

(No Model.)

3 Sheets—Sheet 1.

L. H. HEBERT.
CAR BRAKE.

No. 284,201.

Patented Sept. 4, 1883.

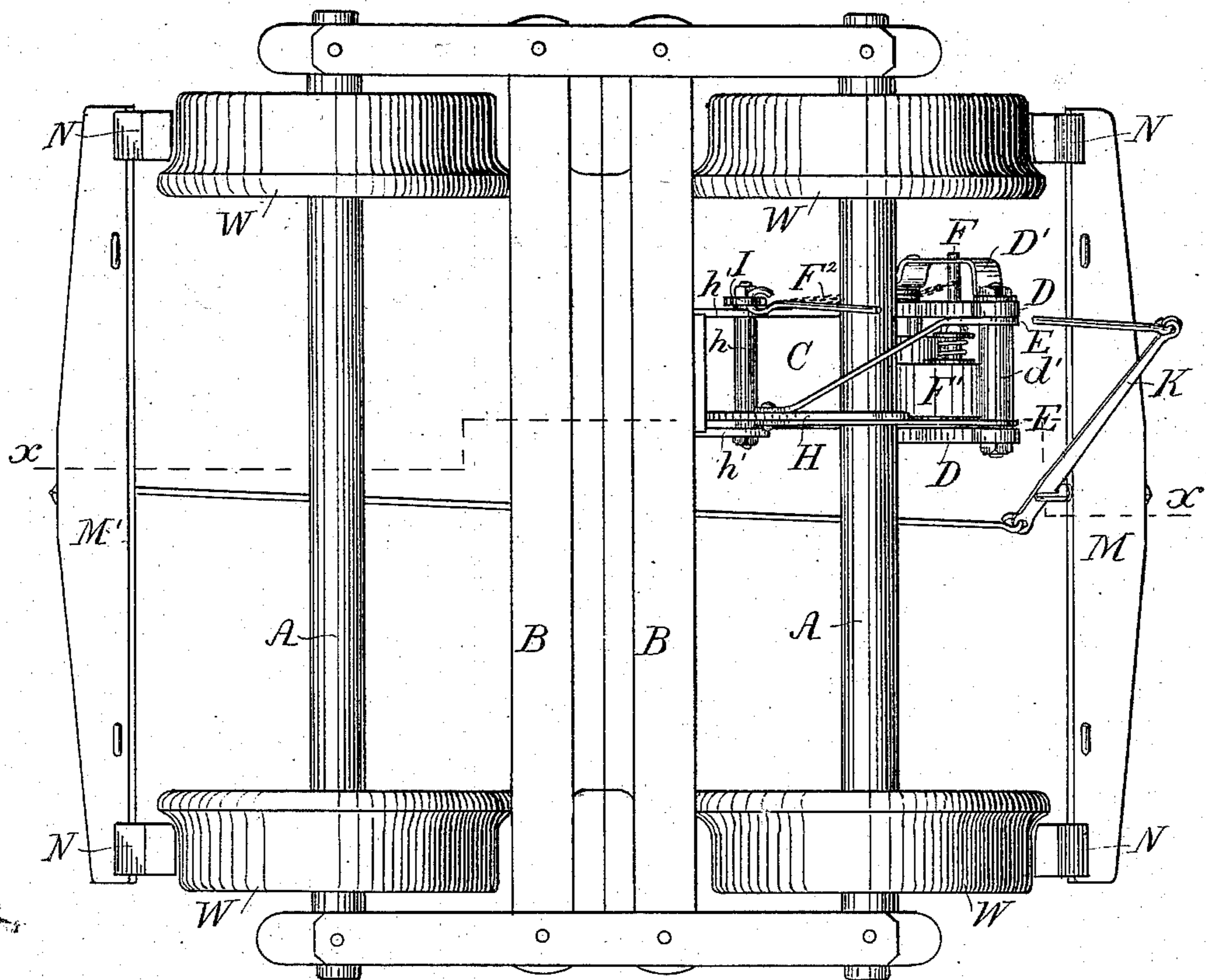


Fig. 1.

