

No. 667,396.

F. IRELAND.
RAILROAD.

Patented Feb. 5, 1901.

(No Model.)

(Application filed Nov. 20, 1900.)

2 Sheets—Sheet 1.

FIG. 1.

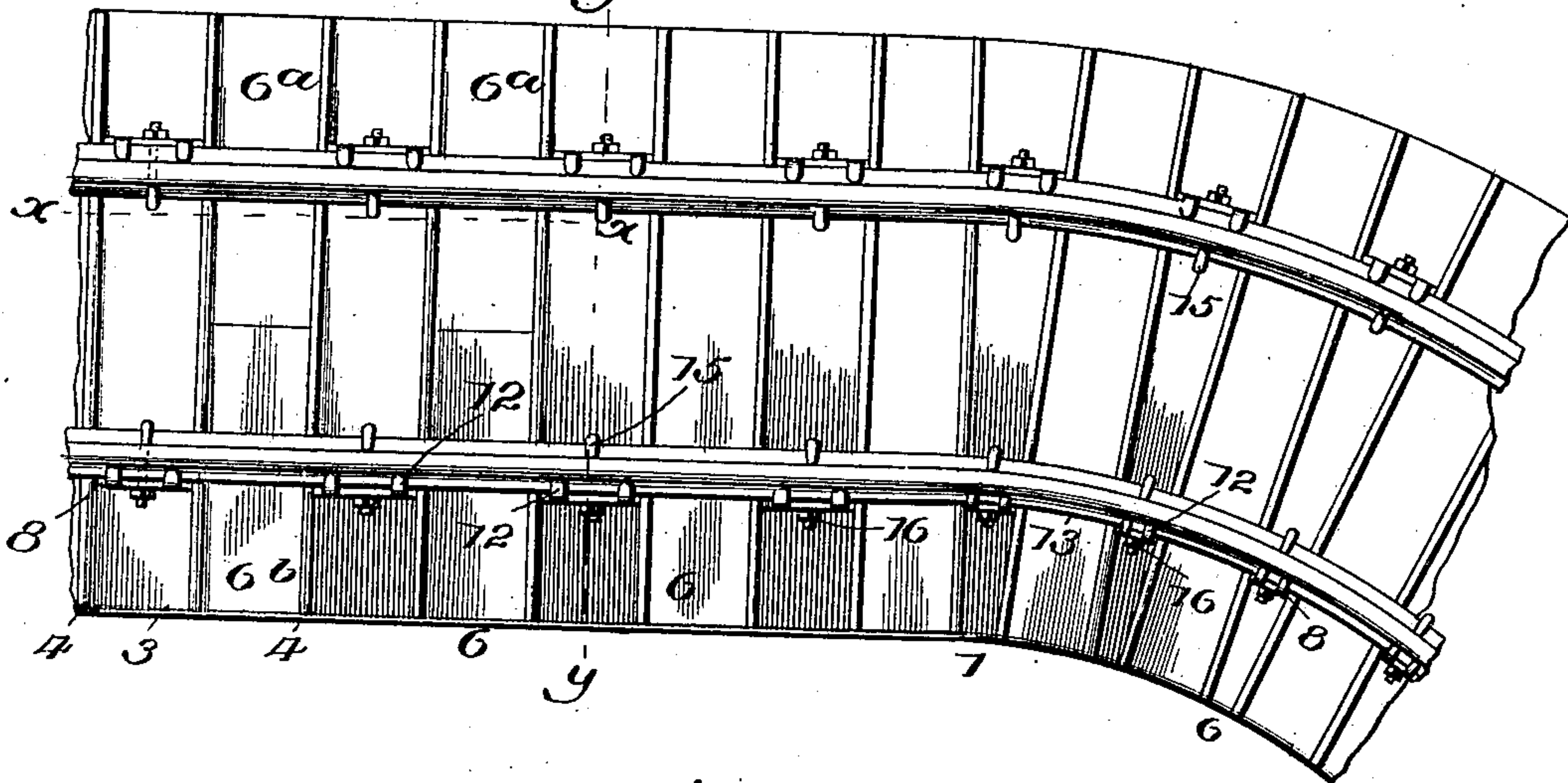


FIG. 2.

