

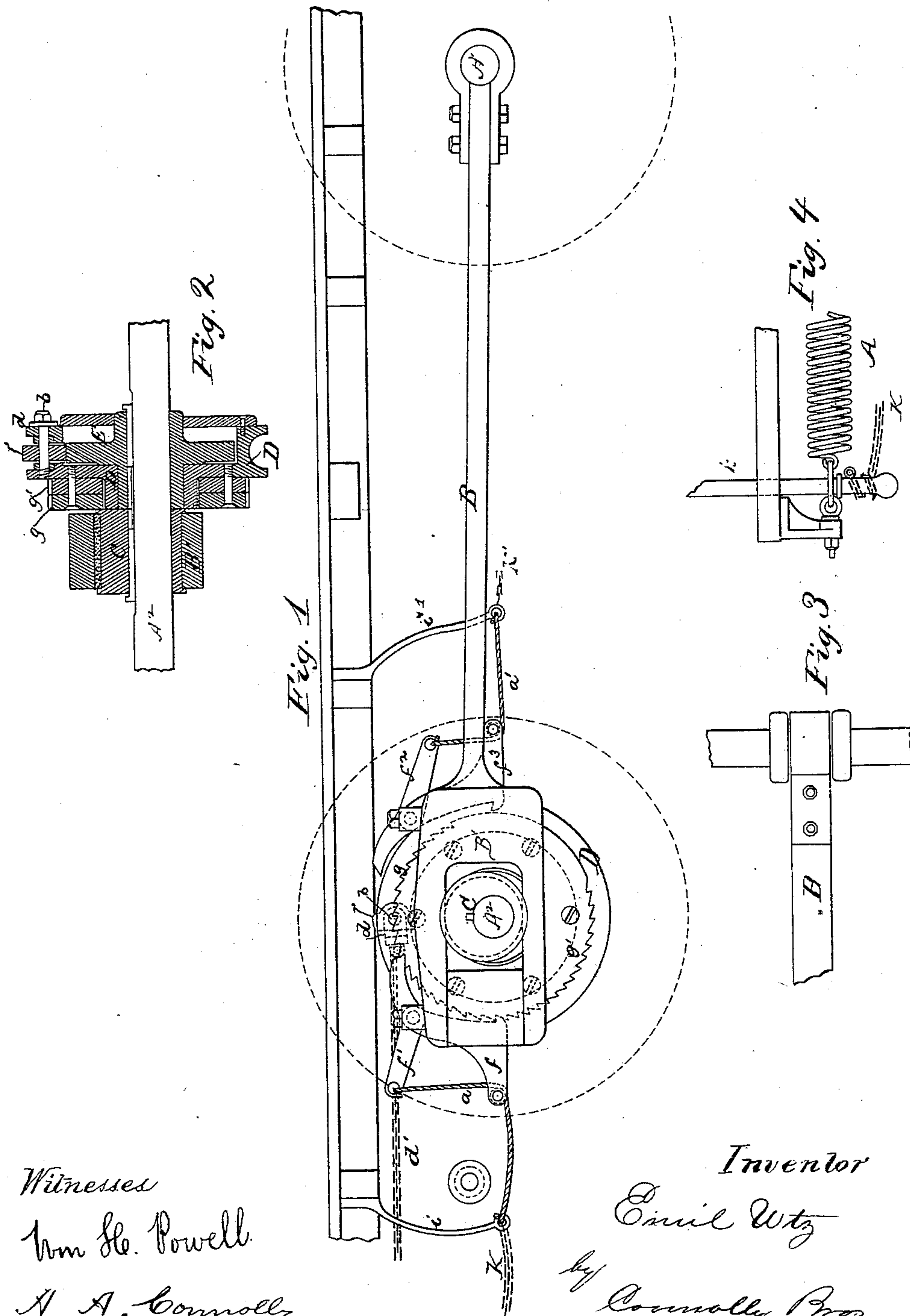
(No Model.)

2 Sheets—Sheet 1.

E. UTZ.
CAR STARTER.

No. 279,049.

Patented June 5, 1883.



Witnesses
Wm H. Powell.
A. A. Connolly

Inventor
Emil Utz
by Connolly Bros.
Attorneys

(No Model.)

