To all whom it may concern:

Be it known that we, ALFRED HACKWORTH and JESSE HACKWORTH, citizens of the United States, residing at Ironton, in the county of Lawrence and State of Ohio, have invented certain new and useful Improvements in Car-Controlling Mechanism, of which the following is a specification.

This invention relates to an improved car controlling mechanism especially designed for use in railway yards where cars are, by gravity, shifted from one track to another and the cars thus sorted and assembled in trains.

The invention has as one of its principal objects to provide a mechanism whereby a car traveling down a grade may, from a suitable tower, be braked and controlled.

A further object of the invention is to provide a mechanism which will eliminate the necessity for numerous crews of workmen for handling the cars in the yards.

And the invention has as a still further object to provide a mechanism which, by dispensing with the usual workmen, will effect a great saving of life and wherein said mechanism will be capable of stopping a car at any desired point so that damage to the rolling stock such as is now incident to frequent collisions, will be eliminated.

Other and incidental objects will appear hereinafter.

In the drawings:

Figure 1 is a perspective view showing our improved mechanism in connection with several tracks of a railway yard.

Figure 2 is a transverse section showing the mounting of the brake shoes or rails of the mechanism.

Figure 3 is a transverse section showing the connections between the rockers of the brake shoes and the brake bar employed.

Figure 4 is a fragmentary plan view showing the mounting of the operating lever for the brake bar.

Figure 5 is a fragmentary section showing the mechanism for reciprocating the brake bar.

Figure 6 is a detail perspective showing one of the rollers employed for supporting the brake bar as well as one of the roller plates.

Figure 7 is a detail section showing the manner in which the sections of the brake shoes are connected.

Figure 8 is a detail section showing the cross shaft carried by each pair of rockers employed, and

Figure 9 is a detail section taken on the line 9—9 of Figure 8, looking in the direction of the arrows.

Referring now more particularly to the drawings, we shall describe our improved mechanism in connection with a single track, the rails of which are indicated at 10 while the track ties are indicated at 11. The track is of ordinary construction, but preferably, the ties are, as suggested in the drawings, arranged upon a cement track bed. Embracing each of the ties at the inner sides of the rails 10 are supporting yokes 12, the ends of which project upwardly and extending through the end portions of said yokes are rods 13 coating with the upper sides of the ties for securing the yokes thereon. Mounted to oscillate upon each of said rods is a pair of upstanding rockers 14 and journaled through the upper end portions of each pair of rockers is, as shown in Figures 8 and 9, a cross shaft 15. Oil ducts 15 lead from the upper ends of the rockers to the bearings for the shafts 15 and normally closing said ducts are cover plates 16. The rockers project above the track rails 10 and secured to said rockers are companion brake shoes or rails 17 spaced at the inner sides of the track rails. The brake shoes are formed in sections and connecting said sections are, as shown in Figure 7, tie bars 17' bolted to the sections.

Suitably mounted upon the ties 11 at spaced points along the track are pairs of confronting blocks 18 and slideable between the blocks of the several pairs is a brake bar 19. Alternating with the pairs of blocks 18 are substantially U-shaped keepers 20 engaging over the brake bar and secured to the track ties for holding the brake bar against displacement, and mounted within certain of said keepers at suitably spaced points throughout the length of the brake bar are roller plates 21. Struck from each of these plates is, as shown in detail in Figure 6, a pair of upstanding toothed flanges 22 and formed to coact with said flanges is a roller 23 provided near its ends with grooves 24 in which are formed teeth adapted to coact with the teeth of the flanges. The rollers are thus supported to sustain the brake bar and as the brake bar is shifted longitudi-
nally, the rollers will move along the flanges 22 of the roller plates beneath said bar. At the ends of the bar are arranged brackets 25 and bearing between these brackets and the bar are cushioning springs 26 designed to absorb shock upon the bar when moved longitudinally. At their outer end portions, the blocks are cut away and pivoted upon each pair of blocks at the inner ends of said cut away portions is a pair of coating levers 27 or bell cranks confronting the upper sides of the blocks. These levers are mounted to rock upon suitable posts or pins 28, upstanding from the blocks and at their inner end portions extend across the bar 19 in overlapping relation. Formed in the inner end portions of said levers are slots 29 and extending through said slots are headed pins 30 connecting the levers with the bar. At their outer end portions, the levers 27 are widened and pivotally connected thereto are pairs of links 31 in which are formed, as particularly shown in Figure 9, slots 32. The links of said pairs straddle the cross shafts 15 and 16 engaged through said shafts are coupling pins 33 extending freely through said slots connecting the links with the shafts. Surrounding the pairs of links 31, in contact with the shafts are collars 34. These links also carry collars 35 held by tapered stop pins or keys 36 engaged through the slots 52 of the links and bearing between said collars are springs 37 acting to retract the links so that the pins 33 will normally rest at the outer ends of the slots 32.

