

(No Model.)

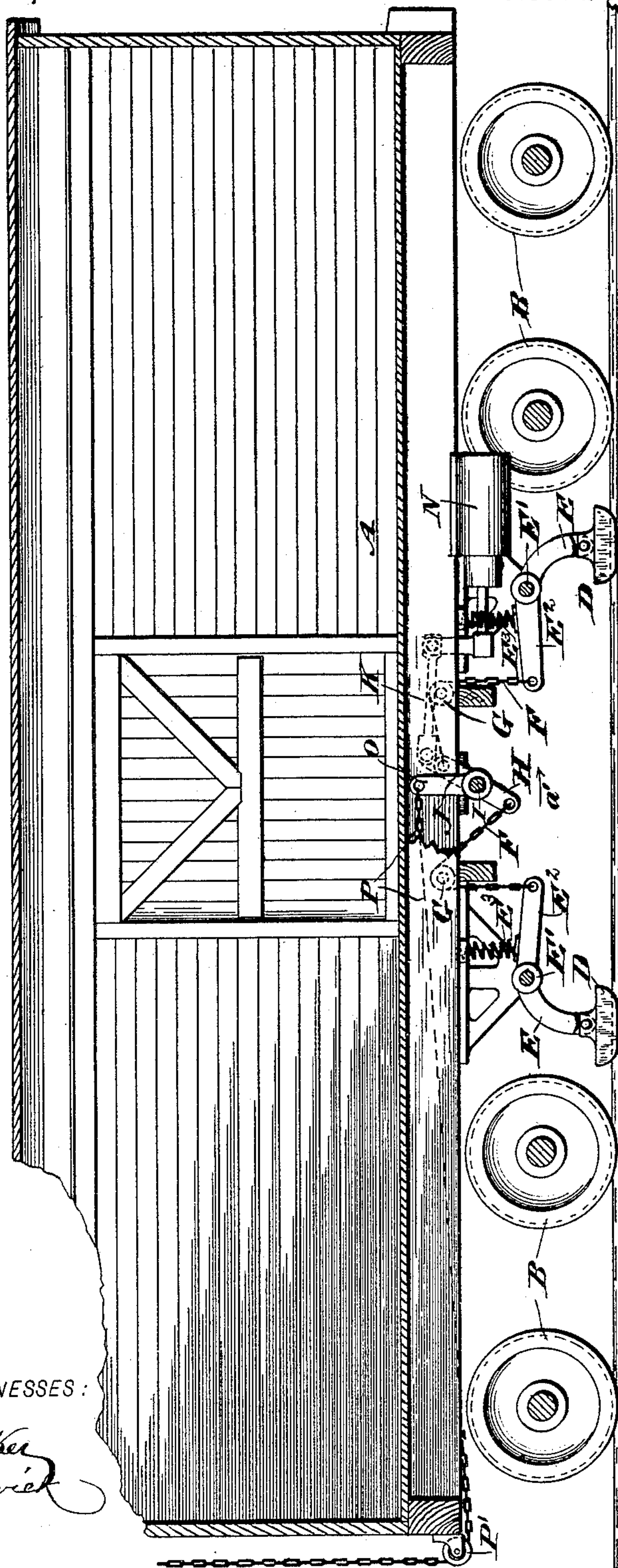
2 Sheets—Sheet 1.

J. W. FISHER.  
CAR BRAKE.

No. 477,172.

Patented June 14, 1892.