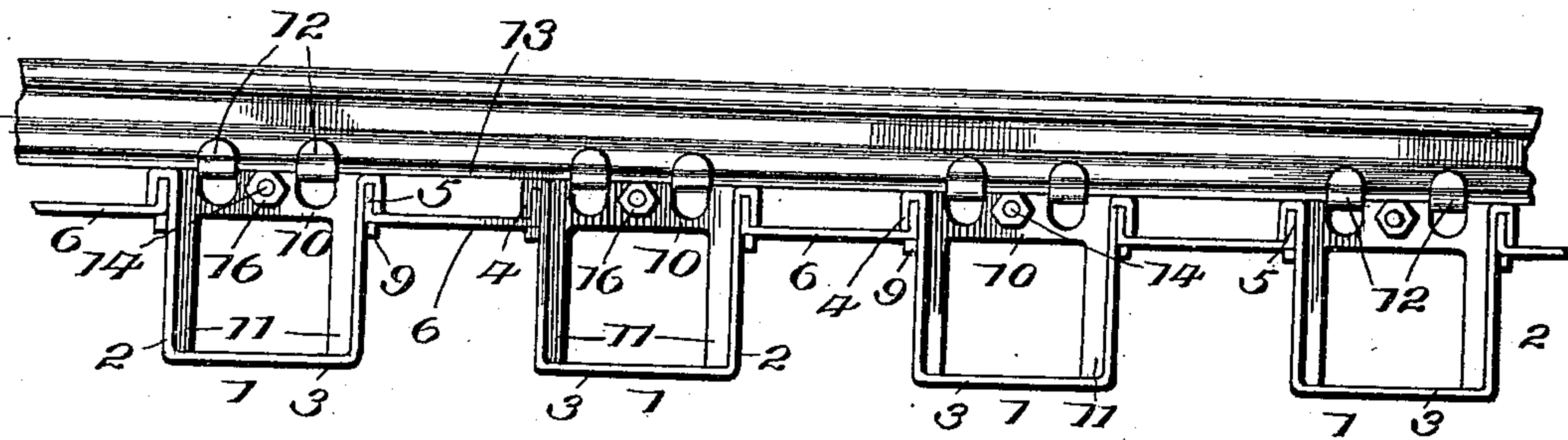
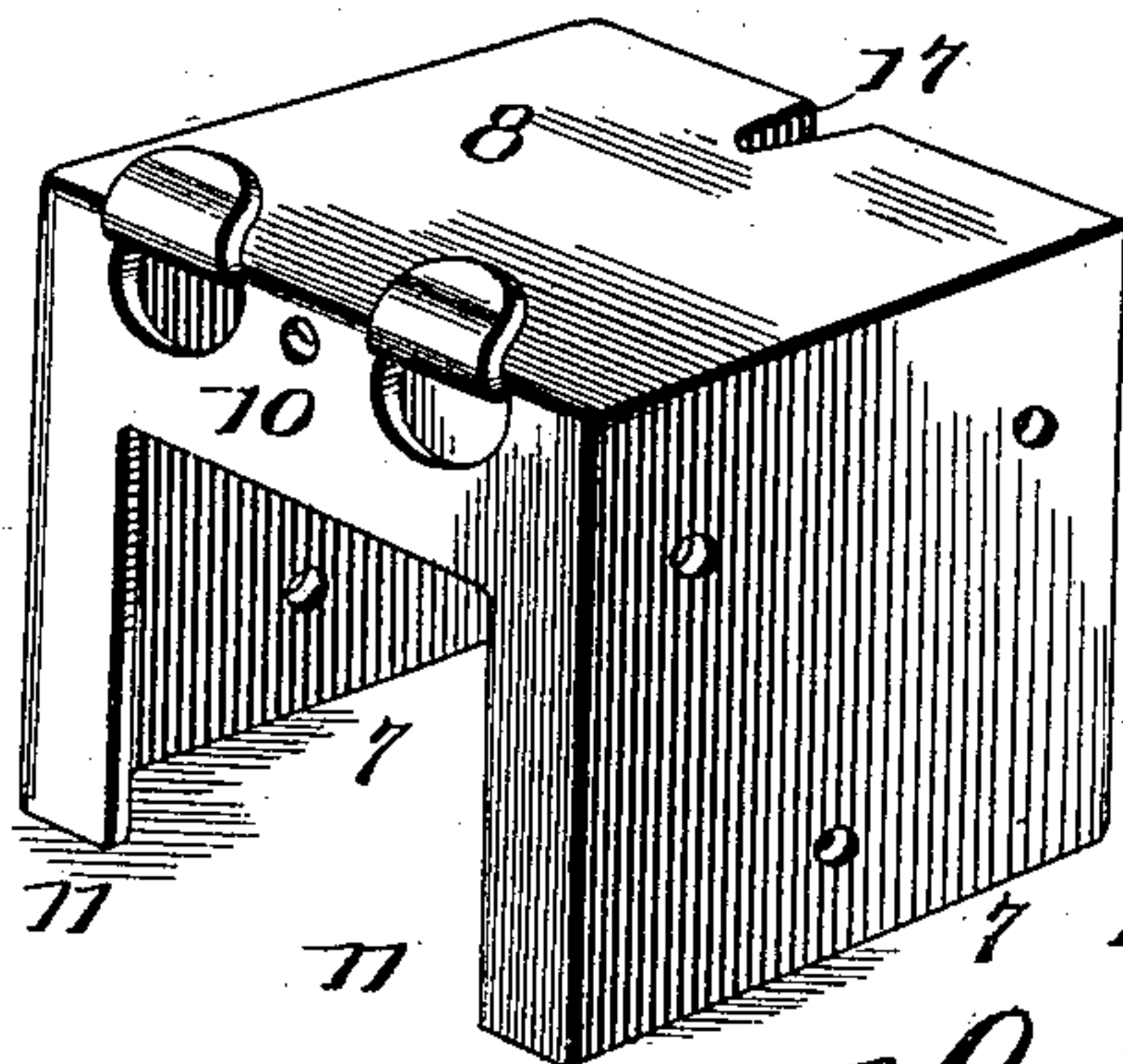


