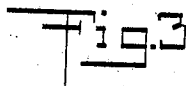
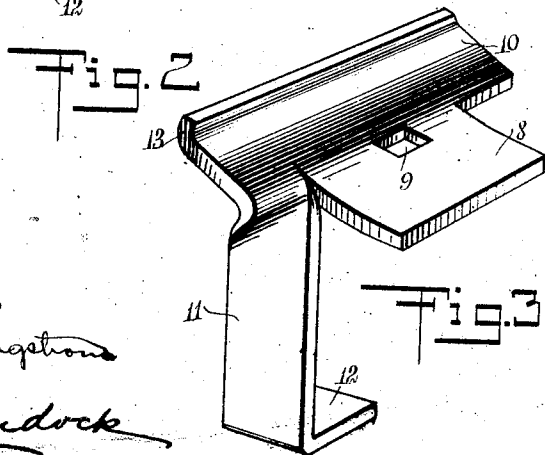
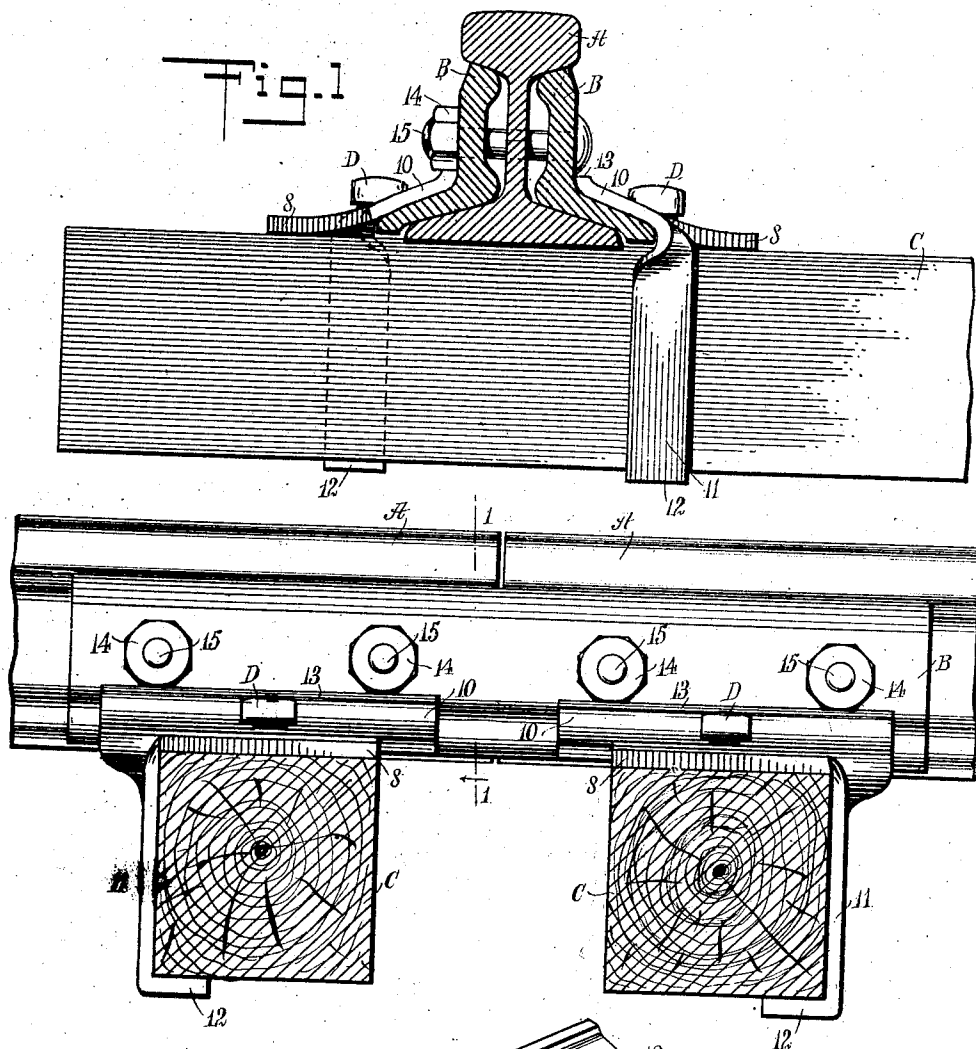


B. ESTES.
RAILWAY RAIL AND NUT LOCK.
APPLICATION FILED NOV. 11, 1910.

992,647.

Patented May 16, 1911.



WITNESSES
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BARTON ESTES, OF SEATTLE, WASHINGTON, ASSIGNOR OF ONE-HALF TO WILLIAM BROWN, OF SEATTLE, WASHINGTON.

RAILWAY-RAIL AND NUT LOCK.

992,647.

Specification of Letters Patent. Patented May 16, 1911.

Application filed November 11, 1910. Serial No. 591,842.

To all whom it may concern:

Be it known that I, BARTON ESTES, a citizen of the United States, and a resident of Seattle, in the county of King and State of Washington, have invented a new and Improved Railway-Rail and Nut Lock, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide devices to prevent the separation between railway ties and railway rails, and subsequent loosening and partial pulling of the holding spikes, particularly at the rail junctions; and to provide a simple, economical and efficient nut lock.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a vertical cross section taken on the line 1—1 in Fig. 2, of a railway rail and fish plate for securing the junction, together with the devices for preventing the separation of the rail and tie, constructed and arranged in accordance with the present invention; Fig. 2 is a side elevation of a railway rail joint when formed by the usual fish plates, showing in connection therewith rail and tie separation preventives constructed and arranged in accordance with the present invention; and Fig. 3 is a perspective view in detail, and on an enlarged scale, showing the rail and tie separation preventing device, constructed and arranged in accordance with the present invention.

