No. 684,581. Patented Oct. 15, 1901.

T. E. McCOLLUM.

MOMENTUM CAR BRAKE.

(Application filed Dec. 8, 1900. Renewed Sept. 9, 1901.)

(No Model.)

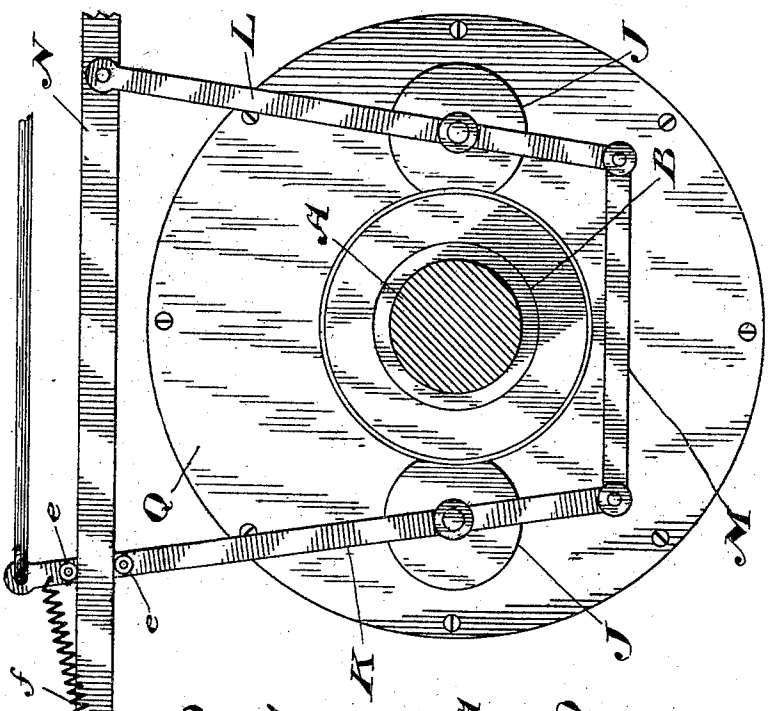


Fig. 2.

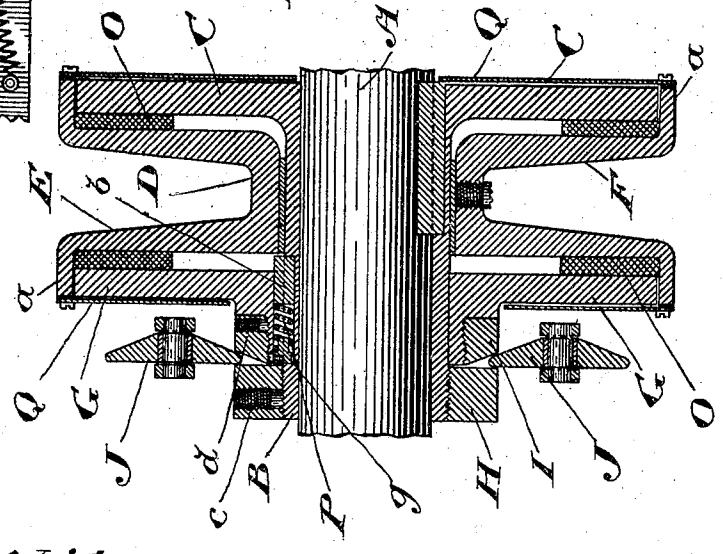


Fig. 1.

Witnesses

B. J. Colbourne

J. M. Goebel

Inventor

Thos. E. McCollum

by Ridout & Maybee

Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS E. McCOLLUM, OF TORONTO, CANADA, ASSIGNOR OF FORTY-SIX AND TWO-THIRDS ONE-HUNDREDTHS TO REMIGIUS ELMSLEY, OF SAME PLACE.

MOMENTUM CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 684,581, dated October 15, 1901.

Application filed December 8, 1900. Renewed September 9, 1901. Serial No. 74,827. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. McCOLLUM, of the city of Toronto, in the county of York, Province of Ontario, Canada, have invented certain new and useful Improvements in Momentum Car-Brakes, of which the following is a specification.

My invention relates to that class of brakes in which the momentum of the car is depended upon to supply the necessary power to apply the brake-shoes to the wheels.

My object is to devise a brake of that type in which the friction-surfaces of the disks are as far as possible from the center of the axle and the winding-drum as close as possible, so that an even and effective braking strain is obtained with as small an expenditure of power as possible; and it consists, essentially, in the details of construction hereinafter more specifically described and then definitely claimed.

Figure 1 is a longitudinal sectional elevation of my improved car-brake. Fig. 2 is a side elevation of the same.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is the car-axle. Upon this axle I key a sleeve B. Upon one end of this sleeve I secure a friction-disk C, either by forming it integral with the sleeve or otherwise making it fast thereon. Upon this sleeve I journal the winding-drum D. To this drum are secured the two friction-disks E and F. At the outer edges of these friction-disks are formed outwardly-extending flanges *a*. These flanges may be integral with the disks or otherwise secured thereto. At the other side of the winding-drum D from the friction-disk C is placed the friction-disk G, slidable upon the feather-key *b*. Upon the end of the sleeve B is screwed the collar H, which is clamped in position by means of the set-screw *c* or in any other ordinary manner. Upon the hub of the friction-disk G is screwed the ring I. This may also be clamped by means of the set-screw *d*. It will be noticed that the ring I is beveled, so as to form a wedge-shaped opening between the ring and the collar H. J J are wedge-wheels journaled, respectively, on the arms K and L. The lower ends of these arms are connected by the pivoted link M. The upper end of the arm L is pivoted upon the bar N, which may be any convenient portion of the truck or the car-body. The arm K slides on the bar N by means of small friction-rollers *e*.

