

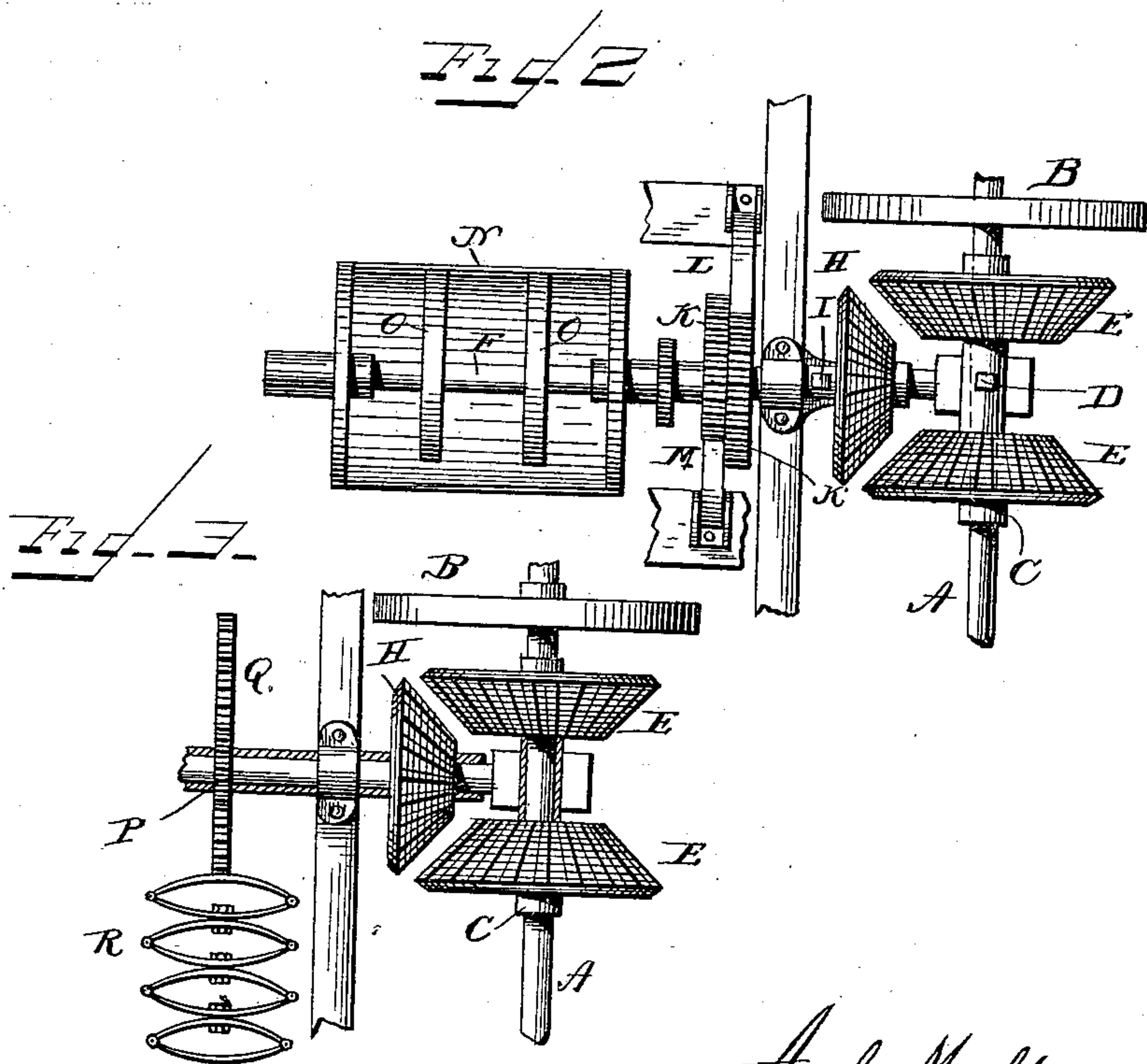
