G. DUPES.

TRACK ADJUSTER OR INDICATOR.

APPLICATION FILED APR. 22, 1913.

1,096,357. Patented May 12, 1914.

Fig. 1.

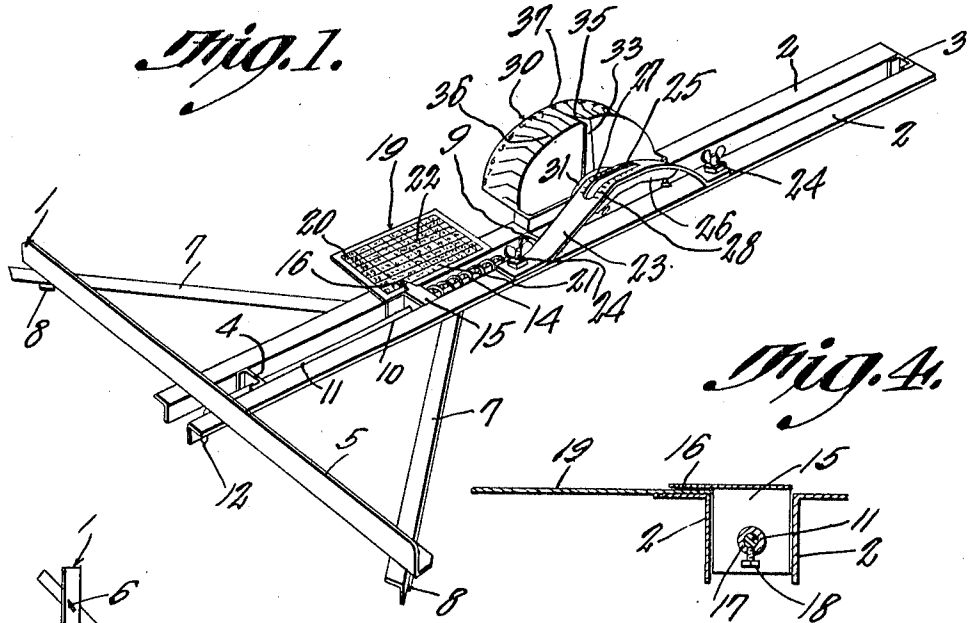


Fig. 4.

Fig. 2.

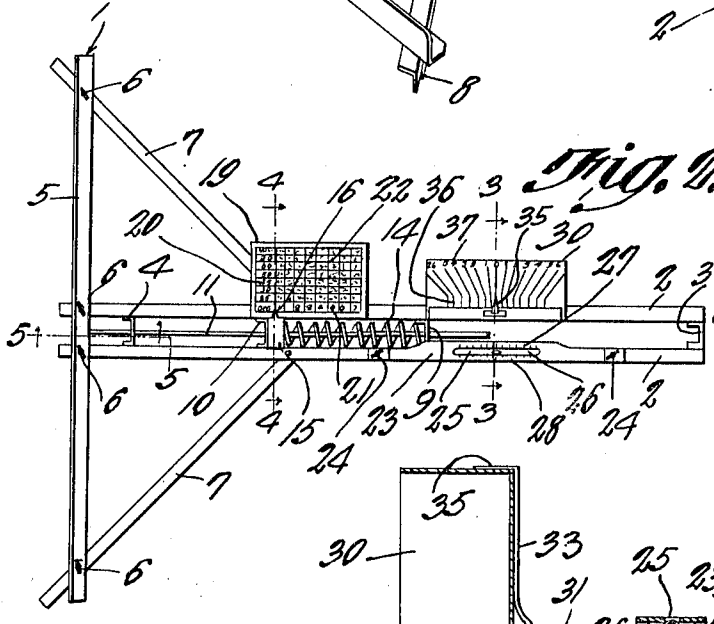


Fig. 5.

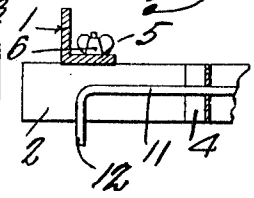


Fig. 3.

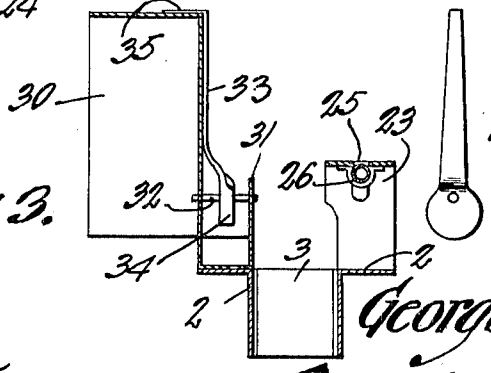


Fig. 6.