2 Sheets—Sheet 2.

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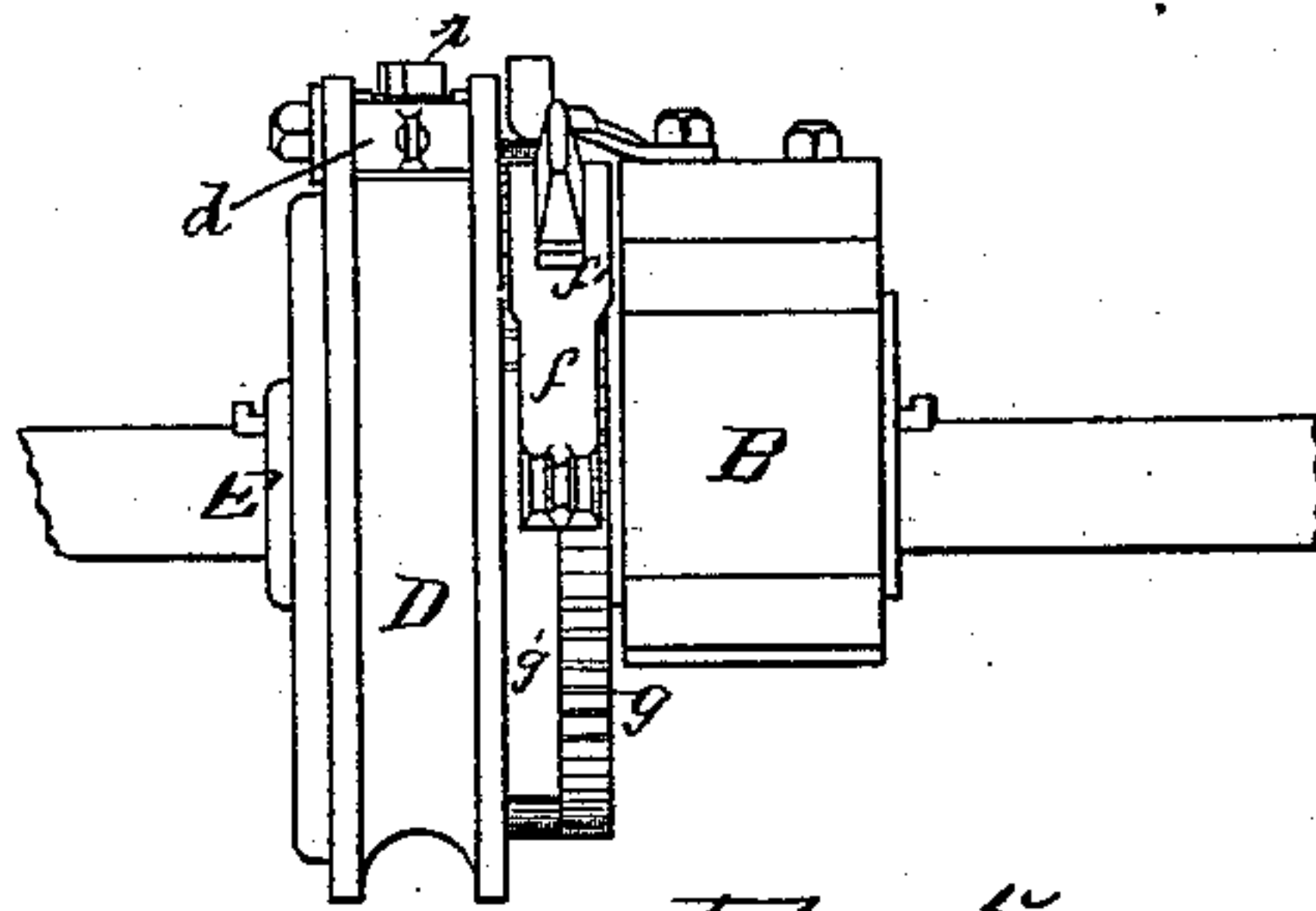


