

(No Model.)

L. E. HERRINGTON.
CAR BRAKE.

No. 589,968.

Patented Sept. 14, 1897.

Fig. 1.

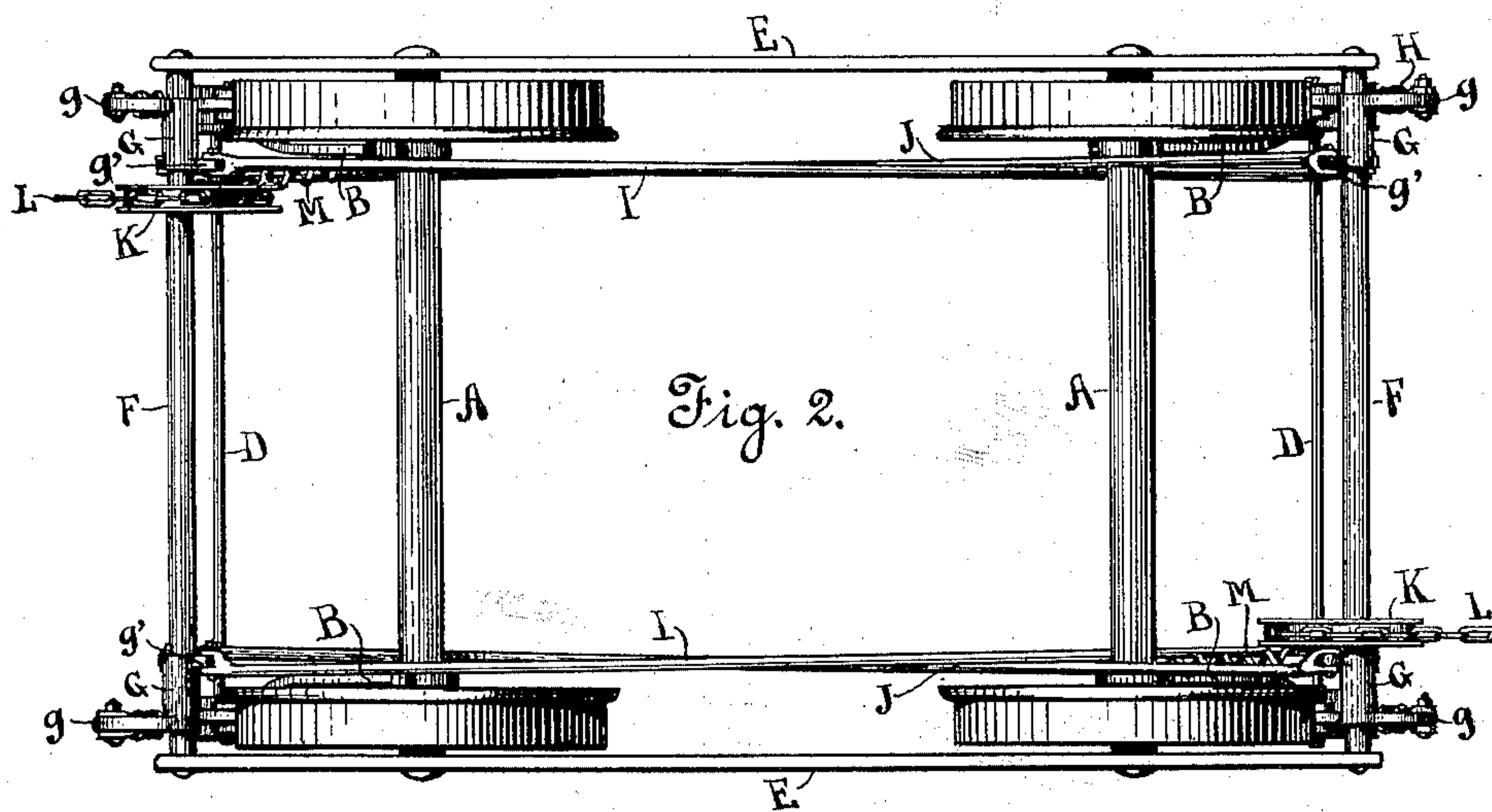
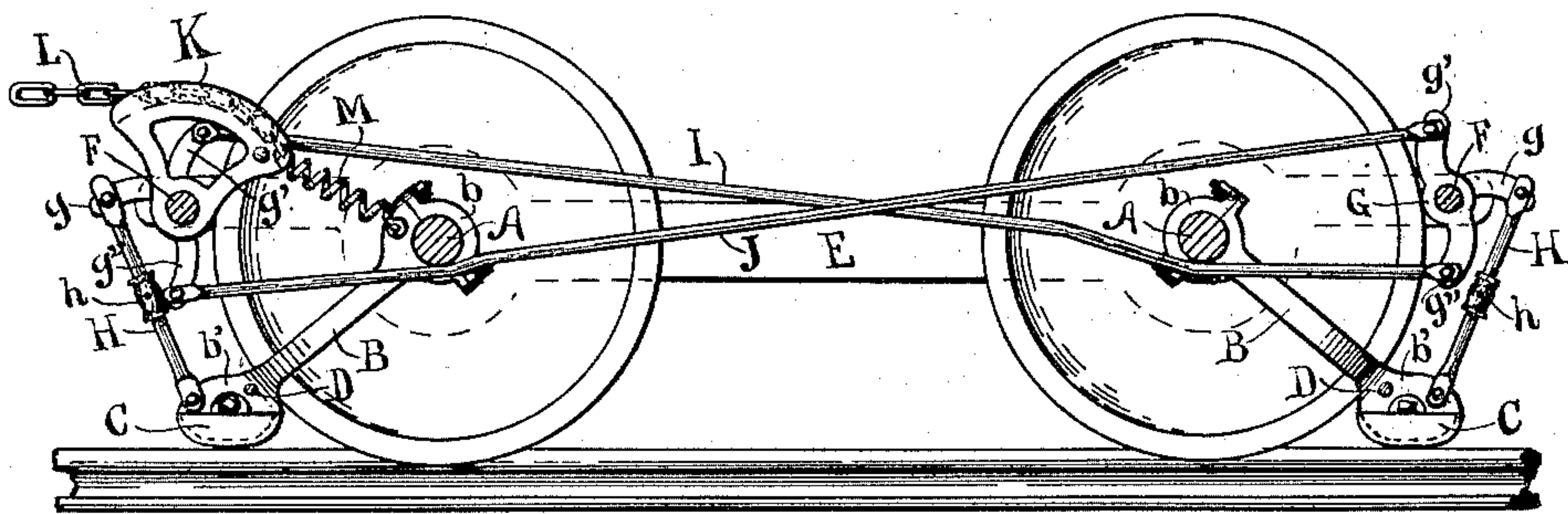
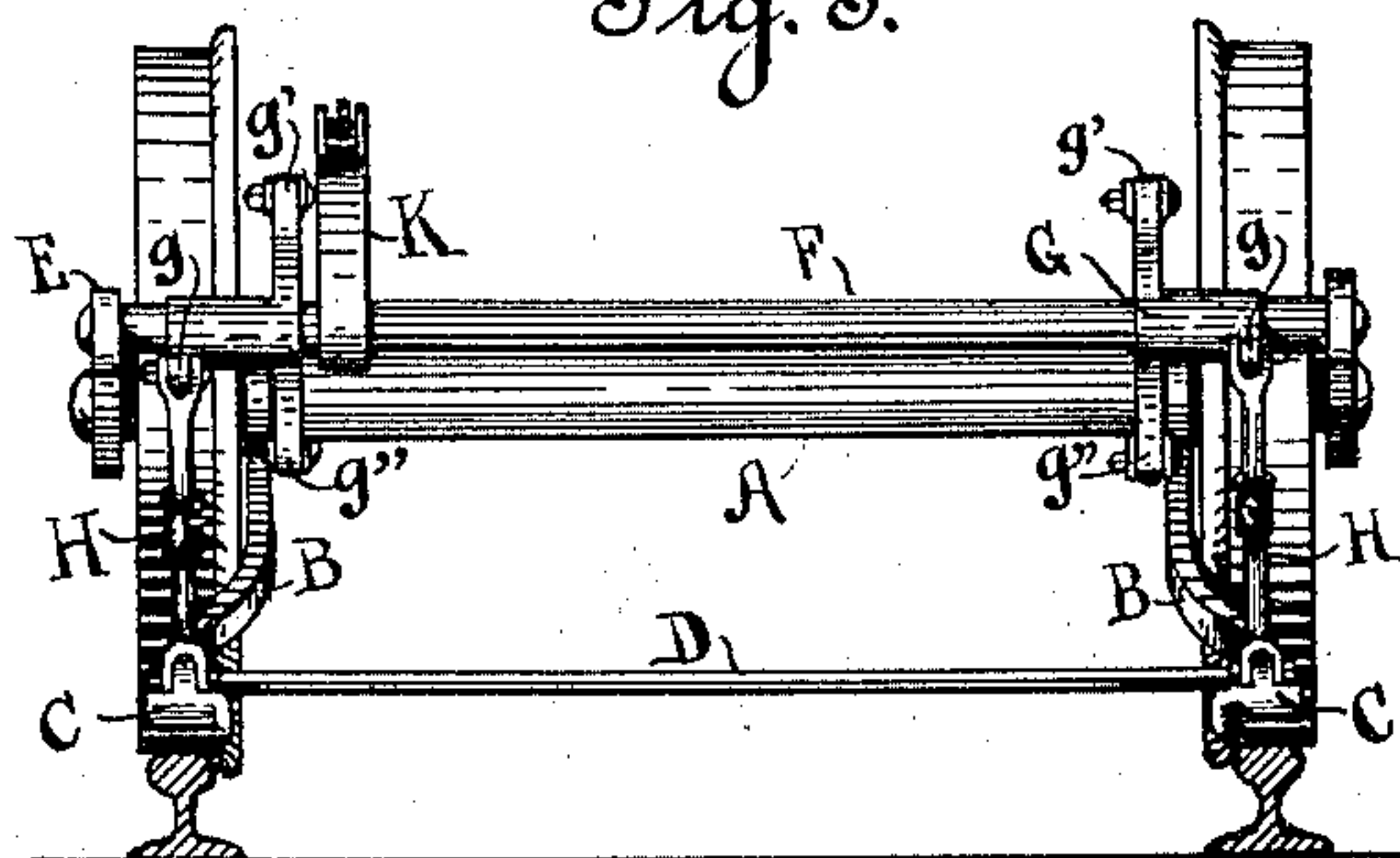


