ASSIGNOR TO THE ST. LOUIS
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CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 665,642, dated January 8, 1901.

Application filed June 27, 1900. Serial No. 21,777. (No model.)

To all whom it may concern:

Be it known that I, OLIVER LINK, a citizen of the United States, residing at St. Charles, in the county of St. Charles and State of Missouri, have invented certain new and useful Improvements in Car-Roofs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to roof construction, and more particularly to a roof designed especially for railway-cars.

An object of my invention, among others, is to provide a roof of the character specified which shall possess great efficiency and durability, combined with simplicity, at a minimum cost.

A further object of my invention is to so construct and combine the several parts constituting my improved roof that any one of said parts may be readily removed and replaced as desired.

A further object is to provide a roof which shall practically consist of two parts slightly separated from each other, thereby providing an air-chamber between said parts, which will be conducive to keeping the temperature of the interior of the car at a uniform point.

The advantages and details of construction will be made fully apparent from the following specification, considered in connection with the accompanying drawings, in which—

Figure I is a perspective view of my improved car-roof, showing parts thereof broken away or removed. Fig. II is a transverse section of Fig. I. Fig. III is a perspective illustrating the removable roof-plates. Fig. IV is an enlarged section taken on line IV IV, Fig. II. Fig. V is a perspective detail view of a portion of one of the finishing strips or plates designed to connect two of the roof-plates that are illustrated in Fig. III together and also house and protect a parting-strip of wood disposed between said plates.

The several parts of my invention and their cooperating accessories will be designated by numerals, of which 1 indicates a car-body, made substantially in the usual or any preferred way and provided longitudinally, near its central part, with the ridge-pole proper, 2, and with the cross-beam 3, designed to be

located at suitable intervals for the purpose of supporting said ridge-pole in its operative position. The ridge-pole proper, 2, is reinforced by the auxiliary ridge-pole 4, as I prefer to form said pole in two parts in order that they may slightly yield independently of each other, and thereby compensate for vibrations incident to use. I also provide one or more purlin-plates 5, which extend from end to end of the car and rest at intervals upon the cross-beams 3 in order to provide a rigid support for the roof.

My improved roof consists of the outer section or roof proper, 6, formed of a series of boards the edges of which are properly dovetailed or otherwise united together, it being understood that a proper pitch is given to the roof and that the joint formed by the union of the ends of said boards should be covered by a metal plate 8, upon which at intervals may be located the cleats or brackets 9, upon which the running-board 11 is secured, as is usual, the metal plate 8 being designed to close the joint between the meeting ends of said boards and prevent all leakage at this point.

By reference to Fig. II it will be observed that the inner ends of the boards 6 rest upon the auxiliary ridge-pole 4, while the outer ends thereof are supported by the longitudinally-disposed rail 12, properly secured in position, preferably by the bolts 13, in order that said rail may be readily removed, if desired, it being understood that said rail is to be held slightly separated from the frame proper, 14, of the car by the brackets 15, which correspond in number to the number of bolts 13 employed to hold the rail in place.

Located beneath the roof proper formed by the boards 6 is the auxiliary roof, which is designed to rest directly upon the purlin-plates 5, and consists of a series of plates 16, one of which is fully illustrated in Fig. III. By reference to said view it will be observed that said plate 16 is provided upon each edge with an upwardly and inwardly directed flange 17 and upon its upper end with a continuation of said flange, as indicated by the numeral 18, the point of union between the flanges 17 and 18 being shaped so as to form the laterally-extending ears 19, the purpose

of which is to more securely hold the plate 16 in its adjusted position, as will be hereinafter more clearly set forth. The lower end of the plate 16 is bent downward at right angles to the plate, thereby forming the depending flange 20, which is designed to extend downward between the frame 14 and the rail 12.

By reference to Fig. II it will be seen that the auxiliary ridge-pole 4 is provided upon each of its lower edges with longitudinally-disposed recesses 21, designed for the reception of the upper ends of the parting-strips 22 and the plates 16 and their accompanying flanges 18.

The ears 19 extend laterally and preferably contact with the ears of the next adjacent plate, while designed to hold said plates separated a proper distance from each other are the parting-strips 22, (most clearly illustrated in Fig. IV,) said strips being of the same height as the flanges 17, and each of them is completely covered by the cap 23, (fully illustrated in Figs. IV and V,) consisting of the central or body portion designed to cover the parting-strips 22 and of the depending downwardly and inwardly directed flanges 24, said flanges being designed to engage the flanges 17 of the plates 16 and thereby bind said plates together and firmly hold them in their operative positions without the necessity of employing any nails for this purpose.

The middle portion of the series of boards 6 is supported by the auxiliary purlin-plate 25, which is designed to rest over the central plate 5 and directly upon the parting-strips 22 and their interposed cover 23, as shown in Fig. IV, said auxiliary plate 25 being secured in place by a locking-bolt 26, which passes through said plates 5 and 25 and the strip 22 and cover 23.