Mounted beneath the railway track and preferably housed within the track bed, is an air cylinder 38 from which extends a piston 39. This structure may be of any approved character and any approved means may be provided for selecting the type of the piston in opposite directions. Extending between adjacent ties of the track is a cross bar 40 and mounted to rock upon said cross bar is a lever 41 pivotally located at its lower end to the piston 39 while at its upper end said lever is provided with teeth. Secured to the lower side of the brake bar 19 to contact with the teeth of the lever is a rack bar 42. Each track of a railway yard will, as suggested in Figure 1, be provided with the mechanism and, preferably, a tower, as conventionally illustrated at 43, will be employed as a controlling station for all of the mechanism.

Any approved means may be provided for supplying air under pressure to the cylinder 38 associated with each track, the flow of air being controlled from the tower 43. However, we do not wish to be limited in this regard as any other approved means may be employed in lieu of the use of compressed air, as suggested in the present instance.

Returning now to the mechanism associated with a single track, it will be seen that when the lever 41 is rocked, the bar 19 will be moved longitudinally. Upon forward movement of the bar, the levers 27 will, as shown in dotted lines in Figure 4, be rocked forwardly, which, as will be at once appreciated, will result in rocking the brake shoes 17 laterally outward to coat, as suggested in Figure 3, with the wheels of a car traveling over the track. By increasing the thrust of the brake bar, the brake shoes may be caused to tightly bind against the inner sides of the car wheels so that the car may be readily braked and checked in its movement. In this connection, it will be observed that when the rockers 14 are swung laterally, the cross shafts 15 will turn upon said rockers so that binding between the pins 33 and links 31 will be avoided while the links will slide forwardly over the cross shafts to effect compression of the springs 37. These springs will, therefore, serve to cushion the thrust of the levers 27 and will yieldably maintain the brake shoes 17 in engagement with the car wheels. Liability of injury to said wheels or damage to the mechanism will thus be reduced to a minimum. It will accordingly be seen that we provide a mechanism of highly effective design and since the cars traveling upon the tracks of a railway yard may be readily controlled by the mechanism the necessity for numerous workmen is eliminated. Furthermore, since the cars may be readily checked in their movement and stopped, as desired, the liability of damage to the rolling stock by collision will be minimized. As suggested in Figure 1, the rails of the several tracks of the yard are preferably bonded while signal lamps 44 are arranged within the tower and are electrically connected with the rails by wires 45 for indicating the position of the trains on each of the tracks. This signal mechanism may be of any approved character and accordingly no attempt is made to show said mechanism in detail.

Having thus described the invention, what is claimed as new is:

1. A car controlling mechanism including companion brake shoes, yokes embracing ties of a track and having upstanding end portions, rods extending through the end portions of the yokes to coat with the ties connecting the yokes therewith, rockers pivotally supported upon said rods and swingingly supporting the shoes between the track rails for movement to engage the wheels of a car upon said rails, and means for swinging said rockers.

2. A car controlling mechanism including companion brake shoes, pairs of rockers pivotally supporting said shoes between a pair of track rails, cross shafts extending between the rockers of said pairs, a bar reciprocable for swinging the rockers and moving the shoes to engage the wheels of
a car upon said rails, and an operative connection between the bar and said cross shafts.

3. A car controlling mechanism including rockers, brake shoes supported by said rockers between a pair of track rails, shafts carried by the rockers, a reciprocal bar, pivotally mounted levers operatively connected with the bar, and links connecting the levers with said shafts whereby the bar may be shifted for swinging the rockers and moving said shoes into engagement with the wheels of a car upon said rails.

4. A car controlling mechanism including rockers, brake shoes supported by said rockers between a pair of track rails, shafts carried by the rockers, a reciprocal bar, pivotally mounted levers operatively connected with the bar, links carried by said levers and slidably coacting with the shafts, and springs bearing between the shafts and links for resisting inward movement of the shoes toward each other, the bar being shiftable for swinging said rockers and spreading the shoes outwardly to engage the wheels of a car upon said rails.

5. A car controlling mechanism including companion brake shoes, rockers pivotally supporting the shoes between a pair of track rails, a reciprocal bar, pivotally mounted levers operatively connected with said bar, shafts carried by the rockers, links carried by said levers and provided with slots, pins carried by the shafts to extend through said slots slidably connecting the links with the shafts, collars upon the links, and springs surrounding said links to bear between said collars and acting to resist inward movement of the shoes toward each other, the bar being shiftable for swinging the rockers outwardly and moving the shoes to engage the wheels of a car upon said rails.

In testimony whereof we affix our signatures.

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