

No. 684,570.

Patented Oct. 15, 1901.

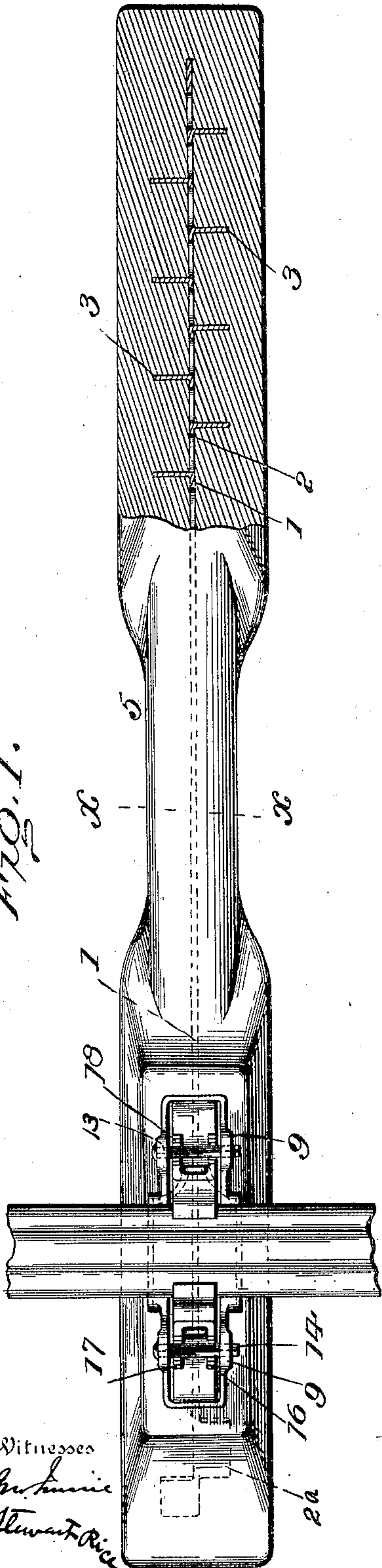
C. C. HARRELL.
COMPOSITE RAILWAY TIE.

(Application filed Feb. 5, 1901.)

(No Model.)

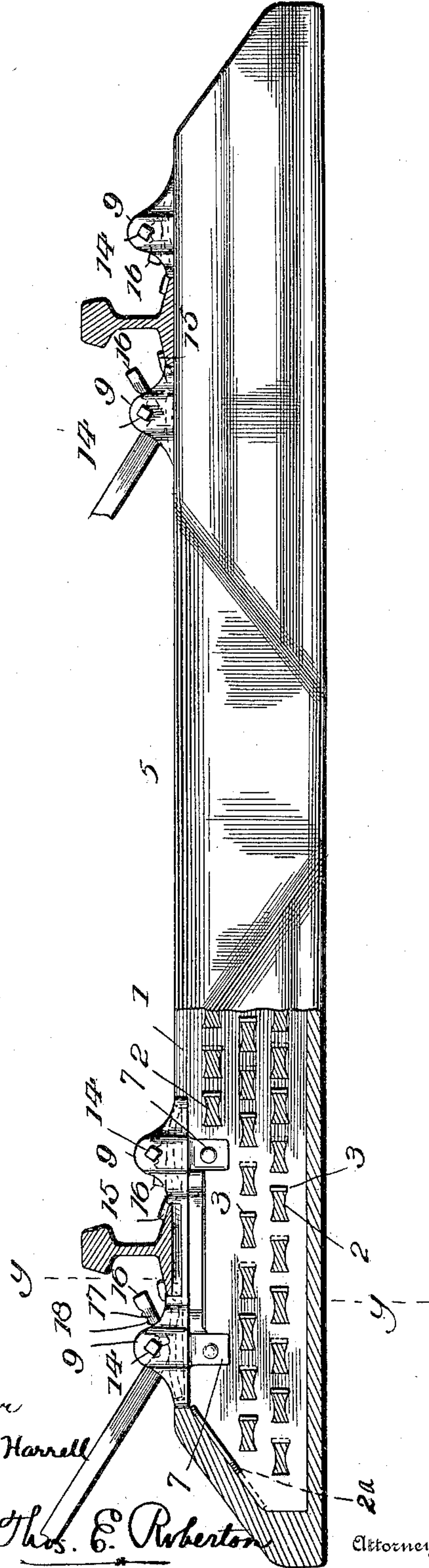
3 Sheets—Sheet 1.