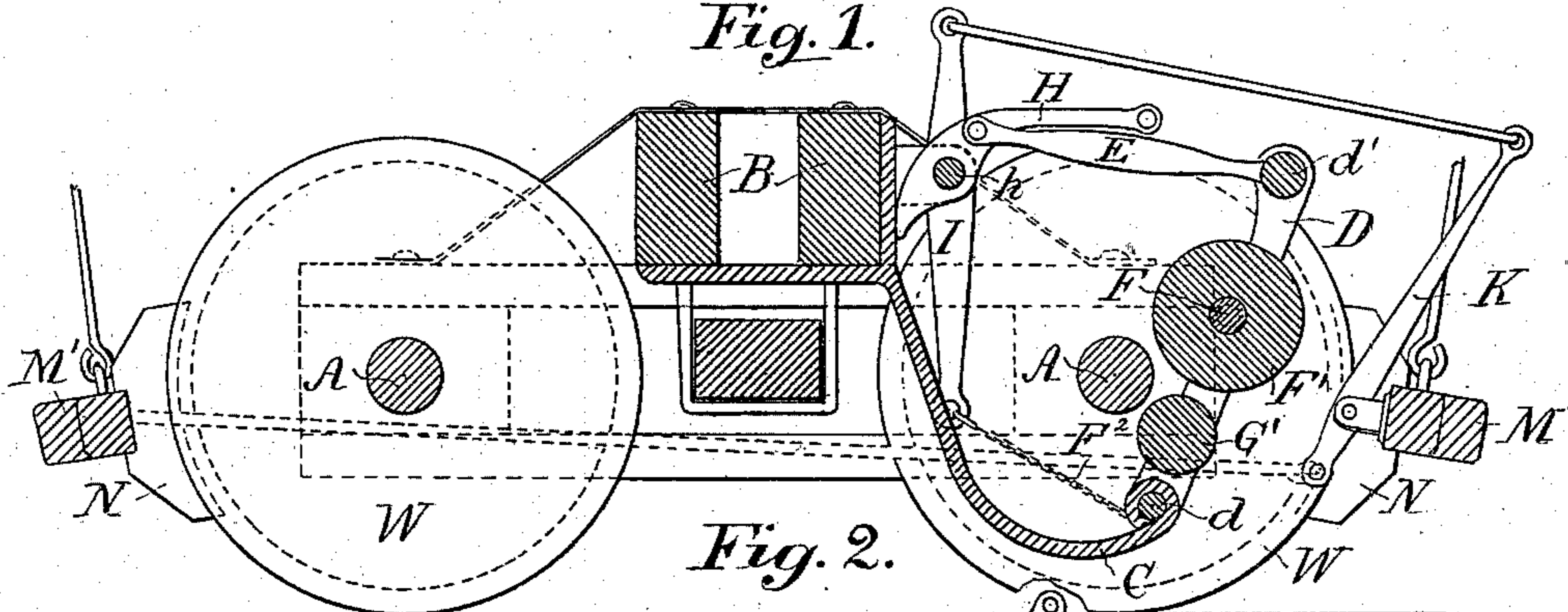


Fig. 2.

