

J. H. MORROW.
RAIL JOINT.
APPLICATION FILED NOV. 22, 1910.

989,390.

Patented Apr. 11, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

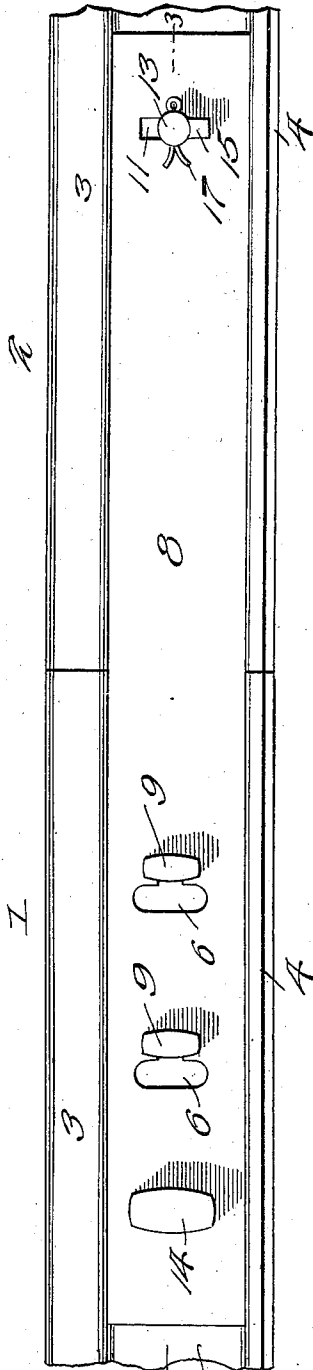
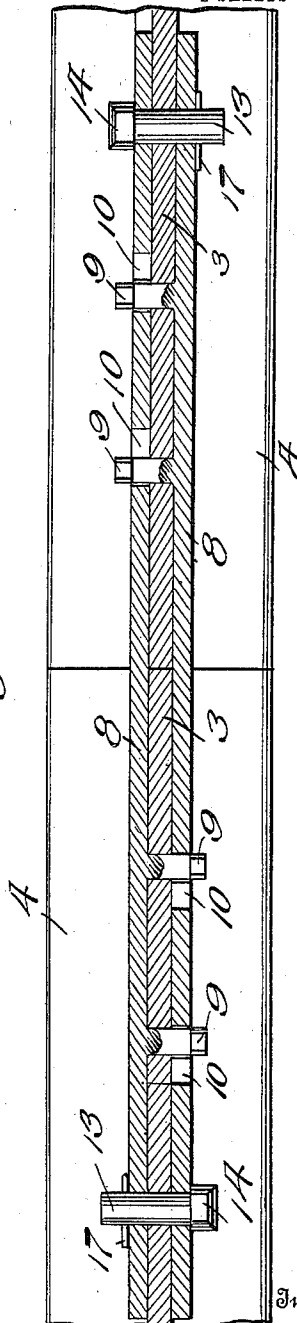


Fig. 3.