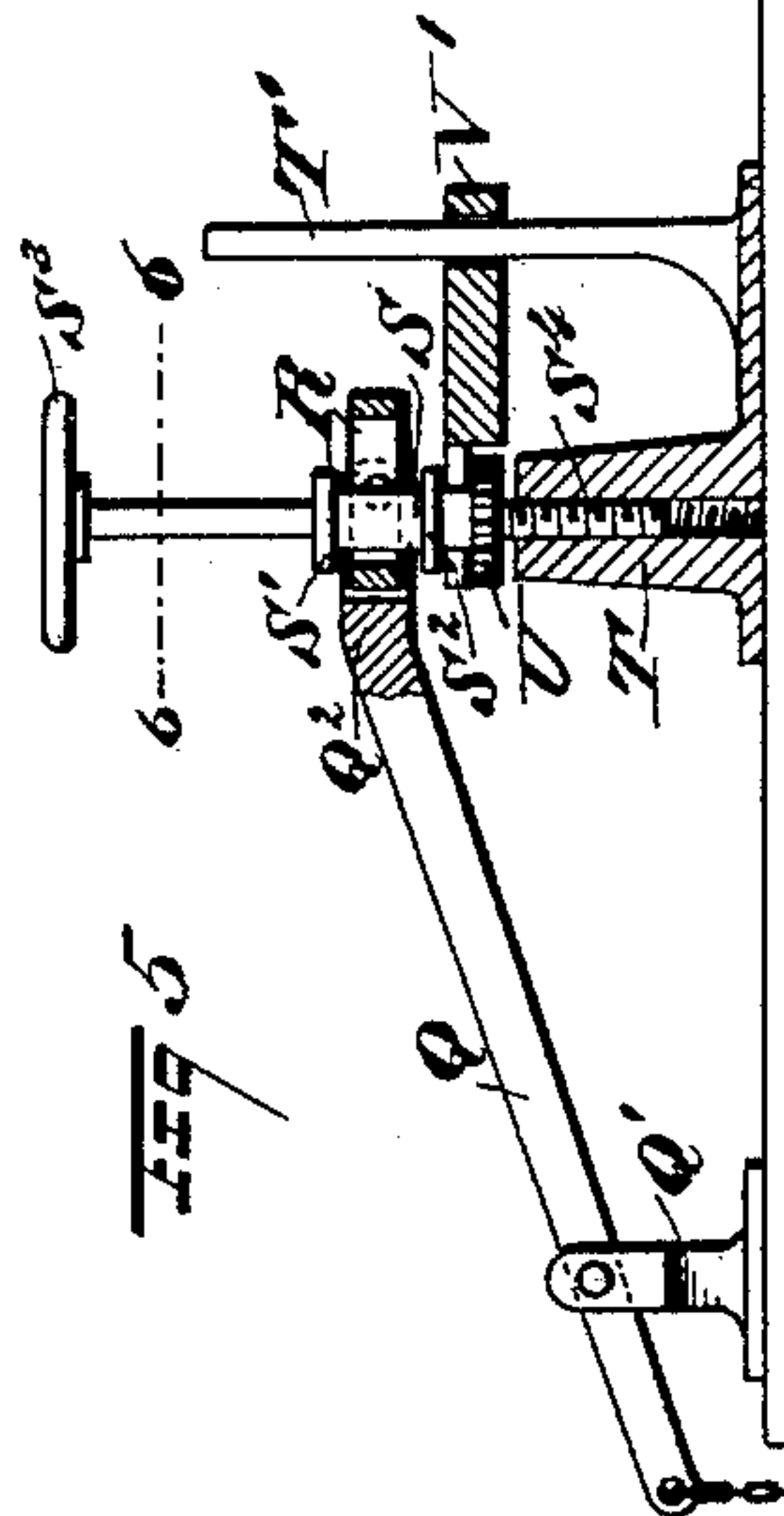
