Dec. 12, 1933. L. L. WILSON 1,939,480

ADJUSTER FOR RAILWAY TRACKS

Filed Oct. 30, 1931

Fig. 1.

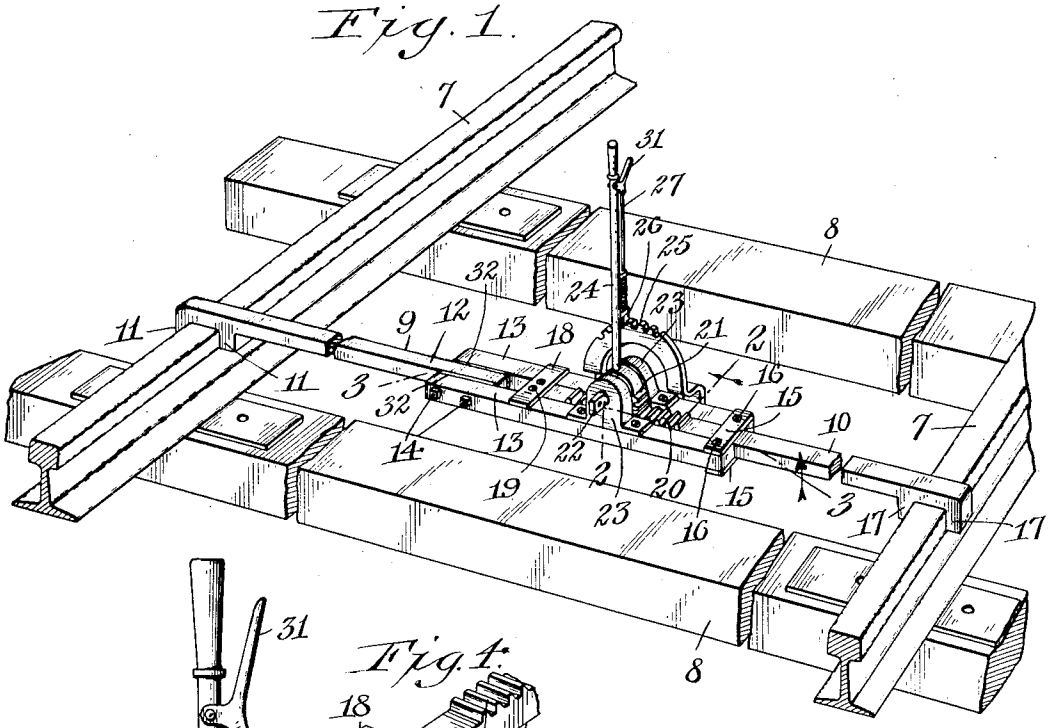


Fig. 2.

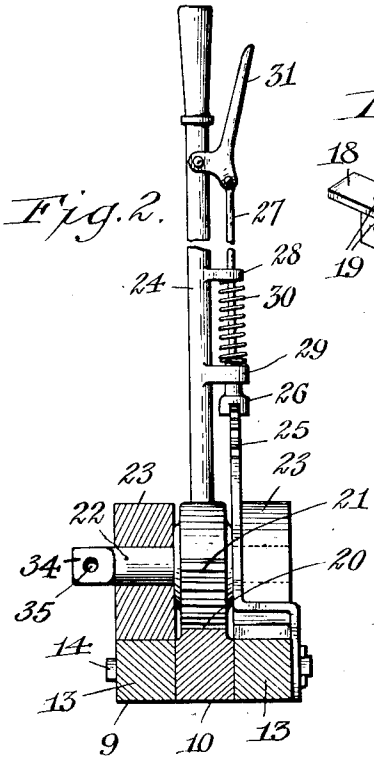


Fig. 4.

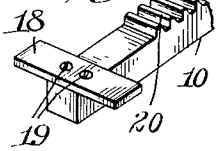
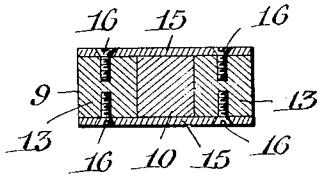


Fig. 5.



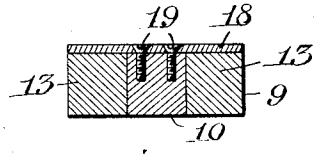


Fig. 3.