FIG. 4.



Witnesses

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Fig. 3.

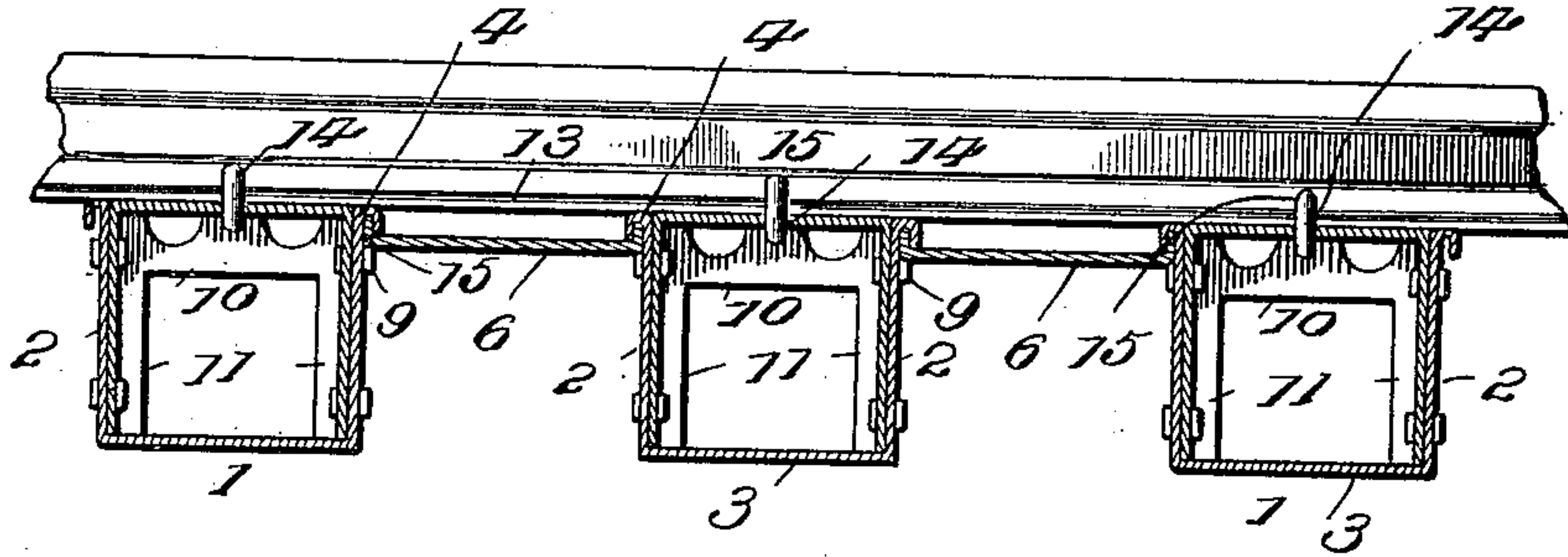


Fig. 5.