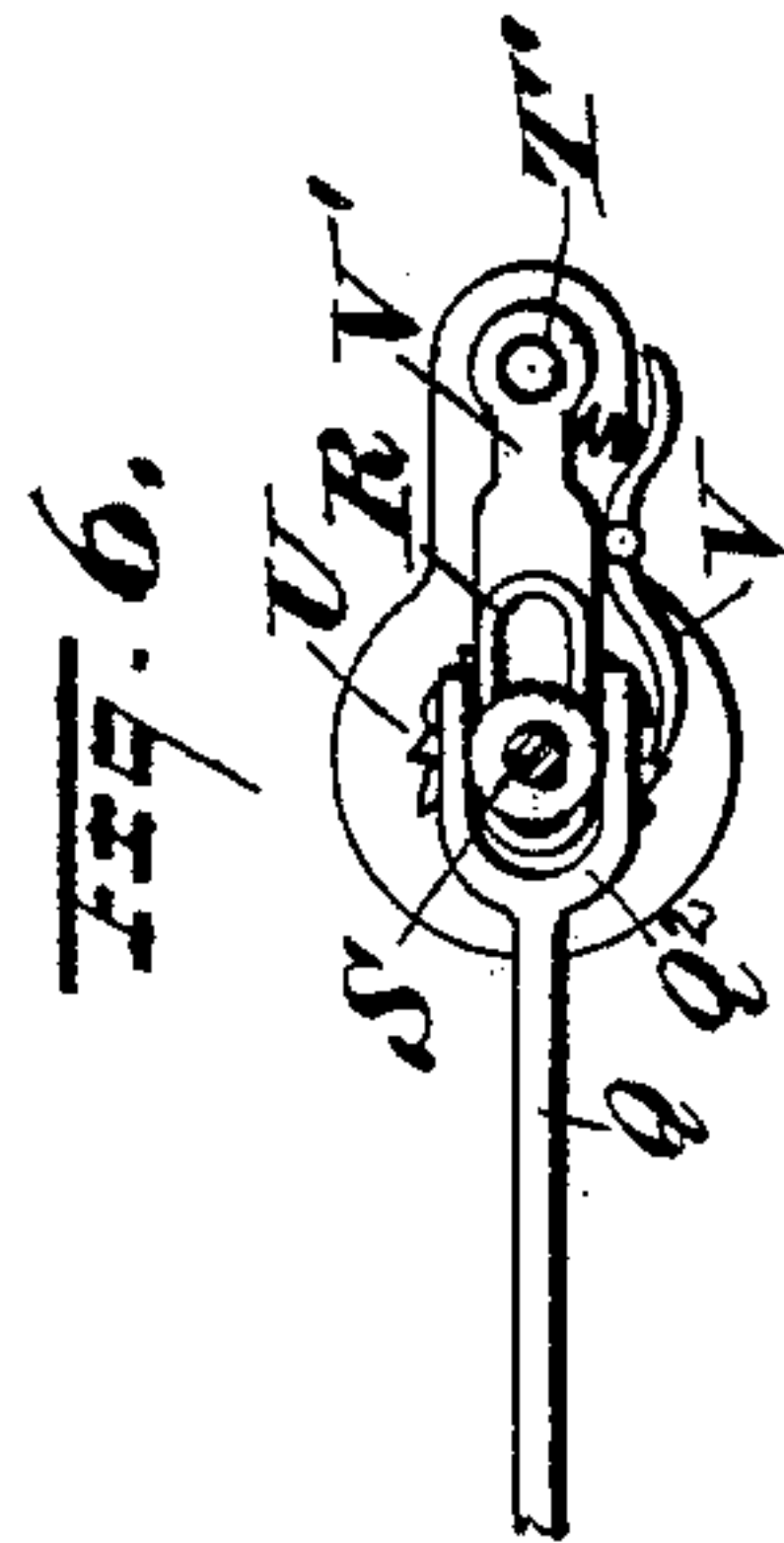
Fig. 1.



