(No Model.)

W. H. CARTER.

CAR BRAKE.

No. 590,879. Patented Sept. 28, 1897.

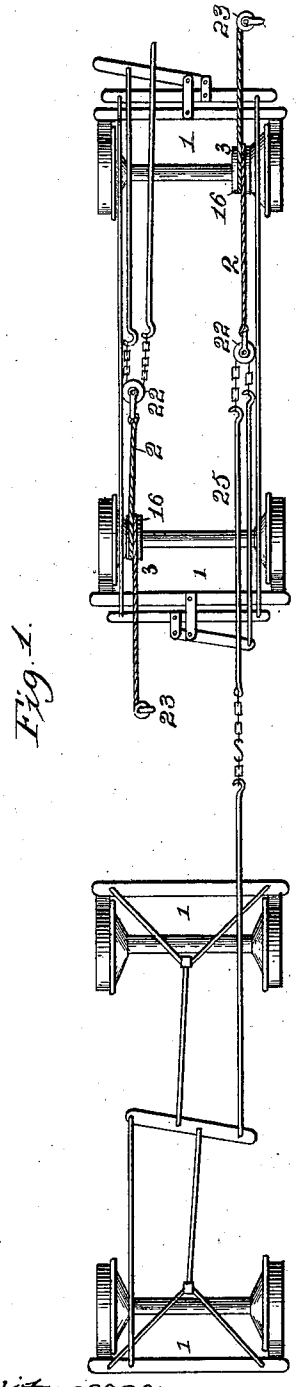


Fig. 1.

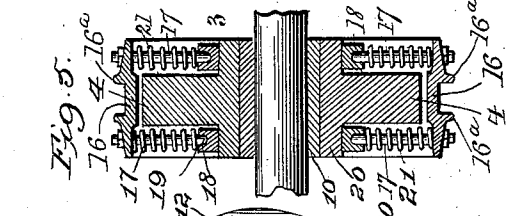


Fig. 5.

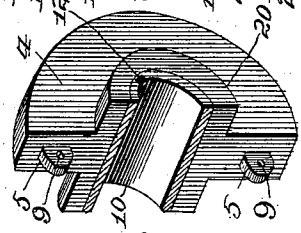
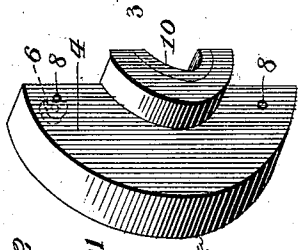


Fig. 4.



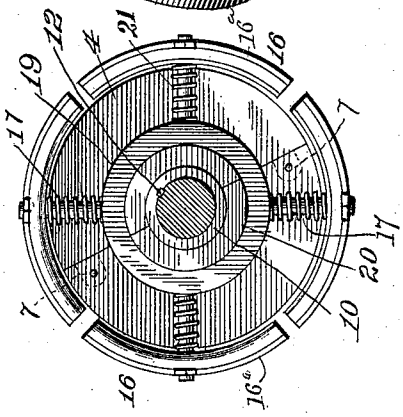


Fig. 3.

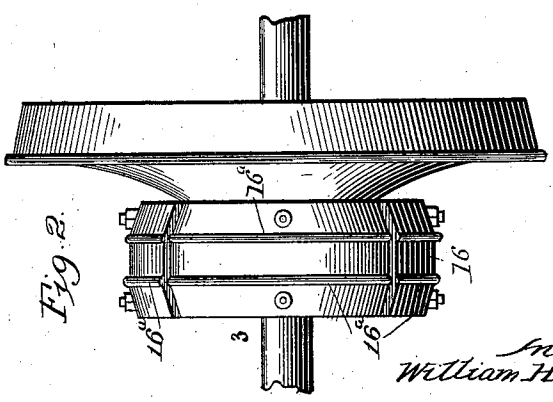


Fig. 2.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 590,879, dated September 28, 1897.

Application filed March 17, 1897. Serial No. 627,915. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CARTER, a citizen of the United States, and a resident of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to a friction device through means of which the momentum of the car may be utilized for applying or assisting in applying the brake-shoes to the car-wheels.

