

(No Model.)

2 Sheets—Sheet 1.

J. MEIER.

CAR BRAKE.

No. 310,067.

Patented Dec. 30, 1884.

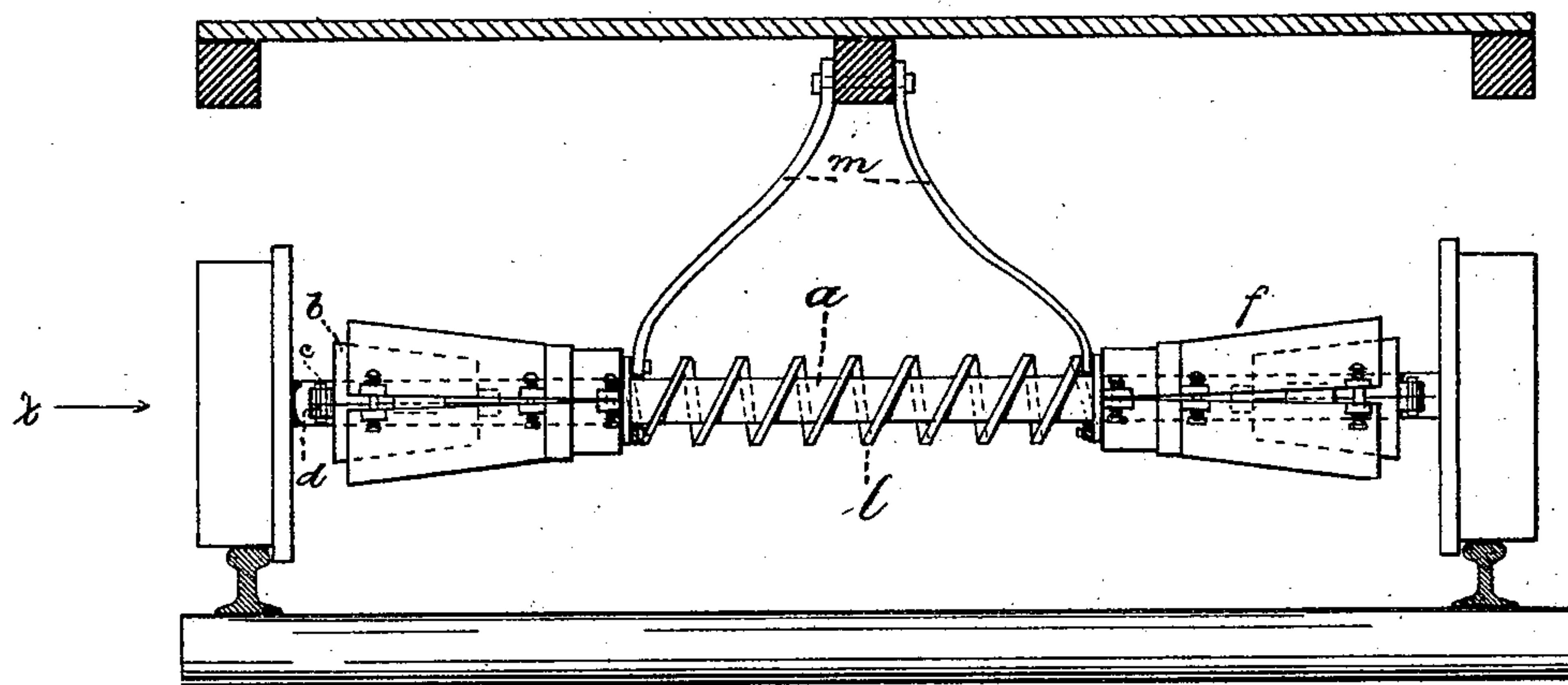


Fig. 1.