Fig. 1.



Witnesses
J. H. Harris
J. Stewart Rice

Fig. 2.



Inventor
Charles Cophay Harrell

By

Thos. E. Robertson

Attorney

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Fig. 3.

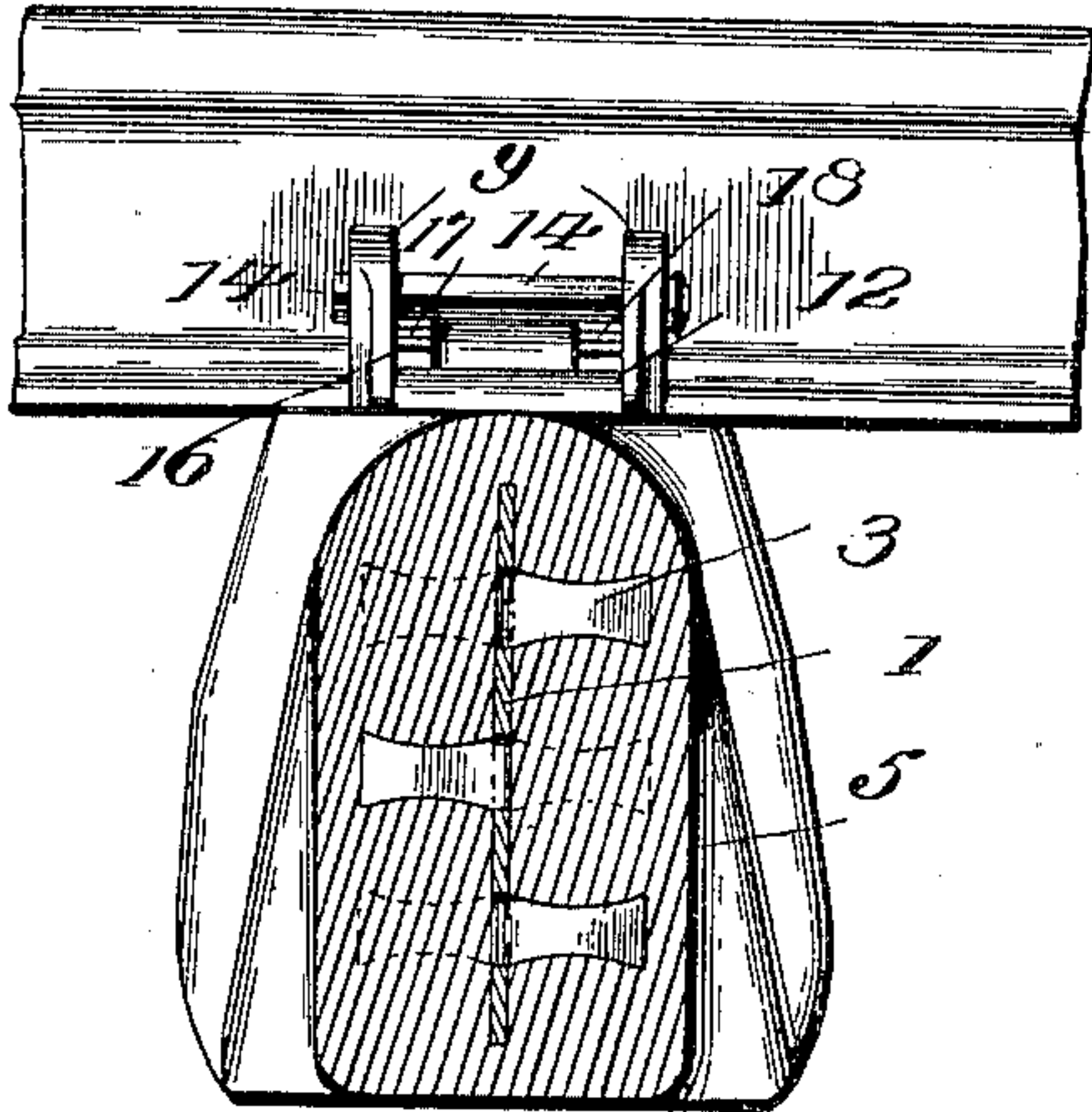


Fig. 8.

