No. 683,898. Patented Oct. 8, 1901.

C. H. BEARDSLEY.

CAR BRAKE.

(Application filed Mar. 2, 1896.)

(No Model.) 2 Sheets—Sheet 1.

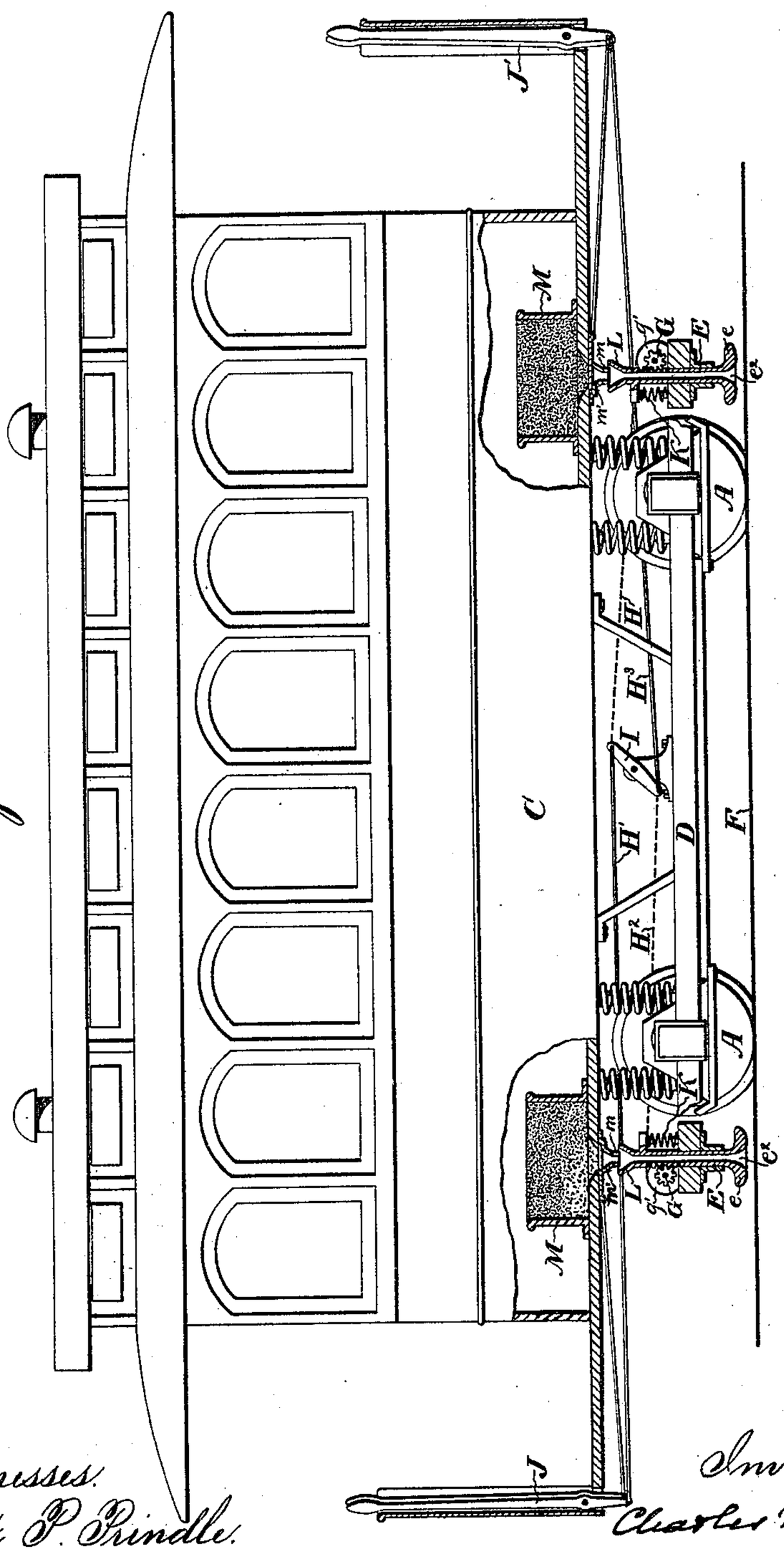

Fig. 1.

Witnesses.
Frank P. Prindle.
Henry C. Hazard.