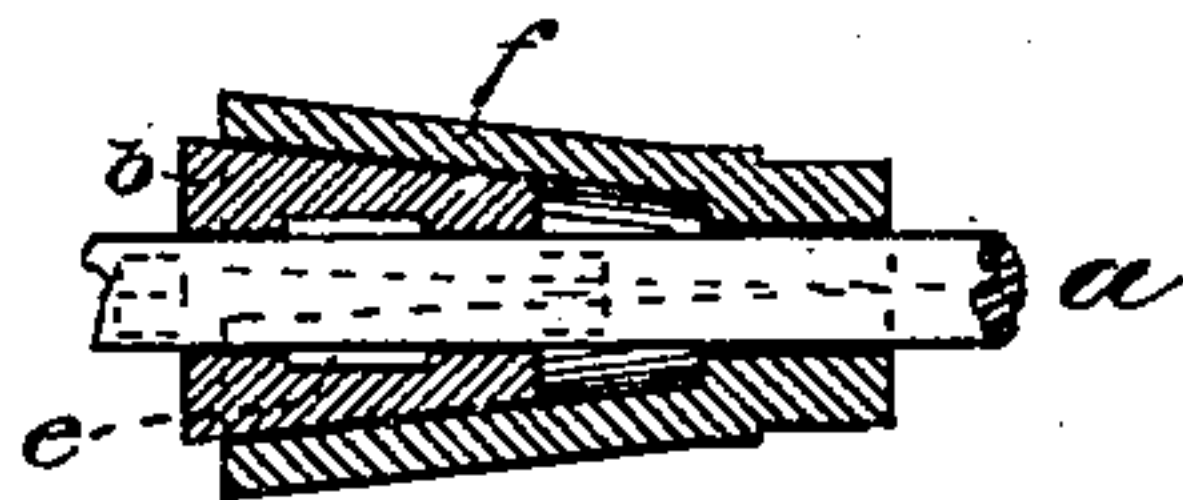


Fig. 3.

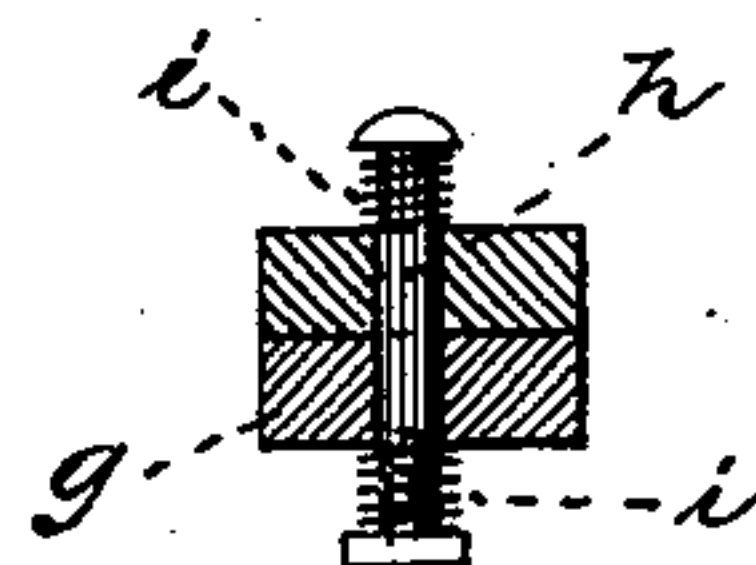


Fig. A.

