(No Model.)

F. J. UNDERWOOD.

CAR BRAKE.

No. 296,896. Patented Apr. 15, 1884.

Fig. 1.

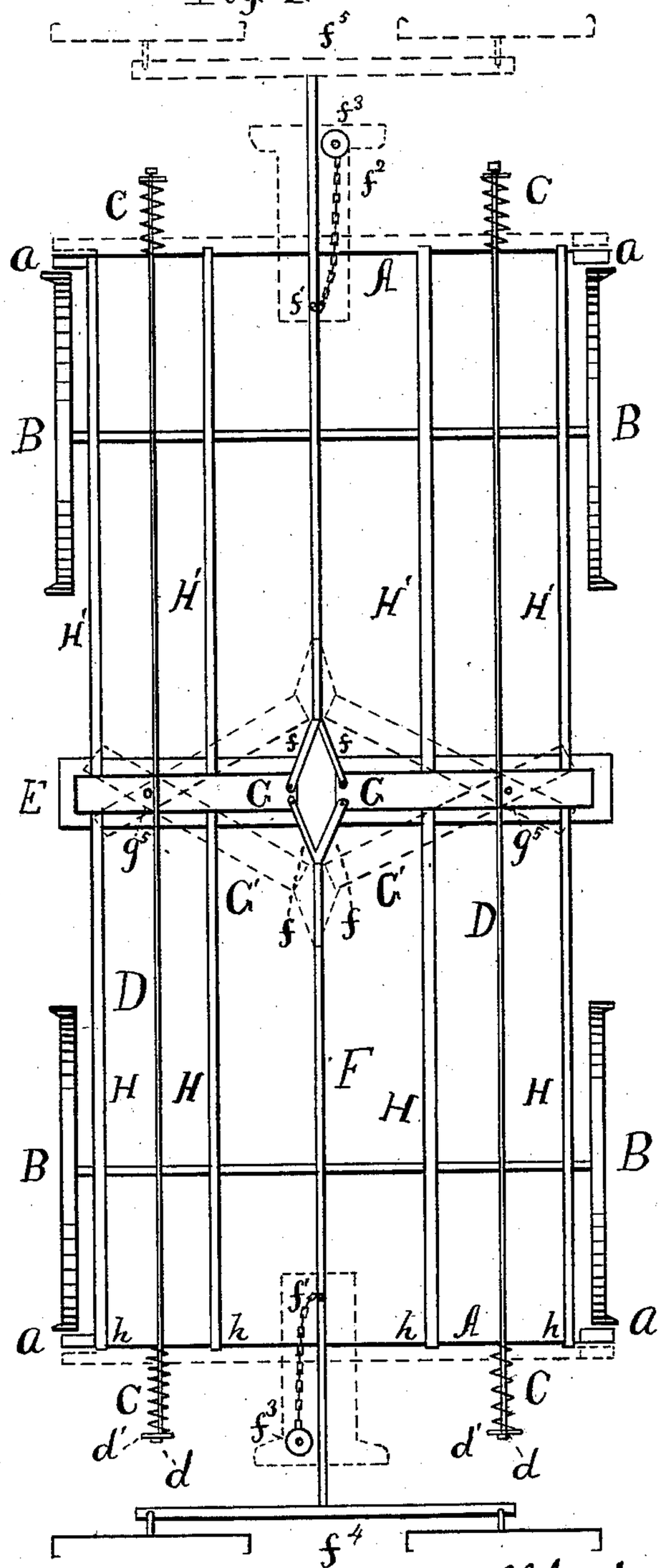
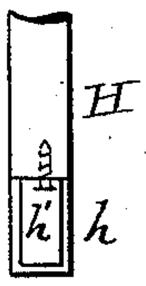


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

FLAVIUS J. UNDERWOOD, OF NORTH SPRINGFIELD, MISSOURI.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 296,896, dated April 15, 1884.