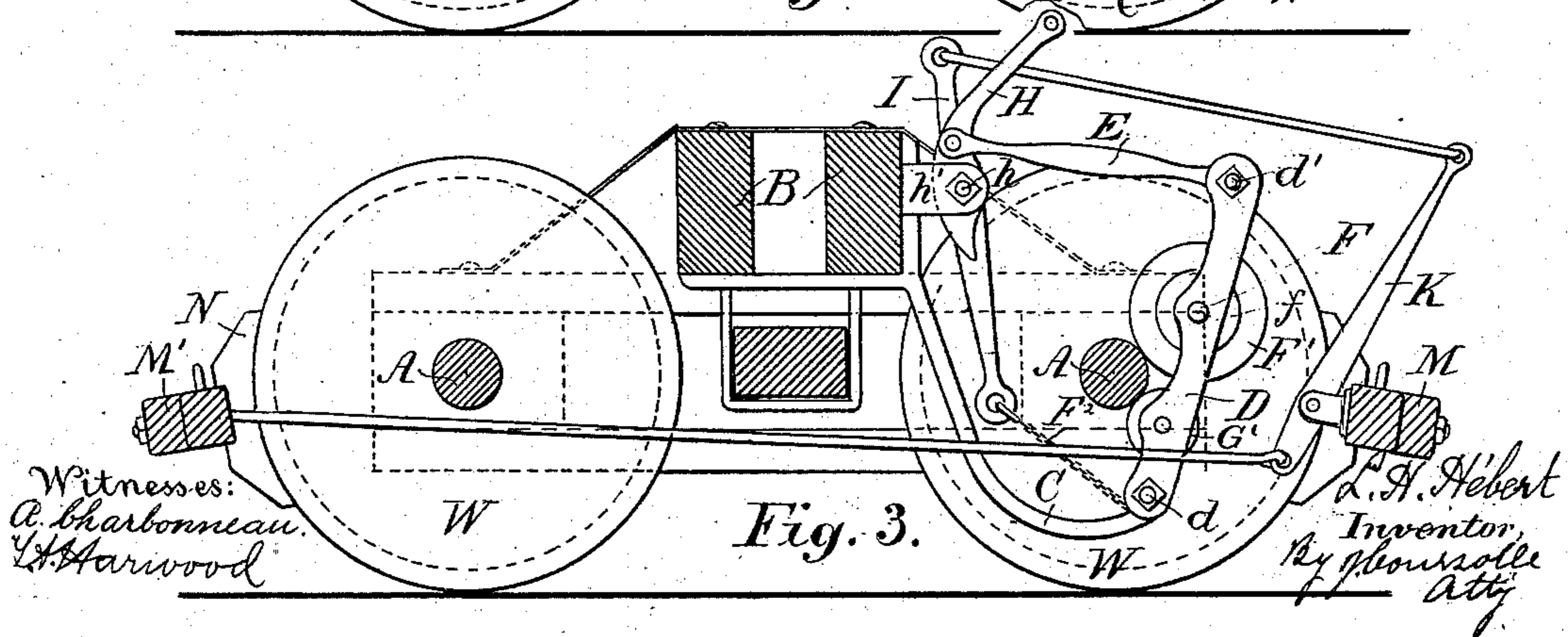


Fig. 3.

Witnesses:
A. Charbonneau.
J. Harwood

L. H. Hebert
Inventor.
By J. H. Harwood
Att'y

(No Model.)

3 Sheets—Sheet 2.

L. H. HEBERT.
CAR BRAKE.

No. 284,201.

Patented Sept. 4, 1883.