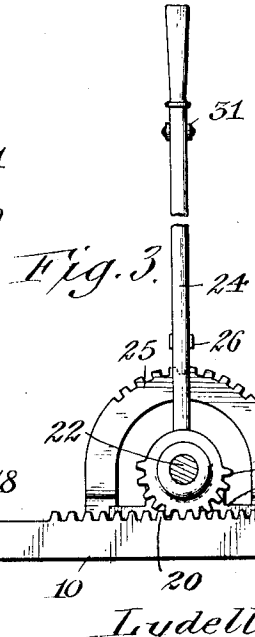


Fig. 6.

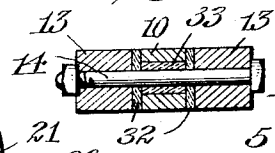


Fig. 7.

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UNITED STATES PATENT OFFICE

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ADJUSTER FOR RAILWAY TRACKS

Lydell L. Wilson, Jamestown, N. Y.

Application October 30, 1931. Serial No. 572,093

5 Claims. (Cl. 254—43)

My invention relates to improvements in adjusters for railway tracks, and more particularly to a device for gaging and adjusting the rails of a track relatively.

One of the objects of my invention is to provide a comparatively light and simple device of the character named, which can be easily handled and moved along the track for gaging and adjusting the rails thereof relatively.

Another object of my invention is the provision of such a device, which can be easily operated, and which comprises comparatively few parts so that it cannot easily become disarranged or fail to operate satisfactorily under any condition of use.

With the above and other objects in view to appear hereinafter, my invention consists in the novel features of construction, and in the arrangement and combination of parts to be hereinafter described and more particularly pointed out in the subjoined claims.

In the drawing:

Fig. 1 is a broken perspective view of a portion of a railway track and a broken perspective view of my inproved device as applied to the rails thereof for gaging and adjusting the same.

Fig. 2 is an enlarged transverse section taken on line 2—2, Fig. 1, looking in the direction of the arrow crossing said line.

Fig. 3 is an enlarged longitudinal section taken on line 3—3, Fig. 1, looking in the direction of the arrow crossing said line.

Fig. 4 is a perspective view of the inner end of the adjustable member of the device.

Fig. 5 is an enlarged cross section taken on line 5—5, Fig. 3.

Fig. 6 is an enlarged cross section taken on line 6—6, Fig. 3.

Fig. 7 is an enlarged cross section taken on line 7—7, Fig. 3.

In the drawing, the reference numeral 7 designates the rails of a track, and 8 the ties to which these rails are secured, or adapted to be secured.

In laying a new track, the rails are adapted to be spaced apart to a certain gage, and by the use of my invention this can be easily accomplished. In old tracks the rails oftentimes are forced out of proper alinement or adjustment, and at places along the length thereof it will be found necessary to adjust the tracks relatively, which can be easily accomplished by means of my improved device; it being simply necessary to place the device transversely across the track and engage the rails with the bifurcated end thereof, as will appear hereinafter.

This device comprises two relatively movable members 9, 10, respectively. Under certain conditions, member 9 may be referred to as the fixed member, and member 10 as the adjustable member. The fixed member, in its broader aspect, has a pair of spaced ears or lugs 11 at its outer end forming a bifurcation into which the head of one of the rails of the track is adapted to be received, the inner end of said member being provided with a guide slot having parallel-sided walls to slidably receive therein the adjustable member 10. In preferred form the fixed member is constructed of bar material of substantially square or rectangular formation in cross section, its outer portion comprising a single bar 12 having the ears or lugs 11 formed thereon, and the inner portion comprising two similar bars 13 spaced apart and secured to opposite sides of the inner end portion of bar 12, to which they are bolted, as at 14, suitable insulating material 32 in the form of strips being placed between the bars 12 and 13. The extreme inner ends of the bars 13 are held spaced apart by cross straps 15. Thus the bars 13 are maintained in parallelism by reason of their connection to the bar 12, and the employment of the cross straps 15; the latter being secured to the upper and lower faces of the bars 13 by means of screws 16, or otherwise. The bolts 14 are passed through the bars 12 and 13, through the insulation strips 32 and through insulation sleeves 33 extending transversely through the bar 12 and having their ends in contact with said insulation strips, as clearly shown in Fig. 7. In this manner opposite ends of the device are electrically insulated from each other to prevent electric current passing from one rail of the track to the other and thus interfere with the electrical track equipment, used for signaling and other purposes.

It is to be understood that the rail contact ends of my device may be otherwise insulated, one from the other, and that the installation shown and described herein is only one of many ways in which short-circuiting of the signaling system of a railway may be prevented when using my improved rail gage and adjuster. The installation shown and described is, however, simple and highly effective, and has advantages over other possible means of installation.