Inventor.
Charles H. Beardsley
by Prindle & Russell
his Attorneys

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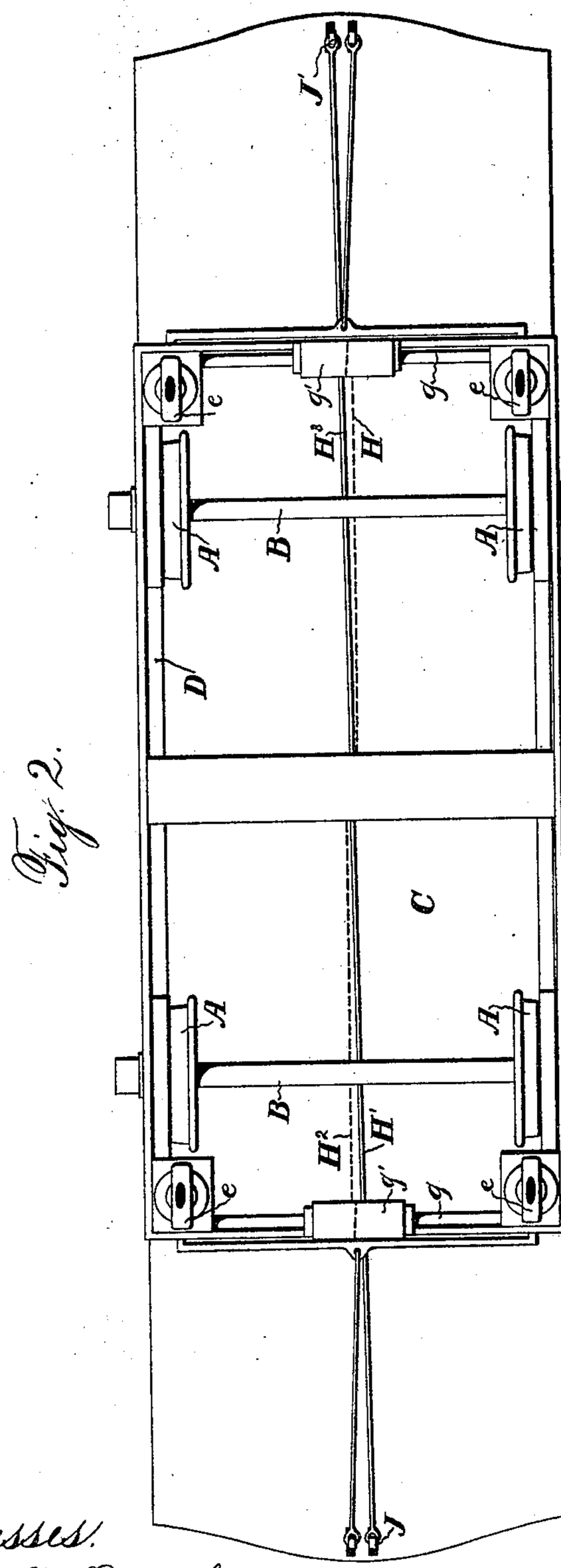

Fig. 2.

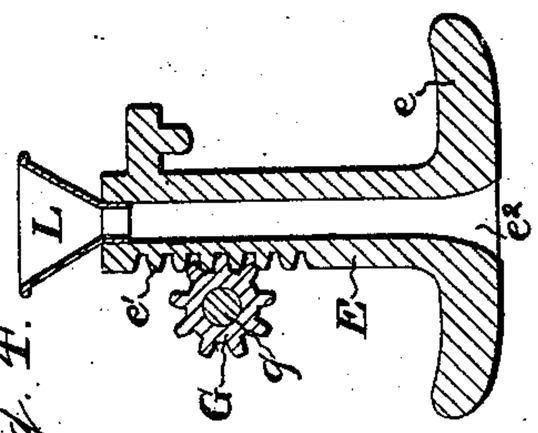

Fig. 4.

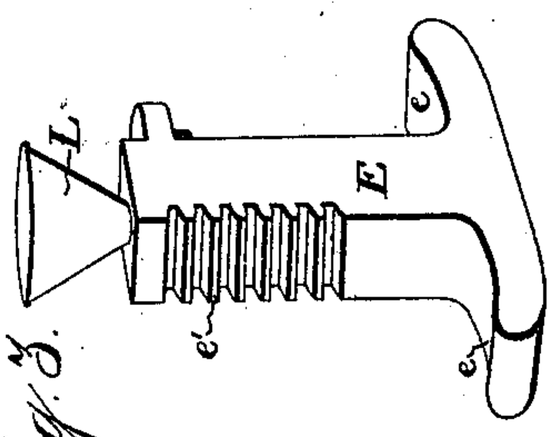

Fig. 3.

Witnesses.
Frank P. Prindle.
Henry C. Hazard.

Inventor.
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UNITED STATES PATENT OFFICE.

CHARLES H. BEARDSLEY, OF BROOKLYN, NEW YORK, ASSIGNOR TO ROBERT K. HARDCASTLE, OF SAME PLACE, AND CHARLES B. HOBBS, OF NEW YORK, N. Y.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 683,898, dated October 8, 1901.

Application filed March 2, 1896. Serial No. 581,536. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BEARDSLEY, of Brooklyn, in the county of Kings, and in the State of New York, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a view, partly in section and partly in side elevation, of a portion of a car provided with my brake mechanism. Fig. 2 is a plan view of the bottom thereof. Fig. 3 is a detail view in perspective of one of the brake-shoes and its bar, and Fig. 4 is a vertical section thereof.

