No. 793,954. PATENTED JULY 4, 1905.

B. F. PRITCHARD

RAIL JOINT.

APPLICATION FILED OCT. 12, 1904.

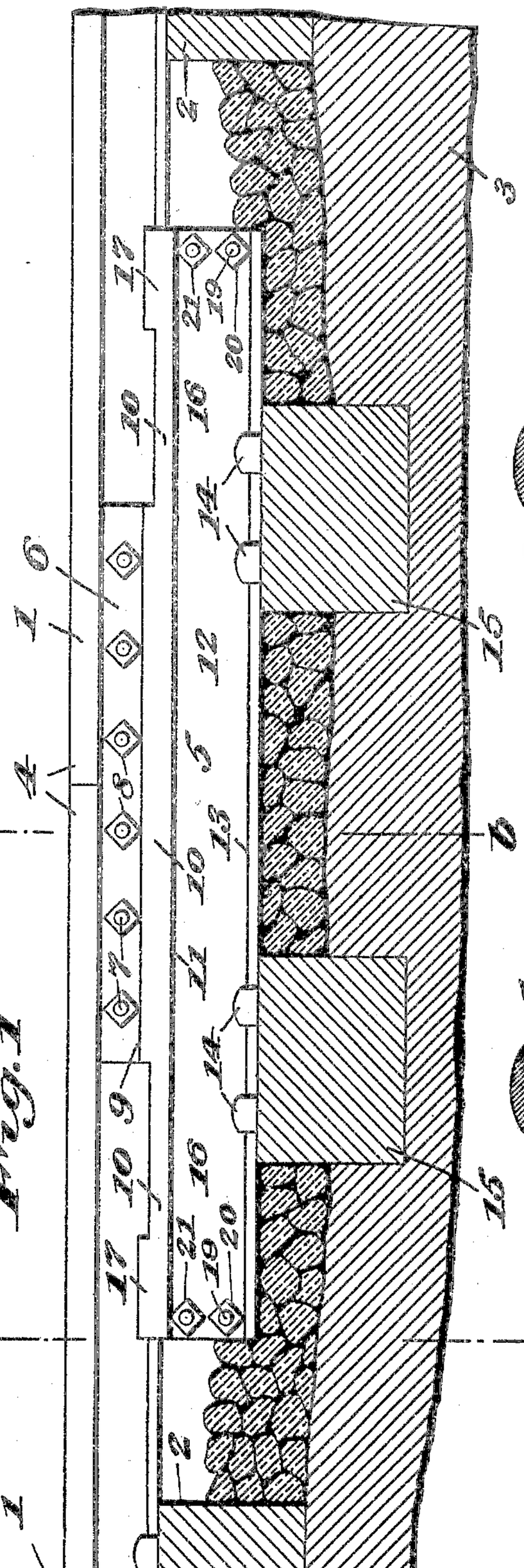

Fig. 1

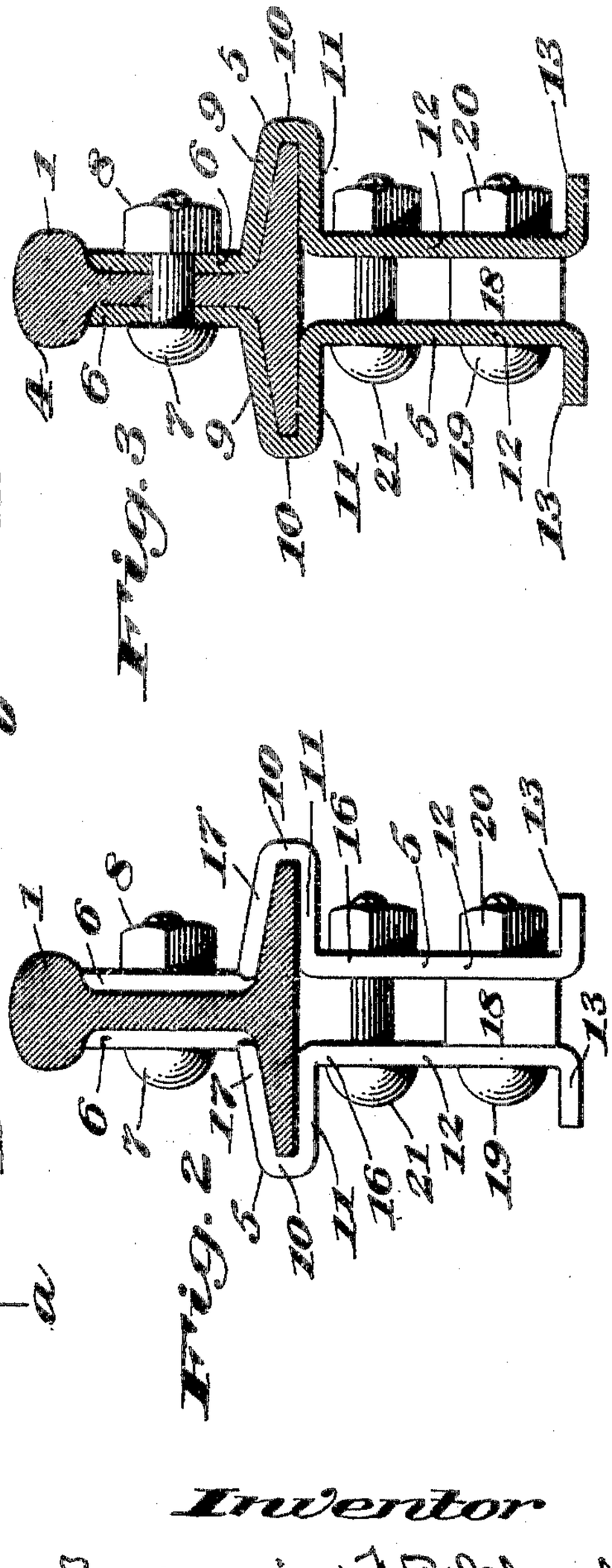

Fig. 3

Fig. 2

Witnesses
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No. 793,954. Patented July 4, 1905.

UNITED STATES PATENT OFFICE.

BENJAMIN F. PRITCHARD, OF CHICAGO, ILLINOIS.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 793,954, dated July 4, 1905.

Application filed October 12, 1904. Serial No. 228,548.

To all whom it may concern:

Be it known that I, BENJAMIN F. PRITCHARD, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain Improvements in Rail-Joints, of which the following is a specification.

This invention relates to certain improvements in rail-joints, and has for its object to provide a device of this character of a simple and comparatively inexpensive nature and of a strong and durable construction which shall serve to strengthen and reinforce the rail ends at the joint in such a way as to prevent unequal depression thereof, whereby pounding of the trucks upon the rail ends is prevented and the track is retained in proper condition for passenger traffic for a considerably greater time and without requiring the expense and annoyance of repairs such as are necessary for maintaining tracks having joints of ordinary construction.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved rail-joint whereby certain important advantages are attained and the device is made simpler, cheaper, and stronger and is otherwise better adapted and made more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a sectional view taken lengthwise of the track and vertically through the ties and road-bed at a rail-joint constructed according to my invention. Fig. 2 is a vertical section taken transversely through the rail in the plane indicated by line *a a* in Fig. 1. Fig. 3 is a view similar to Fig. 2, but taken through the rail-joint in the plane indicated by line *b b* in Fig. 1.

As shown in the views, 1 1 indicate two adjacent rails of a railway-track, and 2 2 indicate the ties whereon said rails are supported at intermediate portions in a well-known way, said ties being rested upon the bed 3 and held in position by ballast in the ordinary manner.