WITNESSES:

H. Walker  
C. Sedgwick

Fig. 6.



INVENTOR:

J. W. Fisher

BY

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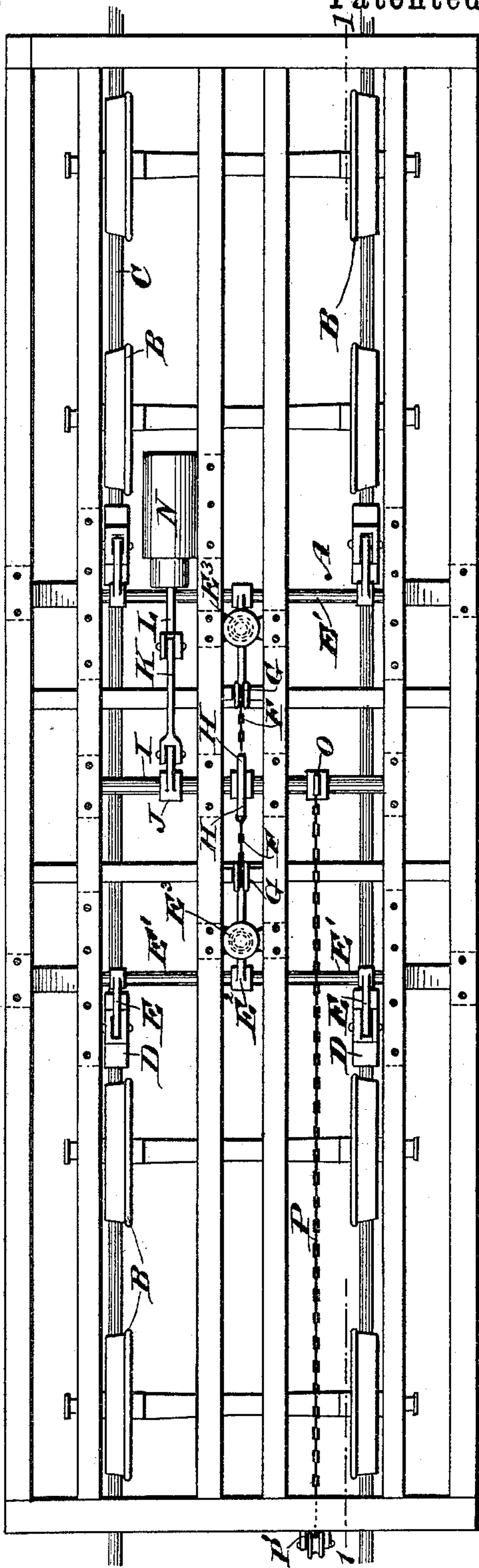
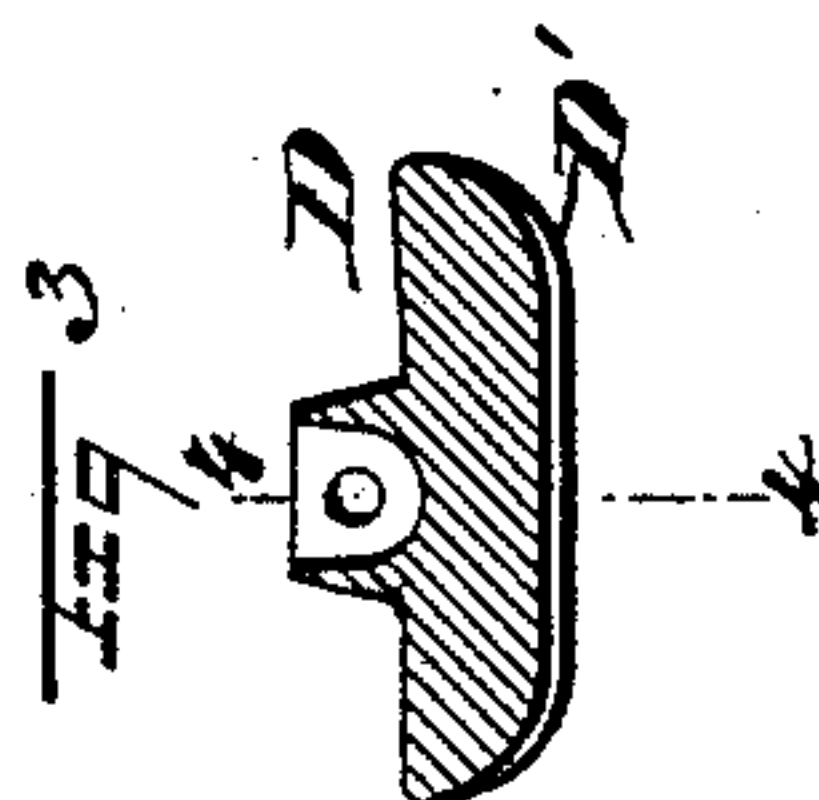
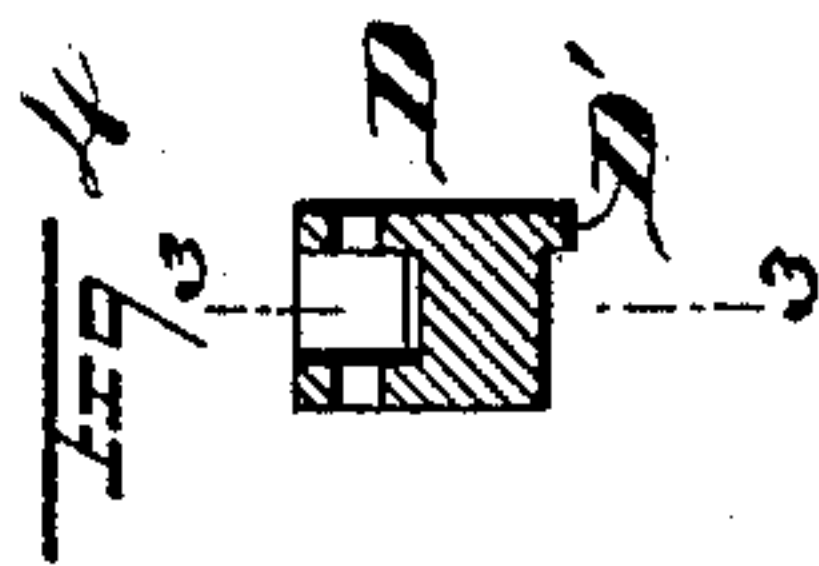


