

(No Model.)

J. S. LUBS.

CAR BRAKE AND STARTER.

No. 344,784.

Patented June 29, 1886.

Fig. 3.

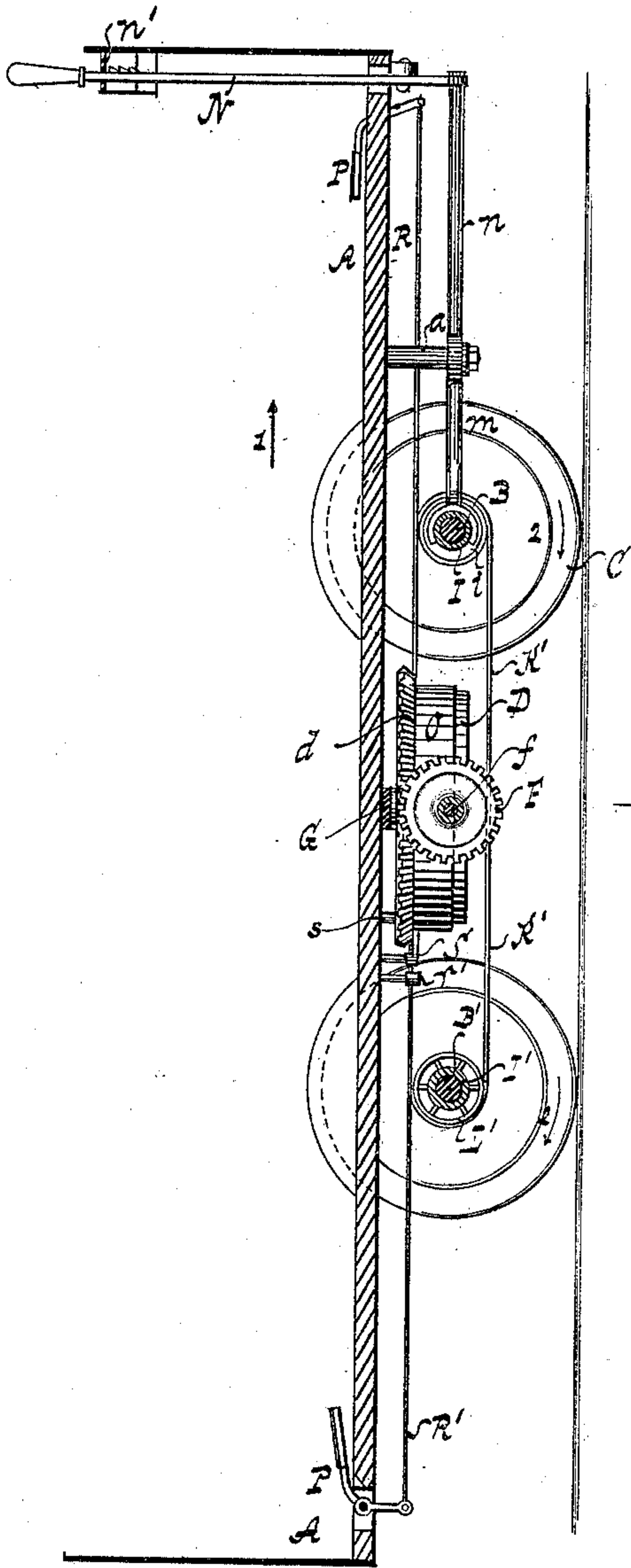


Fig. 1 17

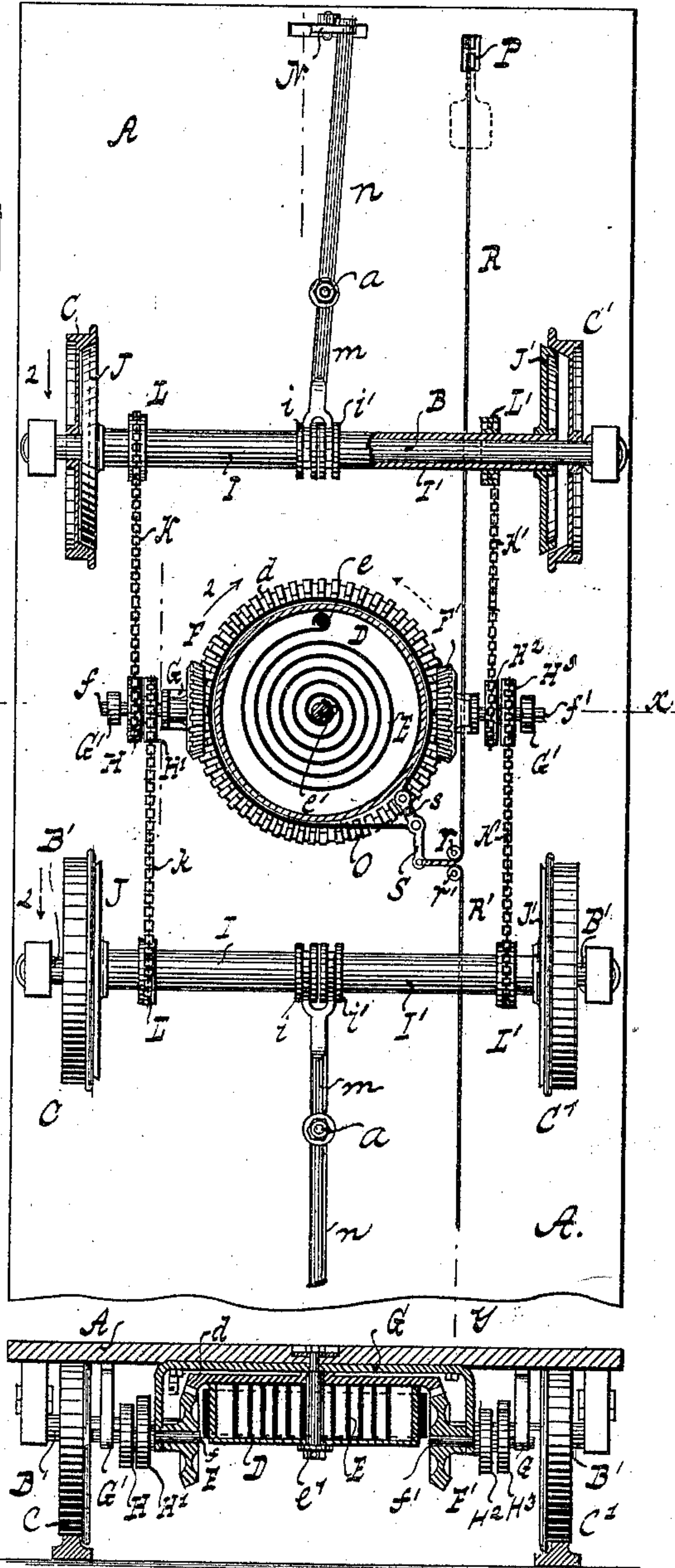


Fig. 2.

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CAR BRAKE AND STARTER.

SPECIFICATION forming part of Letters Patent No. 344,784, dated June 29, 1886.

Application filed November 27, 1885. Serial No. 184,022. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. LUBS, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Car Brakes and Starters, of which the following is a specification.

My invention relates to improvements in mechanism for stopping and starting cars, the said mechanism being designed to store up the energy due to the momentum of the car in stopping, and to give out this force to assist the starting of the car.

My invention consists, essentially, in the combination, with the axles and the wheels of a car, of a drum, a coiled spring therein, a shaft or shafts geared to said drum, sleeves on the axles geared to the shaft or shafts, friction-cones on said sleeves adapted to engage conical recesses in the wheels, a band-brake around the drum, means for applying the same, and levers or equivalent mechanism for throwing the friction-cones into and out of contact with the wheels, all of which is more fully pointed out in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 is an inverted plan view, partly in section, of a car provided with the improved starting and braking mechanism. Fig. 2 is a transverse horizontal section of the same in the plane $x x$, Fig. 1. Fig. 3 is a longitudinal section thereof in the plane $y y$, Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the car-platform. B B' are the axles, and C C' are the wheels secured to the axles.