Witnesses

Hugh Helt
Wm. J. Smith

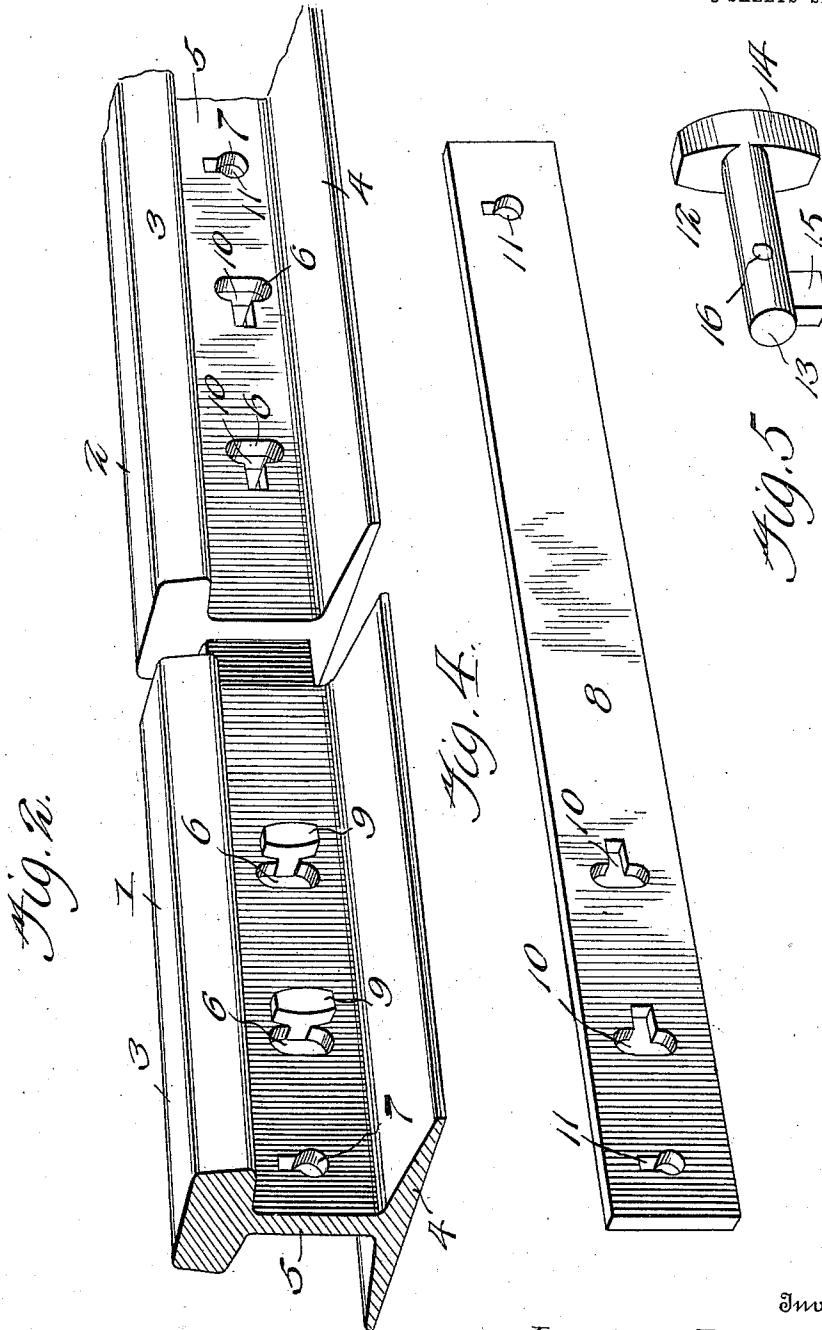
Inventor
Jonathan H. Morrow
By *Victor J. Evans*
Attorney

J. H. MORROW.
RAIL JOINT.
APPLICATION FILED NOV. 22, 1910.

989,390.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 2.



Witnesses

Hugh H. Helt
Wm. J. North

Inventor

Jonathan H. Morrow

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

JONATHAN H. MORROW, OF SLIPPERY ROCK, PENNSYLVANIA.

RAIL-JOINT.

989,390.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed November 22, 1910. Serial No. 593,677.

To all whom it may concern:

Be it known that I, JONATHAN H. MORROW, a citizen of the United States, residing at Slippery Rock, in the county of Butler and State of Pennsylvania, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to devices employed for uniting the adjacent ends of railway rails, and has for its object the production of a simply constructed mechanism whereby the adjacent ends of the rails are firmly united and clamped without the necessity of employing threaded bolts and nuts, but wherein dependence is to be had from friction and wedges to produce the desired result.

The invention consists in certain novel features of construction as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the adjacent ends of the rails with the improvement applied. Fig. 2 is a perspective view of the device, one of the fish plates being removed and the second plate having its T-shaped head projecting through the T-shaped slot of one of the rails and the T-shaped slots of the plate and the second rail alining. Fig. 3 is a longitudinal sectional view taken upon the line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of one of the fish plates. Fig. 5 is a similar view of one of the locking keys.