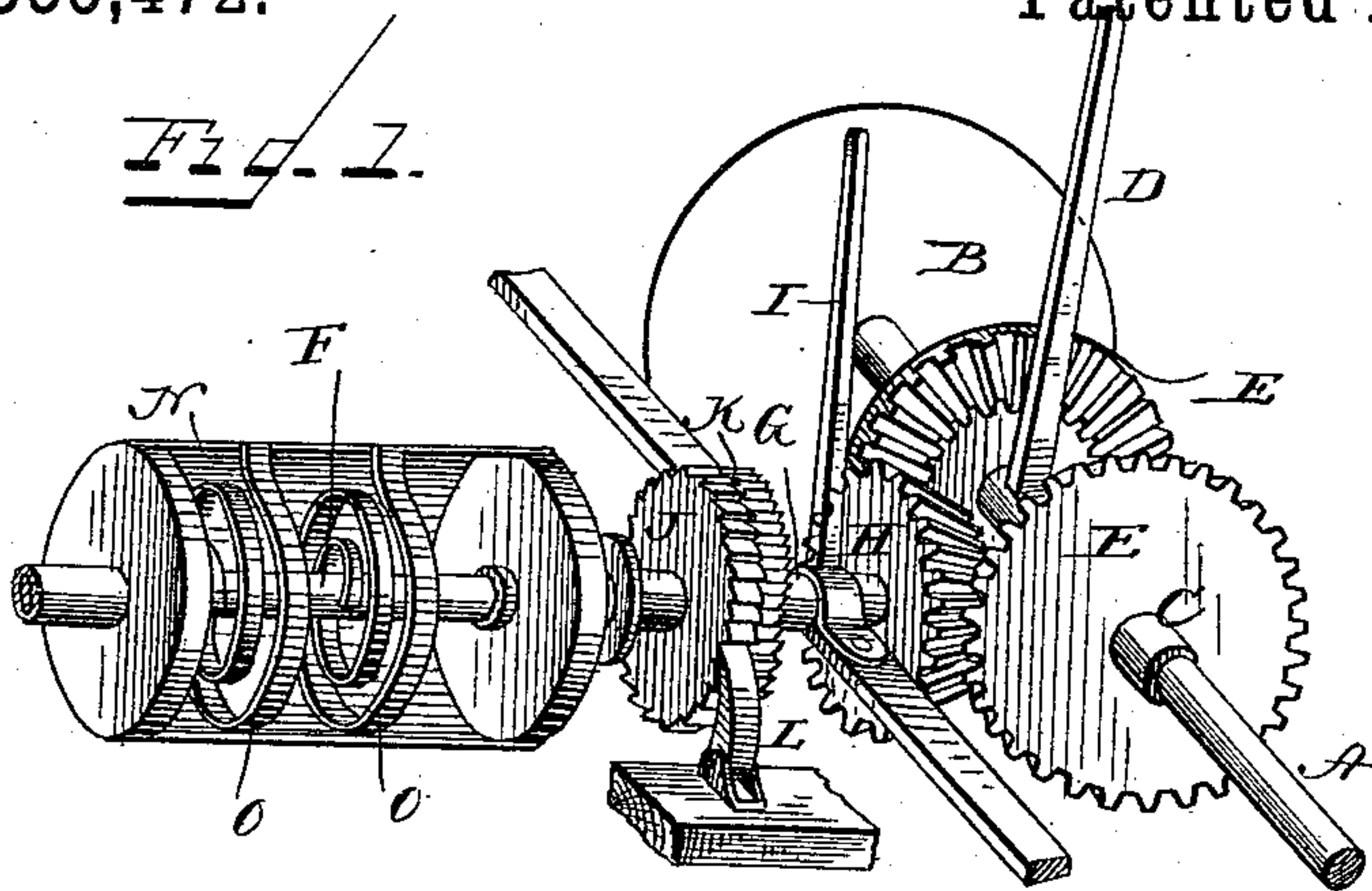
(No Model.)