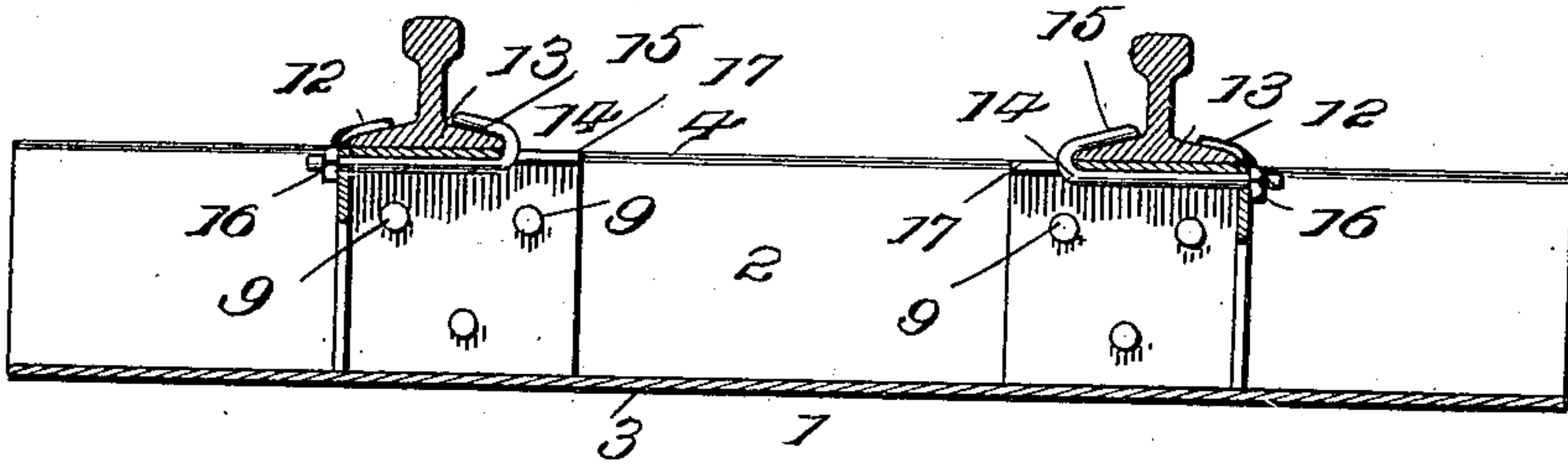


Fig. 6.

