No. 775,480. PATENTED NOV. 22, 1904.

C. J. SWINK.

RAILROAD TIE.

APPLICATION FILED JUNE 1, 1904.

NO MODEL.

Fig. 1.

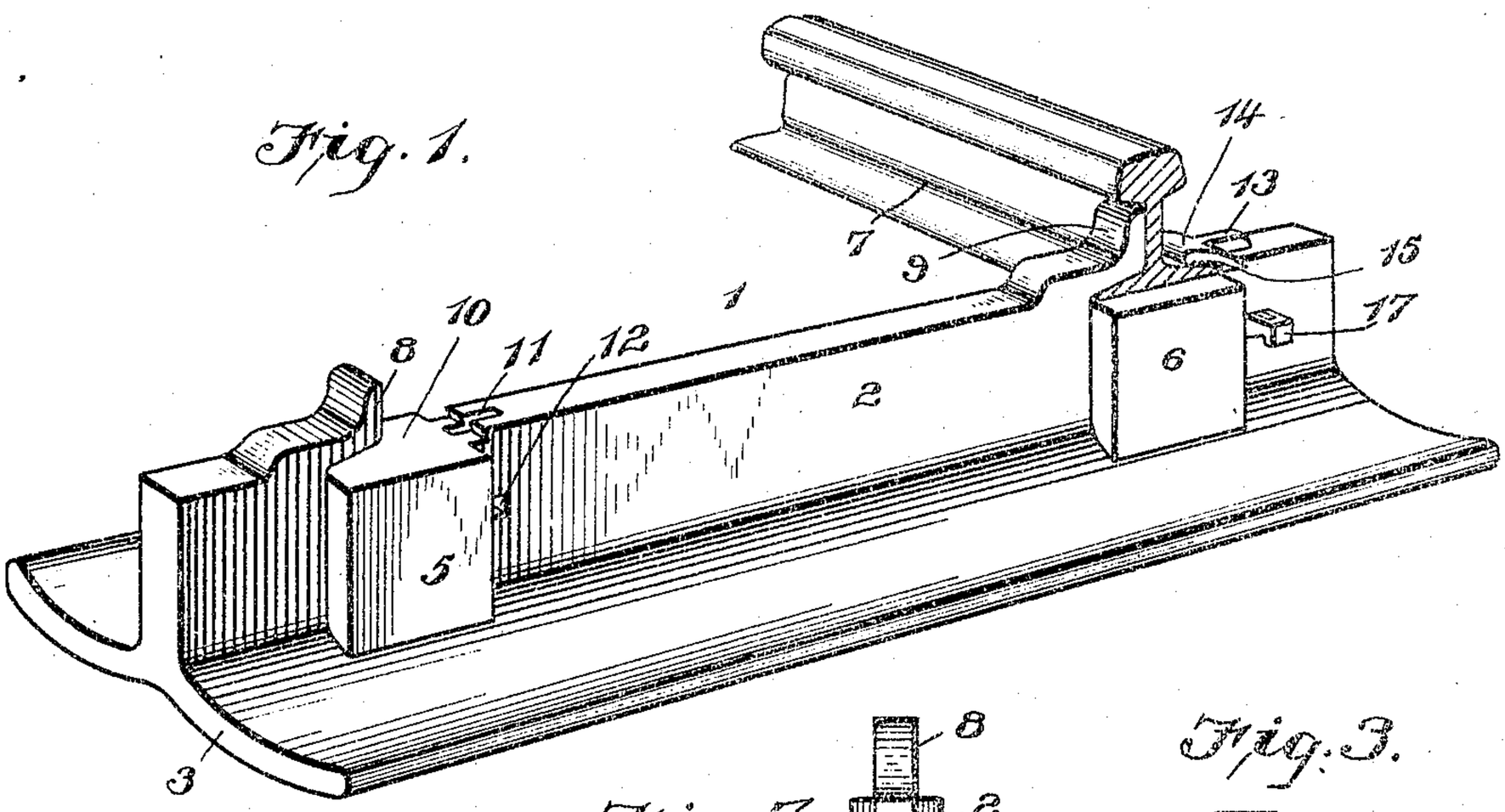


Fig. 7.

