C. WEANER.

FASTENER FOR RAILROAD RAILS.

APPLICATION FILED SEPT. 10, 1910.

978,798.

Patented Dec. 13, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

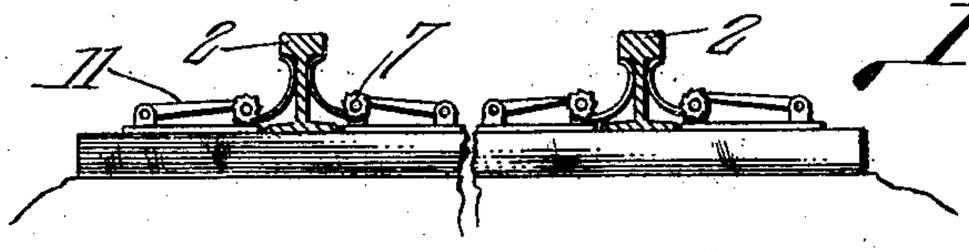

Fig. 2.

Fig. 6.

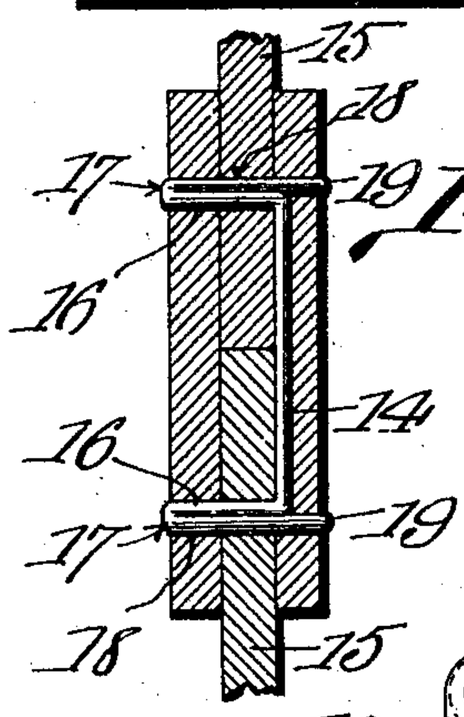

Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 3.

