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PATENTED NOV. 12, 1907.

Z. L. PIERCE.
ANTI RAIL SPREADING DEVICE AND GAGE.
APPLICATION FILED OCT. 29, 1906.

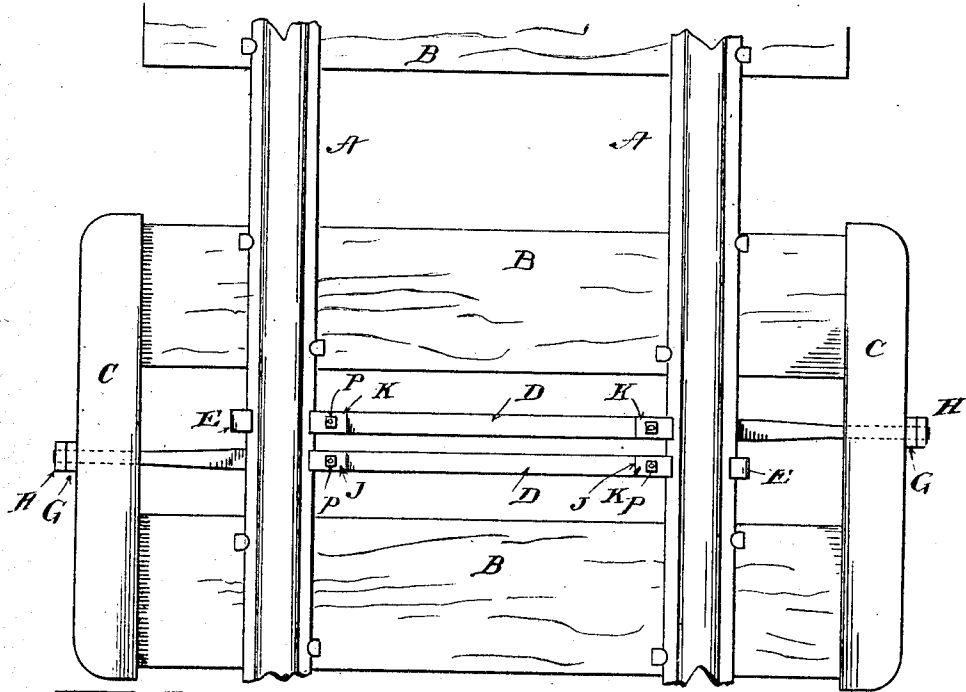


FIG. 1.

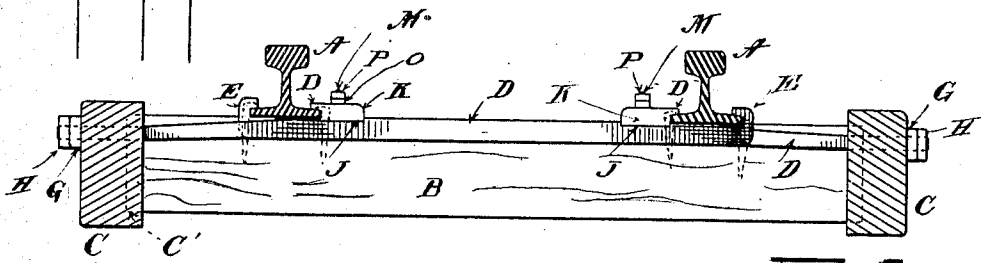


FIG. 2.

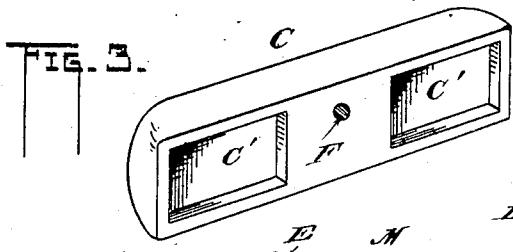


FIG. 3.

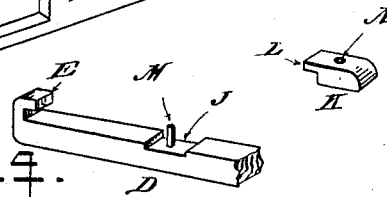


FIG. 4.