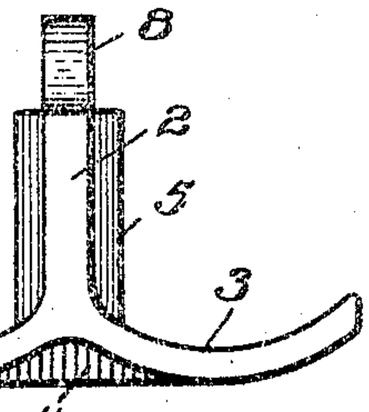


Fig. 3.

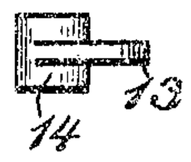


Fig. 2.

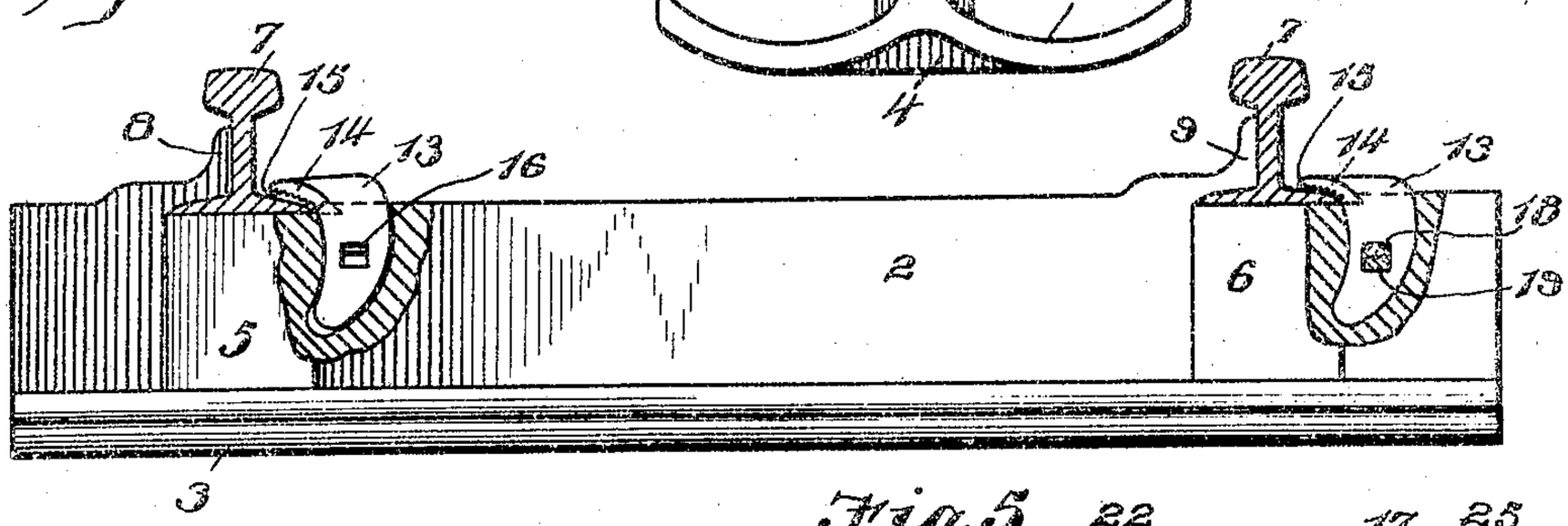


Fig. 5.

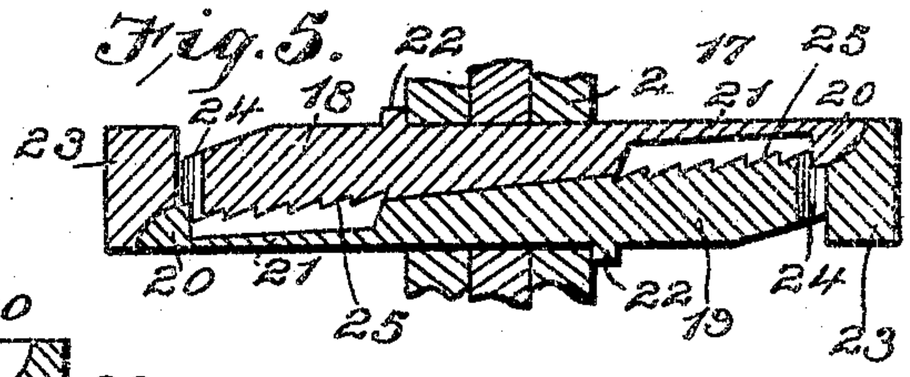


Fig. 4.

