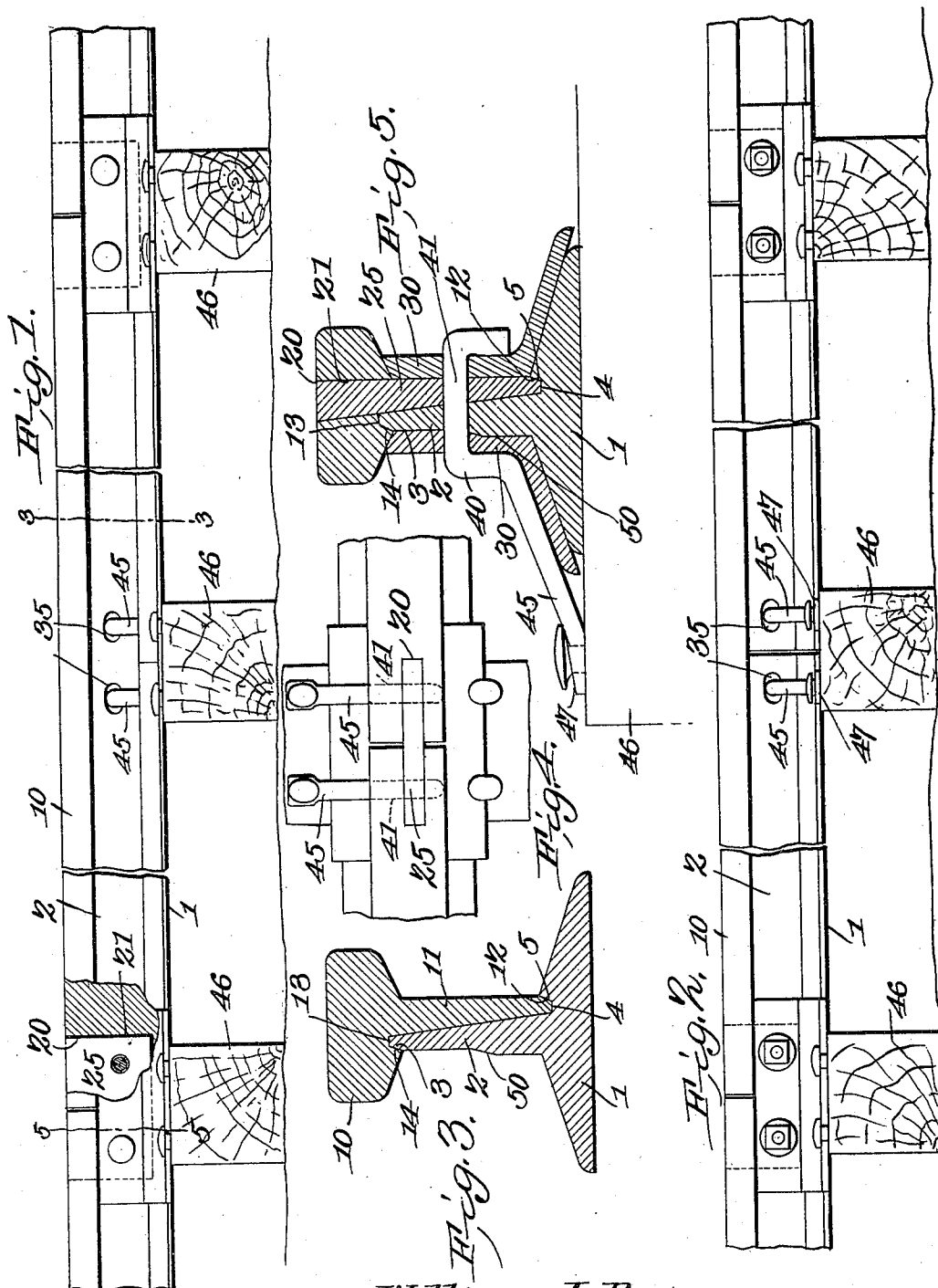


No. 837,454.

PATENTED DEC. 4, 1906.

W. J. DEVERS.
STEEL RAIL.

APPLICATION FILED JUNE 13, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM J. DEVERS, OF SCRANTON, PENNSYLVANIA.

STEEL RAIL.

No. 837,454.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed June 13, 1906. Serial No. 321,511.

To all whom it may concern:

Be it known that I, WILLIAM J. DEVERS, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented a new and useful Steel Rail, of which the following is a specification.

This invention relates to steel rails and means for securing them upon a road-bed and for connecting them together.

