(No Model.)

W. BYRNES.

GRIP CAR BRAKE.

No. 474,900. Patented May 17, 1892.

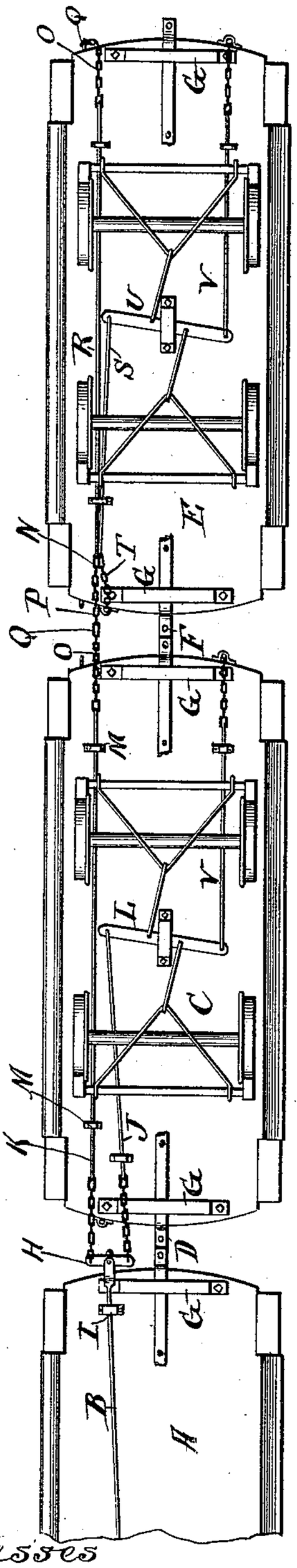

Fig. 1

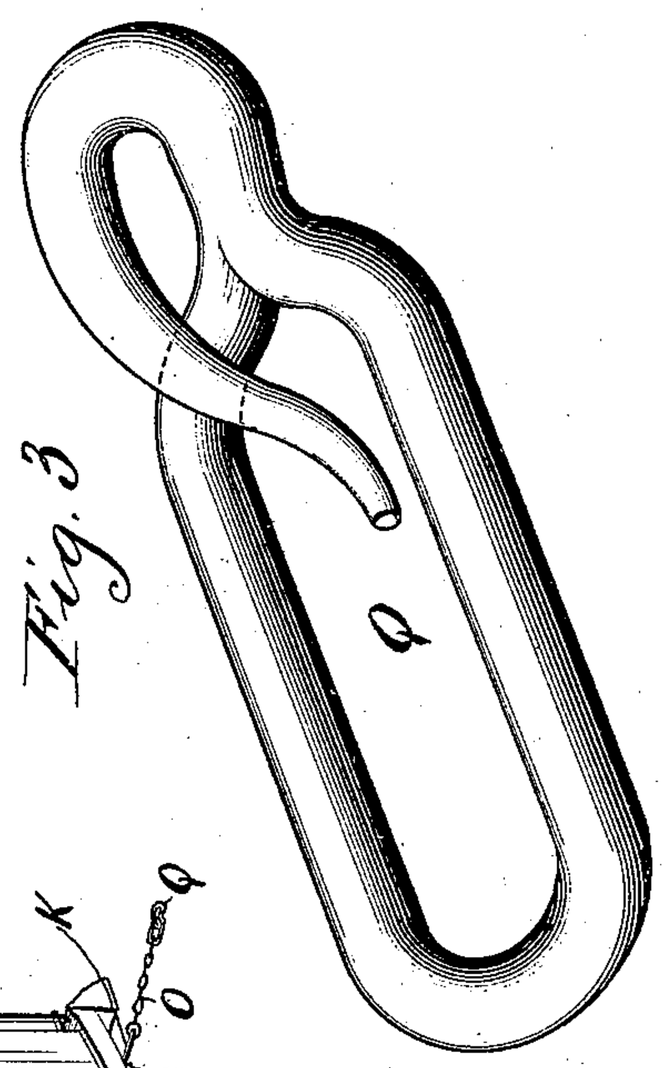

Fig. 3

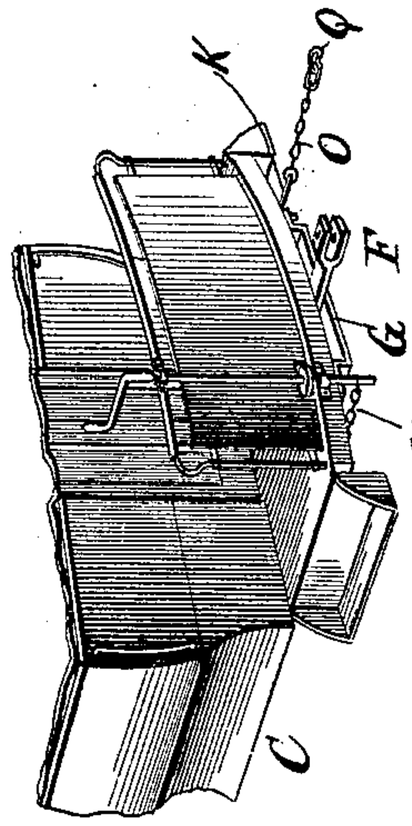

Fig. 2

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UNITED STATES PATENT OFFICE.