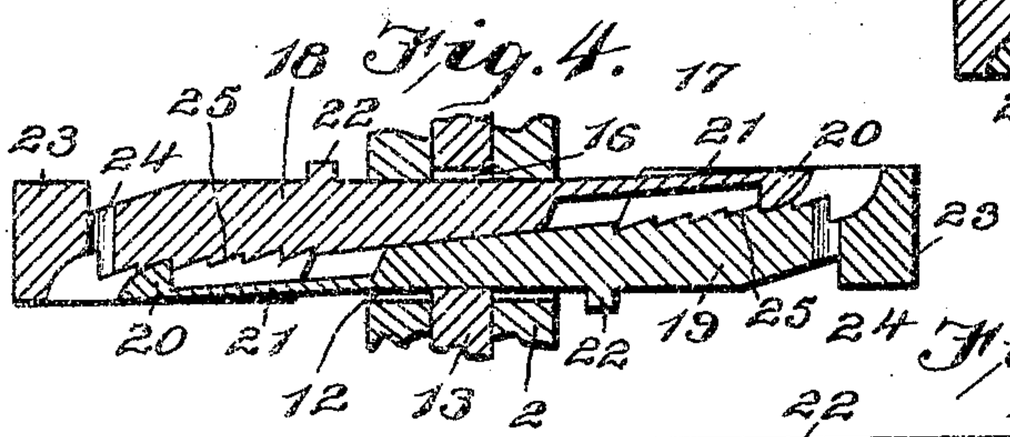
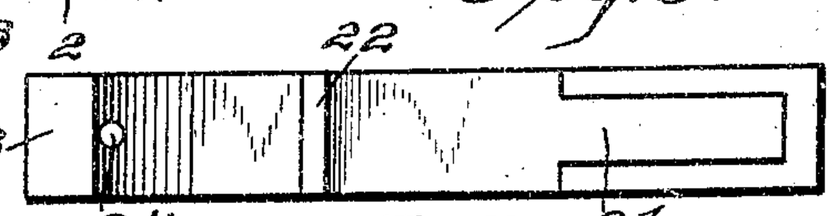


Fig. 6.



Witnesses

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No. 775,480. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

CLARENCE J. SWINK, OF LEBANON, OHIO.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 775,480, dated November 22, 1904.

Application filed June 1, 1904. Serial No. 210,628. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE J. SWINK, a citizen of the United States, residing at Lebanon, in the county of Warren and State of Ohio, have invented certain new and useful Improvements in Railroad-Ties; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to railroad-ties, and has for its object to provide a device of this class which will effectually secure and rigidly hold the railroad-rails in position and for preventing the same from getting out of alinement.

With this object in view my invention consists in the novel construction of the railroad-ties and also in the novel means of securing the rails thereon.

My invention also consists in certain other novel features of construction and in combinations of parts, which will be first fully described, and afterward pointed out in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view showing a tie and a portion of a rail in position. Fig. 2 is an elevation, partly in section. Fig. 3 is a top plan of the rail-holding key. Fig. 4 is a sectional view of the compound wedge locking device. Fig. 5 is a like view showing the wedges driven together. Fig. 6 is a top plan of the compound wedge locking device, and Fig. 7 is an end view of the tie.

Like numerals of reference indicate the same parts throughout the several figures, in which—

1 indicates the tie, which is composed of the vertical wall 2 and the curved base 3, having a web 4 for strengthening the same, the particular form of the base 3 being for the purpose of more securely ballasting and the web 4 strengthening the same. The vertical wall 2 of the tie is provided with enlargements 5 and 6, (shown in Fig. 1,) upon which enlargements the base of the rail 7 rests in order to give a wider base of support to said rail. Referring particularly to Fig. 1, it will be seen that to the left of the enlargement 5 is a raised hooked portion 8, and associated with enlargement 6 is a similar portion 9, attention being directed to the fact that both of said portions 8 and 9 are on the left of the enlargements 5 and 6 for a purpose which will be hereinafter fully described. The tops or bearing portions of the enlargements 5 and 6 are slightly cut away at 10, so that the surface of the enlargements 5 and 6 are somewhat lower than the upper edge of wall 2, as clearly shown in Fig. 1. In this depression the rail 7 sits, and to the right of the depressions is a vertical slot 11, and passing transversely through the wall 2 and through said slot 11 is a preferably square opening 12.