Fig 2



WITNESSES:

H. Walker  
C. Sedgwick

INVENTOR:

J. W. Fisher  
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# UNITED STATES PATENT OFFICE.

JAMES W. FISHER, OF PALOUSE, WASHINGTON, ASSIGNOR TO HIMSELF, FRANK McLAM, EARNEST JONES, WINFIELD JONES, AND EDMAN DOERING, OF SAME PLACE.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 477,172, dated June 14, 1892.

Application filed November 21, 1891. Serial No. 412,607. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. FISHER, of Palouse, in the county of Whitman and State of Washington, have invented a new and Improved Car-Brake, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved car-brake which is simple and durable in construction, very effective in operation, and arranged to brake the rails instead of the car-wheels, to prevent undue operating of the latter, and to quickly stop the train when the brakes are applied.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement as applied. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged sectional side elevation of the brake-shoes on the line 3 3 of Fig. 4. Fig. 4 is a transverse section of the same on the line 4 4 in Fig. 3. Fig. 5 is a sectional side elevation of the mechanism for applying the brakes by hand, and Fig. 6 is a sectional plan view of the same on the line 6 6 of Fig. 5.

The car A, of the usual construction, is provided with the wheels B, traveling on the rails C, adapted to be engaged between the wheels of the front and rear truck by sets of brake-shoes D, each set being composed of two shoes arranged opposite each other and adapted to engage the two rails.

Each set of brake-shoes D is pivotally connected on top with an arm E, extending from a shaft E', mounted to turn in suitable bearings secured to the under side of the car A. In the middle of the shaft E' is secured an arm E<sup>2</sup>, extending inwardly toward the middle of the car and connected with one end of a chain F, passing upward and over a pulley G, and then connecting with an arm H on a shaft I, extending transversely and mounted to turn in suitable bearings on the under side of the car A and at or near the middle of the

same, as plainly shown in Figs. 1 and 2. The arms H, connected with the two sets of brake-shoes, are arranged opposite each other on the shaft I, so that when the latter is turned in the direction of the arrow *a'* a pull is exerted on both chains F, so that the arms E<sup>2</sup> swing upward and the arms E downward. The downward motion of the latter presses the brake-shoes D in contact with the rails C, so as to brake the car.

Each of the brake-shoes is preferably provided at its inner side with a flange D', adapted to engage the inner side of the head of the rail, thus holding the brake-shoe in proper position on the rail when applied.

Each of the arms E<sup>2</sup> is pressed on by a spring E<sup>3</sup>, held on the under side of the car A and serving to release the brake mechanism when the shaft I is turned in an inverse direction of the arrow *a'* and the chains F are slack. The pressure of the springs E<sup>3</sup> causes the arms E<sup>2</sup> to swing downward, so that the shaft E' is turned and the arms E swing upward, thus lifting the brake-shoes D off the rails. The shaft I can either be turned by power or by hand, the shaft being provided for the former purpose with an arm J, pivotally connected by a link K with the piston-rod L of the brake-cylinder N, forming part of a fluid-pressure air-brake system of any approved construction. When the piston L is pushed outward at the time the engineer desires to apply the brakes, then the link K presses on the arm J and turns the shaft I in a direction the reverse of the arrow *a'*, so that the brake-shoes D are applied in the manner above described.