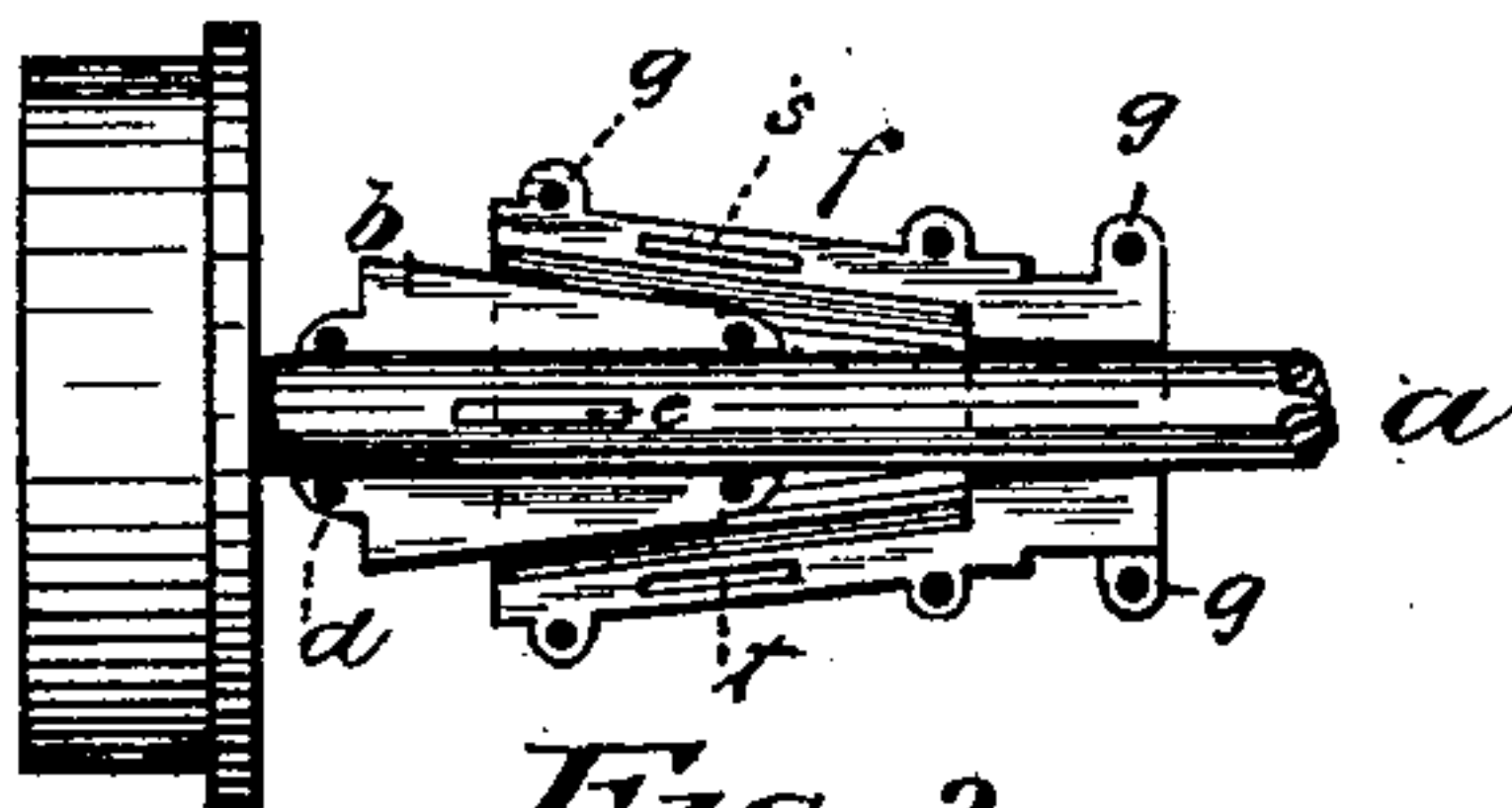


Fig. 2.