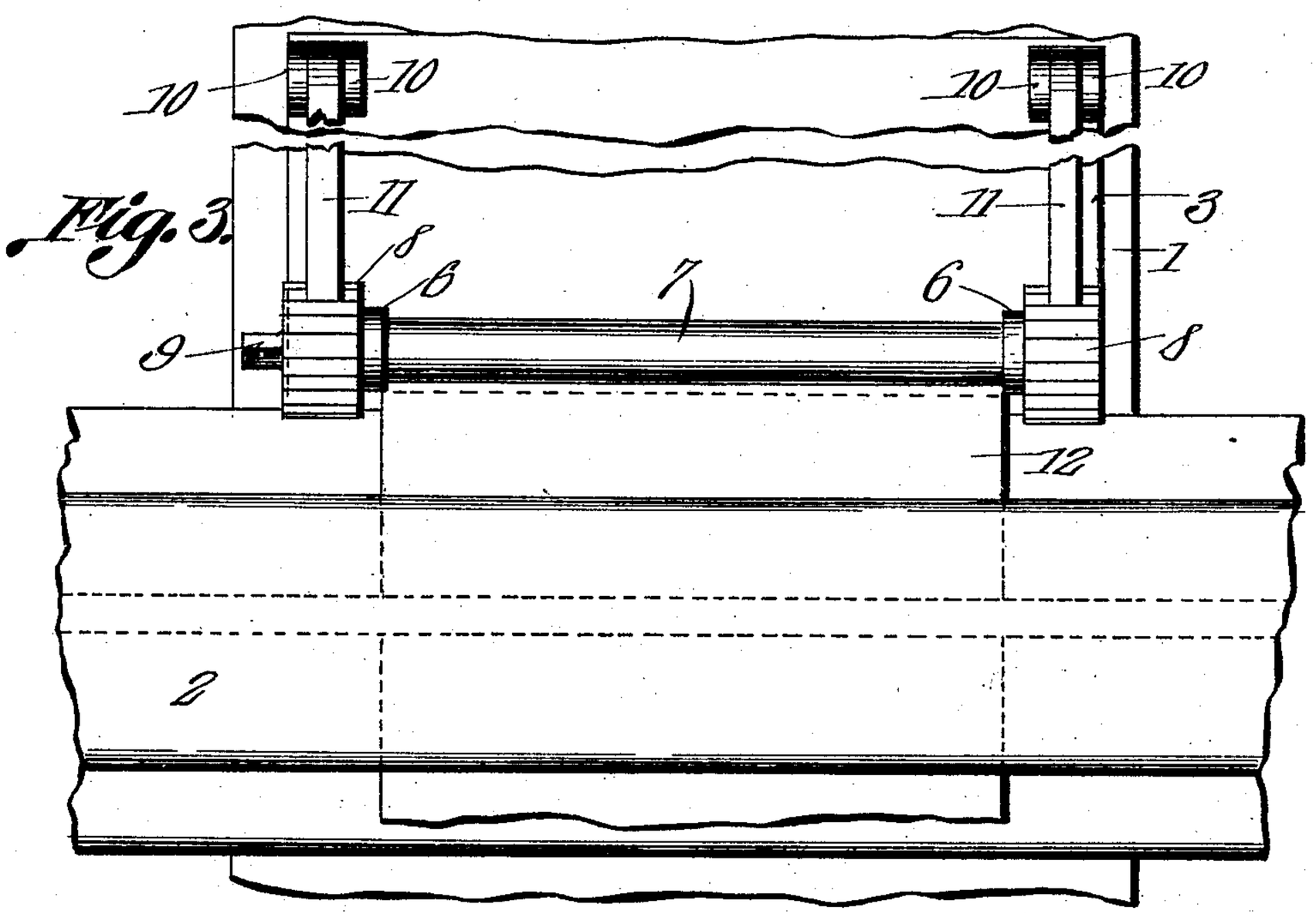
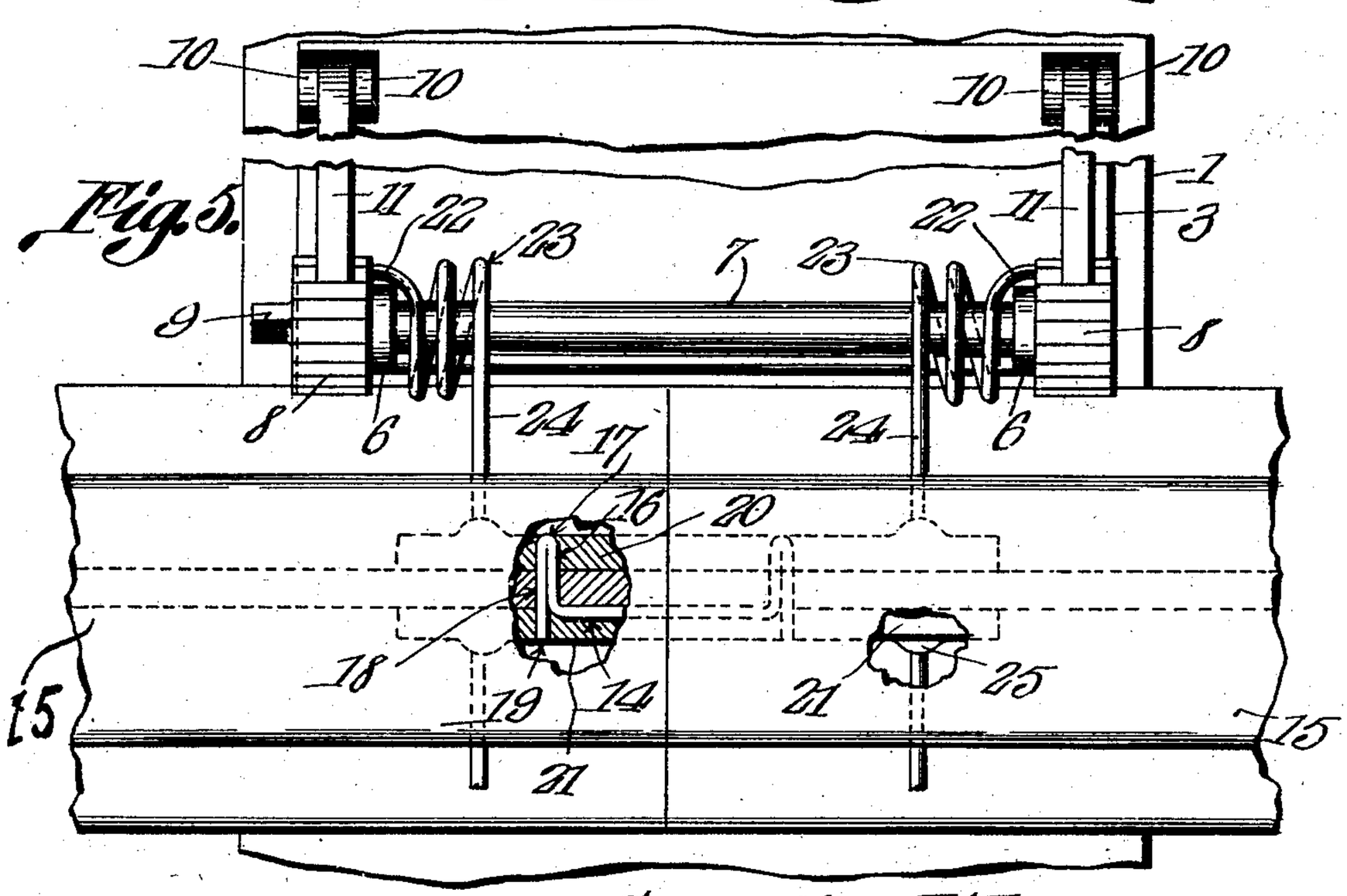


Fig. 5.



