(No Model.)

J. GOODFELLOW.

SAFETY BRAKE.

No. 441,298. Patented Nov. 25, 1890.

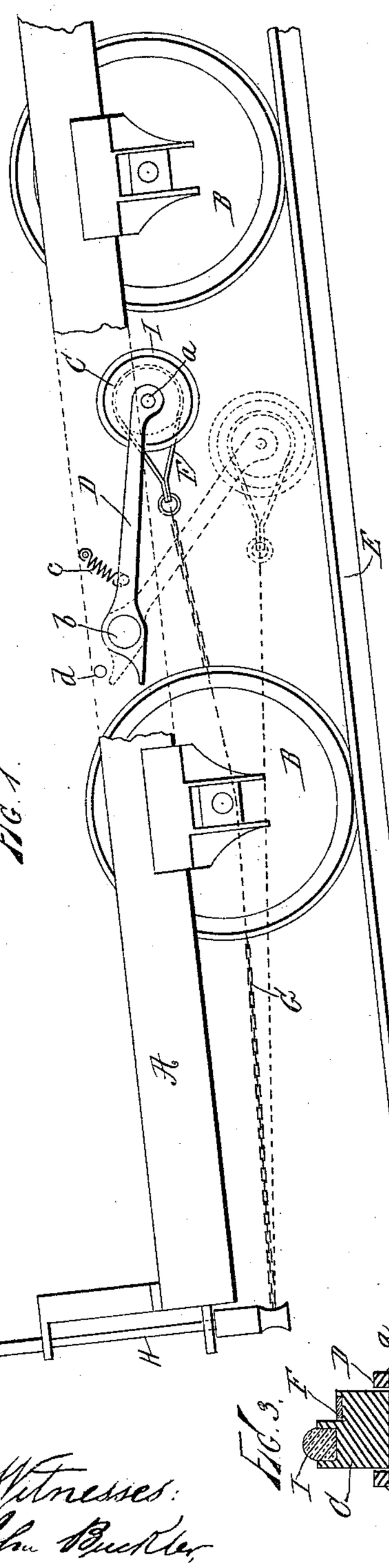

FIG. 1.

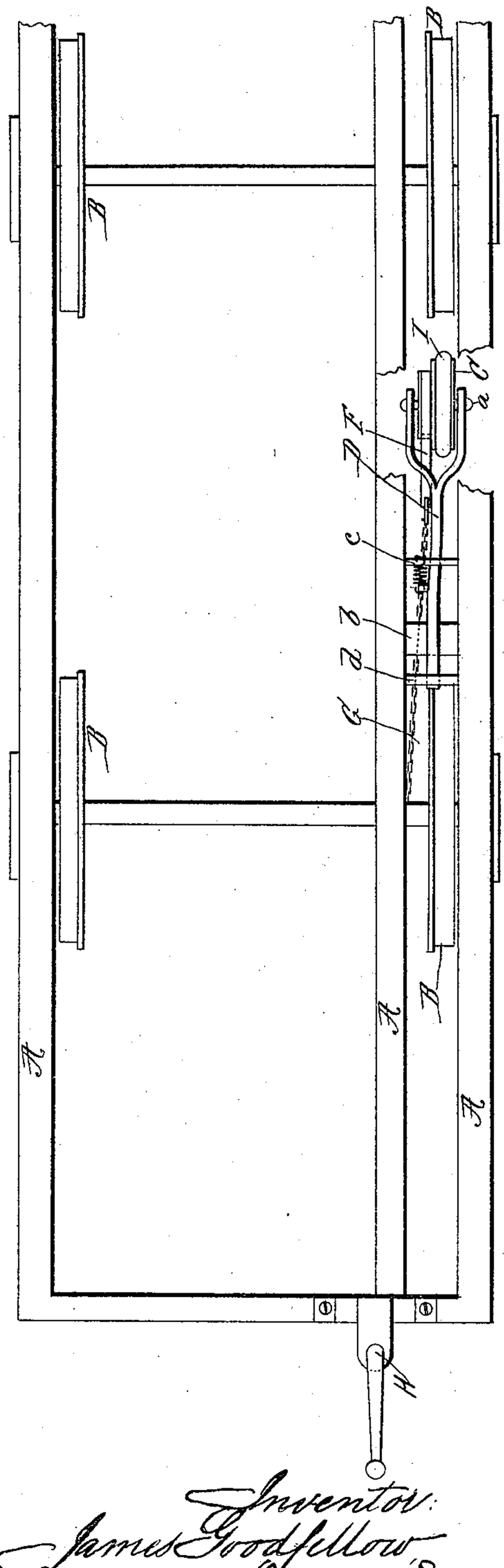

FIG. 2.

