(No Model.)

F. C. BREWSTER.

CAR BRAKE.

No. 454,452. Patented June 23, 1891.

Fig. 1.

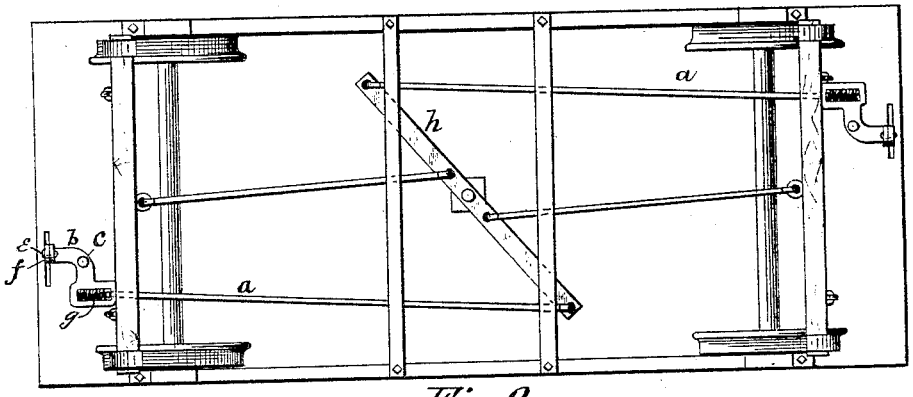


Fig. 2.

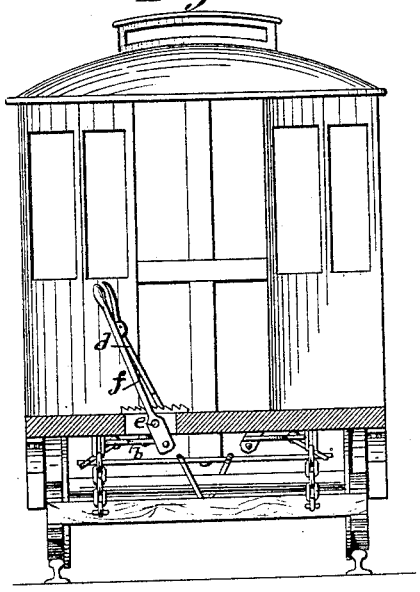
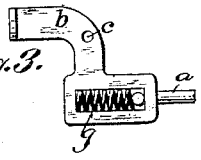


Fig. 3.



Witnesses:
W. W. Gardner.
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UNITED STATES PATENT OFFICE.

FRANCIS CADWALADER BREWSTER, OF ELIZABETH, NEW JERSEY.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 454,452, dated June 23, 1891.

Application filed October 12, 1888. Serial No. 287,937. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS CADWALADER BREWSTER, a citizen of the United States of America, and a resident of Elizabeth, Union county, New Jersey, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to an improvement in a car-brake of that class in which the brake is adapted to be applied by hand power.

The invention has for its object to provide such an organization as shall be less likely to get out of order during its operation, thereby reducing the risk of accident to a minimum.

Another object of the invention is to give the operator a better purchase in applying the brake, so that in the case of horse-cars the driver's long and tedious duties may be materially lessened.

Another object of the invention is to provide a retractile spring which will serve to throw the brake into its proper normal position, just escaping the surface of the wheels, so that the least movement of the operating-handle will bring the brakes into frictional contact with the wheels.

The invention consists in the mechanical construction of the device, which is described fully by reference to the accompanying drawings.

Figure 1 is a view of the bottom of the car, which is supposed to be in an inverted position. Fig. 2 is a view in elevation of the end of the car, the dash-board being omitted. Fig. 3 is a view of one of the details on an enlarged scale.

Let *a* designate the rod of any suitable brake, the said rod being that which will apply and release the brake when respectively pulled toward the end of the car and pushed toward the opposite end. This rod is connected pivotally to one arm of a bent lever *b*, which is pivoted at its bent portion at the point *c*. The other arm of the lever is pivoted to the lower end of the handle *f*, which in turn is pivoted to the frame of the car at the journal *e*, whose axis is parallel to the longitudinal dimension of the said car, the journal being horizontal, and as the handle *f* is vertical the latter is rotated about its bearing at the said journal, and the said handle operates in a plane substantially coincident with the dash-board of the car. The handle is provided with a suitable lever-catch *d* of the ordinary construction. Pressing upon the rod *a* is a spring *g*, located in a slot in the lever and retained there in any convenient manner. This spring normally retains the said rod *a* at the end of the slot, so that the brake is maintained off or released. There is therefore no unnecessary space or lost motion, for just as soon as the handle is pulled the rod *a* is moved and the brake applied. In order to allow for the rotation of the lever *b* upon the point at *c*, the pivot at *c* is made so much smaller than the hole in the said lever, that the said lever fits very loosely upon the said pivot.

All the parts above enumerated are duplicated at the opposite end of the car, so that the two rods *a* are connected to the common lever *h*, pivoted at the center of the car. When this lever is rotated in one direction, the brake is applied, and when rotated in the opposite direction the brake is released.

The best position for the lever or handle *f* to occupy may be determined by experiment, the drawing showing one position where the brake is applied. In practice that position shown might be considered the best for the normal position, and the parts so arranged that a pull to the right would apply the brake. Under these conditions, the driver could more effectually manipulate the brake.

There is a function of the slot containing the spring *g* that may be described as follows: When the brake is to be applied, and assuming that the spring is taken out of the slot, then it will be noticed that only that handle *f*, which is operated by hand, will move, the other handle remaining stationary, because the rod *a*, connected to the last-named handle, will move in the slot without moving the lever containing the slot.

I claim as my invention—

1. In a car-brake, the combination of a rod *a* for operating the brake, a handle *f*, mounted upon a horizontal journal *e*, whose axis is parallel to the longitudinal dimensions of the car, a horizontal pivoted bent lever provided with a slot in one of its arms, the rod *a* being

pivoted in said slot, and the handle *f* being pivoted to the said bent lever at the remaining arm of the said lever.

2. In a car-brake, the combination of a handle standing in a vertical plane, a pivot-support for the said handle, a horizontal bent lever having its center pivoted to a vertical axle or pivot and having one arm connected to the said handle by a pivot-joint and at the other end to the operating-rod of the brake, a slot in the last-named arm of the lever and carrying the end of said rod, and a spring located in the said slot and pressing upon the said rod.

3. In a car-brake, the combination of a rod *a* for operating the brake, a pivoted and horizontal bent lever provided with a slot in one of its arms, and a vertical handle *f*, pivoted to the platform of the car and to the remaining arm of the said bent lever, the rod *a* pressing upon a spring which is supported in said slot.

4. In a car-brake, the combination of a rod *a* for operating the brake, a pivoted and horizontal bent lever, a vertical handle *f*, pivoted to the platform of the car and to one arm of the said bent lever, and a spring connecting the remaining arm of the said bent lever to the said rod.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 4th day of October, 1888.

FRANCIS CADWALADER BREWSTER.

Witnesses:
WM. E. GOODGE,
EDWARD P. THOMPSON.