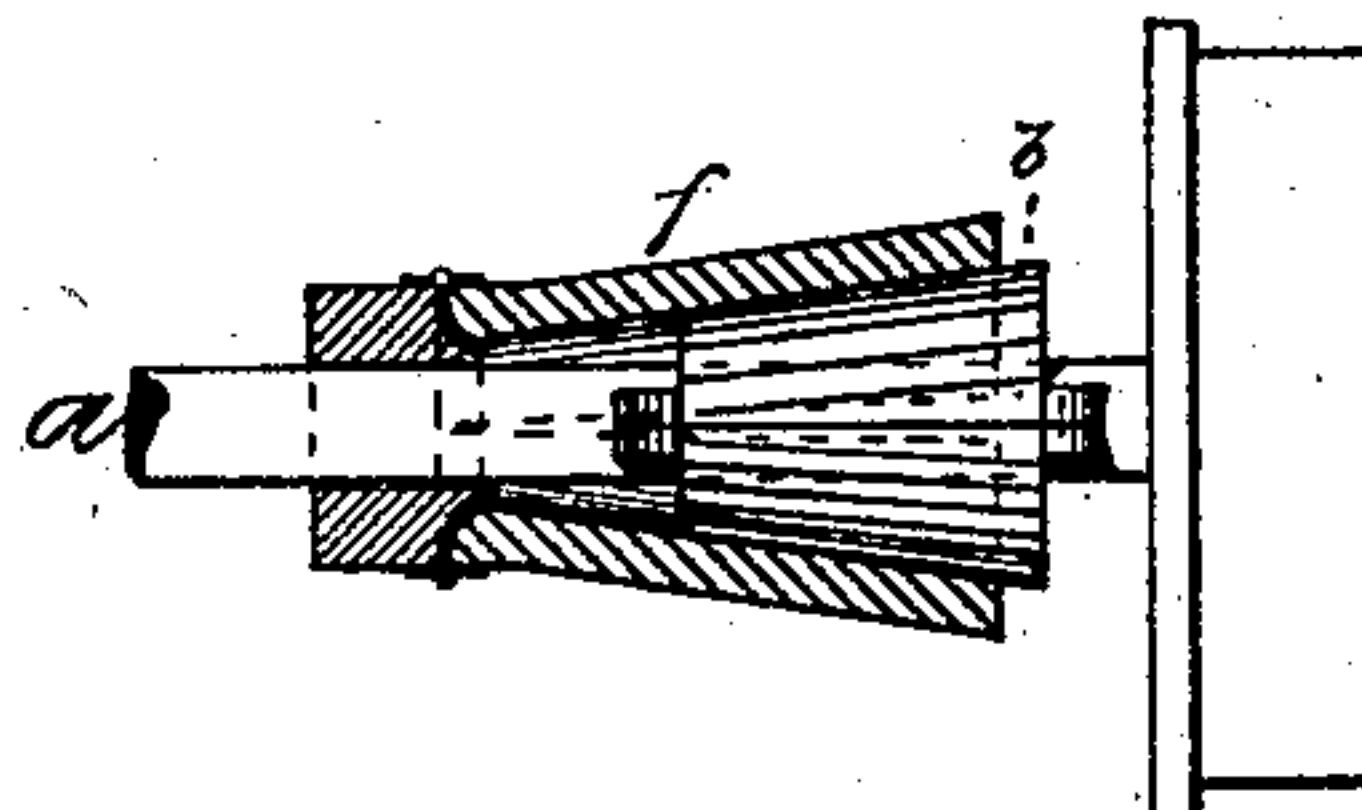


Fig. 5.

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J. W. Campbell.
Edward G. Kempf.

Inventor:

Joseph Meier;
by Dravetly Attys.

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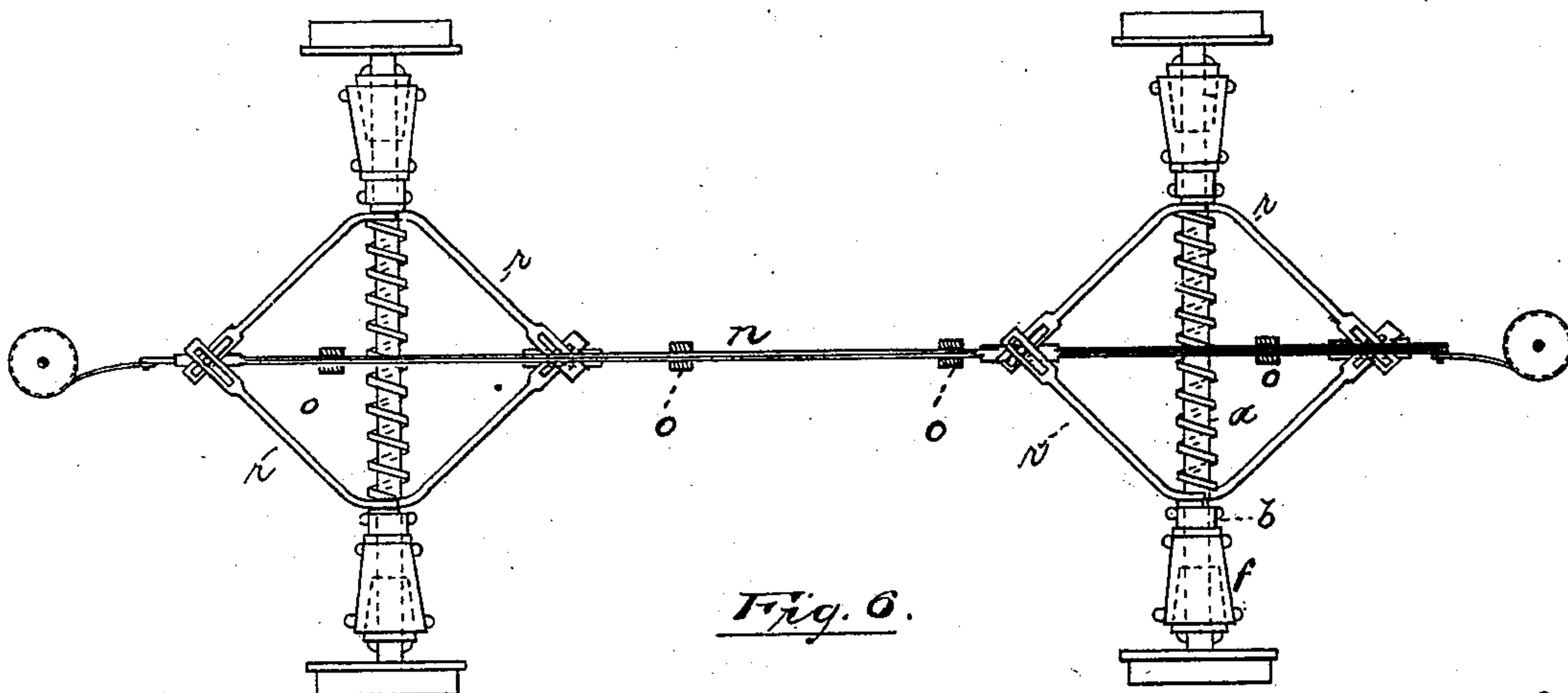