Fig. 3.



Witnesses
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LAWRENCE E. HERRINGTON, OF ELMIRA, NEW YORK.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 589,968, dated September 14, 1897.

Application filed March 27, 1897. Serial No. 629,502. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE E. HERRINGTON, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to improvements in car-brakes in which the brake-shoes are made to engage the track-rails instead of the wheels; and the objects of my improvements are to provide a brake of this type in which the shoes may be applied to the rails close to the wheels of the car, so that the brake will not be thrown away from the rails when passing around curves; also, to so arrange the operating levers and connections as to give greater efficiency with less labor for the operator, and to leave the space between and near the car-axles free to accommodate electric motors or other propelling mechanisms. I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a car-truck, viewed from between the wheels, showing my brake and the manner of applying it; Fig. 2, a plan view of the truck, and Fig. 3 a front elevation.

Corresponding parts are designated by similar letters of reference throughout the several views.

On the axles A A of the car, just inside of the wheels, are hung the swing-arms B B B B by means of proper boxes *b b b b*, which may be babbitted or supplied with suitable brasses. These arms extend downward on an incline and are bent outward in front of the wheels at either end of the car, so as to come into line with the track-rails as close as possible to the wheels. The extremities of the arms take the form of semielliptical heads *b'*, to which the brake-shoes C are attached in any desirable manner—as, for instance, a tongue on the shoe bolted into a socket in the head. These shoes are to be made of cast iron, hard wood, or other suitable material and can be renewed from time to time as they wear away. They are made oblong and curve upward at either end, giving a large friction-surface, much larger than the wheels would give. Cross-bars D D are bolted to the heads *b'* and

hold them the proper distance apart to cause the shoes to conform with the gage of the track. The shoes may also be flanged on the inside, as indicated, to cause them to follow more perfectly the trend of the rails.

