

Patented Aug. 1, 1911.

999,669.

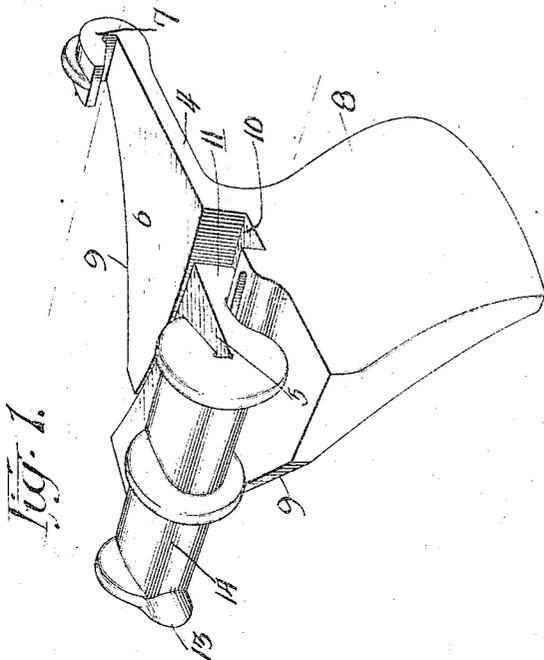


Fig. 1.

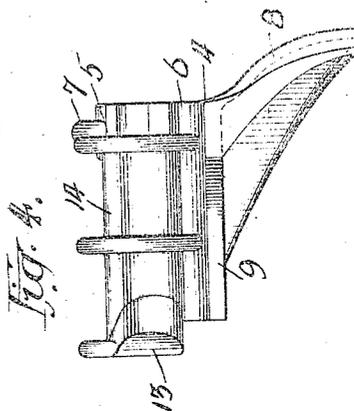


Fig. 4.

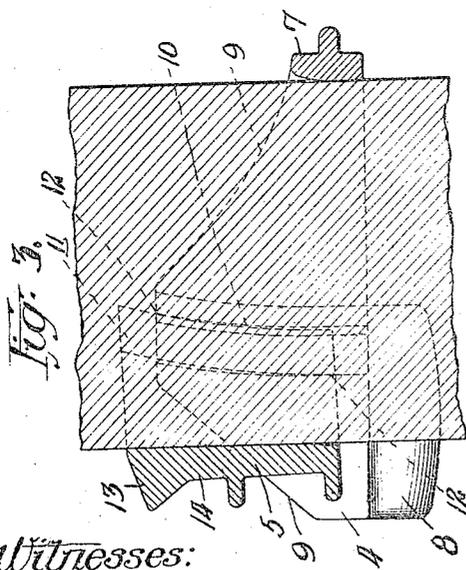
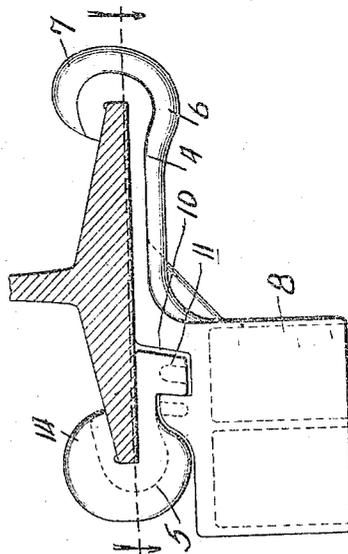


Fig. 3.

Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## RAILWAY-RAIL STAY.

999,669.

Specification of Letters Patent. Patented Aug. 1, 1911.

Application filed April 4, 1910. Serial No. 553,200

*To all whom it may concern:*

Be it known that I, PHILIP W. MOORE, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Rail Stays, of which the following is a specification.

The present invention relates to a stay adapted to be clamped to a rail and cooperate with the rail ties to prevent the creeping of the rail, such as is evidenced at the terminus of a grade or the juncture of a switch, and similar places where a weight is brought to bear on the rail, tending to force it to creep or move along the ties.

The objects of the present invention are, to form the portions of the stay so that it will operate with a skewing movement to impinge itself against the rail; and to eliminate all superfluous and unnecessary metal from the stay without impairing in any way its efficiency in preventing creeping.

In the drawings, Figure 1 is a perspective view of the assembled stay; Fig. 2, a front view showing the stay clamping a rail; Fig. 3, a section on line 3-3 of Fig. 2, looking in the direction of the arrow; and Fig. 4, a side elevation of the assembled stay.

The stay, as shown, consists of two parts, 4 and 5. The part 4, for the sake of convenience, will be hereafter spoken of as the fixed member, although in usage it is subjected to a slight turning, owing to the skewing movement which is imparted thereto to clamp it to the rail; and the part 5 will be termed the movable section.