Fig. 6.

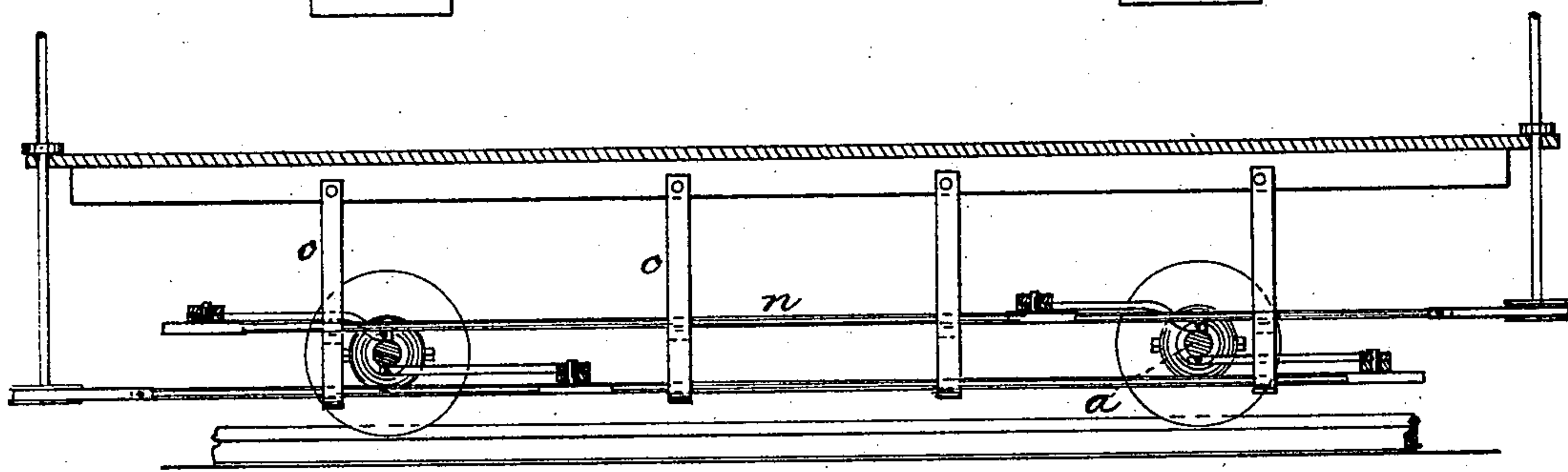


Fig. 7.

Attest:

T. P. Campbell.
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Inventor:

Joseph Meier,
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UNITED STATES PATENT OFFICE.

JOSEPH MEIER, OF NEWARK, NEW JERSEY.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 310,067, dated December 30, 1884.

Application filed April 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MEIER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to reduce the cost of repairing railway or tramway cars by removing the frictional contact and wear of the brake-shoe from the wheels thereof, and to provide a simple and effective device for braking or stopping the revolution of the said wheels.

The invention consists in the arrangements and combinations of parts substantially as will be hereinafter set forth, and finally embodied in the several clauses of the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is an elevation indicating the relation of my improvements to a rail or tram way car and the wheels thereof. Fig. 2 is a view taken through line *x* of Fig. 1, showing half-sections of the improved brake and their mode of operation. Fig. 3 illustrates the mode of keying certain conical sections on the axle. Fig. 4 illustrates a mode of bolting or uniting certain half-sections of the brake portions together. Fig. 5 illustrates a certain modification in the construction of the said sections. Fig. 6 illustrates one mode of operating the brakes, and Fig. 7 is a vertical section showing the brake-operating mechanism more fully.

