(No Model.)

J. F. MORELL.

CAR BRAKE AND STARTER.

No. 337,278. Patented Mar. 2, 1886.

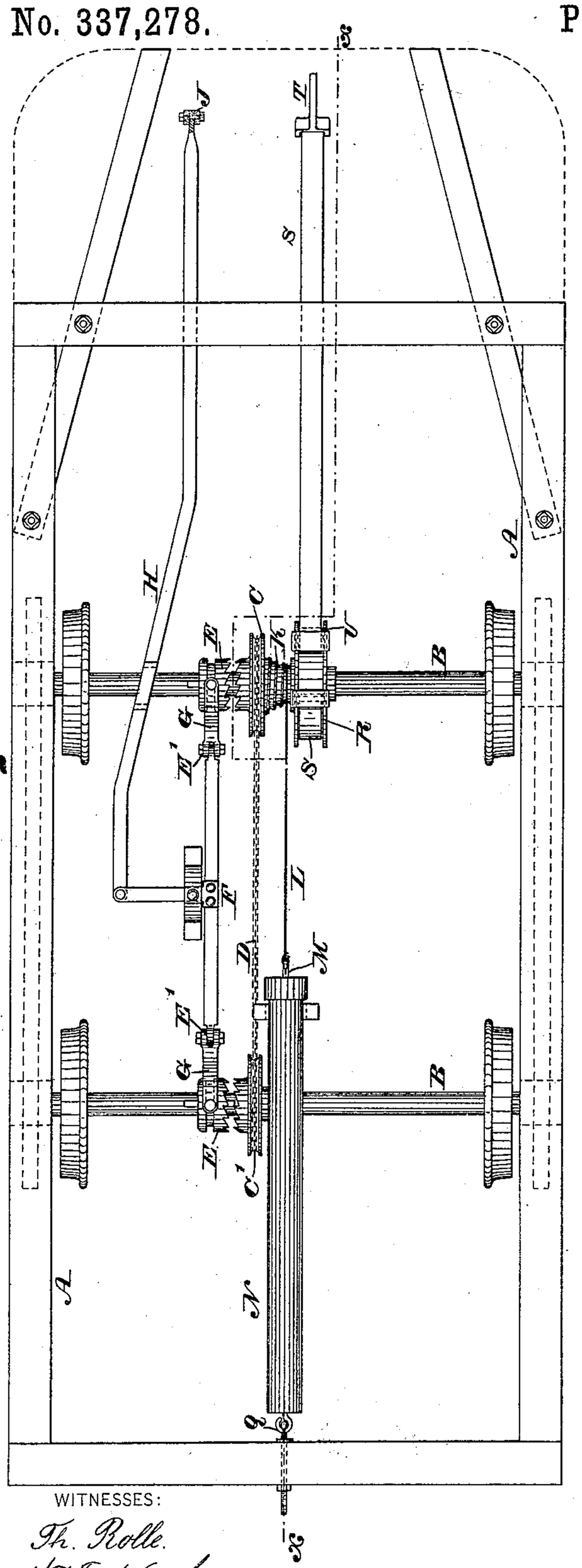

Fig. 1.

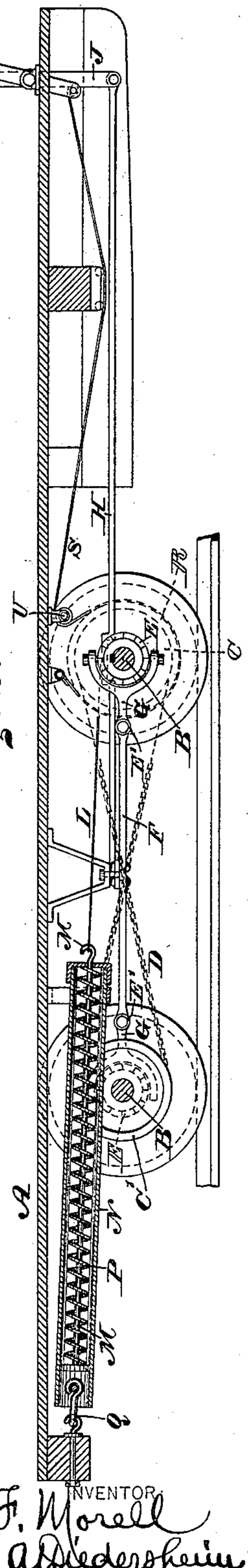

Fig. 2.

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CAR BRAKE AND STARTER.