The fixed section 4 comprises a body portion 6, provided with a rail gripping jaw 7 and with a downwardly depending abutment 8, which in use rests against the tie. The abutment 8, as shown, is of concave formation from its center outwardly, and the particular function of this concave surface will be more fully brought out hereinafter in the specification.

As shown in Figs. 1 and 3, each of the side walls of the fixed section has a portion thereof cut away, as indicated at 9. This cutting away of the fixed section makes the rail gripping jaw 7 of an abbreviated nature; but, as will hereinafter be shown, no great strain is placed upon this jaw, so that the reduction thereof will not in any way

affect the durability or effectiveness of the device. The fixed section is provided with a curved recess 10, and the movable section 5 is provided with a curved depending portion 11, which is adapted to enter into said recess; said recess being undercut on one side to interlock with the depending portion 11, but, as will be seen by a study of Fig. 3, the recess 10 and the depending portion 11 are on arcs struck from different centers, so that when the movable section is driven into position, the depending portion will contact the walls of the slot, as indicated at 12 in Fig. 3, thus locking the two sections together. And any further strain placed upon the movable member will tend to rock the stay member about the abutment 8, thus swinging the rail gripping jaws into tighter engagement with the rail. The movable section, as shown, is formed with a protruding surface 13, which forms a striking head against which the hammer or other instrument strikes when the stay is being assembled in position, and a rail gripping jaw 14.

As heretofore stated, the abutment 8 of the fixed member is of concave formation from its center outwardly, and the creeping of the rail will be resisted by the contacting of this abutment against the tie; hence, when the strain incident with the attempted creeping of the rail is placed on the abutment, it will tend to rock the abutment about its rounded surface, so that a twisting or skewing movement will be imparted to the fixed section as a result of the pressure of the rail on the abutment. This rocking movement will twist or skew the fixed section so as to bring the rail gripping surfaces into tighter impingement against the rail, thus securely locking them thereto and causing them to travel with the rail during its creeping movements, and, as described, this creeping movement will be resisted by the abutment contacting the tie. Hence, the greater the strain placed on the abutment, the tighter the stay will grip the rail, and thus the movement of the rail will serve to bring the stay in tighter engagement therewith, and the force incident to the creeping of the rail will be utilized to prevent such creeping, so that the greater the tendency of the rail to creep, the greater will

be the resistance offered to such creeping, and this feature in rail stay construction is considered to be the principle of operation upon which all practical devices of its kind are constructed.

The operation is as follows: The stay is initially positioned upon the rail by placing the abutment 8 in contact with the tie and driving the movable section into place until the depending portion thereof has engaged the walls of the groove in the fixed portion and locked the two sections together. Then, when a pressure is exerted upon the stay, by reason of the attempted creeping of the rail, such pressure will be resisted by the abutment contacting the tie, and, at the same time, the pressure will tend to rock the abutment on the tie so that the rail gripping jaw of the fixed section will be skewed or twisted to more tightly impinge against the rail.

I claim:

1. In a railway rail stay, the combination of a fixed clamping member and a movable clamping member, a rail gripping jaw on one side of the fixed clamping member, having a curved slot extending across the upper surface thereof from front to rear and lying when the stay is in operative position entirely beneath the flange of the rail, the movable clamping member having a downwardly curved portion extending along one edge thereof and adapted to enter the curved slot in the fixed member, the advancement of the depending portion in the recess serving to lock the two sections together, the upper surfaces of the fixed and movable members lying flush with one another when the sections are assembled and bearing against the under surface of the rail, a rail gripping jaw upon the movable section oppositely disposed from the jaw on the fixed section when the sections are assembled, a rounded abutting portion on the fixed section adapted to bear against the tie, the creeping of the rail tending to rock the fixed section about the abutment, whereby a skewing movement is imparted to the stay, bringing the gripping jaws into tighter engagement with the flanges of the rail, substantially as described.

2. In a railway rail stay, the combination of a fixed clamping member and a movable clamping member, a rail gripping jaw on the fixed clamping member, a downwardly extending curved slot in the fixed clamping member, having both walls thereof curving parallel to each other, a curved depending portion on the movable clamping member, having its walls curving parallel to each other, the curves of the walls of the slot and the walls of the depending portion being struck with different radii, whereby the walls of the depending portion engage the walls of the slot, when movement between the clamping members is effected, and lock

the clamping members together, a rail gripping jaw on the movable clamping member, a rounded abutting portion on the fixed clamping member adapted to bear against a tie, the creeping of the rail tending to rock the fixed clamping member about the abutment, whereby the rail gripping jaws are thrown into tight engagement with the flanges of the rail, substantially as described.

