(No Model.)

E. PECKHAM.

ELECTRIC STREET CAR GEAR.

No. 420,543. Patented Feb. 4, 1890.

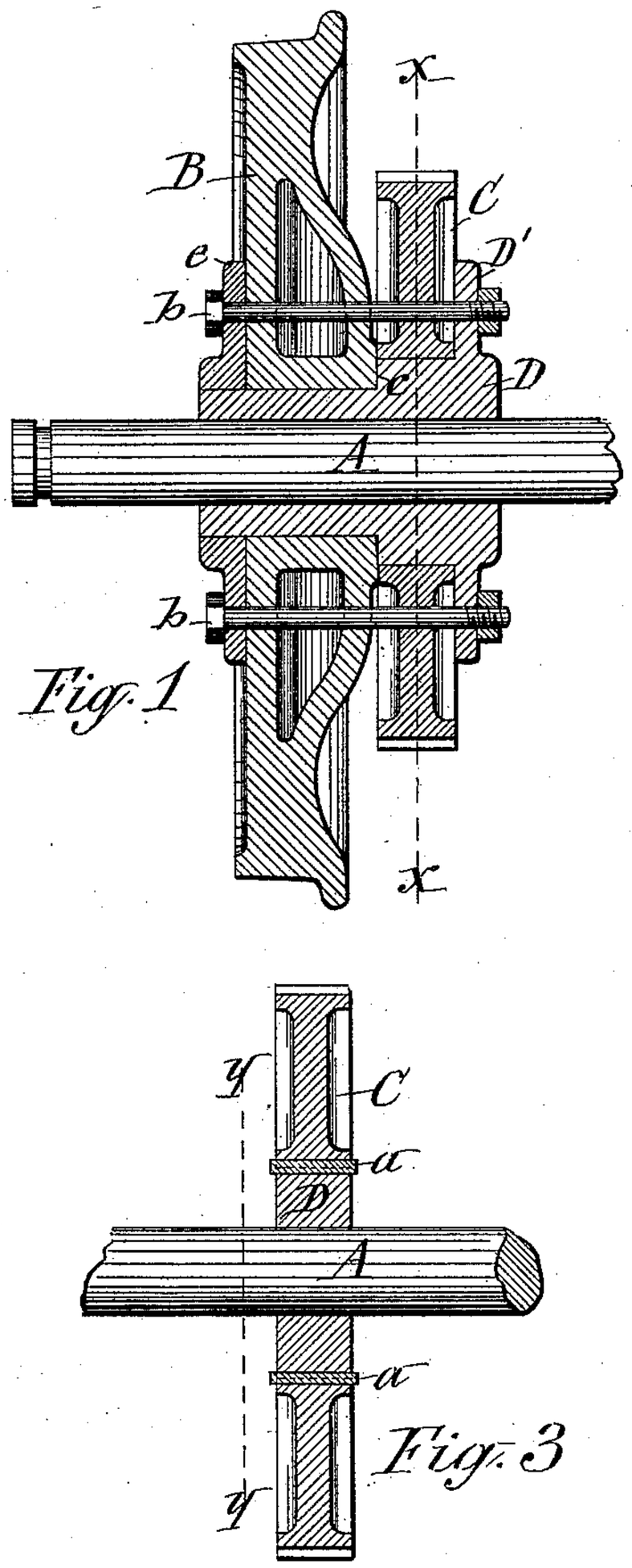

Fig. 1

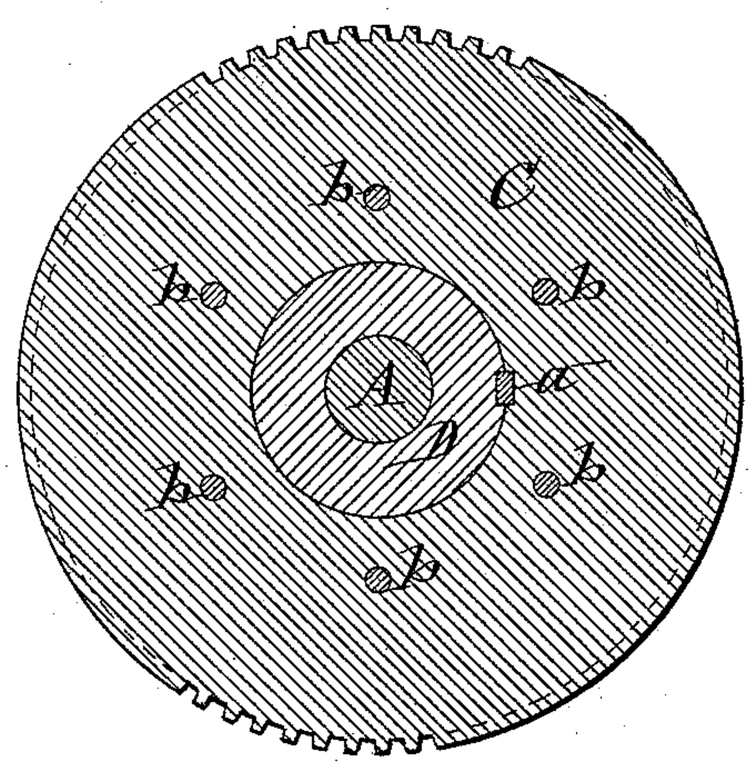

Fig. 2

Fig. 3

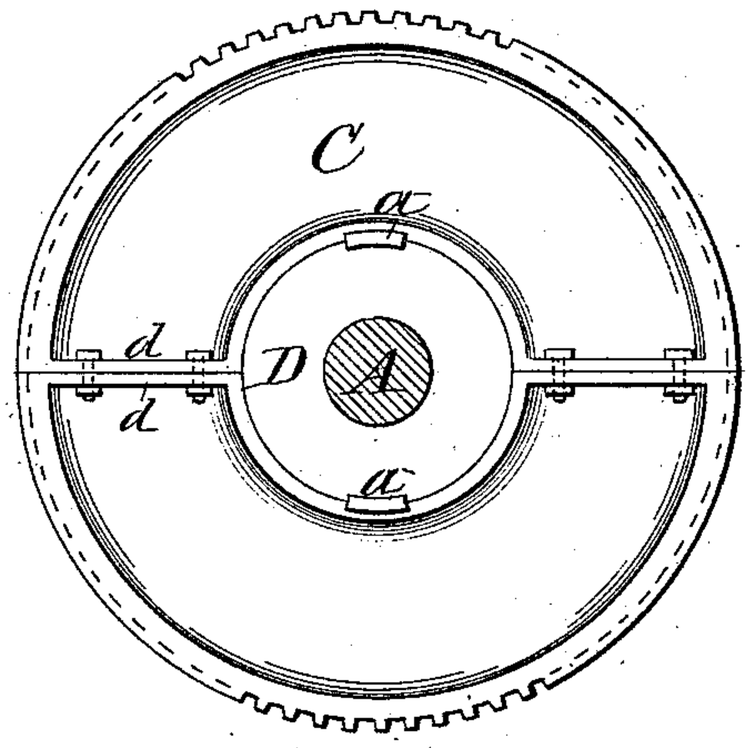

Fig. 4

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UNITED STATES PATENT OFFICE.

EDGAR PECKHAM, OF NEW YORK, N. Y.

ELECTRIC STREET-CAR GEAR.

SPECIFICATION forming part of Letters Patent No. 420,543, dated February 4, 1890.

Application filed May 8, 1889. Serial No. 309,991. (No model.)

To all whom it may concern:

Be it known that I, EDGAR PECKHAM, of New York, in the county of New York, in the State of New York, have invented new and useful Improvements in Electric Street-Car Gear, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the attachment to the car-axle of the gear-wheel which transmits motion from the motor to said axle. Said gear-wheel has hitherto been mounted directly on the axle and fastened thereto by a key inserted in coinciding key-seats on the axle and interior of the wheel-hub.