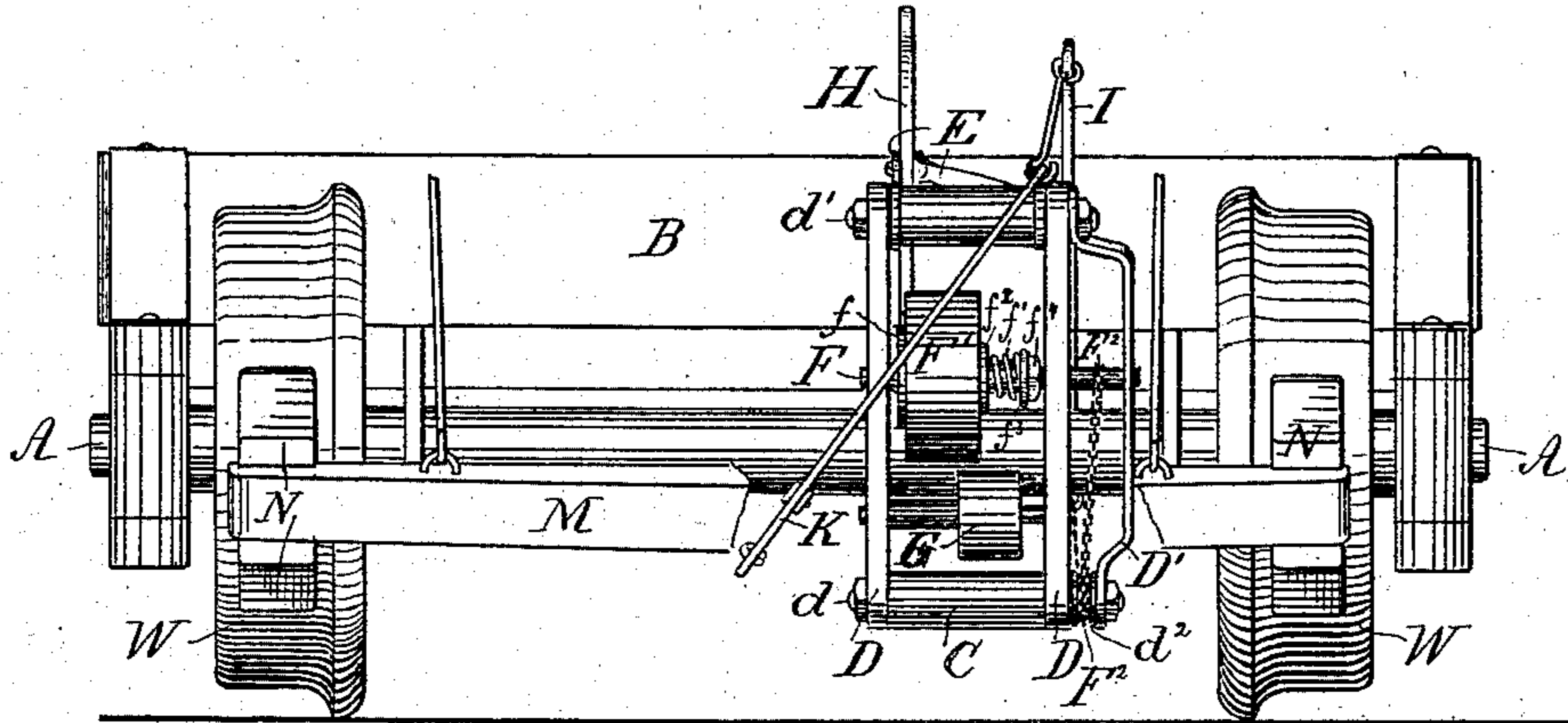


Fig. 4.

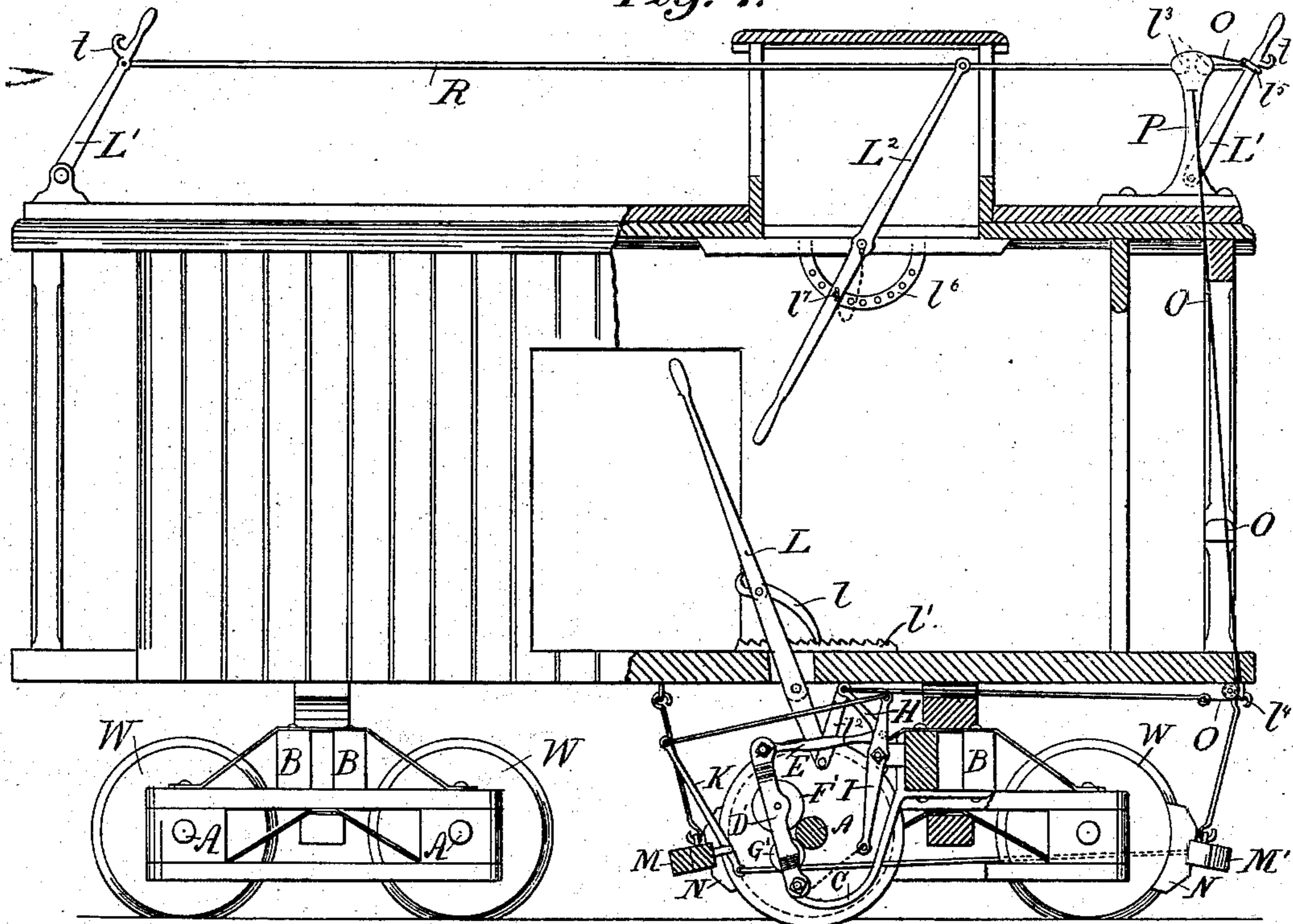


Fig. 6.