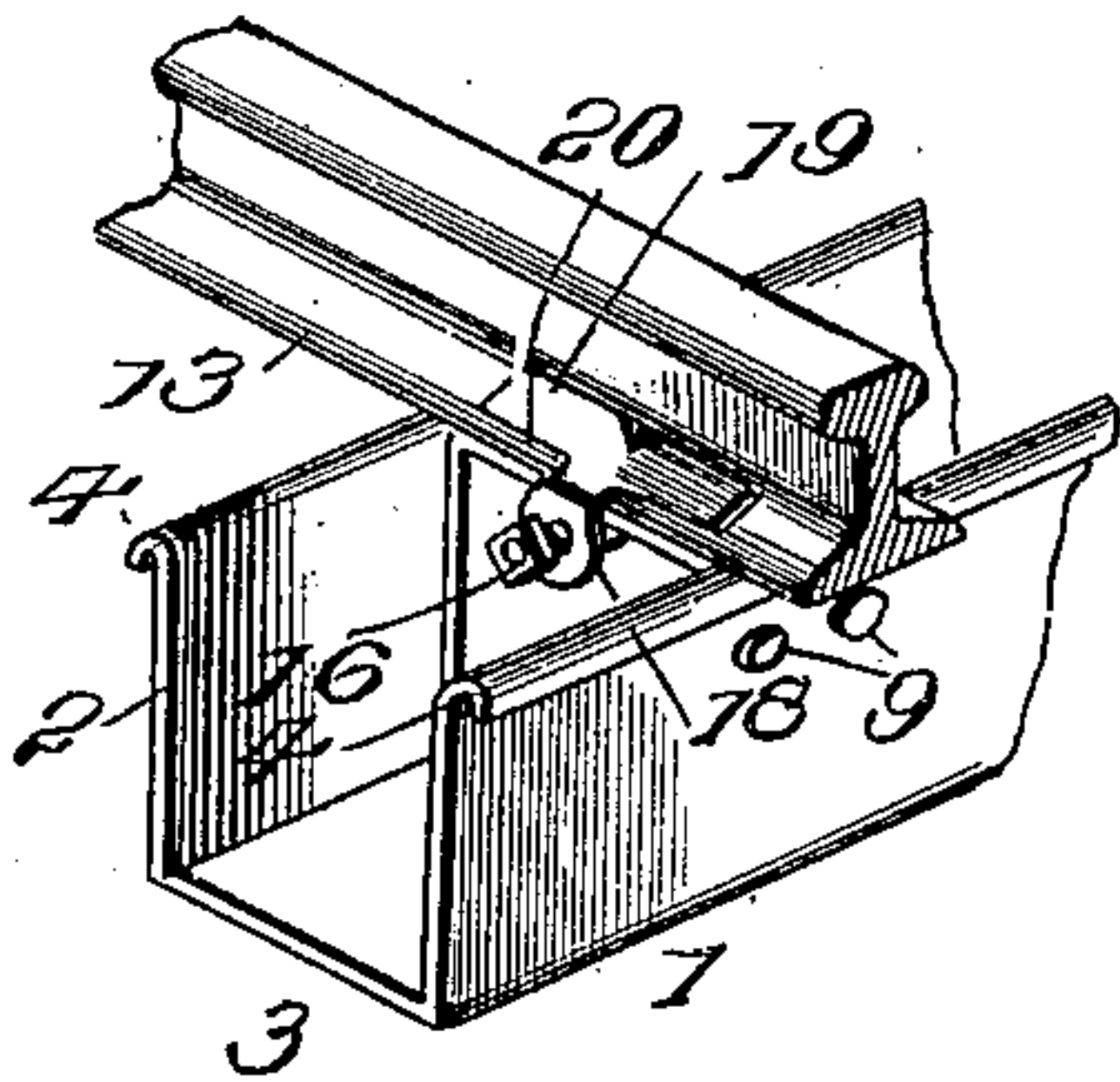
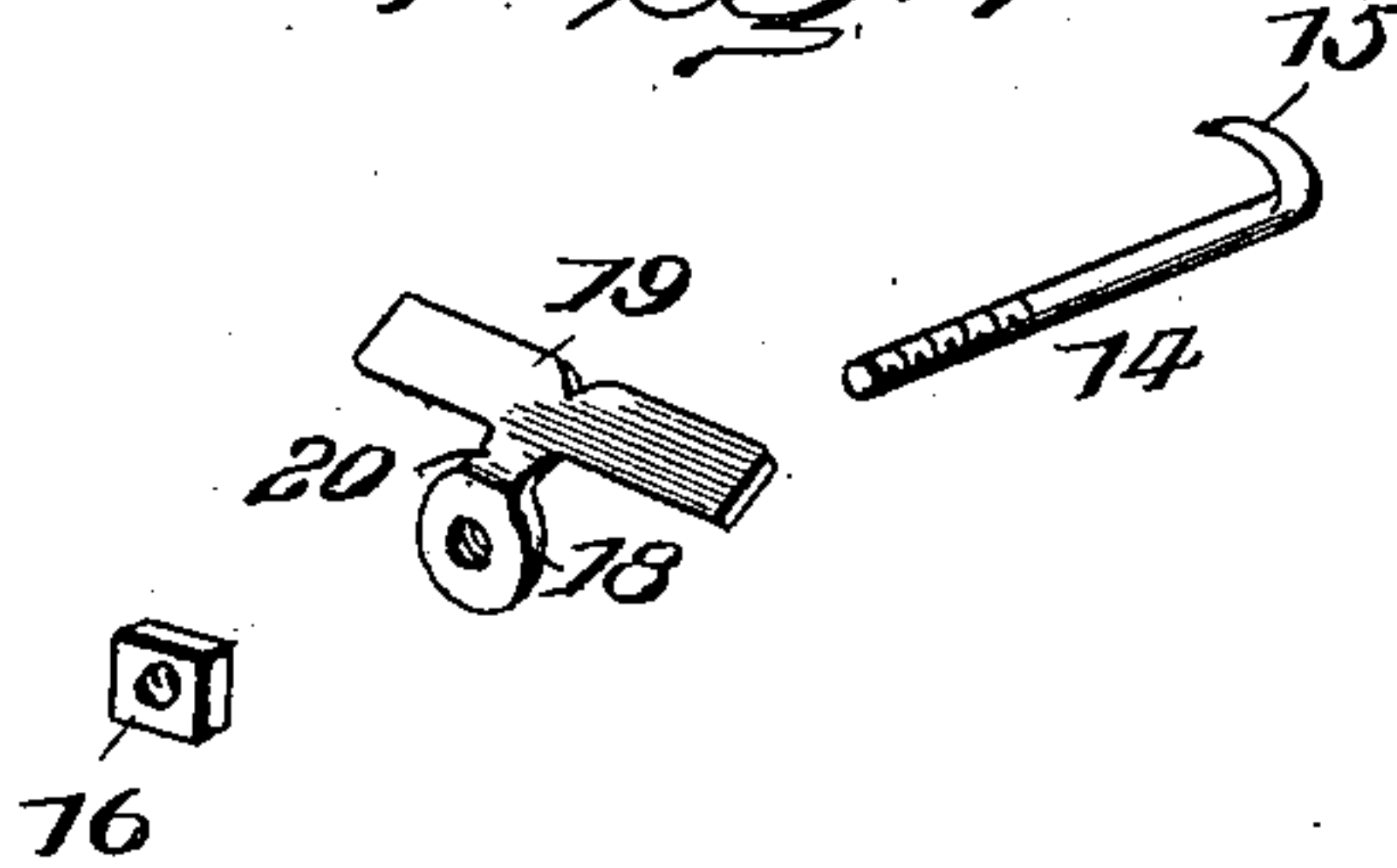