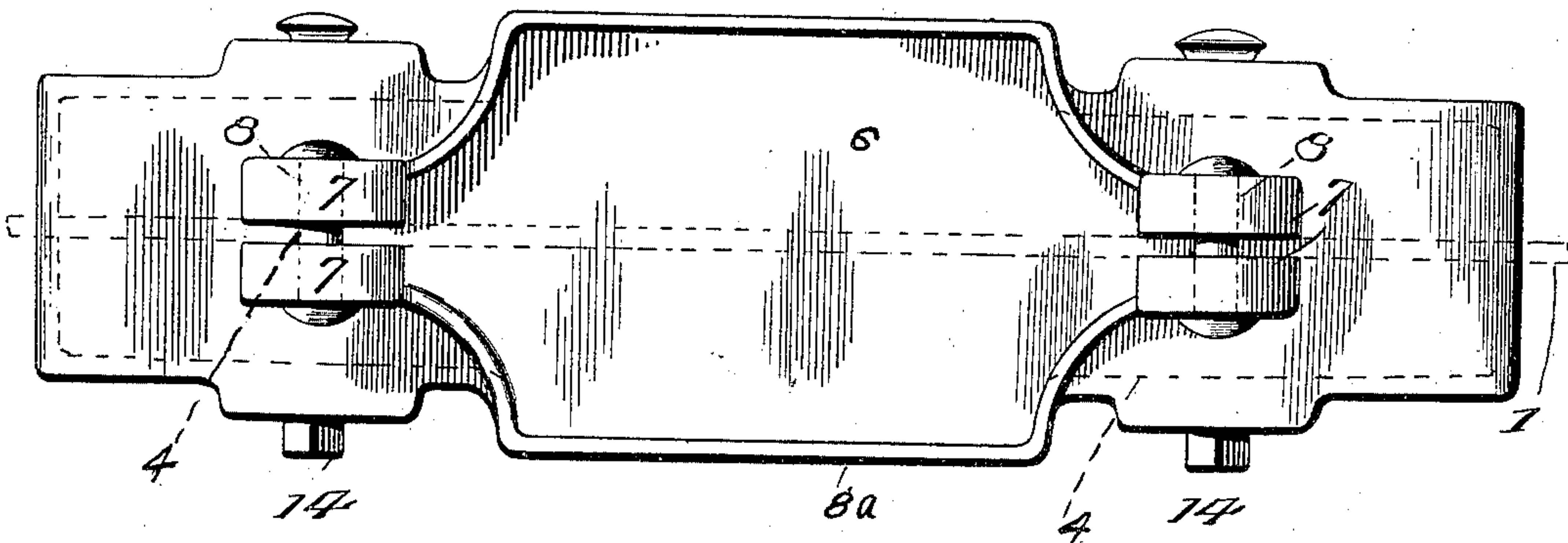