In the accompanying drawings the numerals 1 and 2 designate the rail ends. Each of these rails 1 and 2 is constructed in the usual manner, each comprising a head 3, base flange 4, and connecting web 5. The webs 5 of the rail sections are preferably centrally provided with a plurality of T-shaped openings 6 which are positioned near the end of the said rail, and each of the webs is further provided with a key-hole slot 7 arranged at a suitable distance away from the T-shaped slots 6. It will be noted by reference to the figures of the drawings that the T-shaped slots of each of the rails are arranged so as to have their longitudinal openings facing toward the ends of each of the said rails.

The numeral 8 designates the fish plates of the joint. These fish plates 8 are both constructed in a substantially similar manner and are provided adjacent one of their ends with a plurality of T-shaped studs 9,

while adjacent their opposite ends the said plates are formed with T-shaped slots 10. Arranged at a suitable distance away from the slots and studs are key-hole slots 11, the same being adapted to aline with the key-hole slots 7 of the rail members when the T-shaped studs 9 engage with the reduced longitudinally extending portion of the T-shaped slots 6. When the members are in their assembled position a key 12 is inserted through the alining key-hole slots. This key 12 comprises a rounded body portion 13 having one of its ends formed with a head 14 and its opposite end formed with a bit 15. The body portion is of a thickness equaling the diameter of the rounded portions of the key-hole slots, while the bit is of a size substantially equaling that of the vertical portion provided by the slot, and the distance between the end of the head 14 and the bit 15 equals the combined thickness of the rail web and fish plates so that when the key is in its locked position the same can be rotated to snugly engage one of the fish plates and to retain the fish plates and rails in their assembled position. The inner face of the bit is preferably inclined or beveled so as to afford a wedging action when the said bit is rotated. In order to prevent the accidental removal of the key I have provided the body of the same with a slot 16 which is arranged transversely of the bit 15, and this slot is adapted for the reception of a cotter pin 17.

It is, of course to be understood that the studs 9 and slots 10 of one of the fish plates are arranged upon the said plate so as to co-act with the slots and studs of the opposite fish plates and in assembling the device the rails are spread a suitable distance apart so as to receive the heads of one of the fish plates to have their T-shaped slots aline with the T-shaped slots of the said fish plate. When this is accomplished the second fish plate is positioned so that its openings receive the heads of the studs 9 of the first fish plates and to have its studs project through the alining T-shaped slots of the second rail and the slots of the first fish plate. When this is accomplished the rail and fish plates are forced together so as to bring the key-hole slots of the fish plates and the rails into alinement, when the key 12 is inserted.

From the above description, taken in connection with the accompanying drawings, it

will be noted that I have provided a comparatively simple, cheap and thoroughly effective device for the purpose intended, one wherein the meeting ends of a pair of rails
5 are securely and effectively locked without the employment of threaded bolts or similar devices which are apt to become disengaged owing to the thumping of the rails due to the rolling stock passing thereover, and
10 while I have illustrated and described the preferred embodiment of the improvement, as it now appears to me, changes in minor details of construction, within the scope of the following claim may be resorted to if
15 desired.

Having thus fully described the invention, what I claim as new is:—

The contiguous meeting ends of a pair of rails having their webs provided adjacent
20 their ends with T-shaped openings, said openings having their central portions extending longitudinally toward the ends of the rails, the webs of the rails being further provided with key-hole slots, fish plates,

each of said fish plates having integrally 25 formed T-shaped studs adjacent one of its ends and T-shaped slots adjacent its opposite end, each of said fish plates having key-hole openings, the T-shaped studs of one of the fish plates adapted to engage the T- 30 shaped openings of the rail and the T-shaped openings of the opposite fish plate, the rails adapted to be forced together so as to position the heads of the studs within the longitudinal openings of the T-shaped slots and 35 to bring the key-hole openings of the webs and fish plates into alinement, a headed key provided with a bit adapted to be inserted within the key-hole slot, the said bit having an opening, and a cotter pin adapted to en- 40 gage said opening, substantially as and for the purpose set forth.

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

JONATHAN H. MORROW.

Witnesses:

ALBERT L. BOWSER,
JAMES B. MATES.