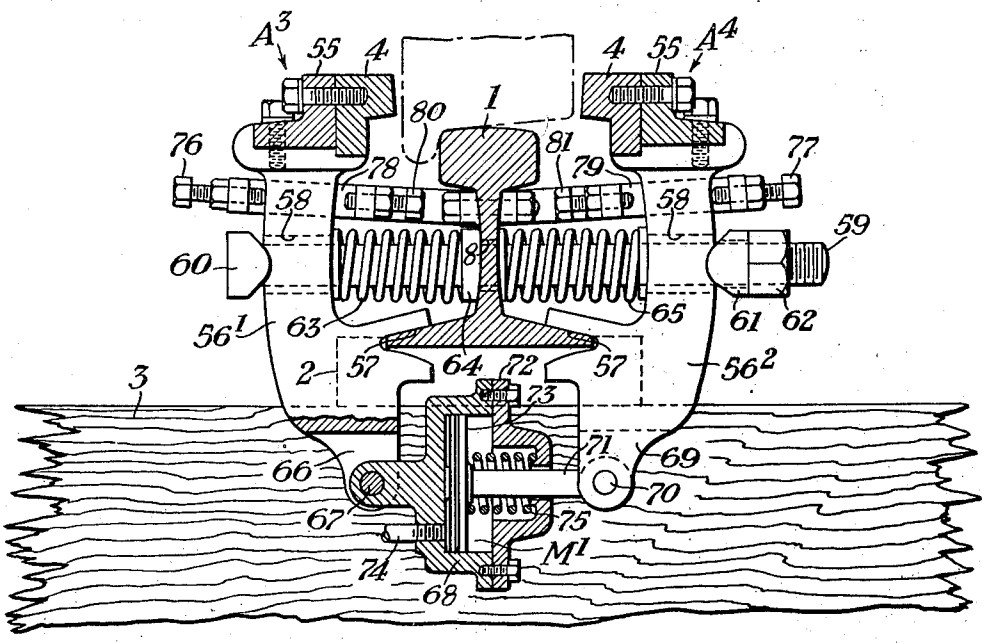
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RAILWAY BRAKING APPARATUS

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RAILWAY BRAKING APPARATUS

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3 Claims. (Cl. 188—62)

My invention relates to railway braking apparatus, and particularly to that class of braking apparatus known as car retarders. More particularly, my present invention relates to car retarders of the type in which the braking bars exert a fixed amount of retardation on all cars passing through the retarder.

The present application is a division of my copending application, Serial No. 85,506, filed on June 16, 1936 for Railway braking apparatus.

I shall describe one form of car retarders embodying my invention, and shall then point out the novel features thereof in claims.

The accompanying drawing is a vertical sectional view showing one form of car retarder embodying my invention.

Referring to the drawing, the reference character 1 designates one track rail of a stretch of railway track, which track rail is mounted on rail supports 2 secured to the usual crossties 3, only one rail support and one crosstie being shown in the drawing. Extending parallel to the rail 1 on opposite sides of the rail are two braking bars A^3 and A^4, each comprising a brake shoe 4 secured to a brake beam 55. The brake shoes and brake beams may have any desired cross sectional shape possessing the necessary strength and rigidity, but as here shown, both the brake shoes and brake beams are L-shaped in cross section.

The braking bars are secured to the upper ends of two similar levers 56^1 and 56^2 which are slidably supported adjacent their lower ends on the opposite base flanges of the rail 1 by means of recesses 57 which loosely receive the base flanges. Formed in the levers 56^1 and 56^2 between the braking bars and the recesses 57 are openings 58 which align with an opening 8 in the web of the rail 1, and extending through the openings 58 and 8 with some clearance is a spring bolt 59, one end of which is provided with a head 60 and the other end of which is provided with a washer 61 and a gauge adjusting nut 62. As will appear more fully hereinafter, the head 60 of the bolt 59 at times serves as a fulcrum for the lever 56^1, and to facilitate rotation of this lever about the bolt head, the inner face of the bolt head is rounded in the manner shown. In a similar manner, the washer 61 at times serves as a fulcrum for the lever 56^2, and to facilitate rotation of this lever about the washer, the inner face of the washer is rounded in the manner shown. The lever 56^1 is constantly biased into engagement with the bolt head 60 by means of a compressed coil spring 63 which surrounds the spring bolt 59 between the lever and a shoulder 64 which is provided on the spring bolt, and the lever 56^2 is similarly constantly biased into engagement with the washer 61 by means of a compressed coil spring 65 which surrounds the bolt between the lever and the web of the rail 1. The lower end of lever 56^1 is provided with a depending bifurcated lug 66 which is pivotally connected at point 67 with the cylinder 68 of a fluid pressure motor M1, and the lower end of lever 52^2 is provided with a depending bifurcated lug 69 which is pivotally connected at point 70 with one end of a piston rod 71, the other end of which projects into cylinder 68 through a cylinder head 72 and is attached to a reciprocable piston 73. The cylinder 68 is provided with an inlet pipe 74 through which compressed air may at times be admitted to the left-hand end of the cylinder, thereby forcing the piston 73 toward the right and the cylinder 68 toward the left, and so spreading the lower ends of the levers apart. The lower ends of the levers are biased toward each other by means of a spring 75 which surrounds the piston rod 71 between the piston 73 and the cylinder head 72. The positions to which the levers 56^1 and 56^2 are free to swing due to the bias of the spring 75 is limited by adjustable stop screws 76 and 77, respectively, mounted in brackets 78 and 79 secured to the rail 1, and the positions to which the levers are free to move when air is supplied to the motor M is limited by adjustable stop screws 80 and 81, respectively, mounted in the brackets 78 and 79. The stop screws 76 and 77 are so adjusted that when the levers are engaging these stop screws both braking bars will occupy positions in which they are clear of the path of car wheels traversing rail 1, and the stop screws 80 and 81 are so adjusted that when the levers are engaging these stop screws the brake shoes of both braking bars will project into the path of car wheels traversing rail 1. The parts are so proportioned that the levers will not under any conditions pivot about the base flanges of the rail.