For applying the brake-shoes D on the rails C by hand the shaft I is provided with an arm O, extending upwardly and connected with one end of a chain P, passing along under the car to one end thereof to finally pass over a pulley P', and then upward along the end of the car to the top of the latter to connect there with one end of a lever Q, fulcrumed on a bracket Q', attached to the top of the car. The inner end of the lever Q is formed with a fork Q<sup>2</sup>, in which is pivoted a loop or link R, through which passes the staff S, formed above and below the link R with col-



lars  $S'$  and  $S^2$ , so as to move the said link up or down when the staff is moved in a like direction. On the upper end of the staff is secured the usual hand-wheel  $S^3$ , and the lower end is formed with a screw-thread  $S^4$ , screwing in a nut  $T$ , attached to the top of the car.

On the staff  $S$  is secured a ratchet-wheel  $U$ , engaged by a pawl  $V$ , pivoted on an arm  $V'$ , mounted to slide on a pin  $T'$ , arranged vertically and attached to the base of the nut  $T$ . The arm  $V'$  is formed with a fork engaging the staff  $S$  below the collar  $S^2$  and on top of the ratchet-wheel  $U$ , so that the arm  $V'$  moves up and down with the staff  $S$  when the latter is turned and screws up or down in the nut  $T$ . When the staff  $S$  moves downward, the lever  $Q$  is caused to swing so that its front end, connected with the chain  $P$ , swings upward and a pull is exerted on the said chain. This pull on the chain causes a swinging of the shaft  $I$  in the direction of the arrow  $a'$ , so that the brake-shoes  $D$  are applied on the rails  $C$  in the manner above fully described. When the shaft  $S$  is turned in an opposite direction, the lever  $Q$  swings downward with its front end and the chain  $P$  becomes slack. The springs  $E^3$  then return the brake-shoes  $D$  into their normal position—that is, off or above the rails  $C$ . The arm  $E^2$ , shaft  $E'$ , and the arms  $E$ , carrying the set of brake-shoes, form a lever carrying at one end a brake-shoe and connected at its other end with the chain  $F$ .

When the brakes are applied by hand, as above described, and the operator releases the staff-wheel  $S^3$ , then the spring-pressed pawl  $V$ , engaging the ratchet-wheel  $U$ , locks the staff  $S$  in place, so that the brakes remain applied without assistance by the operator. When the operator desires to release the brakes, he first presses the pawl  $V$  to release the latter from the ratchet-wheel  $U$ . The staff  $S$  can then be turned in an opposite direction to swing the front end of the lever  $Q$  downward to slacken the chain  $P$ , as above described.

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

1. In a car-brake, the combination, with brake-shoes adapted to engage the rails, of arms pivotally connected with the said brake-shoes, a shaft carrying the said arms, an arm projecting from the said shaft, a chain connected with the free end of the last-mentioned arm, a second shaft provided with an arm connected with the said chain, and means for turning the said shaft by hand or power, substantially as shown and described.

2. In a car-brake, the combination, with brake-shoes adapted to engage the rails, of arms pivotally connected with the said brake-shoes, a shaft carrying the said arms, an arm projecting from the said shaft, a chain connected with the free end of the last-mentioned arm, a second shaft provided with an arm connected with the said chain, means for turning the said shaft by hand or power, and a spring pressing on the chain-arm of the first-mentioned shaft, substantially as shown and described.

3. In a car-brake, the combination, with a lever for applying the brake-shoes and carrying a link pivoted thereto, of a staff provided with collars engaging the said link, and means, substantially as described, for raising and lowering the said staff, substantially as shown and described.

4. In a car-brake, the combination, with a lever for applying the brake-shoes and carrying a link pivoted thereto, of a staff provided with collars engaging the said link, means, substantially as described, for raising and lowering the said staff, and a ratchet-wheel and ratchet for locking the said staff in place to prevent its turning when the brake-shoes are applied, substantially as shown and described.

JAMES W. FISHER.

Witnesses:

J. W. PICKRELL,  
M. A. IVES.