W. VANDERCOOK, JR.

RAIL FASTENER.

APPLICATION FILED FEB. 5, 1910. RENEWED AUG. 9, 1911.

1,003,306. Patented Sept. 12, 1911.

Fig. 1.

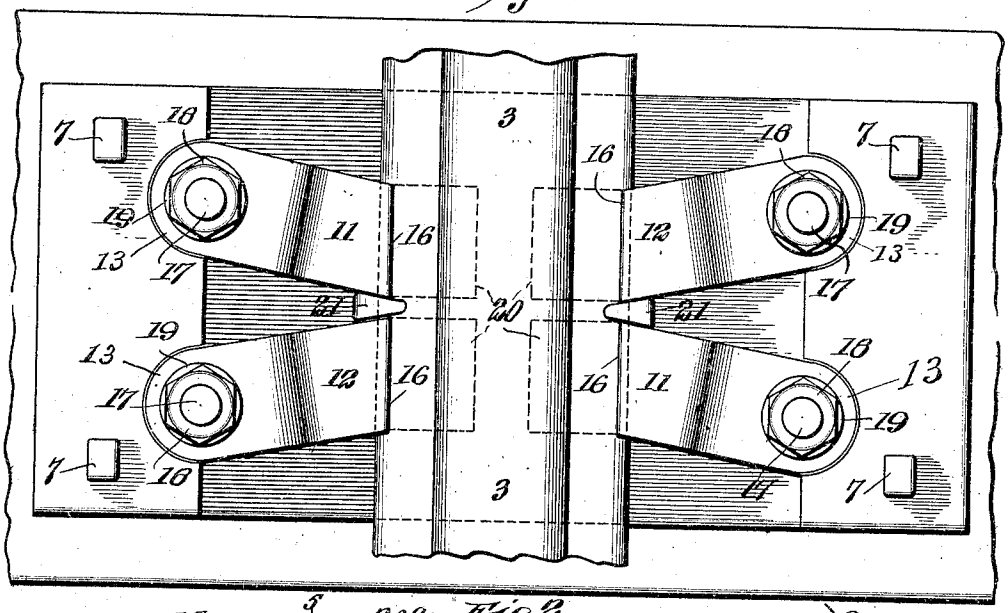


Fig. 4.

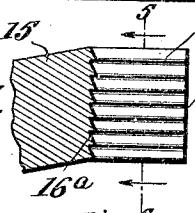


Fig. 2.

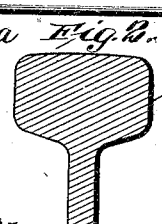
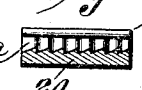


Fig. 5.



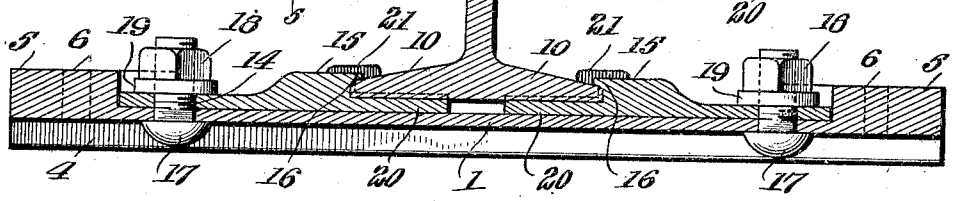
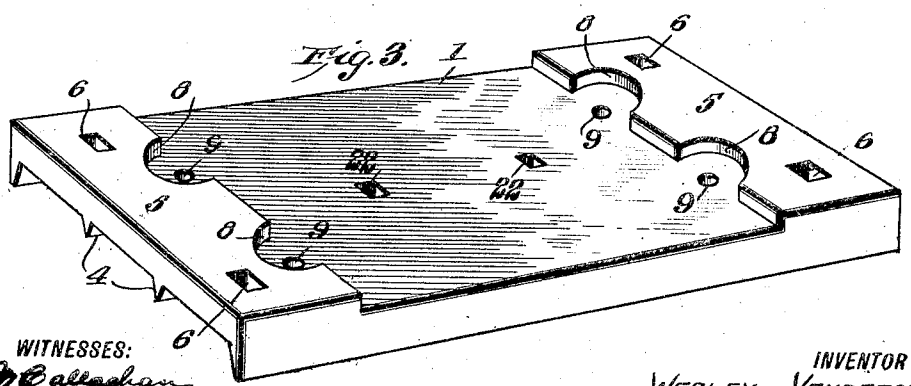


Fig. 3.