A. M. MÜLLER & J. S. RÜTER.

CAR STARTER.

No. 335,472.

Patented Feb. 2, 1886.



WITNESSES

WITNESSES
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UNITED STATES PATENT OFFICE.

AXEL MALTA MÜLLER AND JOHAN SIEGFRIED RÜTER, OF COPENHAGEN,
DENMARK.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 335,472, dated February 2, 1886.

Application filed September 28, 1885. Serial No. 178,395. (No model.)

To all whom it may concern:

Be it known that we, AXEL MALTA MÜLLER and JOHAN SIEGFRIED RÜTER, subjects of the King of Denmark, and residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Car-Starters; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of as much of
15 the running-gear of a railroad-car and of our improved car-starter as will illustrate our invention. Fig. 2 is a plan view of the same, and Fig. 3 is a similar view of a modification of the same.

20 Similar letters of reference indicate corresponding parts in all the figures.

Our invention has relation to so-called "car-starters," or devices in which the force used for stopping a vehicle may be stored so as to
25 assist in starting the vehicle; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A
30 indicates the axle of a railroad-car, and B one of the wheels. A sleeve, C, turns with the said axle and slides longitudinally upon the same, having suitable means for sliding it, a lever, D, being shown in the drawings. Two
35 bevel-wheels, E E, are secured upon the sleeve, and a shaft, F, is secured in the car-frame at a right angle to the axle, the said shaft being secured rigidly so as not to turn. A sleeve, G, turns upon the said shaft, and has a bevel-
40 wheel, H, secured at its outer end, and this sleeve is attached to the end of a suitable lever, I, by means of which it may be slid longitudinally upon the shaft. The sleeve is provided with ratchet-wheels J and K, hav-
45 ing their teeth facing in opposite directions, and these ratchet-wheels are engaged by two pawls, L and M, having suitable means for disengaging them from their respective ratchet-wheels. The inner end of the sleeve is
50 provided with a drum, N, and the sleeve is cut away within the drum, so as to expose the

shaft, and springs O O are secured at one end to the shaft and at the other end to the inside of the drum, winding upon the shaft in the same manner as the springs of a watch or
55 clock. When the car is running, the sleeve upon the axle is placed so as to be disengaged from the bevel-wheel upon the shaft, and the sleeve and bevel-wheel upon the rigid shaft are also drawn back, so as to be perfectly free
60 of the bevel-wheels upon the axle; but when it is desired to stop the car the sleeve with the bevel-wheel is slid toward the axle, and the sleeve upon the axle is slid so as to bring one of the bevel-wheels into engagement with the
65 bevel-wheel upon the rigid shaft, and as the car travels forward and the wheels and axle revolve the bevel-wheel and sleeve and drum will be revolved upon the shaft and wind the spring upon the same, thus gradually stop-
70 ping the car. One of the pawls will now stop the sleeve and drum from being turned back by the spring, and by shifting the sleeve with the bevel-wheels, so as to bring the other
75 bevel-wheel in engagement with the bevel-wheel upon the shaft, the spring may uncoil and turn the drum when released, and turn the bevel-wheel upon the axle and the axle in the direction in which the wheels and axle
80 revolve when starting, thus assisting in starting the car, whereupon the bevel-wheels may again be slid out of engagement with each other.

In Fig. 3 is shown a small pinion, P, upon the sleeve upon the rigid shaft, which pinion
85 meshes with a cogged rack, Q, having its end bearing against a number of elliptic springs, R, and it will be seen that in stopping, the rack will be forced toward the springs compressing them, whereupon in starting, the springs may
90 expand and thus assist in starting the car. The pawls engaging the ratchet-wheels are engaged and disengaged, according to the direction in which it is desired to allow the sleeve upon the shaft to revolve, and may re-
95 tain the springs wound for any length of time, allowing the stored up force to be retained for any length of time and to be used at any time. The springs will act as a brake in stopping the car, and will stop it evenly and gradually
100 without a jar, at the same time stopping it effectually, as the wheels cannot revolve when

the spring is wound up to its full extent, and in the same manner the springs will in uncoiling give the car a gentle and even start without the sudden pull, which is equally disagreeable to the occupants of the car as injurious to the animals drawing the car.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

10 In a car brake and starter, the combination of the axle of the car, a sleeve turning with and sliding upon the axle and having means for sliding it and provided with bevel-wheels at its ends, a shaft secured rigidly at a right
15 angle to the axle, a sleeve turning upon and sliding upon the shaft and provided with a

bevel-wheel at its outer end and with ratchet-wheels having their teeth facing in opposite directions, pawls engaging the said ratchet-wheels, a drum secured to the sleeve at its 20 inner end, and coiled springs secured at one end to the shaft and at the other ends to the inside of the drum, as and for the purpose shown and set forth.

This specification signed by us this fifth day 25 of August, 1885.

AXEL MALTA MÜLLER.
JOHAN SIEGFRIED RÜTER.

Witnesses:

N. B. RAUPACH,
A. LEGARTH.