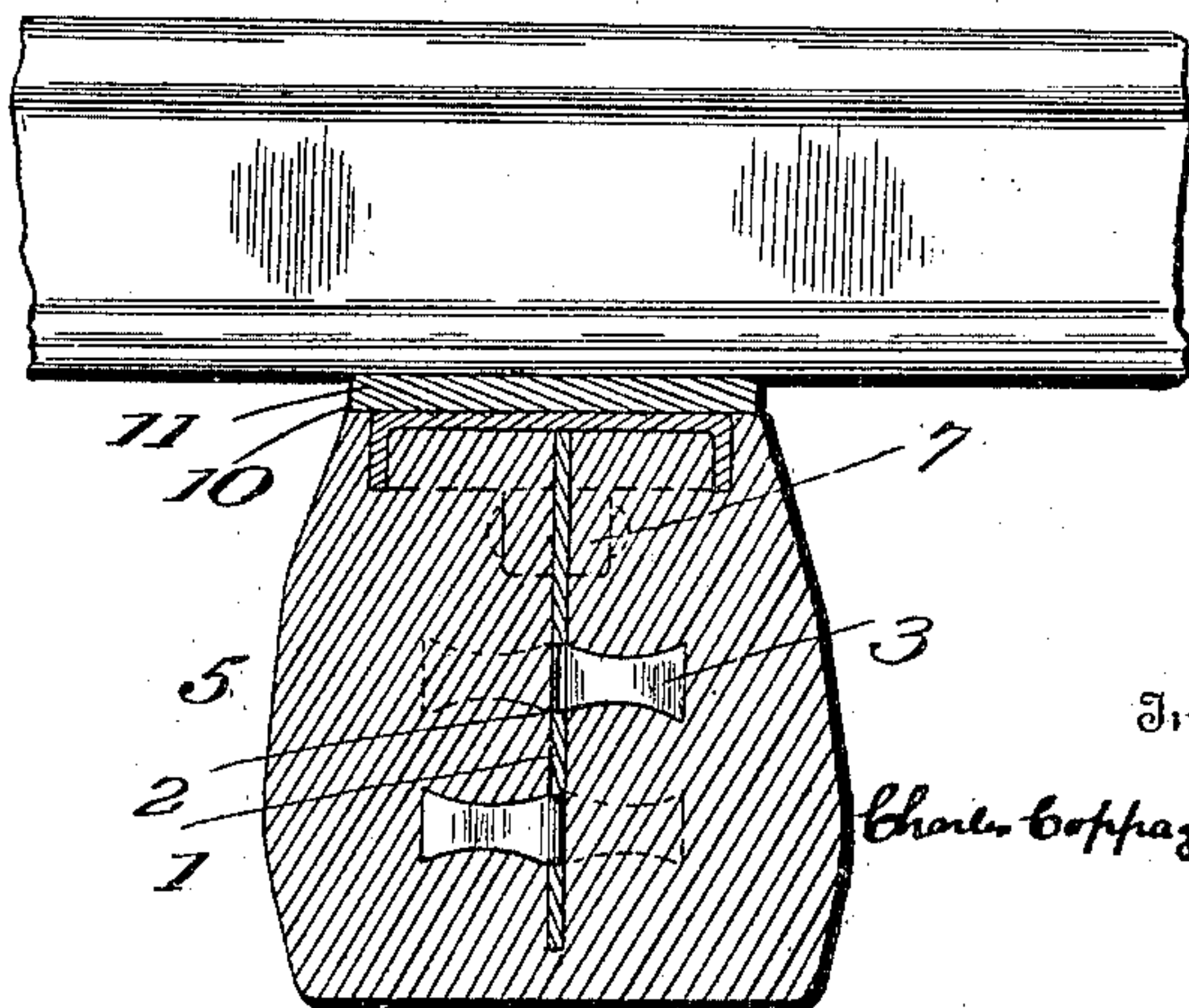