4 4 indicate the adjacent or meeting rail ends, which are approached as close together as possible with due allowance for expansion. At the joint between the rail ends 4 4 is arranged my improved strengthening or reinforcing device, which, as shown on the drawings, comprises two similar parts 5 5, formed from plate or other metal of suitable strength and thickness and each provided at its upper part with a vertically-extended central portion 6, which is adapted to overlap the joint between the rail ends 4 4 after the fashion of an ordinary fish-plate, said portions 6 6 of the respective parts 5 5 of the reinforcing device being adapted to lie flush upon the opposite sides of the rail-web and being held in position thereon by means of bolts 7 7, passed through corresponding openings in the portions 6 6 and rail-web, the extremities of the bolts receiving nuts 8 8 in a well-known way. Below the portions 6 6 each reinforce part or member 5 is provided with an integral downwardly and outwardly sloped or inclined portion 9 9, and said parts 9 of the respective members 5 5 are adapted to fit flush upon the upper surface of the opposite rail-flanges and have at their lower outer extremities downwardly bent or directed integral portions 10 10, adapted to extend down past the outer opposite edges of the respective rail-flanges. Beyond the downwardly-directed portions 10 10 each member 5 has a supporting portion 11, integral with said portion 10 and adapted when the device is in use to extend under and support the flange of the rail at each side of the same, and with said inwardly-directed supporting portions 11 are integrally connected the lower web-like body portions 12 12 of the respective members 5 5, which body portions are, as shown on the drawings, extended inwardly from the outer edge of the respective rail-flanges and are spaced apart sufficiently to stand parallel with each other at points slightly outside of the surfaces of the rail-web, as clearly seen in Figs. 2 and 3. Each of the body portions 12 is provided at its lower edge with an integral outwardly bent or directed flange 13, and when the re-