Fig. 7.



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FRANK IRELAND, OF NARKA, KANSAS.

RAILROAD.

SPECIFICATION forming part of Letters Patent No. 667,396, dated February 5, 1901.

Application filed November 20, 1900. Serial No. 37,166. (No model.)

To all whom it may concern:

Be it known that I, FRANK IRELAND, a citizen of the United States, residing at Narka, in the county of Republic and State of Kansas, have invented certain new and useful Improvements in Railroads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to the construction of railroads, and aims to protect and prevent washing out of the bed by the action of rain and snow and the destruction of the track when submerged from any cause and also to minimize the cost of repairs to rolling-stock and track in material and labor.

For a full description of the invention and the merits thereof, and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a length of railroad embodying the invention. Fig. 2 is a side view. Fig. 3 is a section on the line X X of Fig. 1. Fig. 4 is a perspective view of a rail-chair. Fig. 5 is a detail section on the line Y Y of Fig. 1. Fig. 6 is a perspective view of a chair, showing the employment of a washer. Fig. 7 is a perspective view of the clamp-hook and washer.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The parts entering into the formation of the railroad—such as the cross-ties, cap-plates, and chairs—are formed wholly of metal which will resist wear and the action of rain, rendering the replacement of wooden ties necessary at comparatively short periods. Moreover, by having these parts constructed of metal a washout is not liable to occur in the event of the track being submerged from any cause, the weight being sufficient to compel the parts

to rest upon the road-bed and not to be floated by the surrounding water.

The ties 1 are of trough shape and comprise vertical sides 2 and a bottom 3, the upper edge portions of the vertical sides being recurved, as shown at 4, to embrace and interlock with vertical flanges 5 at the longitudinal edges of the intermediate cap-plates 6, located between adjacent ties. These ties may be rolled, cast, or formed in any desired way so long as they preserve the general outline indicated and have interlocking edge portions to connect with corresponding edges of the intermediate plates 6. In constructing the railroad the ties 1 are spaced a proper distance apart and the interspaces are filled with earth, which is tamped sufficiently hard to prevent displacement of the ties or movement in any direction. The recurved or bent edge portions 4 face outward, so as to interlock with the flanged edges 5 of the cap-plates 6.