The upper end of the bolt 26 is preferably seated in a recess 27 in order that it may rest flush with the surface of the plate 25, and thus enable said end to be wholly inclosed when the boards 6 are placed in position. The covers 23 are provided with an aperture for the reception of the bolt 26, and surrounding said aperture is the upwardly-directed and inwardly-converging flange 28, it being understood that an aperture of proper size to snugly receive the bolt is thus formed. The object of the flange 28 is to insure that any leakage which may take place between the boards 6 and extend into the recess 27 and thence around the bolt 26 will be directed by said flange, so that the water thus escaping will be directed off of the flanges 20. After the parting-strip 22 and the plates 5 and 25 have thus been locked into coöperative relationship by means of the nut 29 it will be seen that said parts will be in such position as to reliably perform their office, and the metal plates 16 will be firmly held in position by the strips 22 bearing against the ears 19. The plates 16 not only provide an air-space between themselves and the roof proper formed by the section 6, but will reliably receive any

water which may leak through said section 6 and direct it downward adjacent to the sides of the car by the flange 20.

By forming the ridge-pole in two parts a very slight space, if desired, may be left between said parts, as indicated by the numeral 30, thereby insuring that when said parts are drawn together, as by the bolt 31, the ends of the plates 16 and the strips 22 will be tightly clamped in position, while at the same time compensation will be provided for vibrations of the car.

By the construction which I have just described it is obvious that the several metallic plates and the covers 23 may be very reliably secured in their operative positions without the necessity of puncturing the same with a nail, thereby insuring that the roof thus formed will not leak around the nail-holes usually formed. It is further obvious that by removing a portion of the boards 6, which are merely nailed in position, and afterward removing the side rails 12 by taking off the nuts upon the bolts 13 any of the plates 16 or the covers 23 are rendered accessible and may be quickly removed and replaced.

By providing the upwardly-directed flanges 18 any leakage escaping through the boards 6 cannot find a way over the upper ends of said plates, while the ears 19 will hold said plates properly separated for the reception of the parting-strips 22.

By reference to the construction which I have just described it is obvious that the outer roof proper formed by the sections or boards 6 may be even carelessly or imperfectly constructed, inasmuch as all leakage is provided for by the series of plates 16, and it may therefore be said that said outer roof is designed primarily for the protection of the inner metal roof and also to provide that an air space will be formed, as set forth. While I have described the preferred construction which may be adopted in forming the several parts of my invention, it will be understood that I wish to comprehend in this application the substantial equivalent thereof.

I claim as my invention—

1. In a car-roof, the plates 16 provided with laterally-extending ears at their upper ends, in combination with the strips 22, acting to hold the plates in position and keep them spaced apart, substantially as set forth.

2. In a car-roof, the combination of the plates 16 having laterally-extending ears at their upper ends, strips 22 fitting between the plates and engaging said ears to hold the plates in position, and a cap 23 covering said strip and the edges of which interlock with said plates on opposite sides of the strip, substantially as set forth.

3. In a car-roof, the combination of the plates 16 provided with laterally-extending ears 19 and flanges 18 at their upper ends, strips 22 fitting between the plates and holding them in position, caps 23 covering the strips and interlocking with the edges of said

plates on opposite sides of said strips, a ridge-pole 4 recessed to receive the upper ends of said plates, strips and caps, and a rail 12 secured to the body of the car at the outer ends
5 of said plates, strips and caps, substantially as and for the purpose set forth.

4. The herein-described roof comprising an outer cover; in combination with an inner roof slightly separated from the outer roof and
10 formed of a series of plates 16 provided with flanges 17, 18 and 20 and with ears 19, in combination with a series of parting-strips 22 and a cover 23 for each of said strips having the
15 flanges 24 designed to cooperate with the flanges 17 on said plates, a ridge-pole formed in two parts designed to clamp the ends of said plates, cover and strip and suitable means
20 to bind and secure said parts together in their operative relationship, in the manner specified and for the purpose set forth.

5. The herein-described roof comprising an outer cover in combination with an inner roof slightly separated from the outer roof and formed of a series of plates 16 provided with
25 flanges 17, 18 and 20 and with ears 19, in combination with a series of parting-strips 22 and a cover 23 for each of said strips having the flanges 24 designed to cooperate with the
30 flanges 17 on said plates and further provided with an upwardly-converging bolt-receiving flange 28, a ridge-pole formed in two parts designed to clamp the ends of said plates, cover
35 and strip and suitable means to bind and secure said parts together in their operative relationship, in the manner specified and for the purpose set forth.

OLIVER LINK.

In presence of—

E. S. KNIGHT,

N. V. ALEXANDER.