

UNITED STATES PATENT OFFICE.

FREDERICK R. SKIDMORE, OF MILWAUKEE, WISCONSIN.

BRAKE.

SPECIFICATION forming part of Letters Patent No. 688,351, dated December 10, 1901.

Application filed June 15, 1901. Serial No. 64,659. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK R. SKIDMORE, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 My invention has for its object to provide a brake-actuating mechanism to be operated mechanically or manually, whereby the power applied may be utilized to the greatest advantage by reason of the arrangement of the
15 several levers and antifriction-rollers; and it consists in certain peculiarities of construction and combination of parts to be hereinafter fully set forth with reference to the accompanying drawings and subsequently claimed.
20 In the drawings, Figure 1 is a plan view showing my improved actuating mechanism applied to brake-beams of ordinary construction. Fig. 2 is a detailed perspective view of said mechanism, and Fig. 3 is a cross-section
25 of the track and antifriction-rollers.

Referring by letters to the drawings, A is an upward spindle, which in practice projects through the car-floor and carries at its upper extremity a handle B. To the lower end of
30 said spindle is secured a crank C, the outer extremity being pivoted to a push-rod D. Said push-rod has at its free end bearings *a a* for a shaft E. Between said bearings and secured to the shaft is a roller F, and upon the
35 outer ends of the former are also secured flanged rollers G G, the whole forming a cross-head, which travels in guides H H of a bracket I, secured to any convenient part of the framework of the car-body.

40 Pivoted to the body of the car and in the path of the roller F is a lever J, the short arm of which is connected to one of the brake-rods K, while the long arm is curved, as shown, and projects across the line of travel
45 of the roller F. However, the track may be curved and the aforesaid lever straight, which will accomplish the same result, without departing from the spirit of my invention.

The operation of the device is as follows:
50 When it is desired to set the brake, the spindle is revolved by any desired means, thereby causing the push-rod to move forward, the

rollers on the latter moving on a straight line owing to their guides H, and the roller F will consequently rock the brake-actuating lever, 55 so as to cause the brake to be immediately set. While I have shown a push-rod connected to the several rollers and cranks, it is obvious that the rollers working in their guides may be connected to any other source 60 of power to move them forward in place of the push-rod and connections shown.

The advantages of the above construction are, first, by reason of curving the lever and having guide-rollers for the push-rod and 65 also a roller-bearing to impinge against the aforesaid lever I overcome a great amount of friction and at the same time am enabled to set the brake if the chain or brake-rod is slack or taut, and also a gain of power is attained by reason of the push-rod starting to 70 set the brake close to the fulcrum of the brake-actuating lever, and when the shoe is against the wheel and the greatest power is required my push-rod is at the end of said brake-actuating lever, and thereby gaining the result 75 of a long leverage at the point where the most power is required.

While I have shown the long arm of the brake-actuating lever as preferably curved, 80 it in some cases may project at an angle across the path of the push-rod roller without departing from the spirit of my invention, the essential feature, however, being a lever with a long arm for the push-rod to work 85 upon and a short arm for the brake-rod connection.

While I have illustrated my device as shown in Fig. 1 as being applied to only one end of a car, it may be duplicated at both 90 ends, or I may connect the latter by a rod L, as illustrated in dotted lines, to an ordinary crank upon the other end of the car and attain the same result.

My device may also be connected to a train 95 of cars as well as to a single car, so that by operating one device the series will be simultaneously actuated.

Having thus described my invention, what I claim as new, and desire to secure by Letters 100 Patent, is—

1. In a brake-actuating mechanism, a pivoted actuating-lever, the short arm of which is connected to the brake, and the long arm

projecting across the path of a roller, means for actuating said roller in a straight line, a push-rod connecting the latter to an actuating-crank, substantially as set forth.

5 2. In a brake-actuating mechanism, a bracket secured to the car-frame, guides in the bracket, rollers for said guides mounted upon a spindle, a push-rod having bearings for the former, and another roller mounted
10 upon the aforesaid spindle in contact with a brake-actuating lever, the latter projecting across the path of the travel of said roller, and means for actuating said push-rod, substantially as set forth.

15 3. In a brake-actuating mechanism, a bracket secured to the car-frame, guides in said bracket, rollers adapted to be connected in said guides, a spindle for the rollers having bearings in a push-rod, another roller piv-
20 oted between the aforesaid rollers and adapted to engage the long arm of a lever which projects across the path of the former, substantially as set forth.

25 4. In a brake-actuating mechanism, a spindle pivoted in the car-frame, a handle at one end of said spindle and a crank secured to the other end, a push-rod secured to the latter, and forked at its free end to form bearings for a shaft, rollers mounted upon said
30 shaft at either end, guides for the rollers, and an intermediate roller mounted upon the aforesaid shaft between the forks of the push-rod, a lever having a long and short arm piv-

oted adjacent to the roller-guides, the long arm of the latter being curved and project- 35 ing across the path of the travel of the rollers and adapted to be rocked by the aforesaid intermediate roller when the push-rod is actuated, substantially as set forth.

5. In a brake-actuating mechanism, a piv- 40 oted actuating-lever connected to the brake, and projecting across the path of the roller, means for actuating said roller, a push-rod connecting the latter to an actuating-crank, substantially as set forth. 45

6. In a brake-actuating mechanism, a piv- 45 oted lever, one arm of which is connected to the brake, and the other projecting across the path of a cross-head, means for actuating said cross-head, whereby motion is imparted to the 50 lever, substantially as set forth.

7. In a brake-actuating mechanism, a piv- 55 oted lever, a brake connected thereto at a predetermined distance from the pivot thereof, said lever projecting across the path of a cross-head, and means for actuating said cross-head, whereby motion is imparted to the lever, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, 60 in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

FREDERICK R. SKIDMORE.

Witnesses:

M. RIETVELT,

L. A. THOMPSON.