The object of the invention is to provide a simple and improved steel rail which can be manufactured at small expense and which can be easily and quickly repaired whenever its head becomes worn or misshaped.

A further object of the invention is to provide improved means for fastening two sections of a rail together or for securely applying a fish-plate to the rail in such manner as to prevent it from working loose and at the same time allowing it to be readily removed whenever necessary.

A further object of the invention is to provide an improved form of splice-bar arrangement particularly adapted for use in connection with the improvements of the present invention, by means of which pounding at the rail-joints can be prevented.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the following claims without departing from the spirit of the invention or sacrificing any of its advantages.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation, partly in section, of a rail constructed in accordance with the invention. Fig. 2 is a view in elevation looking at the opposite side of the rail. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a plan view showing one of the splice-bars in position. Fig. 5 is a section on the line 5 5 of Fig. 1.

Like reference-numerals indicate corresponding parts in the different figures of the drawings.

Reference-numeral 1 indicates the rail-base, which according to my invention is formed with an upstanding fin 2, having its upper end beveled on what I shall term its "outer"

side, as indicated at 3. In addition to the upstanding fin 2 the rail-base 1 is formed adjacent the lower end of said fin with a groove 4, the inner wall 5 of which is beveled. In the following description and claims I shall refer to the groove 4 as a "beveled" groove, as it will be understood that either side of said groove may be beveled, if desired.

The rail-head 10 according to the present invention is detachable from the rail-base 1 and is formed with a depending fin 11, the lower end of which is beveled on its inner side, as indicated at 12. Adjacent the upper end of the depending fin 11 the rail-head 10 is formed with a groove 13, having its outer wall 14 beveled, as shown. In using the improved rail of this invention the rail-head 10 is fitted onto the rail-base 1 in such manner that the beveled upper end of the fin 2 of the rail-base projects into the beveled groove 13 of the rail-head, and the beveled lower end of the depending fin 11 projects into the beveled groove 4 of the rail-base, said beveled grooves serving to produce a double wedging action between the rail head and base, so as to hold them securely together and prevent any rattling or loosening. When the rail base and head are fitted together, the upstanding fin 2 of the base and the depending fin 11 of the head fit closely together in contact with each other and are parallel, as shown.

In assembling a continuous rail according to the present invention it is preferable that each of the head-sections overlap two of the base-sections, whereby the joints between the different head-sections and the joints between the different base-sections will be out of line with each other.

In order to prevent pounding at the joints between the different head-sections of the rail, I form each of the head-sections at each of its ends with an open-ended slot 20 and cut away the depending fin 11 immediately under the slot 20, as indicated at 21. When the rail-heads are formed with the slots 20 and are fitted together, it will be obvious that an elongated slot is produced in the rail-head, this slot continuing downward to the rail-base. I fit into this elongated slot a fin-section 25, which is of the same thickness as the depending fin 11 of each rail-head and which is beveled at its lower end to fit into the beveled groove 4 of the rail-base. The upper end of the fin-section 25 terminates flush with the upper surface of the rail-head, so as to form a splice-bar

which is adapted to prevent wearing of the head-sections at the joints, as well as to avoid pounding of the car-wheels. While it is preferable to slot the ends of the rail-heads, as indicated at 20, and to employ the fin-section 25, it will be obvious that, if desired, this arrangement can be omitted and the head-sections can be assembled without providing any splice-bar arrangement at the joints. This latter construction is sometimes preferable where economy of construction is to be considered in the building of a railroad.

While any ordinary or well-known means—such, for example, as the fish-plates 30—can be employed in conjunction with ordinary bolts or other means for fastening the various members of the rail together, still I prefer to employ for this purpose the improved clamping member hereinafter described, by means of which the different members of the rail—such, for example, as the base portion, head portion, and fish-plates—can be securely fastened together and can be readily taken apart whenever desired.

In order to permit my improved clamping member to be used, I preferably form the rail members with non-circular openings 35, which preferably are of oval shape, although they can be of any other irregular contour. The different members of the rail are fitted together so that the non-circular openings 35 register together. The improved clamping member 40, which preferably is formed with an approximately U-shaped gripping portion 41, is fitted through the non-circular openings 35 and rotated so that the opposite sides of the U-shaped gripping portion firmly embrace the different members of the rail and hold them securely assembled.

It will be apparent that the clamping member 40 is adapted to be inserted when held in one position and to be locked securely within the opening 35 when held in another position.

