(No Model.)

W. NURSE.

CAR BRAKE.

No. 260,116. Patented June 27, 1882.

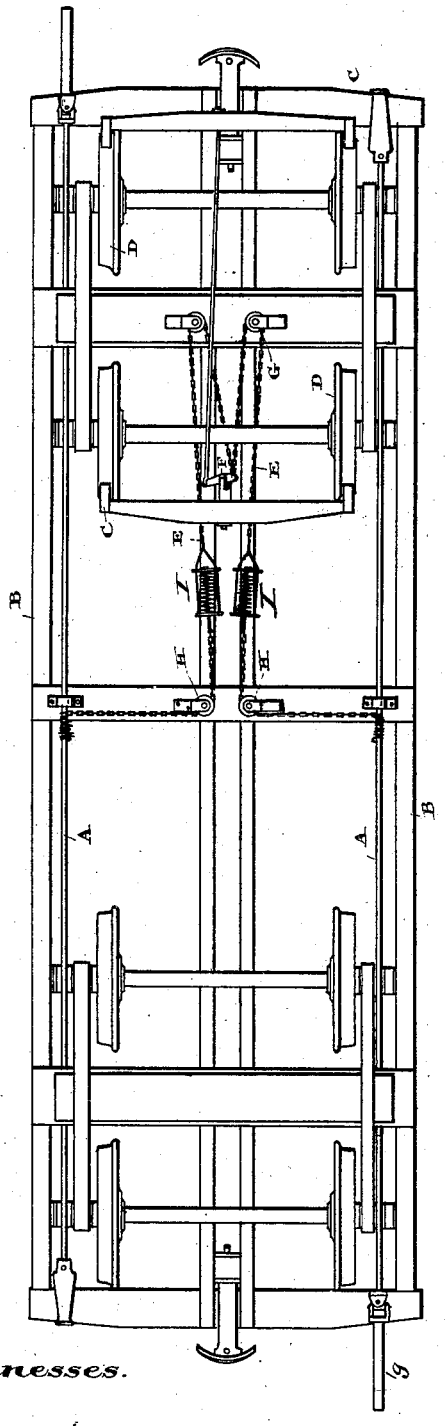

Fig. 1.

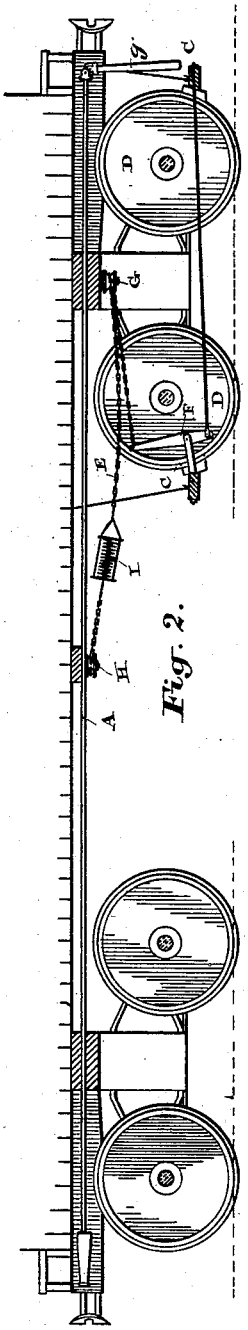

Fig. 2.

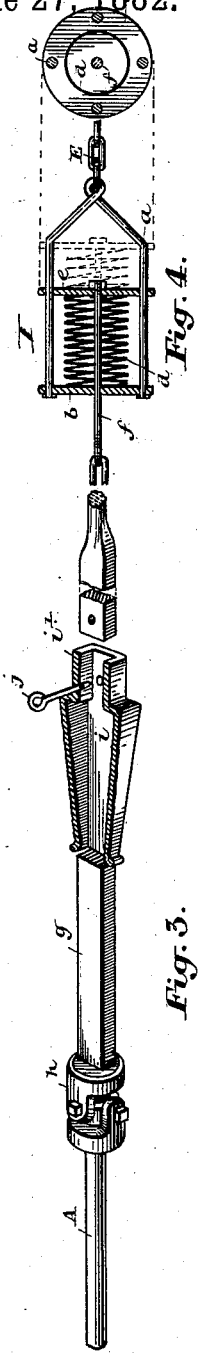

Fig. 4.

Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM NURSE, OF TORONTO, ONTARIO, CANADA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 260,116, dated June 27, 1882.

Application filed February 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NURSE, a subject of the Queen of Great Britain, residing at the city of Toronto, in the county of York, in the province of Ontario, Canada, printer, have invented certain new and useful Improvements in Railway-Car Brakes, of which the following is a specification.

The object of the invention is to provide an appliance for operating the brakes of railway-cars which can be readily and cheaply applied to cars provided with brakes of ordinary construction, and by which all the brakes in a train of cars may be applied simultaneously from any point in the train; and it consists in the peculiar construction, arrangement, and combination of parts, as hereinafter more fully set forth and claimed.