In accordance with the usual construction railway rails are abutted, as shown in Fig. 2 of the drawings. The abutted ends of the rails A, A are maintained in alinement by fish plates B, B, and each end is supported by a tie C. The fish plates and rails are held from lateral spreading on the said ties C by means of spikes D, which are driven beside the fish plate and rail into the ties C. The slight yield of the abutted ends of the rails A, A under the load of the weighted wheels of the locomotive and car produces a hammering jar upon the structure at this point. The slight movement of the joint in time pulls the spikes D. The extent to which the spikes are pulled is gradually augmented until, if not receiving constant

care, the spike is so loosened in the tie C as to be forced over by the lateral thrust of the rails A, A. This is particularly true on curves in the railway bed where the side thrust of the fast running train is excessive. It is to prevent this action and to remove the pulling strain from the spikes D, D that I have provided the present tie lock.

The tie locks shown in the accompanying drawings are provided with a top plate 8. The plate 8 is disposed to rest upon the upper surface of the tie C, and is provided with a perforation 9, through which is driven the spike D after the said tie lock is placed in position. Extending from the edge of the top plate 8 is an elongated section 10. The section 10 is extended toward the rail and slightly inclined to pass over the flange of the said rail and the flange of the fish plate when thus provided, as shown best in Fig. 1 of the drawings. Extended from one end of the section 10 and edge of the flange 8 is a stirrup bar 11. The bar 11 is bent at the lower end thereof to form a stirrup plate 12. The stirrup plate 12 is arranged to snugly fit the tie C. If necessary the tie C is gouged slightly on the lower side to permit the driving thereunder of the plate 12. It will be understood in this connection that if the tie C is of smaller dimension than the distance between the adjacent faces of the plates 8 and 12, the tie is discarded or provided with an added filling piece to render the engagement of the plates 8 and 12 with the said tie positive and firm. It will be understood that it is essential to the proper action of the invention that the fit of the tie C between the plates 12 and 8 should be solid and firm.

In the operation of securing the rails and fish plates in position when employing a tie lock of the character set forth, the tie locks are driven into place, engaging the ties C, C and overlying the flanges of the rails A, A and the fish plates B. Prior to driving the spikes D, D it will be noticed that the grip of the plates 8 and 12 on the tie forms a steadying device for the placement of the rails, therefore facilitating in the proper alinement of the rails and in the construction of the railway bed. After the tie locks are properly adjusted the spikes D, D are driven through the perforations 9.

When thus constructed it will be observed that the stirrup bar 11 and the plates 8 and

12 prevent the separation of the ties C, C and the rails A, A. The torsional or pulling strain when yielding to the pressure of the loaded wheels is received upon and resisted
5 by the said bar and plates.

The sections 10 are provided with an up-
turned flange 13. The flange 13 is provided
to extend under the nuts 14, 14 with which
the bolts 15, 15 are provided. The nuts 14
10 are necessarily turned until a flat side of
each of the said nuts is disposed in horizontal
relation with the flange of the rails A, A.
In this position of the nuts the flange 13
rests under the nut and prevents by im-
15 pingeement thereon rotation of the said nuts.
It is to extend under each and all of the nuts
14 employed on each side of the rail junction
that I have elongated the section 10. It will
be understood that the elongation of the sec-
20 tion 10 may be varied to suit the changed
conditions of the railway structure with refer-
ence to the length of the fish plates and
the number or separation of the bolts 15, 15.

Having thus described my invention, what
25 I claim as new and desire to secure by Let-
ters Patent is:—

1. A railway rail and nut lock, comprising
a stirrup bar having at the upper end there-
of an elongated section arranged to overlie
30 the flange of a railway rail, said section hav-
ing an extended plate adapted to rest upon a
railway tie, said plate being perforated to
receive the rail securing spike, and said stir-
rup being further provided with a section
35 at the under end thereof adapted to rest

under and in contactual relation with the
said tie to prevent the separation of said
rail and tie.

2. A railway rail and nut lock, comprising
a top plate arranged to rest upon the upper
40 surface of a railway tie, said plate having
an elongated section the outer edge whereof
is adapted to rest beneath and in contact
with the fish plate securing bolt nuts with
which the structure is provided, and said
45 plate being further provided with a depend-
ed extension having a hook formed at the
lower end thereof to rest under and in con-
tact with the lower side of a railway tie.

3. A railway rail and nut lock, comprising
50 a top plate arranged to rest upon the upper
surface of a railway tie, said plate having an
elongated section the outer edge whereof is
adapted to rest beneath and in contact with
the fish plate securing bolt nuts with which
55 the structure is provided, and said plate be-
ing further provided with a depended exten-
sion having a hook formed at the lower end
thereof to rest under and in contact with the
lower side of a railway tie, and further pro-
60 vided with a perforation to receive a rail se-
curing spike.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

BARTON ESTES.

Witnesses:

FRANK SWANSON,
ISRAEL BERGLUND.