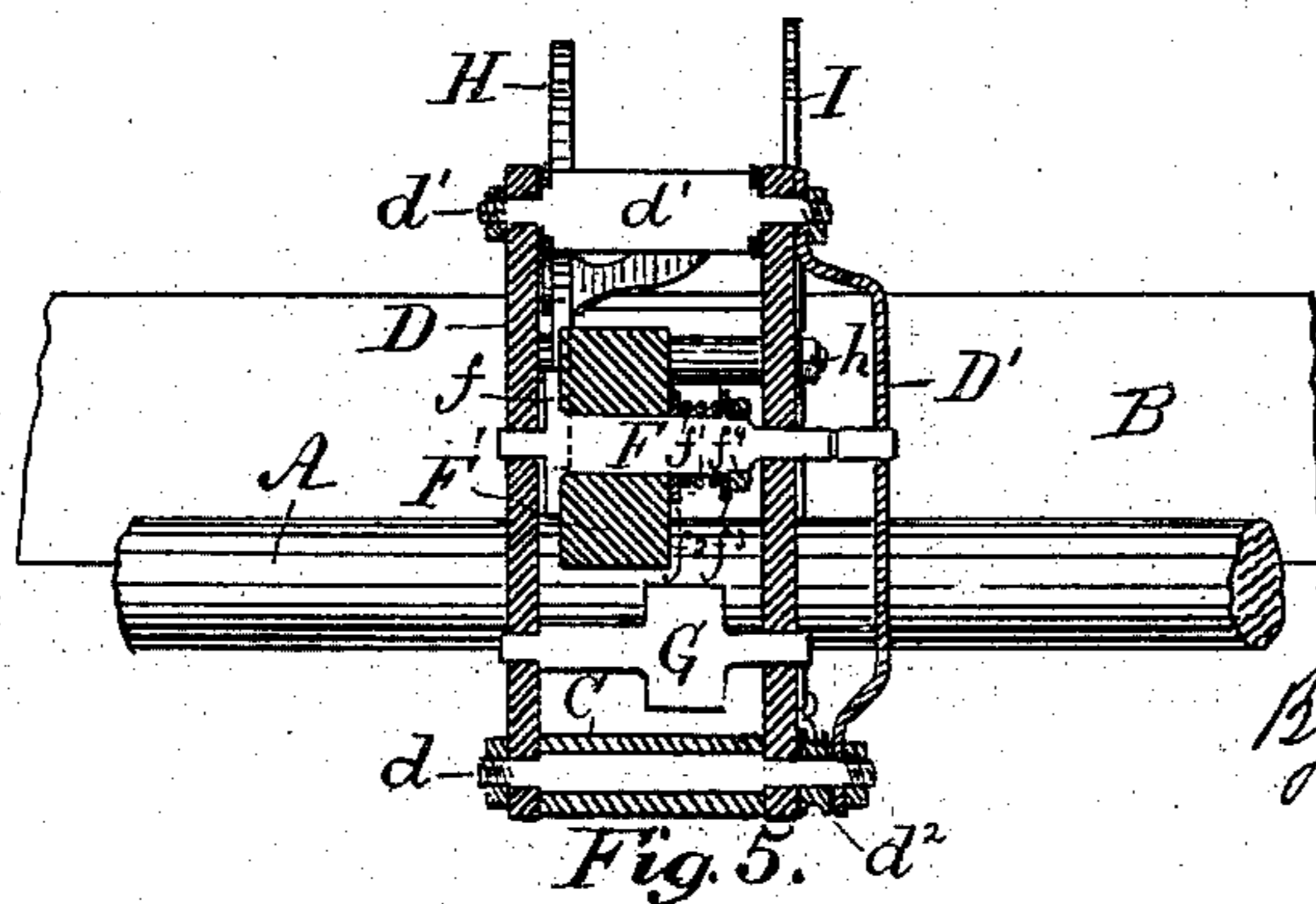


Fig. 5.

Witnesses:
A. Charbonneau
L. Harwood

L. H. Hebert
Inventor,
By J. H. H. H. H.
Att'y

(No Model.)

3 Sheets—Sheet 3.

L. H. HEBERT.
CAR BRAKE.

No. 284,201.

Patented Sept. 4, 1883.