WITNESSES:

E. M. Callaghan

C. E. Jarman

INVENTOR

WESLEY VANDERCOOK JR.

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

WESLEY VANDERCOOK, JR., OF LAKE CHARLES, LOUISIANA.

RAIL-FASTENER.

1,003,306. Specification of Letters Patent. **Patented Sept. 12, 1911.**

Application filed February 5, 1910, Serial No. 542,247. Renewed August 9, 1911. Serial No. 643,218.

To all whom it may concern:

Be it known that I, WESLEY VANDERCOOK, Jr., a citizen of the United States, and resident of Lake Charles, in the parish of Calcasieu and State of Louisiana, have invented certain new and useful Improvements in Rail-Fasteners, of which the following is a specification.

My invention is an improvement in rail fasteners and consists in certain novel constructions and combination of parts, hereinafter described and claimed.

The object of the invention is to provide a means of the character specified, for holding the rail to the tie, and to prevent the so called "creeping" of the rail, due to the movement of the rolling stock over the rail and to expansion and contraction.

Referring to the drawings forming a part hereof, Figure 1 is a plan view of a portion of a rail provided with the improvement, Fig. 2 is a transverse vertical section, Fig. 3 is a perspective view of the anchor plate. Fig. 4 is a partial horizontal section view of one end of a gripping plate, and Fig. 5 is a section on the line 5—5 of Fig. 4.

As is well known, one of the greatest difficulties encountered in the maintenance of way, is the creeping of the rails, due in part to the causes above mentioned. This difficulty is especially marked in double track roads, when the traffic over the rails is in one direction, and on all roads with heavy grades, on which the rails tend to move down hill. To overcome this tendency of the rails to creep, and to securely anchor the rail to the tie, I provide an anchor plate 1, substantially rectangular in shape, seated on the tie 2, beneath the rail 3, and with its largest dimension transverse to the rail and parallel with the length of the tie. The said plate is provided on its under face with a plurality of longitudinal ribs 4, each of which has a sharp edge, the ribs being parallel and spaced apart from each other, as is clearly shown in Fig. 3. On its upper face the plate is provided at each end with a transverse rib 5, and near each end of each rib is an opening 6, for receiving a spike 7, the openings being at the four corners of the plate. Each of the ribs 5 is provided on its inner edge with a plurality of semicircular recesses 8, spaced apart from each other, and from the ends of the rib, and the plate is provided with an opening 9, in each of said recesses. The length of the space between the ribs 5 is greater than the width of the rail base 10, and the plate is so arranged that the rail passes across the center of the said space, at approximately equal distances from the ribs 5.

A plurality of bars 11 and 12 are provided, the said bars being arranged in pairs, a pair on each side of the rail, and the outer ends 13 of the said bars are rounded to fit the recesses 8, and provided with openings 14, registering with the openings 9 of the plate. The opposite end of each bar seats beneath the base 10 of the rail, and is provided with a transverse rib 15, spaced away from the said end and the side wall of the rib adjacent to the rail engages the edge of the base, and is provided with a lip 16 fitting over the edge of the base. A bolt 17 passes through the registering opening 9 and 14 from below, and is held by a nut 18, a washer 19 being interposed between the nut and the upper face of the bar. The bars 11 and 12 are brace bars or struts, seating at one end against the side walls of the recesses, and at the other against the edge of the rail base. As shown in Fig. 1, the bars on each side diverge from each other at their outer ends, and the portion 20, which seats beneath the rail, being bent laterally with respect to the main portion, the portion 20 of the bars 11 being bent in the opposite direction to the portion 20 of the bars 12.