Application filed November 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, FLAVIUS J. UNDERWOOD, a citizen of the United States, residing at North Springfield, in the county of Greene and State of Missouri, have invented certain new and useful Improvements in Brakes for Railway-Cars, Street-Cars, Wagons, and other Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention is a new and useful automatic brake for railway-cars, street-cars, and other vehicles, the object of which is to provide a brake that will be automatically set and then removed by the propelling-power of the vehicle. These objects I attain by means of the device illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a view showing the entire device. Fig. 2 is an enlarged view of one end of a push-bar.

A A are brake-bars with shoes *a*, which are made to operate upon the wheels B.

C are suitable springs, which operate against the brakes to keep them firmly against the wheels. These springs may be supported by means of any suitable device; but I prefer to attach them in a street or railway car, as represented in Fig. 1, to a rod, D, extending through and attached to a cross-piece, E, said rod also passing through the brake-bars, forming a guide for the same. A nut, *d*, and washer *d'* serve as an adjustable attachment and support to the spring C upon the rods. Thus the tension of the spring may be adjusted by means of the nut *d*, and their position secured to operate directly upon the brake-bar. The brakes thus automatically set are removed from the wheels by the horses, engine, or other propelling-power of the vehicle by means of any suitable attachment. I prefer a rod or chain, F, attached to the whiffletree, draw-head, or other place of hitching the propelling-power at one end, and at the other to the ends of levers G G by means of a fork, *f f*. These levers are made of any suitable material, and in a street or railway car are preferably made with fulcrums at g^5, having two pushing-rods, H H', on each side, one leading forward and the other backward. These pushing-rods have slots, loops, or yokes *h*, which permit them to be drawn forward any desired distance. These rods are also adjustable in length by any suitable device. I use a screw and nut, *h'*.

The brake-wheel as now in use to set brakes on cars may be used to set off the brakes, it being attached to the chain *f'*.

The device is operated thus: In a street-car it is made to work from either end, and the brakes apply to all four wheels, as shown in Fig. 1, and as the rods are attached to the levers near the fulcrum the power of the levers is such that a very slight pull removes the brake, and as thus attached the levers are removed before the team begins to pull on the car, and therefore a team is never strained by pulling on a car while the brake is set, as is now frequently the case, and as the brake is set the instant the team stops the car never runs against the team. When the team is standing, the springs hold the brakes against the wheels, and the levers G are then in a straight line; the team starting forward, (being hitched at f^4,) the levers are drawn forward, as indicated by the dotted lines. The inner pushing-rods push the front brake from the wheels in front, and the outer pushing-rods the back brake, the loops, slots, or yokes *h* permitting the front outer and back inner pushing-rods to lengthen, and vice versa when the team is hitched at the other end of the car.

On a railway-car the device is preferably made double that above described for the street-car, and the brakes applied to all the wheels. In this case the rod F is attached to the draw-head, and serves as a drawing and pushing rod, so that in moving forward or backward the car-brakes are all removed by either pushing or pulling.

The common brake-wheel as now in use for setting brakes may be used for setting the brakes off the wheels by attaching the chain to the rod F, as above described in the street-cars.

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

1. An improved automatic brake composed of a brake-bar, A, set by springs C, attached to and supported by a rod, D, which is made so as to adjust the tension of the said spring, levers G, having pushing-rods H H', for removing the

said brake by an attached rod, F, connecting the said levers with the propelling-power of the vehicle, all substantially as shown and described.

2. In an automatic brake, springs C, adjustably attached upon a rod, D, by means of a nut, *d*, and washer *d'*, pushing-rods H H', with loops *h* and adjustable device *h'*, levers G G, with fulcrum g^5, rod F, with fork *f f*, and attachment *f'*, all substantially as shown and described.

3. The combination of an automatic brake composed of springs C, rods D H F, and levers G, with a common brake-wheel, f^3, all substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FLAVIUS J. UNDERWOOD.

Witnesses:
A. W. McPHERSON,
J. A. SIRRINE.