It is evident that by drawing upon the upper end of the arm K the wedge-wheels J J will be forced into the wedge-shaped space between the collar H and the ring I, thus forcing the sliding friction-disk toward the others. Between the faces of the friction-disks are secured the fiber friction-rings O. When the wedge-wheels are operated as described, these friction-surfaces are brought forcibly into contact with one another, and the drum D is thus caused to partake of the rotary motion of the car-axle. Upon this drum the chain of the brake connections is wound in the ordinary well-known manner. The friction-wheels are withdrawn when the brake is released by means of the spring *f*, attached at one end to the arm K and at the other to the bar N. To return the sliding friction-disk G to its normal position, I provide a coil-spring P, which engages at one end the feather-key *b* and at the other engages the lug *g*, secured by means of a screw or otherwise to the hub of the sliding friction-disk G. This coil-spring, it will be noted, lies partly in the keyway in the sliding friction-disk and partly in the key-seat of the feather-key *b*, the key-seat being made longer than is necessary for the accommodation of the key.

A brake constructed as I have described will be found very effective, as it is easily applied and released, and the friction-surfaces are relatively so much farther from the center of the axle than the surface of the winding-drum that a comparatively small amount of power is required to put the brake in operation. Thus it may be caused to operate in a much more even and easy manner. It is very easily placed in position and just as easily got at for repairs.

As all the parts are carried by the sleeve B, the brake may be assembled first and then slid into position on the axle and the sleeve keyed, as already described.

If it is desired to get at the interior of the brake, the collar H and the ring I may be removed. If now the lug *g* be disconnected, the friction-disk G may be slid off the sleeve and also the drum D, with its connected friction-disks. The condition of the friction-surfaces is thus easily ascertained and renewals or repairs made at any time.

To form an oil-bath for the friction-surfaces, I secure annular plates Q to the flanges *a*. These may extend close to the axle and hub of the sliding disk to exclude dust.

What I claim as my invention is—

1. In a momentum-brake, the combination of a winding-drum free to revolve about the axle, two friction-disks forming the opposite sides of the said drum, a flange formed on each disk forming a dust-guard for its outer surface; a friction-disk fast on the axle at one side of the said drum; a friction-disk slidable along the axle, but revolving therewith, and placed at the other side of the said drum, and means for moving the sliding friction-disk to bring the faces of the friction-disks into contact, substantially as and for the purpose specified.

2. In a momentum-brake, a sleeve keyed to the axle; a friction-disk fast thereon; a friction-disk slidable on a feather-key on the said sleeve; a drum journaled on the said sleeve between the aforesaid disks; two friction-disks fast on the said drum; and means for moving the sliding friction-disk to bring the faces of the friction-disks into contact, substantially as and for the purpose specified.

3. In a momentum-brake, a sleeve keyed to the axle; a friction-disk fast thereon; a friction-disk slidable on a feather-key on the said sleeve; a drum journaled on the said sleeve between the aforesaid disks; two friction-disks fast on the said drum; a collar secured on the sleeve outside the sliding friction-disk; and means engaging the collar and the sliding friction-disk for moving the latter to bring the faces of the friction-disks into contact, substantially as and for the purpose specified.

4. In a momentum-brake, a sleeve keyed to the axle; a friction-disk fast thereon; a friction-disk slidable on a feather-key on the said sleeve; a drum journaled on the said sleeve between the aforesaid disks; two friction-disks fast on the said drum; a collar secured on the sleeve outside the sliding friction-disk; one or more wedge-wheels; and means for forcing the said wedge-wheels between the collar and the hub of the sliding friction-disk, substantially as and for the purpose specified.

5. In a momentum-brake, a sleeve keyed to the axle; a friction-disk fast thereon; a friction-disk slidable on a feather-key on the said sleeve; a drum journaled on the said sleeve between the aforesaid disks; two friction-disks fast on the said drum; a collar secured to the sleeve outside the sliding friction-disk; and means engaging the collar and the sliding friction-disk for moving the latter to bring the faces of the friction-disks into contact; and a spring arranged to return the sliding disk to its normal position when the said disk is released, substantially as and for the purpose specified.

6. In a momentum-brake, the combination of a winding-drum free to revolve about the axle, two friction-disks fast on the said drum, a flange formed on each disk forming a dust-guard for its outer surface; an annular plate secured to the side of each of the said flanges; a friction-disk fast on the axle at one side of the said drum; a friction-disk slidable along the axle, but revolving therewith, and placed at the other side of the said drum, and means for moving the sliding friction-disk to bring the faces of the friction-disks into contact, substantially as and for the purpose specified.

7. In a momentum-brake, a sleeve keyed to the axle and having a key-seat cut in its outer surface; a friction-disk fast on the said sleeve; a feather-key occupying part of the key-seat in the sleeve; a friction-disk having a key-way cut therein to enable it to slide on the said feather-key; a lug detachably secured to the said friction-disk within its keyway; a coil-spring lying within the key-seat and key-way and engaging the key and the aforesaid lug; a drum journaled on the sleeve between the aforesaid disks; two friction-disks fast on the said drum; a collar secured on the sleeve outside the sliding friction-disk; and means engaging the collar and the sliding friction-disk for moving the latter to bring the faces of the friction-disks into contact; substantially as and for the purpose specified.

Toronto, November 19, 1900.

THOMAS E. McCOLLUM.

In presence of—

J. EDW. MAYBEE,

J. W. WEBSTER.