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FASTENER FOR RAILROAD-RAILS.

978,798. Specification of Letters Patent. Patented Dec. 13, 1910.

Application filed September 10, 1910. Serial No. 581,432.

To all whom it may concern:

Be it known that I, CORNELIUS WEANER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Fastener for Railroad-Rails, of which the following is a specification.

It is one object of this invention to provide a novel means for connecting the rails of a railroad track with the ties, in such a manner that the transverse movement of the rails upon the ties may be limited, without the use of spikes, rail chairs or the like.

Another object of the invention is to provide novel means for connecting the adjacent ends of a pair of railroad rails, to limit the longitudinal separation of the rails.

Another object of the invention is to provide spring means for holding the railroad rails against transverse movement upon the ties, and to provide novel means for adjusting the spring tension upon the rails.

In the drawings, Figure 1 shows the invention in side elevation; Fig. 2 is an enlarged detail, showing a portion of the device in side elevation, the rail being sectioned; Fig. 3 is a top plan of the device depicted in Fig. 2; Fig. 4 is a side elevation of a modified form of the invention; Fig. 5 is a top plan showing a still further modification, parts being broken away; and Fig. 6 is a horizontal section upon the line A—B of Fig. 4.

In the drawings, the tie is denoted by the numeral 1. This tie may be of wood, metal, concrete, or any other of the common structural materials.

The rail is denoted generally by the numeral 2.

The invention further includes springs adapted to bear upon opposite sides of the rail, and means for adjusting the tension of these springs. These adjusting means may be secured to the tie 1 in any manner. If desired, tie plates 3 may be employed. At this point it may be stated that the springs and the adjusting means therefor, which are located upon opposite sides of the rails 2, are identical in construction. In Fig. 2 of the drawings, the spring and the adjusting means therefor, which are located upon one side of the tie are shown. The description will be confined to but one of these structures, it being understood that the structures upon both sides of the rail 2 are identical in form.

The tie plates 3, when the same are employed, are provided with depending lugs 4, of which there may be any number. These lugs 4, as clearly shown in Figs. 2 and 4, are adapted to fit in recesses 5 in the tie 1. When a concrete tie is employed, the lugs 4 may be mounted in the tie at the time the tie is manufactured. If desired, however, the recesses 5 may be fashioned in the tie, the lugs 4 being slipped into these recesses 5, after the tie 1 has been mounted in the track. The plate 3 is provided, adjacent the rails 2, with upstanding ears 6. A shaft 7 is journaled for rotation in these ears 6, and ratchets 8 are secured to the shaft 7. These ratchets 8 are adapted to engage the remote faces of the ears 6, the ratchets 8 thus constituting a means for preventing the shaft 7 from having longitudinal sliding movement in the ears 6. The shaft 7 and the ratchets 8 constitute a tie carried rotatable member. The shaft 7, at one end, protrudes beyond one of the ratchets 8, this protruding end of the shaft 7 being squared, as shown at 9, to receive a wrench or key, whereby the shaft 7 may be rotated. Spaced from the ratchets 8, and alined with the same, transversely of the track, are pairs of spaced ears 10, between which are pivoted pawls 11, adapted to engage the ratchets 8. By comparing Figs. 2 and 3, it will be seen that a spring plate 12 is secured to the shaft 7, to outstand radially therefrom. This spring plate is adapted to bear against the rail 2, the intermediate portion of the spring plate 12, referring particularly to Fig. 2, bearing against the web of the rail, the free end of the spring plate bearing against the lower face of the ball of the rail.

The structure hereinbefore described, is adapted to be employed in the intermediate portion of the rail 2; that is, at points remote from the meeting ends of a pair of rails. Where the ends of the rails meet, a slightly different construction may be employed. Such a construction is shown in Figs. 4 and 5. Referring, then, to Fig. 5 it will be seen that the rail sections 15 are

connected by a staple member, the intermediate portion 14 of which lies along the faces of the webs of the sections 15. The ends of this staple member are rectangularly bent as shown at 16, these portions 16 being sharply bent upon themselves as at 17, and carried backwardly, as at 18, in contact with the portions 16. The ends 19 of the portions 18 of the staple member, protrude beyond the intermediate portion 14 which lies against the faces of the webs of the rail sections. The parts 16 and 18 of the staple member form arms adapted to extend through the webs of the rails, and through a fish plate 20 which is applied to the rails 15 at one side thereof. The ends 19 of the staple member constitute fingers, adapted to extend through a fish plate 21, which is applied to the opposite side of the webs of the sections 15, this fish plate 21, of course, housing the intermediate portion 14 of the staple member.