Between the axles B B' is suspended from the car-platform a drum, D, having coiled therein a spiral spring, E, one end of which is secured at e to the drum, while its other end is attached to a king-bolt, e' , about which the drum rotates. On the other end of the drum D are formed teeth d , which are continually in engagement with bevel-gears F F', mounted, respectively, on shafts $f f'$, suspended from the car-bottom by a hanger, G, which extends above the drum, and end hangers, G' G'. H H' H² H³ are chain-wheels mounted on the shafts $f f'$, whereby a rotary motion can be imparted to the shafts, so as to rotate the drum.

The axles B B' are encompassed by sleeves I I', carrying at one end friction-cones J J', Fig. 1, and at the other end they are provided with conical recesses, which are adapted to receive the friction-cones J J' of the sleeves, so that when either of the friction cones J J' is in engagement with the respective wheel the corresponding sleeve will be caused to rotate about the axle. This rotating motion of the sleeves is imparted to the shafts $f f'$ by chains K K', which extend around the chain-wheels H H', &c., and chain-wheels L L', mounted on the sleeves I I'.

The sleeves I I' can be moved longitudinally upon the shafts by levers $m m$, pivoted at a to the car-platform, one arm m of each of which is provided with a fork, which engages the adjoining grooved collars of the sleeves, while the other arm m is attached to the end of a hand-lever, N, which extends upward through the car-platform, is pivoted thereto, and engages with the notches in a ratchet-plate, n .

To prevent the drum D from rotating after the spring therein has been wound up, a band-brake, O, encompasses the drum, and said band-brake is operated by foot-levers P P, of ordinary construction, which are connected to the free end of the band-brake by chains R R', which pass over pulleys $r r'$, pivoted to the car-platform, and are connected to a lever, S, which is pivoted to the platform of the car. By depressing either of the foot-levers P the brake O can be drawn against the drum.

The operation of the mechanism described is as follows: Suppose that the car is moving forward in the direction indicated by arrow 1, and that all the friction-cones are out of contact with the wheels, which are rotating in the direction of arrow 2, Figs. 1 and 2. If it is now desired to arrest the motion of the car, the hand-lever N is thrown in the proper position to cause the sleeve I of axle B to shift and throw friction-cone J thereon in contact with wheel C, whence the drum D will be rotated in direction of arrow 2, Fig. 1, and the spring will be wound up, and the force necessary to do this will arrest the motion of the car. At the moment the motion of the car is arrested the band-brake O is applied, and the drum is thereby prevented from rotating in the opposite direction. During the operation the remaining three sleeves merely rotate

about their respective axles, and have no effect on the same, since their friction-cones are out of contact with the wheels. When the car is to be started, the same hand-lever, N, is shifted so as to throw sleeve C' of axles B toward its wheel, and friction-cone J' is thrown into contact with wheel C' on axle B, and the band-brake is thrown clear of the drum. The spring E is now free to unwind, and the drum is rotated in a direction opposite to that indicated by arrow 2, marked thereon, as indicated by broken arrow, and the axle B is turned in the proper direction to start the car. When the car is moving in the opposite direction to arrow 1 thereon, the sleeves I I' on axle B' are employed in precisely the same manner to effect the purpose, the sleeves I I' on axle B then remaining inactive.

It will be observed that by the simple mechanism illustrated and described the motion of the car can be effectually arrested, and all the momentum of the stoppage of the car is utilized in starting the car.

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

1. The combination, with the axles and wheels of a car, of the drum D, the spring E,

coiled therein, a shaft or shafts geared to said drum, sleeves I I' on the axles and geared to the shaft or shafts, the friction-cones J J' on the said sleeves adapted to engage with the wheels, a brake for controlling the drum, means for applying the same, and levers or equivalent mechanism for throwing the friction-cones into and out of contact with the wheels, substantially as shown and described.

2. The combination, with the axles B B' and the wheels of a car, of the drum D, the spiral spring coiled therein, independent shafts *f f'*, geared to said drum, independent sleeves I I' on the axles and geared to the shaft, the friction-cones J J' on the said sleeves adapted to engage conical recesses in the wheels, a band-brake for controlling the drum, means for applying the same, and levers or equivalent mechanism for operating the sleeves, substantially as shown and described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

JOHN S. LUBS.

Witnesses: .

WILLIAM MILLER,
E. F. KASTENHUBER.