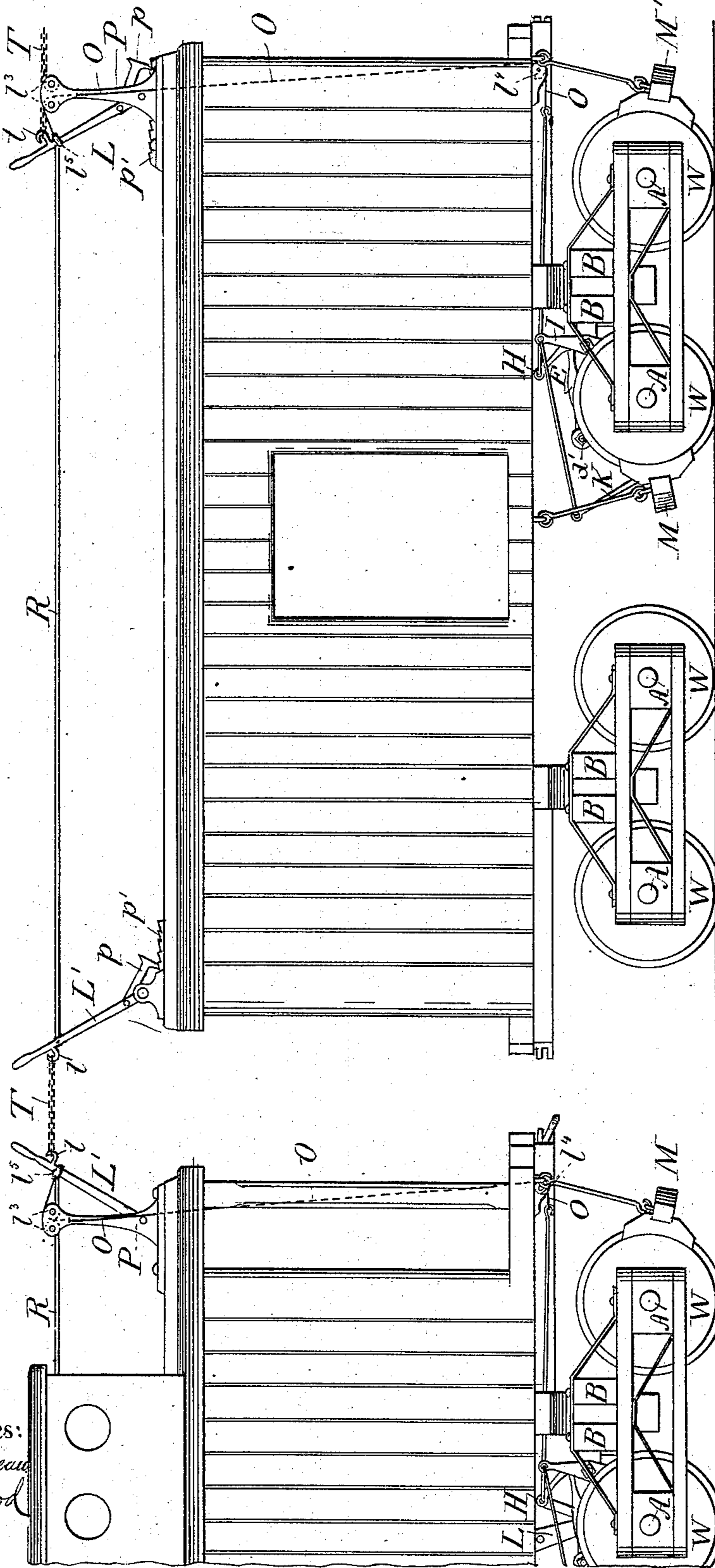


Fig. 1.

Witnesses:
A. Charboineau
W. Harwood

L. H. Hebert
Inventor,
By J. Boursole
Atty

UNITED STATES PATENT OFFICE.

LOUIS HENRI HÉBERT, OF ST. JOHNS, QUEBEC, ASSIGNOR OF TWO-THIRDS
TO JOSEPH JEROME HEBERT AND ARTHUR JOSEPH HEBERT, OF ST.
HENRI, CANADA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 284,201, dated September 4, 1883.

Application filed May 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, LOUIS H. HÉBERT, of St. Johns, in the Province of Quebec, in the Dominion of Canada, have invented certain
5 new and useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to car-brakes of that description in which the brake-power is derived directly from the motion of the axles, the brakeman merely having to start the working mechanism.