SPECIFICATION forming part of Letters Patent No. 337,278, dated March 2, 1886.

Application filed October 29, 1885. Serial No. 181,250. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. MORELL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Car Brakes and Starters, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a top or plan view of a car brake and starter embodying my invention. Fig. 2 represents a vertical section thereof in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists of a car brake and starter constructed of easily-operated and inexpensive parts, as will be hereinafter fully set forth.

Referring to the drawings, A represents the floor of a car or top of the car-truck thereof, as well known. On each axle B of the car is loosely fitted a clutch-pulley, C C′, and around the two pulleys passes a cross chain or belt, D, whereby when one pulley is rotated the motion thereof may be communicated to the other pulley. On the axles are clutches E E, each of which slides on and rotates with the respective axle, and is adapted to engage with the respective pulley C. The two clutches E E are operated by a lever, F, which is pivoted to the floor A, and has at its ends yokes G, each of which engages freely with a neck in the respective clutch. Connected with the lever F is an arm, H, and to the latter is attached a lever, J, which is properly pivoted, hung, or mounted on the platform of the car and within convenient reach of the driver or other operator on the car. To one of the pulleys, C, is secured a cone-pulley, K, to which is fastened one end of a chain, strap, or cord, L, which, when the pulley is rotated, is adapted to be wound thereon. The opposite end of the cord is attached to a rod, M, which is guided in a box or casing, N, and has bearing against it a spring, P, which it will be seen resists the winding of the cord L. The box N is secured to the floor A by a jointed connection, Q, somewhat of the order of a universal joint, permitting freedom of motion of said box as the cord L rises and falls and moves laterally in its winding and unwinding actions.

To the cone-pulley K is secured a pulley, R, around which passes a friction-strap, S, one end whereof is attached to a lever, T, which is within convenient reach of the driver. The other end is secured to the floor A, the strap running around a suitable guide-pulley, U.

When the parts are in position shown in Fig. 1, the clutch-pulleys C C′ and the cone-pulley K and pulley R hang freely and consequently inactive on the respective axles, it being noticed that both clutches E are disconnected from the two clutch-pulleys C C′.

When it is desired to operate the brake and starter, the lever J is moved and the proper clutch thereby shifted to engagement with the clutch-pulley C, whereby said pulley C, the cone-pulley K, and the pulley R are rotated. The cord L is then wound on the pulley K, and the spring P thereby compressed. The contraction of the spring resists the rotation of the pulley K, and consequently of the axle, and serves as a brake for the car. The lever T is now operated so as to tighten the strap S on the pulley R, and the lever J is moved to disengage the respective clutch from the pulley C. The unwinding of the cord L is prevented by the strap S, and the power of the spring remains stored for use. When the car is stopped and it is desired to start the same, the lever J is moved to throw the proper clutch into engagement with the pulley C′ and the strap S is relieved, whereby the spring causes the cord L to unwind, and thus, by means of the pulleys K C and crossed chain D, exert its power on the pulley C′, and consequently on the axle to which it is now clutched, thus starting the car.

In order to prevent the weight of the car from binding the yokes G on the clutches E, the lever F is connected with said yokes by horizontal pivots or joints E′, which relieve the yokes of the weight imposed on said lever F.

I am aware that it is not new to employ clutch-pulleys mounted on car-axles in combination with devices for storing the power of a spring so that when released the said power may operate to rotate the said axles, and such I do not broadly claim.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car brake and starter, a cone-pulley attached to a clutch-pulley, both being loosely mounted on the car-axle, in combination with a clutch rotatably secured on the same axle, means, substantially as described, to operate said clutch, a cord secured to said cone-pulley and connected to a spring, a casing for said spring having a universal-joint attachment to the floor of the car, substantially as and for the purpose set forth.

2. Axles having clutch-pulleys, clutches therefor, a cross-chain passing around said pulleys, a spring and cord, a pulley on which said cord is adapted to be wound, and a holding-pulley for preventing the unwinding of said cord, in combination with a lever which engages with both clutches, and operating mechanism, substantially as and for the purpose set forth.

3. A car brake and starter consisting of spring-clutches, clutch-pulleys, an endless chain or band, a cord attached to said spring, a pulley on which said cord is wound, a pulley for preventing the unwinding of said cord, a friction-strap for said pulley, and an operating-lever for the clutches, and operating devices for said lever and the friction-strap, the clutches, clutch-pulleys, unwinding-pulley, and holding-pulley being on the car-axles, and all operated substantially as described.

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Witnesses:
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