The adjustable member 10 is also bifurcated at its outer end, the bifurcation being formed by spaced depending ears or lugs 17 and being adapted to receive the head of the other rail 7 of the track.

The inner portion of member 10 is slidably maintained in the guide slot formed in the inner end of member 9, it receiving support from the lower of the cross straps 15 and having secured to its upper side at its inner end a retainer strap 18 transversely disposed thereon and overhanging the sides thereof, the overhanging portions being in slidable contact with the inner faces of the bars 13 of member 9; thus preventing the inner end of the adjustable bar from dropping out of horizontal alinement with the bars of the fixed member disposed at opposite sides thereof. The retainer strap 18 is secured to the inner end of the bar 12 forming the adjustable member 10 by means of screws 19.

The adjustable member may have secured thereto or formed thereon a gear rack 20, which is engaged by a segment gear 21 loosely mounted on a transverse pintle 22 removably entered in bearings 23 fastened to the upper sides of the bars 13 of the fixed member. The bearings are therefore spaced apart to receive the segment gear 21 between them, said segment gear being provided with an operating handle 24.

Secured to the outer side of one of the bars 13 of the fixed member is a toothed latch segment 25 having the teeth thereon in an arc of a circle whose center is coincident with the axis of the shaft 22; and on the operating handle 24 is a detent pawl or latch 26 arranged for movement lengthwise of the operating lever 24, the pawl or latch being formed on or secured to a rod 27 which passes through an opening in a lug 28 extending outwardly from the operating lever. The pawl or latch is also guided in a lug 29 spaced from lug 28 and extending outwardly from the operating lever 24.

Surrounding the rod 27 between the lug 28 and the pawl or latch 26 is a helical spring 30 exerting force downwardly on said pawl or latch to maintain the same in engagement with any desired tooth on the toothed latch segment 25. The upper end of the rod 27 is pivotally connected to a handle lever 31, which when drawn inwardly toward the operating lever 24 will draw the rod 27 and pawl or latch 26 upwardly, at the same time moving said rod outwardly. To admit of this, the openings through the lugs 28 and 29 are slightly enlarged; the enlargement, however, being only sufficient to permit the slight lateral movement necessary for the rod and pawl or latch when moving the same upwardly. The pawl or latch can therefore be easily disengaged from the toothed segment 25 when it is desired to rotate the segment gear.

The segment gear 21 can be rotated in either direction, and when rotated, causes the adjustable member 10 to move inwardly or outwardly. While such movement is the true movement of the device, assuming the fixed member 9 to be immovably held, there are times when the rail engaged by the movable member 10 will be secured to the ties, while the rail engaged by the fixed member 9 will be loose on the ties, depending upon whether or not the last-mentioned rail is to be moved with respect to the first-mentioned. In such cases the fixed member 9 becomes the movable member and shifts the rail engaged thereby inwardly or outwardly, depending on the direction of movement of the operating lever 24. It may be found necessary at times to move both rails outwardly, or inwardly, and in such cases both members of my improved device become movable members. For this reason the device may, in its still broader aspect, be referred to as comprising two telescopically-arranged members relatively movable; either one or the other, or both, being movable under operation of the lever 24, depending on whether or not either or both rails of the track are loosely mounted on the ties.

My device is therefore capable of effecting adjustment and minutely gaging the rails of a track under all conditions. The rails of a new track may therefore be conveniently adjusted relatively to proper gage, or any portion of one rail of a track may be adjusted with respect to the other, or be lined up true with respect to adjoining parts of a rail. In fact, adjustment of a rail or rails can be easily made to meet all conditions, and a true gage assured without resorting to the use of skilled labor.

By removably entering the pintle 22 in the bearings 23, the length of the device can be easily changed, so that it will be equally serviceable for narrow and standard gage tracks. This change can be effected by withdrawing the pintle from the bearings and the segment gear 21 after which the segment gear may be elevated slightly to permit the device to be shortened or lengthened approximately to the space between rails, after which the segment gear may be lowered and meshed with the gear rack 20 and the pintle reinserted in the bearings and gear segment so that the device will be in condition for effective operation.