FIG. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

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SAFETY-BRAKE.

SPECIFICATION forming part of Letters Patent No. 441,298, dated November 25, 1890.

Application filed May 9, 1888. Renewed May 1, 1890. Serial No. 350,130. (No model.)

To all whom it may concern:

Be it known that I, JAMES GOODFELLOW, of New York city, county and State of New York, have invented certain new and useful Improvements in Safety-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an auxiliary or safety brake intended to be applied upon street-railway cars, but which may be used on other cars as well, if desired.

The object of my invention is to produce or provide a simple, cheap, convenient, and effective device which may be easily applied upon cars without in any way interfering with the ordinary brakes, and which will operate to break or check the movement of the car upon downgrades or slippery tracks, especially when the ordinary brakes fail to operate. To accomplish all of this and to secure other and further advantages, my improvements involve the use of an adjustable brake-wheel, which may be instantly brought into contact with the rail or car-track, which cannot slip thereon, of which the movement or revolutions may be regulated, and thus the speed of the car controlled according to the degree of pressure applied, and also involve certain relative arrangements or combinations of parts, as will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a view in side elevation illustrating so much of an ordinary street-car as is sufficient for the purposes of the present description and my improved safety-brake applied thereon, the car being represented in position on a grade. Fig. 2 is a plan view corresponding with Fig. 1. Fig. 3 is a sectional view on a scale enlarged beyond previous figures, showing my improved brake-wheel and the friction-band and supporting-yoke.

In all the figures like letters of reference wherever they occur indicate corresponding parts.

A A represent longitudinal timbers of the car.

B B are the ordinary car-wheels, to which ordinary brakes (not shown) are applied after any approved form. In using the ordinary brakes, although the car-wheels may be even prevented from turning, they frequently slip along the track, especially when the latter is wet, and on heavy grades and under other circumstances. With a view to obviating this slipping, sand has been applied to the track; but even this does not always operate successfully.

According to my invention I employ a brake-wheel C independent of the other brakes. This wheel is axled, as at *a*, in a yoke D, pivoted or hinged, as at *b*, at some convenient point on the car-frame, and so arranged that it will swing from a position (shown in the full lines, Fig. 1) where it is out of the way and more or less concealed down to a position (indicated by the dotted lines, Fig. 1) where the margin of the wheel is brought into forcible contact with the track E.

The wheel C is provided with a suitable offset, on which rides a friction-band F, preferably of metal, and this band is connected by a chain or line or cable G with a revolving brake-shaft H, which may be located on the end of the car, within convenient reach of the driver or conductor. The yoke and the wheel therein are normally held up by any suitable spring or counter-balance. (Represented at *c*.) At *d* is a pin or stop so located that when the end of the yoke strikes it the yoke can be moved no farther. In the circumference of the wheel C is a ring or band of rubber I or other suitable material, properly roughened and secured, so that when it touches the track it cannot slip along, but must cause the wheel to revolve or else stop entirely.

By turning the brake-shaft the wheel C, or rather its roughened band I, is brought down into contact with the track, and more or less forcibly, according to the power applied. The effect of this is to throw more or less of the weight of the car upon the safety-brake. The wheel C revolves according to the pressure applied, and the band F causes friction on the wheel, also, in accordance with the pressure, and if the latter be great enough will prevent the wheel from turning, and as the wheel cannot slip along the track this will result in stopping the car, as will be readily understood. As soon as the brake-shaft is

released the safety-brake will automatically return to its normal position, ready to be used again when required. The construction is such that the brake may be applied from either end of the car, and it will operate equally well as the car travels in either direction, so that only one of the improved appliances need be provided for any car.

The improved device may be easily and quickly applied and will be found to admirably answer the purpose or object of the invention previously set forth.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a safety-brake of the character herein set forth, a hinged yoke carrying a friction-wheel and arranged to swing the same into and out of contact with the car-track, said wheel being provided with a roughened surface and with a friction-band, substantially as and for the purposes set forth.

2. In a safety-brake of the character herein set forth, a hinged yoke, friction-wheel, friction-band, chain, or cable, and brake-shaft, combined and arranged substantially as shown and described.

3. In a safety-brake, the combination, with the hinged yoke carrying the friction-wheel, of the returning-spring or counter-balance, substantially as shown, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

JAMES GOODFELLOW.

Witnesses:
W. J. MORGAN,
JOHN BUCKLER.