Fig. 4.



Witnesses

*Johnnie
Johntown Rice.*

Inventor

Chas. Coffey Harrell

By *Thos. E. Robertson*. Attorney

No. 684,570.

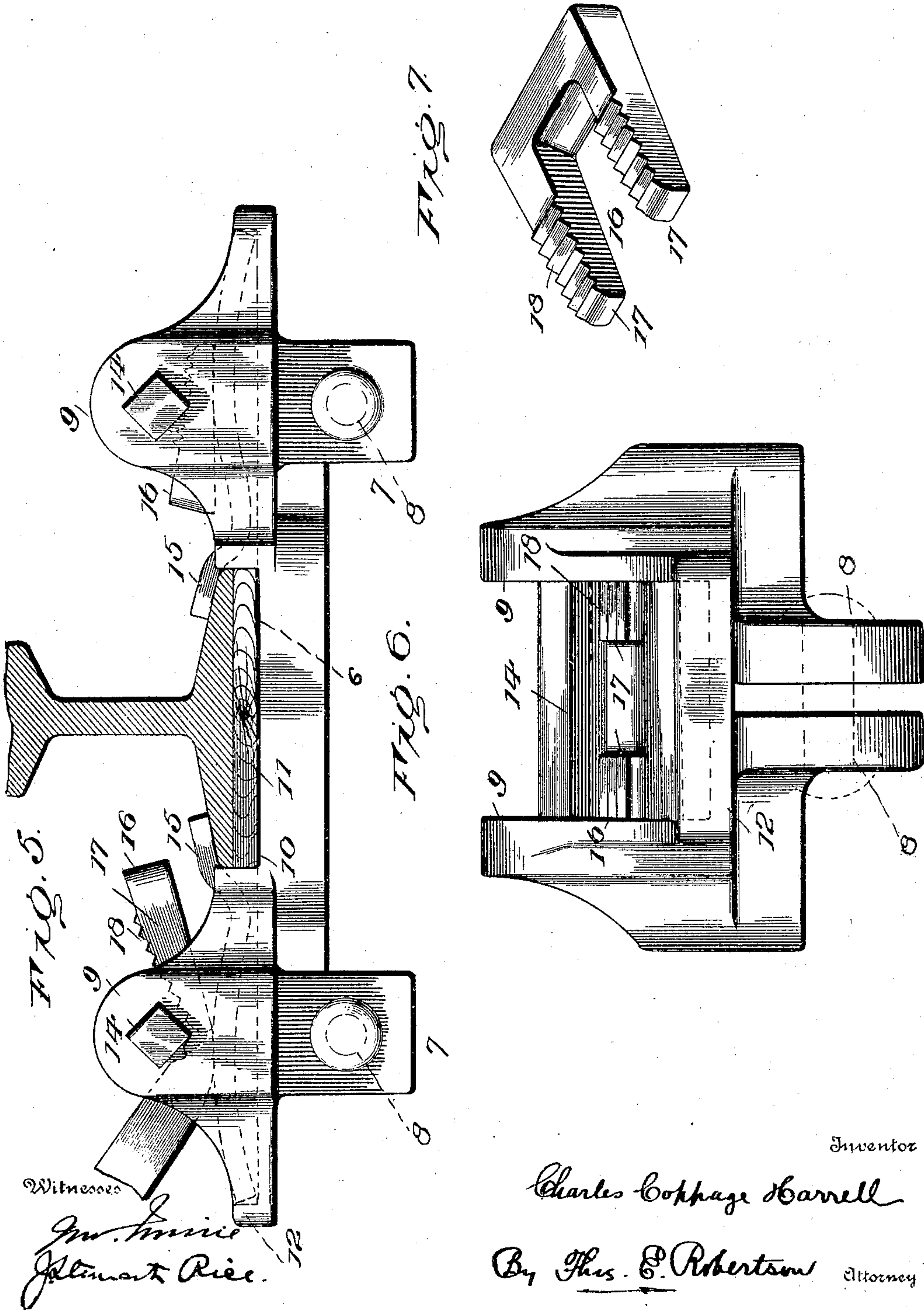
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3 Sheets—Sheet 3.



Inventor

Charles Coppage Harrell

By Thos. P. Robertson

Attorney

UNITED STATES PATENT OFFICE.

CHARLES COPPAGE HARRELL, OF BAINBRIDGE, GEORGIA.

COMPOSITE RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 684,570, dated October 15, 1901.

Application filed February 5, 1901. Serial No. 46,086. (No model.)

To all whom it may concern:

Be it known that I, CHARLES COPPAGE HARRELL, a citizen of the United States, residing at Bainbridge, in the county of Decatur, State of Georgia, have invented a certain new and useful Improvement in Composite Railway-Ties, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to an improvement in composite railway-ties of a similar character to those shown in my Patent No. 667,698, of February 12, 1901, and my application, Serial No. 40,278, filed December 18, 1900, my
15 object being to provide a most simple, inexpensive, and durable tie.

My invention therefore consists of the railway-tie shown in its preferable embodiment in the drawings forming part of this application and in the peculiar construction, arrangement, and combinations of parts hereinafter more particularly described and then definitely set forth by the appended claims.

In the accompanying drawings, which represent the preferable way of carrying out my invention, Figure 1 is a top plan of a composite tie constructed in accordance with my invention with parts broken away to show the metallic framework. Fig. 2 is a side elevation also with parts broken away. Fig. 3 is a vertical cross-section on the line *x x* of Fig. 1 on a larger scale. Fig. 4 is a similar section through the line *y y* of Fig. 2. Fig. 5 is an enlarged detail of one of the rail chairs or supports. Fig. 6 is an end view of the same. Fig. 7 is a perspective detail of the locking-wedge, and Fig. 8 is a bottom plan view of the rail-chair.