Witnesses

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TRACK ADJUSTER OR INDICATOR.

1,096,357. Specification of Letters Patent. Patented May 12, 1914.

Application filed April 22, 1913. Serial No. 762,963.

To all whom it may concern:

Be it known that I, GEORGE DUPES, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Track Adjuster or Indicator, of which the following is a specification.

The device forming the subject matter of this application is adapted to be employed for indicating the elevation of the outer rail of a curve upon a railroad track, for the degree of curvature of the track and for the speed at which the train commonly traverses the curve.

The invention aims to provide novel means whereby the curvature of the track may be indicated, it being possible to read off at a glance, the required elevation for any degree of curvature, and for any speed.

It is within the scope of the invention to improve generally and to enhance the utility of a device of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:—Figure 1 shows the invention in perspective; Fig. 2 is a top plan; Fig. 3 is a transverse section on the line 3—3 of Fig. 2; Fig. 4 is a transverse section on the line 4—4 of Fig. 2; Fig. 5 is a longitudinal section on the line 5—5 of Fig. 2; and Fig. 6 is a plan of the weighted index finger.

In carrying out the invention there is provided a support 1 which may be of any form. Preferably, however, the support 1 comprises parallel longitudinal bars 2 which may be angle members. The longitudinal bars 2 are connected at one end by a brace 3. The bars 2 are also connected by a guide 4, located at a point remote from the brace 3. Superposed upon the longitudinal bars 2 and disposed transversely of the same adjacent the guide 4 is a cross bar 5 which may be an angle member. The cross bar 5 is removably held upon the bars 2 by means of wing bolts 6. The rear ends of braces 7 are pivoted to the longitudinal bars 2, and the forward ends of the braces 7 are connected by other wing bolts 6 with the ends of the cross bar 5. The construction, obviously, is such that the cross bar 5 may be removed at will, the braces 7 being swung into parallelism with the longitudinal bars 2. In this manner, the structure may be readily collapsed. Track engaging lugs 8 extend downwardly from the braces 7, adjacent the forward ends thereof. The longitudinal bars 2 are connected also by an abutment 9 and by a guide 10.

Mounted to slide in the guides 4 and 10 and in the abutment 9 is a movable member 11 which may be a rod. The inner end of the rod 11 is equipped with a depending, track engaging finger 12. A compression spring 14 surrounds the rod 11 and is received at one end by the abutment 9, the inner end of the spring 14 being received by an indicator 15 which is secured adjustably to the rod 11. The indicator 15 is provided with a laterally extended finger 16 and is equipped with a socket 17 which receives the rod 11. Threaded into the socket 17 and adapted to engage the rod 11 is a set screw 18 constituting means whereby the indicator may be adjusted longitudinally of the rod 11.

The finger 16 of the indicator 15 overhangs a plate 19, secured to one of the longitudinal bars 2. The plate 19, adjacent one end, is provided with a transverse scale 20, indicating the number of miles per hour at which the trains may travel. Extended longitudinally of the plate 19, adjacent the inner edge thereof is a scale 21 which is graduated to indicate the different degrees of curvature. Other scales 22 are located above the curvature scale 21. The scales 22 are graduated to indicate the number of inches of elevation required for the outer rail of the curve under different degrees of curvature and different speeds.

Removably secured to one of the longitudinal bars 2 is a curved housing 23, the same if desired, being held in place by wing bolts 24. The housing 23 is provided with a longitudinal slot 25 adapted to disclose a curved level tube 26 which may be secured to the under face of the housing 23. The

housing 23 upon one side of the slot 25 therein is graduated as indicated at 27, to indicate the number of inches of elevation required for the outer rail. Upon the other side of the slot 25, the housing 23 may be inscribed as indicated at 28, with a scale indicating gradients.

Secured to one of the longitudinal bars 2 and ordinarily located opposite to the housing 23 is a curved casing 30, provided with an upstanding arm 31, as shown most clearly in Fig. 3. In the side wall of the casing 30 and in the arm 31 is mounted a shaft 32, carrying an index 33, weighted at its lower end as indicated at 34. The index 33 is equipped with a laterally extended finger 35, adapted to move over the edge of the curved upper face of the casing 30. The finger 35 is adapted to coöperate with radial marks 36, inscribed on the upper face of the casing 30, there being numerals 37 at the ends of the marks 36, the numerals 37 indicating the different numbers of inches of elevation required for the outer rail of the track.

