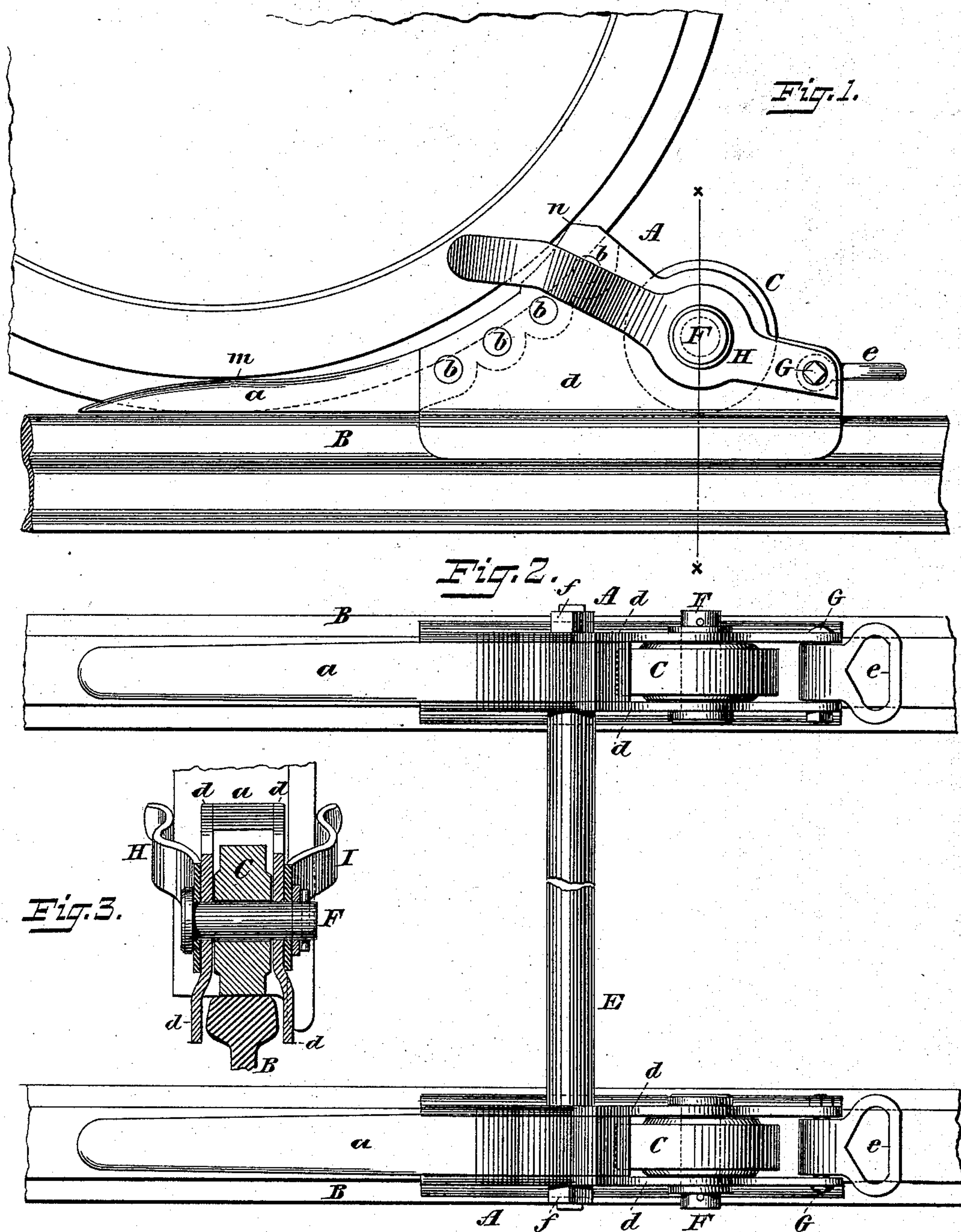


(No Model.)

L. TRAPP.
RAILWAY SHOE BRAKE.

No. 413,213.

Patented Oct. 22, 1889.



WITNESSES:

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LUDWIG TRAPP, OF GÖTTINGEN, GERMANY.

RAILWAY SHOE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 413,213, dated October 22, 1889.

Application filed June 1, 1889. Serial No. 312,879. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG TRAPP, a subject of the Emperor of Germany, and a resident of Göttingen, in Germany, have invented certain new and useful Improvements in Railway Shoe-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to improvements in railway brake-shoes; and it consists of a transportable shoe of novel construction, as hereinafter described, for application to the railway-rails, the object being to produce a means which can be placed on the rails at any desired point for the purpose of stopping a train of cars, or a single car or engine, or assisting the regular wheel-brakes so to do.