Referring now to the details of the drawings by numerals, 1 represents a metallic plate extending almost the full length of the tie and which forms the main part, or, as it might be termed, the "backbone," of the metallic framework, which is adapted to support the coating or housing of cement, concrete, or analogous material. This metallic plate is perforated at a number of places, as shown at 2, and the metal punched from the plate is bent at right angles to the same, so as
50 to form lugs or arms, as shown at 3. It will be noticed that these lugs or arms alternate—that is, every other arm projects on one side of the

plate and the intervening ones project in the opposite direction on the opposite side, as shown clearly in the sectional part of Fig. 1. 55 The only remaining features of the plate to be mentioned are the perforations 4, (shown in dotted lines in Fig. 8,) formed near each end of the plate, to serve as rivet-holes, and the wings 2^a on each end of the plate 2 and 60 which are bent in opposite directions, as seen in Figs. 1 and 2. As will be seen from the drawings, this framework is incased or embedded in a housing 5, of plastic material, as in my aforesaid patent and application. It 65 will be observed that this plate or framework (as it in reality is after the lugs or arms are bent in opposite directions as described) affords a most excellent means for holding this aforesaid plastic housing 5, inasmuch as the 70 material, besides being caught by the lugs or arms 3, enters the perforations; but to insure a still better grip between the housing and the framework I form the lugs or arms 3 with curved edges or sides, so that the lugs or arms 75 are narrower at their centers than at their ends. My rail chair or support comprises a base 6, having at each end two downwardly-depending lugs or feet 7, perforated at 8, by means of which the lugs or feet 7 are riveted to 80 the ends of the framework, the lugs straddling the latter, as clearly shown in the drawings. To stiffen the rail chair or support, I form on each side of it a stiffening-rib, (shown at 8^a.) Extending upwardly at each end of the chair 85 are two flanges 9, parallel with the length of the chair, and between these two sets of flanges is formed the seat 10 for the rail, or rather for the cushion 11, of compressed fiber, hard wood, or other suitable material. At each end of 90 the chair is an upturned flange 12. The side flanges 9 are perforated, as seen at 13, and through these perforations is inserted a spike, pin, or analogous device 14. This spike or pin is preferably square and detachable, although 95 it may be formed integral with the chair, if desired. To secure the rail in these chairs, I employ spring clamping devices 15, of the peculiar shape shown in the drawings, although, of course, this shape is not essential, 100 as any suitable means may be substituted for these clamping-springs. In order to securely clamp these springs 15 against the foot of the rail, and thereby hold the latter in its seat, I

preferably make use of the clamping or locking wedges 16, (shown in Fig. 7,) which comprise two wedged-shaped arms 17, notched at 18, so as to be engaged with a spike or pin 14 in a manner to be described.

The foregoing is a description of the preferable, though not necessary, embodiment of my invention, and the method of securing the rail is as follows: The clamping-spring 15 and the spike or pin 14 are placed in substantially the positions shown at the right-hand end of the enlarged detail Fig. 5, and a pinch-bar or other lever of such a width as will allow it to be inserted between the arms 17 of the wedge 16 is inserted under the spike or pin and the clamping-spring forced down until it is compressed sufficiently to hold the rail in place. The wedge is then inserted under the spike, with its arms 17 straddling the pinch-bar, and as soon as the appropriate notch 18 is under the spike the pinch-bar can be removed. Of course the clamping-spring on the other side is inserted in a like manner. It is evident that if it becomes necessary to tighten the clamping-springs, so as to compensate for any change in the spring or wear in the cushion, it is only necessary to insert a pinch-bar, press down on the spring, and push the wedge farther under the spike, when the clamping-spring will be tightened to the desired degree.

I have described and illustrated what I now consider as the preferable way of forming the various parts, but, except where the appended claims are explicitly limited, I do not limit my invention to the exact construction shown, but intend it to cover any variations or modifications as will naturally suggest themselves. For example, it is manifest that the arms or lugs projecting from the plate may be made separate therefrom and riveted thereto, although on account of its cheapness the plan illustrated is much to be preferred.