The improved fastening means is preferably placed at the center of the rail, and the top of the anchor plate between the ribs is smooth, as is also the bottoms of the bars 11 and 12, so that the said bars may move freely over the plates. The upper faces of the portions 20 are provided with teeth 20^a, so that considerable friction obtains between the said faces and the bottom of the rail. The face between the lip 16 and the portion 20 which engages the edge of the rail base is also toothed as shown at 16^a.

A spike 21 is driven through an opening 22 in the plate 1, between the adjacent inner corners of each pair of plates, and engages the edge of the rail base, and the said corners are rounded, so that the spike head will not bind against the said corners, when driven home. The said spikes, as will be evident, in addition to holding the rail 3 and anchor plate to the tie, act with a wedging action

to force the bars on each side away from each other, and tightly against the flange of the rail.

In operation, the passage of rolling stock over the rail, in either direction should it move the rail even the slightest longitudinally, will swing the bars on the bolts, and cause the corresponding members of each pair to more firmly grip the rail between the inner walls of the ribs 15. The corresponding bars of each pair form a series of clamps, whose jaws under usual conditions grasp the rail, but when the rail moves longitudinally, this grasp is tightened, and the more marked the movement, the firmer becomes the grasp of the jaws of the clamps. It will be evident that the creeping of the rails, which the fastener is designed to prevent, furnishes the power to restrain the said movement.

The device may be described as consisting of a plurality of pairs of gripping jaws, one member of each pair arranged one on each side of the rail, and operated by the longitudinal movement of the rail.

The arrangement of the ribs 4 substantially parallel with the length of the tie, and consequently with the grain of the tie, prevents any lateral movement of the anchor plate, and the spikes at the corners of the plate assist in this, as do also the spikes at the center.

The improved anchor plate is preferably of steel, and the ribs 4 and 5 act also as reinforces to strengthen the plate longitudinally, and transversely, and the said plate may be made in sizes corresponding to the weight of the rails used.

It will be observed that the transverse rib of the clamping bars is inclined with respect to the longitudinal center of the said bar, in order to constrain the bar to take an inclined position with respect to the rail, when the rib is engaged with the rail, and that the ribs of the bars on the same side of the rail are inclined in opposite directions.

I claim—

1. In combination with the rail and the ties, of an anchor plate arranged transversely of the rail at approximately the center thereof and resting on the tie, said plate having longitudinal ribs on its lower face, and a transverse rib at each end on its upper face, each of said last named ribs having a semicircular recess near each end in its inner side wall, a pair of bars on each side of the rail, each of said bars having a rounded end engaging a recess and pivoted to the plate, the opposite end seating beneath the adjacent side of the rail base, and having a transverse rib at the edge of the base and engaging the said edge, and having a lip overlying the same, the members of each pair of bars diverging from the rail, and having their edges adjacent to each other at said edge, a spike passing through the plate between said edges and engaging the rail base, and means for securing the anchor plate to the tie.

2. The combination with a rail, of an anchor plate arranged transversely of the rail and at approximately the center thereof, and provided on its lower face with longitudinal ribs, and on its upper face with a transverse rib at each end, each of the inner walls of the transverse ribs having a rounded recess near each end, a bar for each recess and having a rounded end engaging the recess, each of said bars having its opposite end bent laterally and away from the bar on the same side of the rail and underlying the rail, each bar having a transverse rib on its upper face engaging the edge of the rail and provided with a lip overlying said base, said plate having means whereby it may be secured to a tie, and a spike passing through the plate on each side of the rail and engaging the rail base between the bars, and contacting with the bars.

3. The combination with a rail, of an anchor plate arranged transversely of the rail and at approximately the center thereof, and provided on its lower face with longitudinal ribs, and on its upper face with a transverse rib at each end, and each of the inner walls of the transverse ribs having a rounded recess near each end, a bar for each recess and having a rounded end engaging the recess, each of said bars having its opposite end bent laterally and away from the bar on the same side of the rail and underlying the rail, each bar having a transverse rib on its upper face engaging the edge of the rail and provided with a lip overlying said base, said plate having means whereby it may be secured to a tie.