WILLIAM BYRNES, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ANTHONY BYRNES, OF SAME PLACE.

GRIP-CAR BRAKE.

SPECIFICATION forming part of Letters Patent No. 474,900, dated May 17, 1892.

Application filed August 8, 1891. Serial No. 402,098. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BYRNES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Grip-Car Brakes, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of the bottom of street-cars with a portion of a cable-railway grip-car. Fig. 2 is a perspective view of a portion of one end of one of the street-cars, and Fig. 3 is a perspective view of a coupling-hook for coupling the brake-rods between the cars.

My invention relates to a system for braking the cars that are drawn by a cable-railway grip-car, said system being adapted to brake several cars attached to each other, the front car being attached to the grip-car. In such street-cable-railway trains where more than one car is drawn by a single grip-car the braking devices must be attached between the trailing-cars, and these attachments must be such that they will not catch upon any part of the car when the train is turning a curve around a street-corner or being shunted sidewise to take up the cable.

The object of my invention is to make a convenient, cheap, and accessible coupling device between the cars, and one that is not liable in any way to interfere with the passage of the train around the curves by coming in contact with the cable-irons or the sills of the cars or catch upon the same and stop the train when passing around curves or when the brake is applied.

My invention consists of the combination of devices hereinafter fully specified, and made the subject-matter of the drawings and claim.

In the accompanying drawings, A represents the grip-car, which carries the grip which connects with the cable under the street.

B represents a rod, one end of which is attached to a lever on the grip-car, conveniently arranged for the gripman to operate to apply the brakes to the street-cars hauled by the grip-car.

C is a street-car coupled directly to the grip-car by the coupler D.

E is a street-car, called in common parlance a "trailer," which is coupled to the car C by the couplers F. These couplers which couple the cars are constructed and attached to the bottom of the cars in any well-known way; but they are supported on iron loops G, that are rigidly attached to the under side of the ends of the platforms in such manner as to allow a lateral movement to these couplers when the train passes around curves or is shunted laterally to pick up the cable.

The brake-rod B is attached at one end to the evener H and is supported underneath the grip-car in loops I. The evener H is attached to two brake-rods J and K. The brake-rod J is attached to the lever L, through which it applies the brakes to the wheels under the car C by means of connecting-rods. (Clearly shown in Fig. 1.) The brake-rod K is supported under the car C, near one side of it, by loops M. This brake-rod K is coupled to a link N under the car E by means of two short chains O and P and a coupling-hook Q. There are two brake-rods R and S attached to this link N and also a chain T, which passes to the hand-crank on the platform by which the conductor can brake that car. The brake-rod S is connected to the lever U, by which it applies the brakes to the wheels of the car E by the same system of connecting-rods used under the cars C.

The rods V V (shown under each of the cars C and E) connect with a hand-crank on the platform of each of the cars, by which the conductor can apply the brake to each of the cars in the usual manner. One of these hand-cranks is shown on the end of the car in Fig. 2. The brake-rod R under the car E is supported beneath the car, the same as the brake-rod K, so as to slide longitudinally, and has attached to it a chain O and coupling-hook Q, adapted to be coupled to a similar brake-rod under the next car. The brake-rod K is drawn longitudinally toward the grip-car to apply the brake to the car E, and when the cars pass around a curve in turning street-corners the corners of the car on the inside of the curve nearly touch, while the outside corners are drawn apart,

thus sliding the rods K and R, and unless there is considerable play allowed before the brakes are applied the brakes will be applied in turning a curve, which will be very objectionable. When these two brake-rods are coupled together by an open hook, the hooks are apt to catch on the loops G and get fastened in such manner as to stop the train. To obviate this difficulty I make a wide-open loop in my hook Q and bend the point of the hook down within said loop, as clearly shown in Fig. 3. This hook is hooked to a link in the chain to which it is coupled, which link can be put down under the end of the hook, thereby coupling it; but the end of the hook is bent in such position that it will not catch upon any of the iron loops or sills under the platform of the car, and is particularly adapted for use in the system for braking cable cars above described.

I have found that said system for braking cable cars gives great satisfaction and obviates serious difficulties in this system of cable cars.

Having fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, in a system for braking cable-railway street-cars, of the coupling-rod B, attached to the brake-lever of the grip-car, the evener H, the brake-rods K and R, the coupling-chains O and P, the coupling-hook Q, having the broad-open loop and the point of the hook bent down within the loop, and the brake-levers J and S, operating the brakes under their respective cars, all substantially arranged and operating as specified and shown.

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