Experience has proven that the aforesaid construction not only tends to weaken the axle, but also fails to afford a secure hold for the key, so that the axle becomes stripped of its key-seat, and the gear-wheel is thus loosened thereon, all of which is owing chiefly to the comparatively small diameter of the axle. It is to overcome this defect which my present invention has for its object; and to that end my invention consists in the improved construction and combination of parts hereinafter described, and specifically set forth in the claim.

Figure 1 is a longitudinal sectional view of a car-gear, illustrating my invention for securing the gear-wheel close to the inner side of one of the traction-wheels. Fig. 2 is a transverse section on line *x x*, Fig. 1. Fig. 3 is a longitudinal sectional view showing the means for securing the gear-wheel to the central portion of the axle; and Fig. 4 is a transverse section on line *y y*, Fig. 3.

A represents the car-axle, to which the propelling-power is transmitted from the motor. (Not shown in the annexed drawings.)

B denotes one of the traction-wheels, and C the gear-wheel, which transmits motion from the motor to the axle A. At the point on the axle where the gear-wheel C is to be attached I rigidly and permanently secure to the axle a hub or collar D, either by shrinking, welding, or forging it thereon or in any other suitable and well-known manner. When the gear-wheel is to be located at the inner side of the traction-wheel, as shown in Fig. 1 of the drawings, I form the hub D of sufficient length to receive both the traction-wheel and gear-wheel, and preferably form the seat for the gear-wheel of a greater circumference than the seat for the traction-wheel, so as to form an abutment *c* for the latter independent of the gear-wheel. The inner end of the hub D, I form with a collar D′, against which the inner side of the gear-wheel abuts. The gear-wheel is prevented from slipping circumferentially on the hub D by a key *a* inserted in coinciding key-seats in the hub D and in the interior of the wheel-hub. The enlarged circumference of the said two hubs allows the key-seats to be made of ample width and depth to securely hold the key and resist the shearing strain, while the axle is re-enforced by the hub D.

The traction-wheel B is retained on the hub D and drawn tightly against the shoulder *c* by bolts *b b* passing horizontally through the collar D′, gear-wheel C, traction-wheel B, and a collar *e* applied to the protruding end of the hub D at the outer side of the traction-wheel. All of the aforesaid parts are thus firmly united. Said construction also obviates the necessity of casting or forming the wheel C in two diametrically-jointed parts.

When the gear-wheel C is to be located on the central portion of the axle A, I secure the hub or collar D to said portion of the axle in the manner hereinbefore stated, and divide the wheel C diametrically into two sections, which are provided with flanges *d d* on opposite sides along their joint and firmly united by rivets or bolts passing through said flanges. The wheel is provided with an eye which fits closely to the circumference of the hub D, and in order to render each wheel-section self-sustaining on the said hub I provide each of said sections with a key-seat and the hub with corresponding key-seats and insert the two keys *a a* in the two sets of key-seats, as shown in Fig. 4 of the drawings.

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

In an electrically-propelled car, the combination, with the axle, of the hub D, formed with two wheel-seats of different diameters, with the shoulder *c* between them and with the collar D′ on the end of the larger wheel-

seat, the gear-wheel C, mounted on and rigidly secured to the larger of said seats, and having one side of its hub flush with the shoulder *e* and resting with the opposite side against the collar D′, the traction-wheel B, mounted rigidly on the other seat and resting against the shoulder *c*, the collar *e* on the end of the smaller wheel-seat of the hub, and bolts *b b*, passing horizontally through the two collars and intervening wheels and drawing the collar *e* against the side of the traction-wheel, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 24th day of April, 1889.

EDGAR PECKHAM. [L. S.]

Witnesses:
HARRY M. TURK,
T. F. BOURNE.