In carrying out the invention I form or secure to, upon, or around the car-wheel axle or journal *a* a conical section or sections, *b b*, providing frictional surfaces. Said sections are made in half-sections, as shown more clearly in Figs. 1 and 2, and are bolted on in any suitable manner so that they will remain together. Said half-sections may thus be readily detached from the axle when worn or broken without disturbing the wheel. The bolts are

lettered *c*. Said bolts may be arranged in ears *d* of said sections, which ears are formed to lie below the line of the inclined frictional surface, so as not to interfere with a proper contact. To prevent the sections *b* from turning on the axle when they are not integral therewith, I provide feathers, &c., which project from the said axle into suitable recesses in the sections, as shown in Fig. 3.

Sliding upon the axle *a* is arranged a section, *f*, having a chamber therein, which is formed to taper in correspondence with the conical section, *b*. Said section *f* is also formed of separable half-sections, adapted, by having perforated ears *g*, to be bolted together by bolts *h* in any suitable manner, the preferred mode being to provide springs *i*, and arrange them between the ears and the heads of the bolts, as shown in Fig. 1, so that when the frictional surfaces of the sections come into contact in braking the wheels the force or jar of such contact will be broken, and the parts will be prevented from so binding as to prevent the retractile springs from acting. By moving the sliding sections laterally the inclined surfaces make a contact, and sufficient friction is produced to stop the motion of the journal or axle and the wheel revolving therewith. The frictional sections are normally held separate by springs *l m*, and are forced into holding contact by any suitable system of levers or other appropriate mechanism. The preferred arrangement, however, is shown in Fig. 6, in which *n* is a center rod suspended from or secured to the bottom of the car or other support by brackets or hangers *o*, and operated by the usual brake-crank or wheel-bar *p*, to which it is connected, preferably by a coil-spring, *q*. By winding up said spring or other connective, and moving the center bar or rod longitudinally, the arms *r*, uniting the brake-sections with the said bar, are caused to spread and throw the said sections into frictional contact, as will be understood. When power is removed from the brake-bar, the coil-spring unwinds, and the spring or springs *l m* act to move the center bar backward and to separate the frictional surfaces.

To hold the sliding half-sections in proper relation to one another, I provide dowels or tongues *s* on one section and corresponding re-

cesses or grooves in the other. These unite in holding the said sections together, but allow the same to separate sufficiently when a contact is made.

5 I may form the sliding section of hinged or pivoted parts, as shown in Fig. 5. In this case the bearing of the said sections on the axle is not changed or the parts caused to bind when the contact of the frictional surfaces is
10 made.

I do not wish to be understood as limiting myself to the exact form and construction of parts specifically described, as many changes may be made without departing from the spirit
15 of this invention.

I am aware that, broadly, it is not new to construct brakes of reciprocally inclined or conical sections, one of which moves laterally to and from engagement with the other, and
20 this feature I disclaim; but heretofore one of said sections has been cast with the wheel, so that the tendency of the laterally-sliding co-operating section was to throw said wheel along the axle. In my invention this objection is
25 overcome, the inner conical section being upon the axle independent of the wheel, so that the co-operating section cannot affect the said wheel.

I am also aware that friction-wheels of a different construction have been secured to the
30 axle in sections; but in this case no inclined surfaces were provided, nor a laterally-sliding co-operating section to engage the same.

Having thus described the invention, what I
35 claim as new is—

1. In combination, in a car-brake, the half-

sections *f f*, bolted together around the car-axle, the bolts *h*, and springs *i*, all said parts being arranged and operating substantially as
40 and for the purposes set forth and shown.

2. In combination with the railway or tramway car axle, the conical section *b*, and co-operating sections *f*, and retractile springs, all
45 said parts being arranged and operating substantially as set forth.

3. In combination, the traction-wheel axle, conical section, co-operating section, retractile spring or springs, center bar, arms connecting said bar to the said co-operating sections, the coil-spring, and brake-bar, all said
50 parts being arranged and operating substantially as herein set forth.

4. The sliding half-sections having dowels or tongues *s* in one and corresponding recesses or grooves in the other to hold the said
55 sections separably together, said half-sections being in combination with the car-axle and co-operating frictional sections, as set forth.

5. The combination, with the car-axle, conical half-sections secured thereon and together, and reciprocally-inclined half-sections connected together and engaging with said sections on said axle, all substantially as and for
60 the purposes set forth.

In testimony that I claim the foregoing I
65 have hereunto set my hand this 4th day of April, 1884.

JOSEPH MEIER.

Witnesses:

OLIVER DRAKE,
F. F. CAMPBELL.