3. In a railway rail stay, the combination of a fixed clamping member and a movable clamping member, a rail gripping jaw on one side of the fixed clamping member, said fixed clamping member having a curved slot extending across the upper surface thereof from front to rear and lying when the stay is in operative position entirely beneath the flange of the rail, the movable clamping member having a downwardly curved portion extending along one edge thereof and adapted to enter the curved slot in the fixed member, the advancement of the depending portion in the recess serving to lock the two sections together, the upper surfaces of the fixed and movable members lying flush with one another when the sections are assembled and bearing against the under surface of the rail, a rail gripping jaw upon the movable section oppositely disposed from the jaw on the fixed section when the sections are assembled, an abutting portion on the fixed section adapted to bear against a tie, said abutting portion extending outwardly from the fixed section, the outer face of the abutting portion being of a concave formation and formed with a curve extending from its upper to its lower edge and from side to side thereof, the creeping of the rail tending to rock the fixed section about the abutment, whereby a skewing movement is imparted to the stay, bringing the gripping jaws into tighter engagement with the flanges of the rail, substantially as described.

4. In a railway rail stay, the combination of a fixed clamping member and a movable clamping member, a rail gripping jaw on the fixed member, means for interlocking the fixed and movable clamping members, a rail gripping jaw on the movable member having an elongated flat face adapted to lie against the side of the rail flange, an abutting portion on the fixed section adapted to bear against a tie, said abutting portion extending outwardly from the fixed section, the outer face of the abutting portion being of a convex formation and formed with a curve extending from its upper to its lower edge and from side to side thereof, the creeping of the rail tending to rock the fixed section about the abutment, whereby the rail gripping jaws are thrown into tight engagement with the flanges of the rail, the acting face of the gripping jaw of the fixed section being formed to provide a clearance between

a portion thereof and the side of the rail flange to permit of the rocking of the fixed section, substantially as described.

5 In a railway rail stay, the combination  
 5 of a fixed clamping member and a movable  
 clamping member, a rail gripping jaw on  
 one side of the fixed member, said fixed  
 clamping member having a curved slot ex-  
 10 tending across the upper surface thereof  
 from front to rear and lying when the stay  
 is in operative position entirely beneath the  
 flange of the rail, the movable clamping  
 member having a downwardly depending  
 15 curved portion extending along one edge  
 thereof, the curves of the groove and de-  
 pending portion being struck with differ-  
 ent radii, said groove being undercut on one  
 side to interlock with the depending portion,  
 the advancement of the depending portion  
 20 into the slot serving to lock the two sections  
 together, the upper surfaces of the fixed and  
 movable members lying flush with one an-  
 other when the sections are assembled and  
 bearing against the under surface of the  
 25 rail, a rail gripping jaw upon the movable  
 section oppositely disposed from the jaw on  
 the fixed section when the sections are as-  
 sembled, a rounded abutting portion on the  
 fixed section adapted to bear against the tie,  
 30 the creeping of the rail tending to rock the  
 fixed section about the abutment, whereby a  
 skewing movement is imparted to the stay,  
 bringing the gripping jaws into tighter en-  
 gagement with the flanges of the rail, sub-  
 35 stantially as described.

6. In a railway rail stay, the combination  
 of a fixed clamping member and a movable  
 clamping member, a rail gripping jaw on  
 one side of the fixed member, said fixed

clamping member having a curved slot ex- 40  
 tending across the upper surface thereof  
 from front to rear and lying when the stay  
 is in operative position entirely beneath the  
 flange of the rail, the movable clamping 45  
 member having a downwardly depending  
 curved portion extending along one edge  
 thereof, the curves of the groove and de-  
 pending portion being struck with different  
 radii, said groove being undercut on one 50  
 side to interlock with the depending por-  
 tion, the advancement of the depending por-  
 tion into the slot serving to lock the two  
 sections together, the upper surfaces of the  
 fixed and movable members lying flush with 55  
 one another when the sections are assem-  
 bled and bearing against the under surface  
 of the rail, a rail gripping jaw upon the  
 movable section oppositely disposed from  
 the jaw on the fixed section when the sec- 60  
 tions are assembled, an abutting portion on  
 the fixed section adapted to bear against a  
 tie, said abutting portion extending out-  
 wardly from the fixed section, the outer  
 face of the abutting portion being of a con- 65  
 vex formation and formed with a curve ex-  
 tending from its upper to its lower edge and  
 from side to side thereof, the creeping of the  
 rail tending to rock the fixed section about  
 the abutment, whereby a skewing movement 70  
 is imparted to the stay, bringing the grip-  
 ping jaws into tighter engagement with the  
 flanges of the rail, substantially as de-  
 scribed.

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