With the retarder constructed in the manner just described, it will be obvious that if a car passes through the retarder when no fluid is being supplied to the motor M1, the braking bars will be held out of engagement with the car wheels by the spring 75, and the car retarder will not, therefore, exert any force on the car. When, however, fluid is supplied to motor M1, the braking bars will then be biased by the fluid to such positions that the brake shoes will frictionally engage the opposite side faces of each car wheel

traversing rail 1, and the retarder will therefore act to retard the speed of cars. It should be noted that when the braking bars are engaging a car wheel they are free to move toward and away from the rail so as to compensate for variations in the thickness of car wheels, and in the spacing of the wheels on different axles, thereby providing a smooth and efficient braking action.

The gauge adjustment of the retarder may be varied by adjusting nut 62, while the positions of the braking bars in both their open and closed positions may be varied by adjusting the stop screws 76, 77, 80, and 81, whereby variations in retardation caused by shoe wear and the like can be quickly and conveniently compensated for.

Although I have herein shown and described only one form of railway braking apparatus embodying my invention, it is understood that various changes and modifications may be made therein within the scope of the appended claims without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim is:

1. Railway braking apparatus comprising two levers disposed on opposite sides of a track rail and slidably supported adjacent their lower ends on the rail flanges, braking bars secured to the upper ends of the levers, a bolt extending with clearance through an opening in each lever and an aligned opening in the track rail and provided at one end with a head and at the other end with a washer and a nut, a shoulder formed on said bolt between the one lever and the rail, a first compressed coil spring surrounding said bolt between said one lever and said shoulder, a second compressed coil spring surrounding said bolt between the rail and the other lever, and a fluid pressure motor connected between the lower ends of the levers for rotating the levers about the bolt head and said washer as fulcrums to positions in which the brake shoes will frictionally engage the opposite side faces of car wheels traversing the track rail.

2. Railway braking apparatus comprising two levers disposed on opposite sides of a track rail and slidably supported adjacent their lower ends on the rail flanges, braking bars secured to the upper ends of the levers, a bolt extending with clearance through an opening in each lever and an aligned opening in the track rail and provided at one end with a head and at the other end with a washer and a nut, a shoulder formed on said bolt between the one lever and the rail, a first compressed coil spring surrounding said bolt between said one lever and said shoulder, a second compressed coil spring surrounding said bolt between the rail and the other lever, a fluid pressure motor connected between the lower ends of the levers for rotating the levers about the bolt head and said washer as fulcrums to positions in which the brake shoes will frictionally engage the opposite side faces of car wheels traversing the track rail, and a spring in said fluid pressure motor for rotating the levers to positions in which the brake shoes are clear of the path of car wheels traversing the track rail.

3. Railway braking apparatus comprising two levers disposed on opposite sides of a track rail and slidably supported adjacent their lower ends on the rail flanges, braking bars secured to the upper ends of the levers, a bolt extending with clearance through an opening in each lever and an aligned opening in the track rail and provided at one end with a head and at the other end with a washer and a nut, a shoulder formed on said bolt between the one lever and the rail, a first compressed coil spring surrounding said bolt between said one lever and said shoulder, a second compressed coil spring surrounding said bolt between the rail and the other lever, a fluid pressure motor connected between the lower ends of the levers for rotating the levers about the bolt head and said washer as fulcrums to positions in which the brake shoes will frictionally engage the opposite side faces of car wheels traversing the track rail, a spring in said fluid pressure motor for rotating the levers to positions in which the brake shoes are clear of the path of car wheels traversing the track rail, and stops for positioning the levers relative to the rail when no car wheel is being engaged by the braking bars.

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