Letters of like name and kind refer to like parts in each of the figures.

My invention relates to a particular class of brakes which operate solely upon the rails, and has for its object the prevention of slipping whenever the rail is wet or frosty; and to such end my said invention consists in the means employed for placing sand or other like material between the brake-shoe and rail, substantially as and for the purpose hereinafter specified.

My invention can be applied to cars having any desired number of wheels, but for convenience is shown in connection with a street-car in which are four wheels A and A, that are secured in pairs upon two axles B and B and connected with the body C in any desired manner.

Located upon the truck-frame D, in front of each of a pair of wheels A and A, is a vertically-movable bar E, which carries upon its lower end a brake-shoe *e*, which is adapted to engage with the track-rail F and is caused to so engage or is released from such engagement by means of a toothed rack *e'* upon one side of said bar E and a pinion G, which is secured upon one end of a shaft *g*, that extends across and is journaled upon said truck-frame in such position as to cause the teeth of said pinion to engage with the teeth of said rack-bar.

Upon the shaft *g*, preferably at or near its longitudinal center, is secured a drum *g'*, around which is passed a cord or chain H, which from thence extends to and is connected with one end of a lever I, that is pivoted centrally upon a horizontal axis midway between the axles B and B, while from the same end of such lever a similar cord or chain H' extends to and is connected with a brake-lever J at the end of the car opposite to that at or near which is located said brake bar and shoe E and *e*, respectively.

The opposite end of the car is provided with similar brake devices, which are connected by means of cords or chains H^2 and H^3 with the end of the lever I opposite to that where the cords H and H' are secured and to the brake-lever J'.

Suitable springs K and K are arranged to maintain the brakes normally at their upper positions, while by the rotation of either of the brake-rods I or I', so as to wind around it the cord or chain H' or H^3, the brake-bars E and E will be depressed until their shoes bear upon the rails F and F with any required degree of force.

When the rails are dry, friction between the same and the brake-shoes will be sufficient for the ready stopping of the car; but when said rails are wet or frosty the friction is so much reduced as to render it necessary to apply sand between said parts. This has heretofore been accomplished by directing a stream of sand upon the rail in front of each brake-shoe; but when so applied but a small percentage was utilized, as the largest part was scraped from off the rail by the front end of the shoe and wasted. To obviate such loss, I construct within the center of the brake bar and shoe a vertical passage e^2, which is enlarged at its lower end and at its upper end contains a funnel L, which is located beneath the nozzle *m* of a funnel *m'*, that forms the bottom of a box M for containing sand, which box is located within the car-body C, preferably beneath the seat. Suitable valves or other means for permitting and arresting the flow of sand from the sand-boxes are arranged to be controlled from either or both ends of the car within easy reach of the driver or motorman.

With the mechanism described the sand is conveyed to the rail at the center of each shoe and cannot escape therefrom except by passing between the engaging surfaces of said

parts, where it operates to cause great friction and to render practicable at all times the obtaining from the brake its maximum of efficiency.

Having thus described my invention, what I claim is—

1. As an improvement in car-brakes, the combination of a shoe having an opening that emerges at its under side, a source of supply of sand communicating with said opening, and a sand-controlling device that is operated independently of the operation of the shoe, substantially as and for the purpose described.

2. As an improvement in car-brakes, the combination of a shoe having an opening that emerges at its under side, a source of supply of sand communicating with said opening, and means for operating the shoe without discharging sand from the source of supply, substantially as and for the purpose described.

3. As an improvement in car-brakes, the combination of a shoe having an opening that emerges at its under side, a box or receptacle for sand, supported by the car-body, means for operating the shoe, and means independent of the shoe-operating means for causing the delivery of sand from the box or receptacle to the shoe-opening, substantially as and for the purpose described.

4. As an improvement in car-brakes, a rail-engaging shoe, and its supporting-bar provided with an opening through which sand may pass and be delivered to the rail between the ends of the shoe, substantially as and for the purpose set forth.

5. As an improvement in car-brakes, the combination of a rail-engaging shoe, and its supporting-bar provided with a vertical opening through which sand may pass and be delivered to the rail, and a receptacle for sand adapted to discharge sand into the upper end of said opening, substantially as and for the purpose described.

6. As an improvement in car-brakes, the combination of two sets of vertically-movable brake-shoes, a toothed bar carrying each shoe, a pinion meshing with the teeth of the bar, a shaft for the pinion, a drum on the shaft, a lever, connections between the latter and each drum, and an operating mechanism at each end of the car connected to said lever, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of November, 1895.

CHAS. H. BEARDSLEY.

Witnesses:

HENRY C. HAZARD,

GEO. S. PRINDLE.