The cap-plates 6 connect adjacent ties and interlock at their longitudinal edges therewith and cover the earth between the ties and prevent soaking thereof by rain or snow and the consequent loosening of the ties. These cap-plates shed the water at the sides of the road-bed and materially protect the same and obviate frequent repairs and prevent weeds, grass, and kindred growths from obstructing the track, which is objectionable and entails considerable expense in the proper maintenance of the road. These cap-plates may be of a single length, corresponding with the length of the ties 1, or they may be composed of sections, as shown at 6^a and 6^b in Fig. 1. This sectional construction enables the plates to be more readily handled when placing them in position or removing them from the road-bed for any purpose. It is to be understood that the cap-plates are insertible and removable by an endwise movement, the flanges 5 sliding in the guideways formed by the recurved or bent edge portions 4 of the ties. For a straight length of track the ties 1 will be of uniform width; but on curves the ties 1 will taper conformably to the degree of curvature of the track, as will be readily comprehended and as shown most clearly in Fig. 1, the ends of the ties corresponding with the

greater circle being wider than the ends bordering upon the smaller circle.

The rail-chairs are substantially of inverted-U shape and comprise side members 7 and a cross-piece 8, the side members 7 fitting against the inner sides 2 of the ties and being bolted or otherwise fastened thereto and the cross-piece 8 bridging the space formed between the said sides 2. The heads of the uppermost bolts or fastenings 9 project, so as to come beneath the cap-plates 6 and prevent downward displacement thereof in the event of the earth ballast not being sufficiently high to form a support for the said cap-plates. It will thus be seen that the bolts or fastenings 9, in addition to securing the chairs to the ties, are utilized for supporting the cap-plates when interlocked with the ties. In order that the chairs may serve to brace and stiffen the sides 2 of the ties, they are formed with a transverse flange 10 at one end of the cross-piece 8 and vertical flanges 11 at one end of the side members 7. Clips 12 are provided at one end of the cross-piece 8 and are bent so as to engage over the foot of the rail 13, and these clips are preferably formed by being cut from the transverse flange 10. A clamp-bolt 14 coöperates with the chair and clips 12 to secure the rail in position and is formed at one end with a hook 15 to engage over the foot of the rail and act in opposition to the clips 12 for the securement of the rail to the chair. This clamp-bolt passes through an opening formed in the transverse flange 10 and the threaded end receives the nut 16, by means of which the parts are tightened. The clamp-bolt is located centrally of the space formed between the clips 12, and the end of the cross-piece 8 opposite the space formed between the clips 12 is notched, as shown at 17, to receive the hook 15.

When the rails 13 are of uniform gage, the chair and clamp-bolt will be constructed so as to coöperate therewith; but in the event of the gage varying it will be necessary to interpose a washer between the nut 16 and the adjacent part of the rail, and the form of washer best adapted for the purpose is shown in Figs. 6 and 7 and is of approximately T form, comprising a stem 18 and a cross-piece 19. The stem 18 of the washer is substantially of circular form and is connected with the cross-piece 19 by a neck portion 20, which

is bent at an obtuse angle to the part 18, so as to throw the cross-piece 19 in such position as to engage over the foot of the rail. The nut 16 engages with the neck portion 20 and bears against the base portion of the cross-piece 19. The stem 18 is apertured for the passage therethrough of the clamp-bolt 14.

By combining the ties and cap-plates in the manner stated the road-bed is completely housed and protected from rain and snow, and these parts being solely of metal are not adapted to be buoyed by rising water. Hence a track constructed in accordance with this invention is not liable to be washed away when located in lowlands and other places visited by floods.

Having thus described the invention, what is claimed as new is—

1. In a railroad, and in combination with metallic ties of trough shape having their upper edge portions bent outwardly and recurved, metal plates located between adjacent ties and having their longitudinal edges bent up and embraced by the recurved edges of the ties, substantially as set forth.

2. In a railroad, and in combination with metallic ties of trough shape in cross-section and having their upper edge portions recurved or outwardly bent, plates located between adjacent ties and having their longitudinal edges flanged and adapted to interlock with the recurved or bent edges of the ties, and projections extending from the sides of the ties and coming beneath the plates to form a support therefor, substantially as specified.

3. In combination, trough-shaped metallic ties having their edge portions bent or recurved, rail-chairs of substantially inverted-U shape and having their side members fitted against the sides of the ties, fastenings connecting the chairs with the ties and having projecting parts, and cap-plates having their longitudinal edges flanged and adapted to interlock with the bent edges of the ties and supported by the projecting portions of certain of the chair-fastenings, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK IRELAND. [L. S.]

Witnesses:

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G. W. BACON.