inforcing members are in position the said lower flanges 13 of the body portions of the respective members 5 5 are adapted to rest upon ties 15 15, sunk in the road-bed between the first-named cross-ties 2 2 and sufficiently depressed below the level of said first-named ties 2 to permit said flanges 13 to rest securely upon their upper surfaces without requiring any elevation or depression of the rails at the joint. The ties 15 15 are spaced apart from each other, as seen in Fig. 1, sufficiently to insure the location of one of said ties upon each side of the rail-joint formed at the meeting rail ends 4 4.

The body portions 12 12 of the reinforce members 5 5 have, together with the supporting portions 11, portions 10, and lower flanges 13, extended end portions 16, which are directed beneath the rails 1 1 at points beyond the engagement of the joint-lapping portions 6 6, so as to afford a secure and firm support for the rails at such points, the said extended end portions 16 16 of the members 5 being provided at their extremities with lugs or arms 17, which are lapped over in opposite directions inwardly upon the opposite rail-flanges, as clearly shown in Figs. 1 and 2, the said arms 17 being integrally produced upon the extremities of the flanges or portions 10, which take across the outer edges of the rail-flanges. This arrangement insures the clamping of the rail-flange to the reinforce at the extremities of the extensions 16 thereof.

To maintain the members 5 5 of the reinforce spaced apart, I provide blocks 18 18, held between the extremities of the extensions 16 at opposite ends of the reinforce, the said blocks 18 being located adjacent to the lower edges of the body portions 12 12 of the respective members 5 and being held in position by means of bolts 19, passed through them and provided with nuts 20. Above the blocks 18 other bolts are passed through the opposite ends of the reinforce members and provided with nuts, as shown at 21, this arrangement serving to hold the two members 5 5, of which each reinforce is formed, in relation and connected preparatory to being applied to the rail ends for use. By this connected arrangement of the reinforce members a great convenience is effected in applying the members to a rail-joint, since the upper portions 6 6 may be wedged apart in any preferred way to permit the insertion of the rail ends between them, after which the bolts 7 7 and nuts 8 8 may be applied for holding the reinforce members in relation with the rail ends.

The reinforce being rested at its ends securely upon the ties 15 15, which are depressed to give them more secure support on the bed, affords a rigid support for the meeting rail ends, so that said rail ends, which are directly rested upon the supporting portions 11 11 of the reinforce members, as clearly shown on the drawings, are securely held against depression, and more especially against independent depression, and in this way it will be evident that the pounding of the wheels in passing from a depressed rail end to a slightly-elevated rail end is altogether avoided and the consequent wear and tear on the rolling-stock and rails, together with the annoying noise and cost and inconvenience of repairs, are eliminated.

The improved reinforce is of an extremely simple and inexpensive nature and is especially well adapted for use by reason of the economy resulting from the elimination of pounding and wear of the rail ends and wheels, and it will also be obvious that the device is capable of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts of the device herein set forth in carrying out my invention in practice.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A reinforce for rail-joints comprising members adapted for application at opposite sides of the rail ends and having central upwardly-extended portions adapted to be lapped on the rail-web, and provided with supporting portions connected with said upper portions and extended beneath opposite sides of the rail-flange and with body portions directed downwardly below and integrally connected with said supporting portions, the extremities of said body portions and supporting portions of the respective members being extended beyond the ends of said central upper portions.

2. A reinforce for rail-joints comprising members adapted for application at opposite sides of the rail ends and having central upwardly-extended portions adapted to be lapped on the rail-web and provided with supporting portions connected with said upper portions and extended beneath opposite sides of the rail-flange and with body portions directed downwardly and integrally connected with said supporting portions, the extremities of said body portions and supporting portions of the respective members being extended beyond the ends of said central upper portions and having arms engaged over the opposite sides of the rail-flange.

3. A reinforce for rail-joints comprising members adapted for application at opposite sides of the rail ends and having upper portions to be lapped on the rail-web and provided with supporting portions connected with said upper portions and extended beneath opposite sides of the rail-flange and with body portions directed downwardly below and integrally

connected with said supporting portions in combination with ties on which the rails are supported and other ties at a lower level than the first-mentioned ties and whereon the body portions of the reinforce members are supported.

In testimony whereof I have hereunto signed my name, at Chicago, Illinois, this 10th day of August, 1904, in the presence of two subscribing witnesses.

BENJAMIN F. PRITCHARD.

Witnesses:

J. D. CAPLINGER,

W. MOORE.