Figure 1 is a bottom view of a car, showing the trucks in position and the rod connected to the brakes. Fig. 2 is a sectional elevation of the same. Fig. 3 is an enlarged detail, showing the universal-joint and sleeve connection for the ends of the bar. Fig. 4 is a detail of the spring applied to the brake-chain for the purpose of preventing too great a strain being exerted on the brake.

In the drawings, like letters indicate corresponding parts in each figure.

A is a metal rod or bar supported by suitable brackets on the bottom of the car-frame B.

C are the brakes, arranged in connection with the wheel D in the ordinary way.

E is a chain connected to the brake-lever F. This chain extends from the brake-lever to the bottom of the truck-bolster, where it passes around a sheave-pulley, G, thence extending back toward the center of the car, where it passes around another sheave-pulley, H, pivoted on the bottom of the center car-timber, thence passing to the rod A, to which it is secured.

Between the sheave-pulleys G and H, I place the spring device I. This spring is specially designed and adapted for its particular purpose, and consists of a cage, *a*, designed to hold a spiral spring, as indicated. One end of this cage is connected to the brake-chain E. Its other end has a base-plate, *b*, designed to hold the spiral spring *d*, and an adjustable plate, *e*, is held in the cage *a*, as shown, and presses against the other end of the spiral spring *d*. Through this adjustable plate and through the center of the spiral spring and also the center of the plate *b* a spindle, *f*, is passed. This spindle is attached at one end to the plate *e* and at the other end to the chain E, extending toward the sheave-pulley H.

It will be seen that when any strain is exerted on the chain E the spiral spring *d* is pressed between its plates, and by thus receiving the pressure on the chain is greatly relieved, and the brakes are not applied with the same force as they would be were this spring arrangement not interposed.

Owing to the connection described between the brakes and rod A it will be seen that the rod A, when caused to revolve, the chain E being wound upon it, will impart the desired strain on the brakes; and in this way the brakes are readily applied by the simple revolution of the rod A, which motion may be imparted to the said rod either by a hand-wheel connected to the rod by suitable gearing or a motor power driven by compressed air may be arranged to convey the desired movement.

While each car may be arranged to have its brakes applied independently, it will of course be understood that the principal object of my invention is to provide means by which all the brakes in the entire train may be simultaneously and readily put on. In order to secure this desired end, it is of course necessary to provide means for connecting the rod of one car to a similar rod carried on the next, and at the same time to have the connection of such a character that it can be connected when the cars are of different heights, and also permit the movement to and from each other of the cars so connected. With that view I provide my combined universal-joint and sleeve connection exhibited in detail in Fig. 3.

A square bar, *g*, is connected to the rod A by the universal joint *h*. This joint permits the free vertical or lateral movement of the bar, while forming a perfectly stiff joint for conveying the rotary movement of the bar *g* to the rod A.

i is a sleeve having its interior hollowed out in the form shown in the drawings. This form

is designed to permit the bar *g*, which fits within the sleeve, to accommodate itself to any angle at which it may be set owing to the different heights of the two cars coupled together. It also permits the longitudinal movement of the sleeve upon the bar, but it will not permit the sleeve to revolve without conveying the same movement to the bar. The other end of the sleeve has a socket, *i'*, designed to receive the end of the rod A attached to the other car. This end of the rod fits into the socket *i'*, and is secured there by the pin *j*.

When the cars are uncoupled the pin *j* may be withdrawn and the sleeve pushed up over the end of the bar A, so as not to project beyond the end of the car. The bar *g* being connected to the other end of the bar A by the universal joint, as described, it will naturally drop down, as indicated on the right-hand side of Fig. 2, and is also arranged so that it will not protrude beyond the end of the car, while it can easily be raised when the cars are to be coupled together.

In Fig. 1 I have shown two rods arranged on the car, but it is not intended that the two should always be used, the object of two being to enable the car to be reversible.

I have not shown any motor for imparting the desired movement to the rod A, as there are various motors which may satisfactorily answer the purpose, and their application forms no feature in my present invention.

I am aware that it is not new with me to provide rotating bars with universal connections for applying the brakes to all of a series of cars, and such device is not sought to be broadly covered in this application.

What I claim as my invention is—

1. In a railway-car, a brake mechanism adapted to operate simultaneously all the brakes of the series of a train of cars, the horizontal rod A, chain E, and brake-levers, combined with the cushioning device I, composed of the spring *d*, set within the cage *a*, having a fixed base-plate, *b*, and a movable plate, *e*, and with the spindle *f*, all operating as and for the purposes specified.

2. In railway-car brakes, substantially as described, the rod A, chain E, and cushioning device I, combined with the bar *g*, connected by joint *h* to the rod A of one car, the sleeve *i*, having flaring interior and socket *i'*, the said socket adapted to receive the end of the rod A of the adjacent car, and the securing means *j*, all operating as and for the purpose set forth.

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