Referring to Figs. 5 and 6 it will be seen that the fish plates 20 and 21, and the rail sections 15 are, by means of the staple member, held together, so that the rail sections 15 cannot be separated longitudinally. This staple member is also employed in the form of invention depicted in Fig. 4, and subsequently to be described.

In the form of the invention shown in Fig. 5, the rail engaging spring is altered slightly from the showing of Figs. 2 and 3. Referring to Fig. 5, it will be seen that the spring is helical in construction, two of these helical springs being employed upon each of the shafts 7. Each helical spring is secured at one end, as denoted by the numeral 22, to one of the ratchets 8, the helical body 23 of the spring surrounding the shaft 7 between the ears 6. The end 24 of the helical spring projects toward the web of the rail. If desired, the ends 24 of the helical springs may be provided with terminal enlargements or heads 25, which bear against the fish plates 20 and 21.

As shown in Fig. 4, the helical springs of Fig. 5 may be replaced by spring plates 27, these spring plates being similar to the spring plates 12 of Fig. 2, the spring plates in Figs. 2 and 6 being flat pieces of resilient metal. The spring plates 27 of Fig. 4 may be shod along their upper edges with beveled shoes 28 adapted to bear against the fish plates 20 and 21. The shaft 26 may, as shown in Fig. 4, be enlarged in diameter over the showing of Figs. 2 and 3, in order to facilitate the securing of the plate 27 to the shaft.

The operation of the device depicted in Fig. 2 is as follows, it being recalled that this form of the invention is adapted to be employed at points remote from the meeting ends of the rails. A wrench or key is applied to the squared end 9 of the shaft 7, and the shaft rotated. By this operation, the spring plates 12 will be positioned substantially as shown in Fig. 2, the rails 2 being held in place against transverse movement. When the desired tension in the springs 12 has been secured, the rotation of the shaft 7 may cease, whereupon the pawls 11 engaging the ratchets 8, will serve to hold the shafts 7 and the spring plates 12 in the positions which they have assumed. Obviously, the pawl and ratchet mechanism 8—11 constitutes step-by-step means for adjusting the tension of the springs 12.

In the form of the invention shown in Fig. 5 the operation of the device is substantially the same as that hereinbefore set forth; saving that when the shaft 7 is rotated, the heads 25 upon the ends 24 of the helical springs, will be pressed against the fish plates 20 and 21. Not only will the rails 15 thus be held against transverse movement, but the fish plates 20 and 21 will be held, respectively, on the arms 16—18 and upon the fingers 19 of the staple member.

The device shown in Fig. 4 is similarly operated. This figure serves to illustrate the fact that the flat spring plates may be employed in connection with the fish plates 20 and 21. This figure further illustrates the fact that, by continuing the rotation of the shaft 26, the shod edges 28 of the spring plates 27 may be slid downwardly along the fish plates 20 and 21, from the positions shown in Fig. 2, to those shown in Fig. 4. By this operation, the pressure of the springs against the fish plates 20 and 21 will be greatly increased. This disposition of the spring plates 27 may be at the joints between the rails, upon curves, and at other places where strong spring tension against opposite sides of the railway rail structure is demanded.

What is claimed is:

1. In a device of the class described, springs adapted to bear against opposite sides of a railroad rail structure, and means for adjusting the tension of the springs.

2. In a device of the class described, springs adapted to bear against opposite sides of a railroad rail structure; and step-by-step mechanism for adjusting the tension of the springs.

3. In a device of the class described, springs adapted to bear against opposite sides of a railroad rail structure; and pawl and ratchet mechanism for adjusting the tension of the springs.

4. In a device of the class described, a rotatable member including a shaft and a ratchet fixed upon the shaft; a rail engaging spring secured radially upon the rotatable member; and a pawl to engage the ratchet.

5. In a device of the class described, tie plates provided with upstanding ears; a rotatable member including a shaft jour-

naled in the ears and shaft carried ratchets engageable by the ears to prevent a longitudinal sliding of the shaft; plate carried pawls to engage the ratchets; and a rail engaging spring secured radially upon the rotatable member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CORNELIUS WEANER.

Witnesses:
SARAH MILLIGAN,
W. HOOD.