The preferred means for preventing the accidental rotation of the clamping member 40 comprises a handle 45, which when the clamping member is in locked position inclines downward to the upper surface of the sleeper 46 and is provided with an opening or eye 47, adapted to receive a spike which is driven into the sleeper 46 and serves to prevent accidental rotation or disengagement of the clamping member 40 from the rail.

In order to cause the clamping member 40 to secure a very tight grip upon the members of the rail, I form one of said members—such, for example, as the upstanding fin 2 of the rail-base—with a beveled rib or thickened portion 15, which extends in a horizontal direction along the fin below the openings 35. The effect of the beveled rib 50 is to cause the rail to be thicker below each opening 35 than it is at either end of said openings. The clamping member 40 is turned to horizontal

position and is fitted through the non-circular openings 35, so that the opposite ends of its U-shaped gripping portion embrace the thinnest portion of the rail. Then when the handle 45 is turned downward from the horizontal to the vertical position it will be apparent that one end of the U-shaped gripping portion 41 contacts with and rides over the beveled rib 50, and thus serves to draw all the different members of the rail closely together.

It will be obvious that the beveled rib 50 acts as a wedge portion adjacent each of the openings 35, which wedge portion is adapted to cooperate with the clamping member 40 so as to lock the different members of the rail securely together.

It will be apparent that the elongated or non-circular openings 35 in addition to their function of providing a cooperating slot for the clamping member 40 also provide for the necessary expansion and contraction of the rail due to changes in temperature.

The improved rail and rail-fastening of this invention is strong, simple, durable, and inexpensive in construction, as well as thoroughly efficient in use.

It is to be understood that the clamping members 40, which extend through the non-circular openings 35 in the central portion of the rail, as shown in Figs. 1 and 2, are formed with U-shaped gripping portions which are only sufficiently wide to fit against the two sides of the rail, so that one end of the U-shaped gripping portion 41 will contact with the beveled rib 50, and thus lock the two members of the rail firmly together. At the joints between the two rails, however, clamping members having larger gripping portions 41 are employed, so that said gripping portions will be able to extend through not only the wedge portions of the rail, but also through the fish-plates, as indicated in Fig. 5. In this case the beveled ribs 50, if desired, can be placed upon the fish-plates, so as to be in position to be engaged by the U-shaped gripping portions of the clamping members, as previously described.

What is claimed is—

1. A rail having non-circular openings, fish-plates fitted against said rail and having non-circular openings, and a clamping member having a U-shaped portion to engage said non-circular openings and a handle for preventing rotation of the gripping portion.

2. A rail comprising a plurality of detachable parts fitted together and formed with non-circular openings, a wedge portion adjacent each of said openings, and a clamping member adapted to be fitted through said openings in one position and lock the rail parts together when turned to another position to engage said wedge portion.

3. A rail comprising a plurality of detachable parts fitted together and formed with

non-circular openings, a wedge portion adjacent each of said openings, a clamping member adapted to be fitted through said openings in one position and lock the rail parts together when turned to another position to engage said wedge portion, and means for preventing the accidental rotation of said clamping member.

4. A rail comprising a plurality of detachable parts fitted together and formed with non-circular openings, and a clamping member adapted to be fitted through said openings in one position and lock the rail parts together when turned to another position, and means for preventing the accidental rotation of said clamping member, said means comprising a handle connected with the clamping member and adapted to incline downwardly when said member is locked, said handle having a spike-opening at its lower end.

5. A rail comprising a plurality of detachable parts formed with non-circular openings, said rail having a wedge portion adjacent said non-circular openings, and a clamping member adapted to be fitted through said openings in one position and to be locked and tightened by said wedge portion when turned to another position.

6. A rail comprising a plurality of detachable parts having non-circular openings therein, said rail having a wedge portion ad-

jacent said openings, and a clamping member having an approximately U-shaped gripping portion passed through said openings and turned to engage the wedge portion and lock the different parts of the rail together.

7. A rail having a fin formed with a beveled rib and an elongated opening, a fish-plate having an elongated opening fitted against said fin, and a clamping member having an approximately U-shaped gripping portion fitted through said elongated openings and turned so as to engage said beveled rib, said clamping member having a handle formed with a spike-opening.

8. A rail comprising a base having a rib and an upstanding fin, a head having a depending fin, a groove and an open-ended slot at each end thereof, the depending fin being cut away beneath the open-ended slot, and a fin-section fitted into said open-ended slot and engaging the groove in the rail-base, the upper end of said fin-section being flush with the upper end of the rail-head.

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

WILLIAM J. DEVERS.

Witnesses:

MARY E. McNAMARA,
CECILIA M. DEDERS.