My improved brake is of such a description that it can be worked from any point on the
15 top of a train of cars, or from the roof or floor of the brake-van. It consists, mainly, of a friction-pulley journaled loose upon a spindle placed parallel to the axle, and in a swing-frame consisting of arms pivoted below to a
20 bracket, which is secured to the bogie-frame, and held at the top by links pivoted to a lever which is suitably journaled, and having its long arm connected to the means of setting the brake. A guide-pulley is also journaled
25 in the same swing-frame, parallel to the spindle carrying the friction-pulley, so that when the brake is set the friction-pulley and guide-pulley hold the axle between them, the guide-pulley thus insuring the contact of the axle
30 with the friction-pulley. A chain or rope is secured to the spindle upon which the friction-pulley is journaled, and when the latter is pressed against the axle it is rotated and winds up the chain or rope secured to the spindle,
35 thereby drawing a lever, which in turn draws the brake-lever, tightening the brake-blocks upon the wheels. When all the chain or rope has been wound upon the spindle and the blocks are tight upon the wheels, but the latter still continue to rotate, the friction-pulley
40 is still receiving motion from the axle, but will now run loose upon the spindle against the pressure of a spiral spring, pressing the pulley against a large flange or collar upon the said spindle. The means of starting the mechanism consists of a lever pivoted on the floor
45 of the brake-van, being connected below to the lever controlling the arm in which the friction pulley is journaled, and provided

with a pawl or detent working in a rack. The
50 lever controlling the arm in which the friction-pulley is journaled is further connected, by means of a cord, to levers on the top of the car, coupled by a rod, said levers being also
55 provided with pawl or detents, and with means to connect with the adjacent cars.

Figure 1 is a top view of a car bogie or truck, showing the principal parts of the brake mechanism. Fig. 2 is a cross-section of the same on line *x x*. Fig. 3 is a cross-section
60 through the axle, showing the brake mechanism in side elevation. Fig. 4 is an elevation of the same. Fig. 5 is a longitudinal section through the lever-arms carrying the spindle upon which the friction-pulley is journaled,
65 shown on an enlarged scale. Fig. 6 is a longitudinal section of a car having the brake applied. Fig. 7 is an elevation of the end of contiguous cars, showing the connections.

A are the car-axes, and W are the wheels. 70
B are the transverse beams of the bogie-frame. C is a bracket firmly secured to the beams B, and having its free end bent partly around the axle and bracket, being broad and formed into a long bearing (or two eyes) to receive the pin
75 *d*, by which the arms D are pivoted thereto. These arms D form a swing-frame of limited range, being held together at the top by a pin, *d'*, upon which are pivoted the links E, these being disposed in fork shape, and pivoted to
80 the lever H, close to the center or fulcrum upon the pin *h*, which is held in arms *h'*, attached to or forming part of the bracket C. The swing-frame formed by the arms D has journaled in it a spindle, F, having near one end a large
85 flange or collar, *f*, terminating in a large neck or bearing, upon which the friction-pulley F' is journaled. This is pressed against the collar *f* by a spiral spring, *f'*, placed upon the spindle, between two washers, *f*² *f*³, the outer
90 one of which is secured and the pressure of the spring regulated by a nut, *f*⁴. To the end of the spindle F projecting beyond the arm is fastened, so as to prevent it from slipping, a cord or chain, F², which is thence led over a
95 grooved pulley, *d*², journaled upon the pin *d*, and secured to the lower end of the long arm of the lever I, which is centered upon the pin

h, and having its upper end or short arm connected by a rod or link to the lever K, pivoted on one of the cross-bars, M, which carry the brake blocks or shoes N, and the lower short end connected by a rod to the other cross-bar, M', these being acted upon simultaneously and in opposite directions in the usual manner. In the frame formed by the arms D is also journaled, a little below the friction-bowl F', a guide-pulley, G, this and the pulley F' being so disposed that when the swing-frame D is drawn toward the axle the latter lies between the two pulleys, the guide-pulley G thus insuring the contact of the pulley F' with the axle A. An extra bar or guard, D', is attached to the side of the frame D D d d' to protect the overhanging ends of spindles. The lever H has a flexure close to its center, at which the links E are pivoted, and terminates in a projection butting against the bracket C or beam B, and limiting the outward range of the swing-frame D.

The action of this mechanism is this. When the pulley F' is pressed against the axle, it will rotate with the spindle upon which it is journaled, and wind up the chain F², thus moving the lever I, which works the lever K, and with it the cross-bars M M', thus tightening the blocks upon the wheels W. When all the available length of chain F² is wound upon the spindle F, the strain thus produced will keep the spindle stationary and allow the pulley F' to rotate loose upon its bearing should the axle still continue to rotate.

Should the part of the axle that is in contact with the pulleys F' and G become worn and uneven, a split sleeve can be put upon the axle.