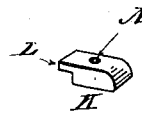


FIG. 5.

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ANTI-RAIL-SPREADING DEVICE AND GAGE.

No. 870,842.

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To all whom it may concern:

Be it known that I, ZACHARIAH L. PIERCE, a citizen of the United States, residing at Hanna City, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Anti-Rail-Spreading Devices and Gages; and he does hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains to rail adjusting means; relating also to means for preventing the spreading of the rails of rail-way tracks.

An object of the invention is to provide simple, but effective means by which to prevent the rails from spreading.

A further object is to provide means for keeping the rails in alinement or for placing them in alinement when, through the action of frost or flood, they have become displaced.

Another and important object is to provide a gage by which the rails are properly spaced and held in rigid relation to one another.

In the appended drawing, Figure 1 is a top view of a pair of rails and the ties upon which they are mounted and spiked showing my invention attached thereto. Fig. 2 is a transverse section of the rails shown in Fig. 1 with my invention applied thereto. Fig. 3 is a perspective view of a thrust-plate shown in the preceding figures. Fig. 4 is a perspective view of a portion of an adjusting bar, and, Fig. 5 is a perspective view of a clamping block to be secured thereto.

It is well known that many accidents to railway trains result from the spreading of the rails due to many causes, such, for instance, as the rotting of the ties and loosening of the spikes which holds the rails. As a matter of fact if the rails were connected and immovable relatively so that neither could move without moving the other many accidents would be avoided, and it is my purpose in this application to present a simple means by which to prevent accidents due to the causes named.

The rails are represented by the letter A held upon the ties B in the customary manner. Upon and against the ends of two neighboring ties, as shown in Fig. 1, I place a thrust-plate C there being one at each end of the pair of ties and which bridge the two. Preferably some means is provided for preventing movement of the thrust-plate with relation to the ties. To illustrate this I have shown in Fig. 3 that the surface of the plate which lies next to the ties is provided with two recesses C' in which the ends of the ties rest, their relation being shown in broken lines in Fig. 2. I next provide a pair of bars D one end of each of which has an upturned hooked portion E which, as shown in Fig. 2, incloses

the outside flange portion of the rail. The opposite end of each bar extends through a hole F in the thrust-plate C being provided with screw threads (not shown) to receive a nut G and a lock nut H.

It will be noted that by tightening the nuts the bars will be shifted in the direction of their lengths to pull the rail, whose flange it incloses, toward the thrust-plate which carries the bar whose nut is being tightened. If the nut of each bar is tightened it is evident that, as arranged in the drawing, ignoring the time, however, the parts not as yet described, each rail would be drawn towards its companion and the result would be to narrow the gage of the track. But I have provided means which will now be described by which when one of the bars is shifted in the same extent and in the same direction without altering the gage of the track. This of course can only be done by separately shifting the bars. In each bar, inside of each rail, is a recess J, Figs. 2 and 4, in each of which is seated a block K, Fig. 5, said block having an overhang at L to rest upon the inner portion of the rail flange as shown in Fig. 2. Stud M in the bars hold the said blocks K in place in the recesses aided by nuts O and lock nuts P preventing said nuts jarring loose although it will be understood that any other means for holding the blocks in place may be resorted to. By setting the blocks into the recesses J of the bars they are enabled to stand great pressure without shifting their positions or their securing means becoming strained in any way, making the bar and the block, in effect, integral parts. Evidently these blocks, as described, after being properly positioned will secure the rails a fixed distance apart to correspond with the gage that it is desired the track shall have. It will also be evident that the outside upturned ends at E will prevent the rails from spreading, the thrust of the wheels upon the rails being transferred through their bars to the thrust-plates. The resistance to the thrust of the wheels upon either rail, is in proportion to the tensile strength of the bars D and the breaking strain of the thrust-plate holding them, and the amount of strength of these parts, of course, depends upon their cross sectional area. In alining the track the nut G of one of the bars D is tightened and the other bar must, as a matter of course, be allowed to shift by loosening its corresponding nut.