In order that the pintle 22 may be easily withdrawn and inserted, it may have a flattened extension 34 at one end which projects outwardly over the adjacent bearing 23, and this flattened extension may have an opening 35 therethrough for conveniently inserting a stiff wire, nail, or other object in order to conveniently withdraw or insert the pintle. Any other convenient means of permitting the ready withdrawal of the pintle from its bearings and the gear segment, may be employed.

The removability of the pintle 22 will also enable the rails of a track to be adjusted relatively to a greater degree than would otherwise be necessary; it being apparent from the drawing that the relative movement of the two telescopic parts of the device is limited and, after having moved these parts to the extreme limit permitted by the gear segment, the pintle may be removed and the gear segment adjusted to engage a different portion of the gear rack, after which the pintle may be inserted in the bearings and gear segment and an increased range in the relative movement of the telescopic parts effected upon rotative movement of said gear segment.

Having thus described my invention, what I claim is:

1. A device for adjusting railway tracks, comprising two members telescopically arranged, one of said members comprising a bar having rail-engaging means at its outer end, two spaced bars secured to opposite sides of said first-mentioned bar at the inner end thereof and extending beyond said end to form a guide slot between the extending portions of said two spaced bars and spacing straps secured to the free ends of said spaced bars to hold them in parallelism and provide a slideway between the two with parallel-sided walls, the second of said members comprising a bar having rail-engaging means at its outer end and having its inner end portion slidably arranged within said guide slot, said last-mentioned bar having a retainer strap secured to its upper side overhanging the sides of the

same for sliding contact with the upper faces of said spaced bars, the bar of said second member being provided with a gear rack on its upper face, bearings secured to the upper sides of said spaced bars, a shaft supported in said bearings, a segment gear on said shaft between said bearings in engagement with said gear rack, and an operating lever extending outwardly from said segment gear.

2. A device for adjusting railway tracks, comprising two members telescopically arranged, one of said members comprising a bar having rail-engaging means at its outer end, two spaced bars secured to opposite sides of said first-mentioned bar at the inner end thereof and extending beyond said end and spacing straps secured to the upper and lower sides of said spaced bars to hold them in parallelism and provide a guide slot between the extending portions of said two spaced bars with parallel-sided walls, the second member comprising a bar having rail-engaging means at its outer end and having its inner end portion slidably arranged within said guide slot, said last-mentioned bar having a retainer strap secured to its upper side at its inner end overhanging the sides of the same for sliding contact with the upper faces of said spaced bars, the bar of said second member being provided with a gear rack on its upper face, bearings secured to the upper sides of said spaced bars, a shaft in said bearings, a segment gear on said shaft between said bearings in engagement with said gear rack, an operating lever extending outwardly from said segment gear, a toothed latch segment secured to the outer side of one of said spaced bars, a latch carried by said operating lever and adapted for engagement with said toothed segment, and means for actuating said latch.

3. A device for adjusting railway tracks, comprising two members telescopically arranged, one of said members comprising a bar having rail-engaging means at its outer end, two spaced bars secured to opposite sides of said first-mentioned bar at the inner end thereof, electrical insulation between said spaced bars and said first-mentioned bar, the second member comprising a bar having rail-engaging means at its outer end and having its inner end portion slidably arranged between said two spaced bars out of contact with said insulation, the bar of said second member having means to retain it in alinement with the other member, one of said members having a gear rack on its upper face, a segment gear retained in mesh with said gear rack, and an operating lever extending outwardly from said segment gear.

4. A device for adjusting railway tracks, comprising two members telescopically arranged, one of said members comprising a bar having rail-engaging means at its outer end and two spaced bars at opposite sides of said first-mentioned bar at the inner end thereof to form a guide slot therebetween, electrical insulation strips between said first-mentioned bar and said two spaced bars, bolts passed through the three bars forming said member and through said insulation strips, an insulation sleeve surrounding each of said bolts within said first-mentioned bar and having its ends in contact with said insulation strips, a second member comprising a bar having rail-engaging means at its outer end and having its inner end portion slidably arranged within said guide slot, and means for moving said members relatively, said insulation being at all times free of moving contact with any part of the device.

5. A device for adjusting railways tracks, comprising two telescopic members having rail-engaging means at their other ends, one of said members having a gear rack, a bearing element on the other member, a pintle loosely arranged within said bearing member, a gear segment loosely applied to said pintle, said pintle being removable from said bearing and said gear segment being removable from said pintle to allow readjustment of said gear segment with respect to said gear rack, thereby permitting a greater range of relative movement of said two telescopic members than the range of the teeth on said gear segment.

LYDELL L. WILSON.