What I claim as new is—

1. In a railway-tie, a framework comprising a substantially vertically disposed plate having a series of lugs or arms projecting laterally therefrom on each side of the plate, the said lugs or arms projecting at short intervals for substantially the length of the said plate, substantially as described.

2. In a railway-tie, a framework comprising a substantially vertically-disposed plate having a series of lugs or arms projecting laterally therefrom on each side of the plate, the said lugs or arms projecting at short intervals for substantially the length of the said plate, the whole being incased or embedded in cement whereby the series of lugs or arms on each side of the plate form a means of tying the cement, substantially as described.

3. In a railway-tie, a framework comprising a substantially vertically disposed plate having perforations therein, the metal punched from the perforations forming lugs or arms projecting laterally from the said plate, there being a series of lugs or arms pro-

jecting from each side of the plate, substantially as described.

4. In a railway-tie, a framework comprising a plate having perforations therein, the metal punched from the perforations forming lugs or arms projecting laterally from the plate alternately on opposite sides, substantially as described.

5. In a railway-tie, a framework comprising a plate having perforations therein, the metal punched from the perforations forming lugs or arms projecting laterally from the plate alternately on opposite sides, the whole being incased or embedded in cement, substantially as described.

6. In a railway-tie, a framework comprising a plate having several rows of perforations therein, the metal punched from the said perforations forming several rows of lugs or arms projecting laterally from said plate on each side thereof, substantially as described.

7. In a railway-tie, a framework comprising a plate having several rows of perforations therein, the metal punched from the said perforations forming several rows of lugs or arms projecting laterally from said plate on each side thereof, the whole being incased or embedded in cement, substantially as described.

8. In a railway-tie, a framework comprising a plate, a rail chair or support comprising a substantially central seat for the rail, flanges on opposite sides of said seat, and downwardly-projecting lugs or feet straddling the aforesaid plate and riveted thereto, substantially as described.

9. In a railway-tie, a framework comprising a plate having a series of arms projecting laterally therefrom on each side thereof, a rail chair or support comprising a substantially central seat for the rail, flanges on opposite sides of said seat, and downwardly-projecting parallel lugs or feet straddling the aforesaid plate and riveted thereto, substantially as described.

10. In a railway-tie, a rail chair or support comprising a substantially central seat for the rail, flanges on opposite sides of said seat, and downwardly-projecting lugs or feet, arranged parallel with each other and riveted or bolted together, substantially as described.

11. In a railway-tie, a rail chair or support having a substantially central seat for the rail, flanges on opposite sides thereof, downwardly-projecting lugs or feet, arranged parallel with each other and riveted or bolted together, and strengthening-ribs under the seat, substantially as described.

12. In a railway-tie, a plate, a rail chair or support riveted or bolted thereto and having a substantially central seat for the rail, flanges projecting upwardly from said chair, means connecting said flanges, a rail-securing device, and a wedge coacting with said means and securing the rail-securing device in place, substantially as described.

13. In a railway-tie, a rail chair or support having a seat for the rail, flanges projecting upwardly from said rail-chair, means connecting said flanges, means for holding the rail in position, and a notched wedge coacting with said means, substantially as described.

14. In a railway-tie, a rail chair or support having a seat for the rail, flanges projecting upwardly from said rail-chair, means as a spike or pin connecting said flanges, and a securing device coacting with said means comprising a pair of bars or wedges with a space between them for the operating-lever, substantially as described.

15. In a railway-tie, a framework comprising a plate having a series of lugs projecting laterally therefrom on each side thereof and wings projecting from the ends thereof, substantially as described.

16. In a railway-tie, a framework comprising a plate having a series of lugs projecting laterally therefrom on each side thereof and wings projecting from the ends thereof, on opposite sides of the plate, substantially as described.

17. In a railway-tie, a framework comprising a plate having a series of integral arms or lugs projecting laterally from each side thereof and wings projecting from the ends thereof on opposite sides of the plate, substantially as described.

In testimony whereof I affix my signature, in the presence of two witnesses, this 24th day of January, 1901.

CHARLES COPPAGE HARRELL.

Witnesses:

E. J. PERRY,

L. C. TOOLE.