In the ends of the truck-sills E E, where they extend forward of the wheels, are journaled two shafts F F, upon which are keyed or otherwise fastened hubs G G G G, each provided with the arms *g g' g''*. The arms *g* are located on the outside of the hubs, in line with the heads *b'*, to which they are connected by links H, which are made in two parts connected together by right and left nuts or turnbuckles *h*. On the inside of the hubs G and clearing the inside of the wheels are the arms *g' g''*, diametrically opposite each other and set so as to exert their full length in leverage on the connecting rods or cables I J when the brake is operated. These connecting-rods cross each other in pairs at either side of the truck, rods I connecting arms *g'* of the hubs on one shaft with arms *g''* of the corresponding hubs on the other shaft, and rods J connecting the arms *g''* and *g'* in like manner. On the shafts F F are also fastened the sectors K K, from which run chains or cables L L to the usual brake lever or wheel at either end of the car. The periphery of the sector is properly grooved to keep the chain or cable in place. The springs M M run from these sectors to the boxings on arms B, being connected thereto in suitable eyes or bolts. These springs act to withdraw the brake-shoes when the brake mechanism is released.

In operation, when the motorman turns the crank or wheel at either end of the car, the sector at that end is drawn forward, imparting motion to its shaft F and through it to the arms *g* at either side, which in turn force the brake-shoes down upon the track by means of the links H. At the same time the arms *g'* will exert a pull through connecting-rods I or J upon arms *g''* at the other end of the car, imparting motion to the shaft F and setting the brakes at that end of the car. Rods I and J will also be supplied with turnbuckles, so that by properly adjusting the lengths of these rods and the links H all four brake-shoes will be brought down upon the track at the same time and with equal force.

As soon as the brake lever or wheel is released the springs M M bring all the parts back to normal position.

It will be seen that by properly proportion-
5 ing the various levers great force can be ex-
erted upon the brakes with little effort on the
part of the motorman. By the use of the sec-
tor the leverage of the force exerted on the
shafts F F is made constant. The arms B
10 and links II are inclined toward each other
and thus hold the brake-shoes firmly in posi-
tion. The braking force at the forward end
of the car is transmitted directly to the front
axle through the arms B, and there is a cor-
15 responding pull on the rear axle, exerted
through the arms B at that end of the car.
The boxes on the arms B are made so that
the axles will run freely in them and will run
smoothly, if oiled daily with the rest of the
20 machinery.

Heretofore track-brakes have generally
been applied between the wheels, in which
position they are thrown entirely away from
the rails on curves, especially such curves
25 as are necessary on street-railways. In my
construction the brake-shoes hug the wheels
closely and their variation from the track-line
is very small even on sharp curves. My ar-
rangement also leaves the central space be-
30 tween axles open and unobstructed, and the
brake mechanism cannot in any way inter-
fere with the motor mechanism.

Modifications in the arrangement and loca-
tion of the parts of my device may become
necessary in attaching it to various styles of 35
car-trucks, and it may be desirable in some
cases to couple the swing-arms B to the frame-
work of the truck instead of to the axles, as
shown.

Without, therefore, limiting myself to the 40
precise construction and arrangement of the
device as shown, what I claim, and desire to
secure by Letters Patent, is—

In a car-brake, the combination, with the
car-truck, of swing-arms coupled thereto, 45
brake-shoes attached to the extremities of the
swing-arms in line with the track-rails, shafts
journaled in the truck-sills at either end of
the car, arms at the ends of the shafts, links
coupling these arms to the ends of the swing- 50
arms, other arms on the shafts oppositely
disposed and coupled together by crossed con-
necting-rods running between the shafts close
to the car-wheels, in the manner shown, and
sectors fastened to the shafts in line with and 55
coupled by chains or cables to the brake-lever
shafts substantially as described.

In testimony whereof I have affixed my sig-
nature in presence of two witnesses.

LAWRENCE E. HERRINGTON.

Witnesses:

HOLLIS H. MILLS,
C. TRACEY STAGG.