In operation, the lugs 8, and the finger 12 of the slidable rod 11 are brought into contact with the outer edge of the inner rail of the track, the bars 2, adjacent their outer ends, resting upon the outer rail. When the parts are positioned as above described, the rod 11 will be slid toward the outer rail, owing to the engagement between the finger 12 and the outer edge of the inner rail, the amount of longitudinal movement imparted to the rod 11 depending upon the degree of curvature of the track. When the rod 11 is slid outwardly, in the manner hereinbefore described, the indicator 15 will be carried outwardly toward the outer rail and the finger 16 of the indicator 15 will register upon one of the markings of the scale 21 which indicates the degree of curvature of the track. Thus, for instance, the operator will be informed at a glance, that he is working upon a three degree curve. Suppose that it is desired to elevate this three degree curve for a speed of sixty miles per hour. Then the operator notes that particular mark upon the scale 22 which is alined longitudinally with the sixty mile mark on the scale 20 and alined transversely with the three degree mark on the scale 21. Assuming that it is found that the required elevation of the outer rail under the conditions above pointed out is eight inches, the jack is placed under the outer rail of the track, and the outer rail of the track is elevated. In this manner, the outer ends of the longitudinal bars 2 are elevated, and the bubble in the level tube 26 moves accordingly. When the bubble in the level tube is opposite to the eight inch mark on the scale 27 on the housing 23, the operator is informed that the outer rail has been elevated to the proper extent. The ballast is then tamped under the ties, to hold the outer rail elevated, and the jack is removed.

Since the outer rail of the track is at a higher elevation than the inner rail, the level tube 26 indicates true conditions only when the part 2 defines a radius of the curve. Owing to the large radius of the curve, it is not possible to determine by inspection that the part 2 lies in a radius of the curve. The part 2 lies in a radius of the curve only when the lugs 8 touch the outer edge of the inner rail. It cannot be ascertained by inspection that the lugs 8 touch the outer edge of the inner rail, because the lugs are hidden by the braces 7 and the bar 5. Therefore, the operator may be relying on the tube 26 when the tube is not indicating true conditions. If the operator is working on a curve which is known to be a three degree curve, then, if the finger 15 does not indicate a three degree curve on the table 22, the operator knows at once that the part 2 is not disposed radially of the curve and that the level tube 26 is not to be relied upon. Then the operator pushes the device inwardly until the finger 15 registers on the three degree curve mark on the table 22. Under such circumstances it is certain that the lugs 8 touch the outer edge of the inner rail, that part 2 is disposed radially of the curve, and that the level tube 26 is so positioned that it will indicate correctly, the amount of elevation to be given to the outer rail, for the particular degree of curvature.

Instead of using the housing 23 and the level tube 26, the casing 30 and the pivotally mounted index 33 may be resorted to, it being obvious that when the support 1 is tilted in the manner hereinbefore described, the finger 35 of the index 33 will move along the marks 36 which are inscribed on the top of the casing 30, the numerals 37 which are adjacent the ends of the marks 36 serving to indicate when the outer rail has been elevated to the proper extent.

Either the graduated casing 30 and the pivotally mounted index 33, or the housing 23 and the level tube 26 may be employed; or both of these structures may be employed together, one of them acting as a check upon the other.

When it is desired to find the grade of a piece of track or to raise the track to any selected grade, the support 1 may be laid lengthwise upon the rail, whereupon the bubble in the level tube 26, registering on the gradient scale 28 of the housing 23 will give the desired information.

Having thus described the invention, what is claimed is:—

1. In a device for determining the elevation of the outer rail of a curved track, a support having spaced rail-engaging elements; a scale on the support and indicating

different amounts of curvature; a movable, rail-engaging member coöperating with the rail-engaging elements and mounted on the support and adapted to register on the curvature scale; and level-indicating mechanism on the support, having graduations indicating rail elevations for different degrees of curvature.

2. In a device for determining the elevation of the outer rail of a curved track; a support; means on the support for engaging one rail of the track to dispose the support radially of the track; a movable rail-engaging member carried by the support and coöperating with said means; and a scale upon the support, upon which scale the movable member registers.

3. In a device for determining the elevation of the outer rail of a curved track, a support; means on the support for engaging one rail of a curved track to dispose the support radially of the track; a movable rail-engaging member carried by the support and coöperating with said means; resilient means for actuating the rail-engaging member toward the track engaging means; and a scale upon the support, upon which scale the movable member registers.

4. In a device for determining the elevation of the outer rail of a curved track; a support; rail-engaging means on the support for maintaining the support radially of the track; a scale on the support indicating different amounts of curvature; a movable, rail-engaging member coöperating with said means and mounted on the support and adapted to register on the scale; resilient means for actuating said member into rail-engaging position; the level-indicating mechanism on the support, having graduations indicating rail elevation for different amounts of curvature.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE DUPES.

Witnesses:
SELINA WILLSON,
I. E. SIMPSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."