The following means are provided for setting the brake: A hand-lever, L, projecting into the interior of the brake-van, is pivoted under the floor, having a detent or pawl, l, pivoted to it above the floor, which meshes in the teeth of a rack, l', secured to the floor of the van. The lower end or arm of said lever is connected to the long arm of the lever H by means of a link, l².

To enable the brakes to be set from the top of the cars, a lever, L', is pivoted at each end of the car and connected by a rod, R. A cord, O, is attached to the lever situated at the end of the car under which the wheels to be braked are located. This cord is led between two cord-pulleys, l³, placed in a bracket, P, at about the same height as the eye l³, securing the cord to the lever, also over a cord-pulley, l⁴, below and connected to the lever H. The rod R may also be pivoted to a lever, L², placed overhead in the brake-van, suitably pivoted, and provided with a sector, l⁶, and pin l⁷ on a small chain, for securing the same when set.

Levers similar to the levers L', and connected by rods, may be placed on each car, and may be provided with pawls p and racks p'. The levers L' at the ends of adjacent cars may be connected by a chain, T, suitable hooks, t, being provided on the levers. The effect of this connection is that any tendency of the cars to

part company would put on the brakes, as any deviation of the levers L' from the vertical or other normal position would pull the cords O, and by bringing the friction-bowl F' in contact with the axle would cause the chain F² to be wound up or shortened and the brake-blocks tightened upon the wheels.

I claim as my invention—

1. In a winding mechanism for an automatic car-brake, the combination, with an upright frame, D, containing a friction-pulley to bear upon the axle, of a supporting-frame, C, having its upper end constructed and secured to the transfer beam or bolster B of the truck, and its lower end extending thence downward and outward beneath the axle, whereby it is adapted to support the frame D in the required position outside of the wheel.

2. The swing-frame consisting of the arms D D, pivoted below to the bracket C, and held above by the links E, journaled upon the pin d', the said frame having journaled in it a spindle, F, carrying a friction-pulley, F', and a guide-pulley, G, so disposed that the axle comes in contact with the pulleys F' and G when the frame is drawn toward the axle, the lower pivot, d, carrying a grooved pulley, d², and a guard D', placed over the projecting spindles.

3. In an automatic car-brake, the combination, with the axle, of a swinging support, D, the spindle F, journaled therein, and provided with a collar, f, the friction-pulley F', the spiral spring acting to hold said pulley in contact with the collar, means, substantially as described, for applying a tension to said spring, and a chain or cord connecting the spindle with the brake mechanism, whereby motion is communicated from the axle to the spindle and the parts relieved from excessive strain.

4. In an automatic brake mechanism, the combination of the swinging frame D, its friction-pulley adapted to encounter the axle, the chain connected with said pulley, the centrally-pivoted lever I, the rod extending from said lever to the brake-lever K, and the jointed levers E H for controlling the position of the frame D.

5. The combination, in a brake mechanism, of the pulley-supporting frame D, pivoted to a supporting-arm on the truck, the link E, the lever H, pivotally connected to the link E and to the truck, and provided at one end with an extension to serve as a stop, and at the opposite end with an eye, or its equivalent, adapted to receive the cord or operating device.

6. The combination of the axle A and bogie-frame B, carrying a bracket, C, to the free end of which is pivoted the swing-frame D d d', which carries the guide-pulley G, and friction-bowl F', journaled frictionally upon the spindle F, having secured to its end the end of a chain or cord, F², led over a grooved pulley, d², to the end of the long arm of the lever I, which is linked to the lever K, pivoted on and working the brake-bars M M' simultaneously and in opposite directions.

7. In combination with an automatic brake

mechanism, constructed substantially as described, with a controlling-lever, H, two hand-levers, L', mounted upon opposite ends of the car, a rod connecting said levers, and a cord
5 or chain extending over suitable guides from one of said levers to the controlling-lever H of the brake mechanism, whereby the brake mechanism may be operated from any point on the top of the car.

10 8. The combination of the automatic brake mechanism for controlling the lever H, a hand-lever, L', mounted within the upper part of the car, and connecting devices, substantially as described, extending from said lever, exter-
15 nally of the car, to the lever H.

9. The levers L', provided with pawls *p*, working in racks *p'*, in combination with a chain, T, coupling the levers of adjacent cars, in combination with the rod R, cords O, pulleys *l*³ *l*⁴, and the lever H, all substantially as
20 described, and for the purpose set forth.

Signed at St. Johns this 27th day of April, 1883.

LOUIS HENRI HÉBERT.

In presence of—

ARTHUR J. HEBERT,
EDMUND GUAY.