The manner of constructing the brake-shoe and the method of using the same will be understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a brake-shoe embodying the invention, said shoe being shown in position upon a railway-rail and supporting one wheel of a car, while Fig. 2 is a top plan view of a pair of said brake-shoes connected by a tube or rod, one shoe being for each railway-rail; and Fig. 3, a vertical section on the dotted line X X of Fig. 1.

In the drawings, A designates the shoe, which consists of the tongue *a*, adapted at its lower surface to rest upon the rail B and at its upper surface curving upward, as hereinafter described, one end of the tongue *a* being tapered to an edge, while the other end is in an elevated position and secured by rivets *b* between the side plates *d d*, as shown in Fig. 1. The plates *d d* have mounted between them the roller C, which rests upon the rail B and serves as the support for one end of the shoe, the extension of the tongue *a* forming and supporting the other end thereof. The lower edges of the plates *d d* are bent outward laterally, and then extend downward over the sides of the rail, in order to prevent the shoe from slipping therefrom and to form guides for directing its longitudinal sliding movement on the rail. At the end of the shoe

opposite to the tongue *a* there is provided a handle *e*, for convenience in transporting the device and placing it on the rail.

The curved upper portion of the tongue *a* and adjacent edges of the plates *d d* are designed to receive the tread of the car-wheel, and have a surface which permits the wheel to touch them at but two points at one time, as shown in Fig. 1, said points being at about the center of the extension of the tongue *a* and at the upper end of the plates *d d*, the contact-point on the extension of the tongue being in a location to come directly beneath the car-wheel when the latter is upon the shoe and the tongue is flat upon the rail. The relation of the upper surface of the tongue *a* with the convex surface of the car-wheel is clearly indicated in Fig. 1, in which *m n* denote the contact-points of the wheel with the shoe.

I have described above the construction of a single shoe; but I prefer to use these shoes in pairs, one shoe for each rail, and the shoe on one rail being connected with the shoe on the other rail by a rod or tube E, the ends of which pass through the plates *d d*, and are there secured by nuts *f*, as indicated in Fig. 2.

In the operation of the invention the shoes are placed upon the rails, the tongues *a* being pointed toward the approaching train, the front wheels of which will first ride up the tongues and bear against the upper contact-point *n*, which will have the effect of causing the shoes to rock upward sufficiently to relieve the tongues *a* from the rails and permit the shoes to slide forward on the rollers C. This forward thrust of the shoes on the rails prevents the car-wheels from riding completely over the shoes, and has the effect of momentarily bringing the weight of the car on the tongues *a*, depressing them on the rails, after which the wheels again ride up the inclined surface of the tongues, and by bearing against the upper contact-point *n* again rock the tongues upward and thrust the shoes forward on the rollers C. After each forward thrust of the shoes the weight of the car comes upon the tongues *a* and brings their extensive lower surface into frictional contact with the rails, so that it will be seen that the action of the car-wheels is

to alternately move the shoes forward and check them. This action is so rapid in its effect that the thrusting forward and checking of the shoes are analogous to practically imperceptible pulsations; but the train thereby may be readily stopped, the lower surface of the tongues *a* acting as powerful brakes against the surface of the rails, while the thrusting forward of the shoes on the rollers C prevents the wheels from passing entirely over the shoes, and also the too sudden stopping of the train. After the train has been stopped the car-wheels will ride down the inclined surface of the tongues *a* onto the rails, after which the shoes may be removed.

Upon opposite ends of the axle F of the rollers C and the ends of the bolts G, securing the handles *e*, may be provided the diverging spring-plates H I, as shown in Figs. 1 and 3, which are adapted, when in use, to receive the rim of the car-wheel between them, as denoted in said figures, and thereby aid in preserving the shoes A in position on the rails B. The ends of the plates H I being at opposite sides of the rim of the car-wheel, the latter serves to aid in preventing the shoes from moving laterally.

The brake-shoes, though durable and simple in construction, have been produced only after much thought and experiment, and are thoroughly efficient and practical for the purposes intended, as persons skilled in the art to which the invention pertains will readily understand.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A railway shoe-brake having the tongue at one end and a roller at the other, the tongue having a curved upper surface with contact-points for the car-wheel, whereby, when in use, the shoe may be alternately thrust forward and retarded, substantially as set forth.

2. A railway shoe-brake having a tongue at one end to rest on the rail, a roller at the other end to enable the shoe to slide forward, and a guide for retaining it in position, the upper surface of the tongue being curved to receive the car-wheel and provided with contact-points on different planes, whereby, when in use, the car-wheel may alternately impel and check the shoe, substantially as set forth.

3. The shoe consisting of the tongue *a*, plates *d d*, and roller C, the tongue being adapted to rest on the track-rail and having contact-points *m n* for the car-wheel, substantially as set forth.

4. The shoe consisting of the tongue *a*, plates *d d*, roller C, and plates H I, substantially as set forth.

LUDWIG TRAPP.

Witnesses:

OTTO TRAPP,
JEAN GRUND.