4. The combination with the rail, of an anchor plate arranged transversely of the rail and at approximately the center thereof, and provided on its lower face with longitudinal ribs, and on its upper face with a transverse rib at each end, each of the inner walls of the transverse ribs having a rounded recess near each end, and a bar for each recess and having a rounded end, engaging the recess, each of said bars having its opposite end bent laterally and away from the bar on the same side of the rail and underlying the rail, each bar having a transverse rib on its upper face engaging the edge of the rail base and provided with a lip overlying said bar.

5. The combination with the rail of a plate arranged transversely beneath the rail, said plate having serrations on its under face and having a rib on its upper face on each side of the rail and spaced apart therefrom, a pair of bars on each side of the rail, the outer ends of the bars abutting the ribs, bolts passing through the said outer ends

and the plate, and each of said bars having at its opposite end a rib engaging the edge of the rail, and a laterally bent portion underlying the rail, said rib having a lip overlying the rail, and the laterally bent portion of each bar extending in the opposite direction from the portion of the other bar on the same side of the rail.

6. The combination with the rail, of a plate arranged transversely thereof and having a roughened under face, and provided with means whereby it may be secured to a tie, said plate having a rib on its upper face on each side of the tie and spaced therefrom, a bar pivoted to the plate near each side edge on each side of the rail, the outer end of each bar abutting against the adjacent rib, and the inner end underlying the said base, each of said bars having a transverse rib with an undercut side wall engaging the base of the rail, the bars on each side of the rail converging toward their inner ends.

7. The combination with the rail, of a plate arranged transversely thereof, and having a transverse rib on each side of the rail, said plate having means whereby it may be secured to a tie, a bar pivoted near each side edge of the plate on each side of the rail by one end, the said end abutting against the rib and the inner end underlying the rail, and having an inclined transverse rib abutting against the edge of the said base, the bars, on the same side of the rail converging toward the rail.

8. The combination with the rail, of a plate underlying the same transversely and provided with means whereby it may be secured to a tie, a pair of bars pivoted by one end to the plate near each side edge thereof, and on each side of the rail, the inner end of each of said bars underlying the rail base and having a transvers rib on its upper face against which the edge of the base abuts, the members of each pair of bars converging toward the rail.

9. A device of the character specified, comprising a plate having means whereby it may be secured to a tie, and adapted to be arranged transversely of a rail, a pair of bars pivoted to each end of the bar by one end and adapted to underlie the rail at the opposite end, each bar having a transverse rib on its upper face against which the edge of the rail base is adapted to abut, said rib having a lip for overlying the rail base, the bars on the same side converging toward the rail for the purpose specified.

10. A device of the character specified, comprising a plate having means whereby it may be secured to a tie, and adapted to underlie a rail transversely, a pair of bars pivoted by one end to the plate near each end thereof, each of said bars having its inner end adapted to underlie the rail and having on its upper face a transverse rib arranged at an angle to the longitudinal center of the bar and adapted to abut against the edge of the rail base, the ribs of the bars on the same side of the rail being inclined in opposite directions, whereby to cause said bars to be inclined with respect to each other when the ribs engage the rail.

11. A device of the character specified, comprising a plate having means whereby it may be secured to a tie, and adapted to be arranged transversely of a rail, a pair of bars pivoted to each end of the plate by one end and adapted to underlie the rail at the opposite end, each bar having a transverse rib on its upper face adapted to abut against the edge of the rail base, the bars on the same side of the rail converging at the end adjacent to the rail when engaged therewith.

12. The combination with the rail, of a plate adapted to underlie the rail, a pair of bars pivoted to the plate on each side of the rail and each adapted to engage the rail with its free end, the bars on each side of the rail being inclined to the rail in opposite directions and converging toward their free ends.

13. The combination with the rail, of a plate adapted to underlie the rail, a pair of bars pivoted to the plate on each side of the rail and each adapted to engage the rail with its free end, the bars on each side of the rail being inclined to the rail in opposite directions.

WESLEY VANDERCOOK, JR.

Witnesses:
L. F. JOHNSON,
S. A. MAYO.