My invention consists in certain combinations and features of construction whereby the above objects are accomplished, to certain novel details whereby the disk is locked with the axle when the brakes are to be applied, to certain novel features of construction in the disk, and to certain novel features in the construction of the shoes and the manner of mounting them. These features will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the brake system. Fig. 2 is a plan of one of the friction devices. Fig. 3 is a side elevation of one of the same. Fig. 4 is a detail detached perspective view of the disk, and Fig. 5 is a detail sectional view of the manner of mounting the friction-shoes.

My improved brake-applying apparatus operates in either direction, and it is intended that there shall be mounted on each axle of the motor-car brakes which have connection with the ordinary brakes for controlling them.

1 represents any suitable form of wheel-brakes, 2 the brake connections, and 3 the friction devices about which the connections 2 wind, so that tension is applied to said connections when the brake is applied.

As will be seen from Figs. 1, 2, and 3, each friction device consists of a disk 4, divided diametrically and secured together about the axle by means of lugs 5 on one half, which enter sockets 6 on the other half, and pins 7, which pass through perforations 8 in the sides of the sockets and through perforations 9 in the lugs 5. (See Fig. 4.) Interposed between the disk and the axle is a notched collar, which is keyed or otherwise secured to the axle at 12 for securely fixing the disk on the axle, or, if preferred, the collar may be dispensed with and the disk secured directly to the axle.

16 are shoes having the flanges 16^a for confining the controlling connection on them, which bear upon the periphery of the disk 4, and perforated to receive the inwardly-extending radial bolts 17, which are fixed at 18 in collars or spiders 19 on opposite sides of the disk and loosely upon the hubs 20 of said disks. Springs 21 are mounted on said bolts 17 between the collars 19 and the friction-shoes 16 in order to throw said shoes normally away from the disk.

The cable 2 or other equivalent brake connection is fixed to a sheave 22 and passes once around the shoes 16 and thence to the brake-staff 23. When tension is applied to the cable 2 by winding staff 23, the shoes 16 are pressed about the disk 4, so as to press the shoes to the disk. At the same time, said disk being locked against rotation on the axle, the friction-shoes are caused to rotate with the disk. This causes a winding of the cable and a strong application of the brakes by a slight application of work at the brake-staff, and it will be seen, owing to the disk being fixed on the axle, that the car will be braked against movement in either direction, thus making it easy to stop on grades without any fear of the car going backward.

25 are the connections, which pass from the respective wheel-brakes 1 over the sheaves 22, and thence to the trail-car connections. By this means an equalized braking effect is obtained on both the motor and trail cars.

The friction-shoes are corrugated or roughened to prevent slipping and to insure the winding effect on the cable.

If it should be necessary to apply the brakes against a retrograde movement, as when stopping on a grade, the ordinary braking pressure produced by the brake-staff is ample for this, and the apparatus is entirely free to apply the brakes in this way without material opposition from the friction devices.

A further advantage of my system is that the work performed by the friction devices also exerts a retarding influence on the car. If the motor-car is to be operated alone, the connections 25 are simply looped together and the connections between the brake-beams and the sheaves 22 thus become fixed.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A friction-clutch for car-brakes comprising the disk having hubs, the collars, the segmental shoes adapted to bear on the periphery of the disk, the radial bolts secured to the collars and extending through the shoes and the springs surrounding the bolts between the collars and the shoes; substantially as and for the purpose set forth.

2. A frictional device for application to the axle of a car, a combination of a disk 4 having a notched collar 10 for fixing the disk on said axle, collars or spiders loose upon the hub of the disk, shoes carried by said collars or spiders bearing upon said disk, and means for forcing the shoes against the disk at will, substantially as herein described.

3. In a friction device for car-brakes the combination of the axle, the disk fixed on the axle, shoes constructed to bear upon the periphery of said disk, the collar or spider for holding said shoes, mounted loosely upon the hub of the disk and having arms to which the respective shoes are connected, and a winding cable or equivalent flexible connection passing around the shoes and adapted to press them into engagement with the disk and to hold them against rotation substantially as set forth.

4. In a friction device for car-brakes, the combination of the disk fixed on the axle, the peripheral shoes bearing upon said disk, the supporting-spider constructed to be loosely mounted upon the hub of the disk, and having arms to which the shoes are connected, and springs interposed between the spider and the shoes, to hold them normally away from the disk, substantially as set forth.

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