13 indicates the rail-locking key, which is shaped preferably as shown in Fig. 2, and is provided with a laterally-extending head 14, having its bottom preferably serrated at 15, as shown in Fig. 2, for the purpose of biting into the base of the rail to more securely hold the same to the tie and for effectually preventing any lateral movement of the rail. Said key 13 is provided with a preferably square opening 16, as shown, for a purpose which will be presently described.

17 indicates the compound wedge locking device, which is composed of two wedge members 18 and 19. As shown in Fig. 4, said wedge members 18 and 19 are provided at their smaller ends with a hook 20, and the portion of the wedge member between the hook 20 and the inclined portion is formed comparatively thin, as shown at 21, so as to give a springy resilient function to the hook 20. Formed on the wedge portions 18 and 19 is a lug or projection 22, and the larger ends of the said wedge portions are provided with a vertical wall 23 and a vertical opening 24 just inside of said portions 23. It will be noted that the inclined surfaces near said openings 24 are provided with teeth 25, as clearly shown.

Having thus described the several parts of my invention, its operation is as follows: In order to secure the rail to the tie, the base of the rail is inserted under the hooked portion 8 or 9, said portion 8 or 9 being shaped to con-

form to the rail and to engage the web of the same. The key 13 is then driven into the vertical slot 11, the opening 16 in said key being adapted to register in line with the transverse opening 12 in the wall 2 of the tie. After driving the key into position the two wedge locking members 18 and 19 are inserted in the transverse opening 12 from each side of the wall 2. The said locking members are driven together, and as the inclined surfaces of the said members pass together they exert a pressure to draw the key 13 farther down into the slot 11, causing the serrated head 14 of the key to bite into the base of the rail. As shown in Fig. 4, the wedge members 18 and 19 are not driven to their farthest point, and the opening 16 in the key 13 is shown just out of alinement with the transverse opening 12 in the wall 2, the device being designed so that when the rail is first secured to the tie the wedge members when driven to this position will cause the key 13 to bite into the base of the rail, so that any wear may be taken up by further driving the wedge members together until they come into the position as shown in Fig. 5, which also shows the opening 16 in the key coinciding exactly with the transverse opening 12 in the wall 2. When in this position, the lugs 22 on the wedge members 18 and 19 are in contact with the wall 2, so that all lateral movement or play between the parts is eliminated.

In order to disengage the compound wedge locking members so as to remove the key in order to repair the rail or in order to insert a new rail, a suitable instrument is driven into the openings 24 in the wedge members, so as to drive the hook 20 of said members out of engagement with the toothed portions thereof. The wedge members can then be drawn apart and the key removed from the slot 11 by any suitable instrument.

It will be noted that the rail-engaging portions 8 and 9 of the tie are on the left of the enlargements 5 and 6, so that after the rails are disengaged from the tie the tie may be removed by simply sliding the same laterally from under the rails without in any way interfering with the rails or without disturbing any of the remaining ties. In this manner any single tie can be removed and replaced.

It is my intention to use a cement ballast in connection with this device, and, if convenient, to cover the entire tie with cement with the exception of the key, so as to protect the same from atmospheric action and in order to prolong the life of the tie, which is to be constructed of steel or other suitable metal.

Having thus fully described my invention, I do not wish to be understood as limiting myself to the exact construction as herein set forth, as various slight changes may be made therein which would fall within the limit and scope of my invention, and I consider myself clearly entitled to all such changes and modifications.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a railroad-tie comprising a base and vertical portion, a rail-engaging portion on said vertical portion, a rail-engaging key adapted to be inserted in said vertical portion, and a compound wedge locking device adapted to be passed through said vertical portion and through said key, substantially as described.

2. A railroad-tie comprising a base and a vertical portion, a rail-engaging portion thereon, a rail-engaging key having a serrated head and adapted to be inserted in said vertical portion and a locking device composed of two wedge members adapted to be passed through said vertical portion and through said key, substantially as described.

3. A railroad-tie comprising a curved base and a vertical portion, a web under said base, a rail-engaging portion on said tie, a key adapted to enter said tie and means for locking the key in engagement with the rail, substantially as described.

4. A railroad-tie comprising a rail-engaging portion, a key adapted to enter said tie, a locking device consisting of two wedge members having a portion of their contiguous surfaces toothed, and means formed on said wedge portions for engaging said toothed surfaces, substantially as described.

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

CLARENCE J. SWINK.

Witnesses:
WILLIAM R. KEMPER,
CHARLES R. SOUTHARD.