My device, as will be readily seen, furnishes a very simple yet efficient means for the purposes named, and it also provides means for preventing the rails from turning over since the upturned ends of the bars E and the blocks J prevent them from so doing. In bringing the track into alinement the track man merely loosens the nuts of the bar at one side and

tightens the nut at the other side, as intimated, after withdrawing the spikes, the work being extremely simple.

In constructing the track the gage for the same is determined at once by the bars as they are placed in position it being understood that the invention is placed at intervals of a few yards or as many as desirable as found by experience.

Having thus described my invention, I claim—

10 1. In an anti-rail spreader, the rails, two companion bars each having engagement with both rails, and each having one of its ends extending outside the track the extended ends being at opposite sides of the track, a member at each side of the track having fixed relation
15 with the ties on which the track is laid, and means on the extended end of each bar for engaging one of the said members.

2. In combination with a track a bar connecting its rails, one end extending outside the track at one side and engaging the rail at that side, means carried solely on the extended end by which to adjust the bar lengthwise for aligning the track, a fixed member for receiving the thrust of said means, the opposite end of the bar having engagement with the other rail.

25 3. In combination with the rails, a bar connecting them, one end having engagement with one of the rails, and having its opposite free end extending beneath and beyond the other rail and having engagement with the latter, means carried by the said free extended end of the bar for adjusting the bar in the direction of its length, a fixed member for receiving the thrust of said adjusting means.
30

4. In combination with the rails, of a bar engaging one of them and having means attached thereto for engaging the other rail for holding the rails a fixed distance apart, the said bar having means at one end by which to pull it in the direction of its length to shift both rails, a member for receiving the thrust of such means, and a companion bar positioned in the vicinity of the first and likewise having attachment with the rails and extending in the opposite direction from the first, means thereon for pulling the bar in the direction of its length, and in a direction opposite to the pull of the first said bar, and a member for receiving the thrust of the said means, the bars adapted
40 for shifting the track on its ties by loosening the shifting means on one of them and tightening the means on the other.
45

5. In combination with the rails of a railway track, a

pair of bars each engaging both rails said bars extending outside of the track, one at each side thereof, a member at each side of the track through each of which one of the said bars extends, and means upon the end of each bar and contacting with the outside surface of the member for shifting the track in a transverse direction as described. 50

6. In combination with the rails of a railway track, a pair of bars, one end of each extending outside the track the other end of each said bar extending to the rail farthest removed from the outside end of said bar, the same inclosing the outer flange-portion of that rail, each said bar having means for inclosing the inside flange-portions of both the rails, a member through which each of the outside ends extends and other means in connection with the same members for imparting longitudinal shifting movement to each said bar and the rails for the purposes named. 55

7. In a railway track, the combination of the rails thereof, a member at each side of the track in rigid relation to the ties, a bar located substantially at right angles to the length of the track and having attachment to the rails of the track for holding said rails in rigid relation, and means on the ends of each bar outside the first said means for imparting transverse shifting movement to the track through one of said bars by tightening said means, after first loosening the means on the end of the opposite bar. 60

8. In combination with the rails, a pair of bars beneath the same and extending substantially at right angles thereto, an upturned member at the free end of each of the bars for engaging the flange of the outside of each rail, a member on each bar inside each rail for engaging the inside flange of the rails, a thrust-plate having rigid relation with the ties at each side of the track and through each of which one or more bars extends, and means in connection with the bars outside of the thrust-plate and by means of which, together with said thrust-plate, the bars are shifted in a longitudinal direction to impart transverse movement to the track. 65

9. In combination with the rails of the companion bars D having the upturned ends E thereon for engaging the base of the rails, the members J and K on the bars also for engaging the rails, the thrust plates C each having one end of one of the bars extending therethrough, and the nuts G H on said bars outside the members to bear against said members for the purposes set forth. 70

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

ZACHARIAH L. PIERCE.

Witnesses:

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