Fig. 5

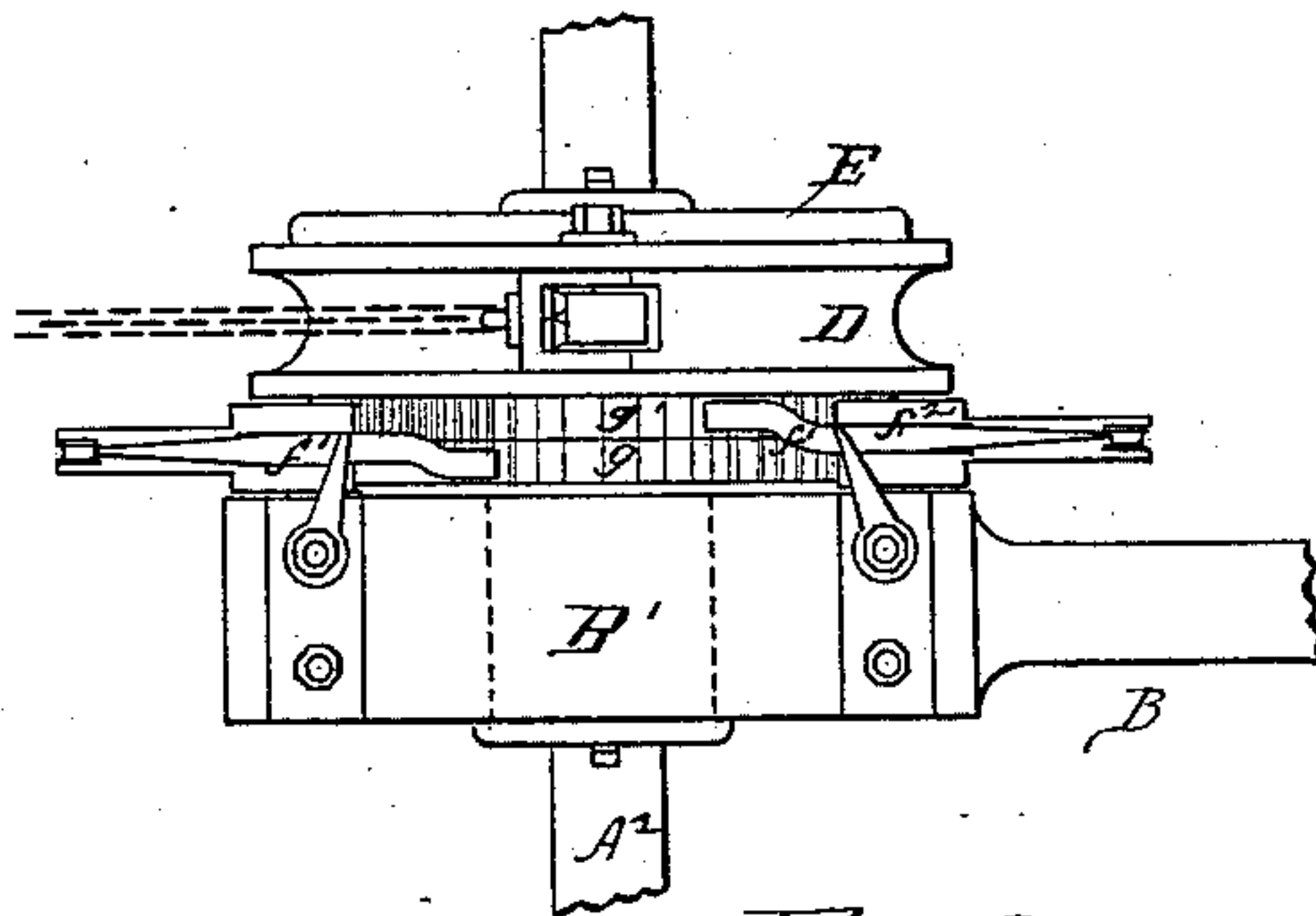


Fig. 6

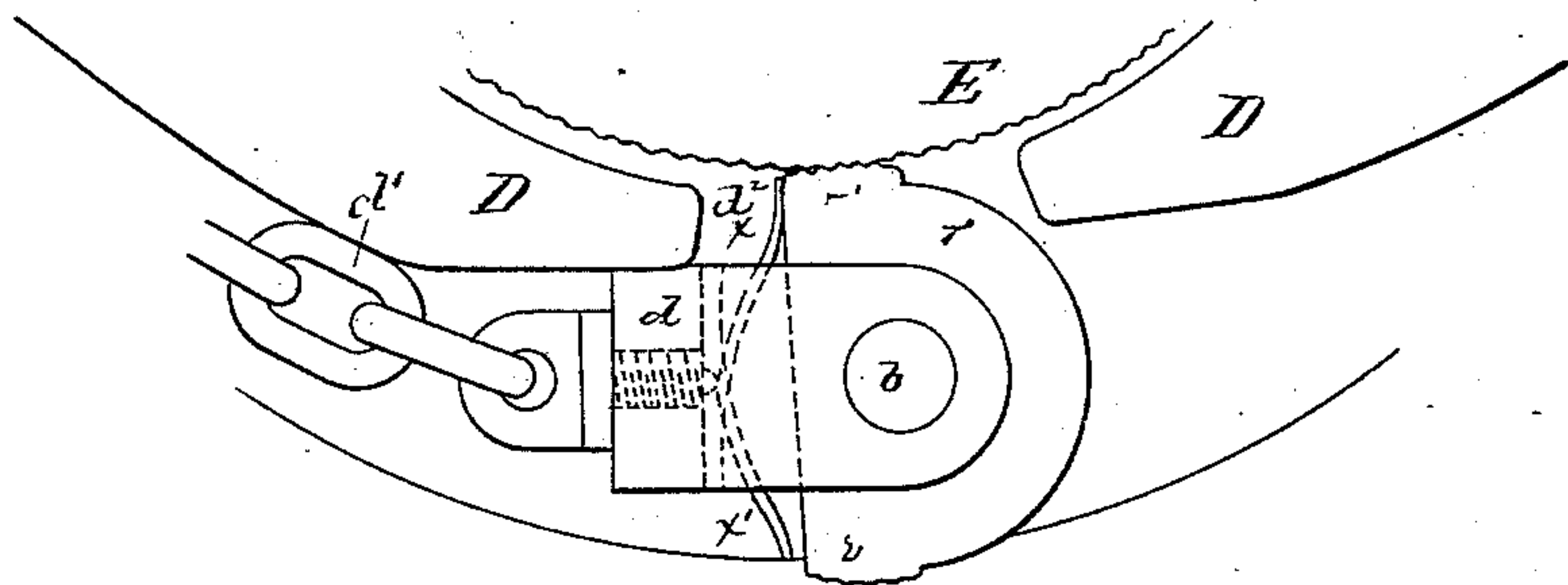


Fig. 7

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UNITED STATES PATENT OFFICE.

EMIL UTZ, OF HALSTEAD, KANSAS.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 279,049, dated June 5, 1883.

Application filed March 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, EMIL UTZ, of Halstead, in the county of Harvey and State of Kansas, have invented certain new and useful Improvements in Car-Starters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable 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.

My invention has relation to car-starters of that class wherein the momentum of the car operates through the medium of mechanism connected to the axle to create a tension in a spiral spring at the moment of stopping the car, the tension of the spring being brought into requisition to start the car when the brakes are released.

My invention consists in the construction and combination of parts hereinafter fully set forth, whereby the object above suggested is attained.

Referring to the accompanying drawing, A designates a spiral spring, which is attached at one end to a suitable part of the car-frame or its platform.

B designates a pitman-bar, journaled at one end on one of the axles, A', of the car, and having a slotted head, B', at the other end, which embraces an eccentric, c, mounted on and keyed to the next adjacent axle, A². Upon the axle A² is also loosely mounted a combination-wheel, D, having on its periphery two parallel divisions, the one being grooved around its entire circumference and the other toothed, like a ratchet-wheel, and about half-way around. The toothed portion of the periphery of the wheel D is again divided into two parallel rows, g and g', whose teeth point, respectively, in opposite directions. Across the grooved portion of the periphery of the wheel D is pivoted, at one point of its circumference, the swivel d, by means of a pivot, b, which also serves as an axle for the small roller or eccentric r, the latter having an irregularly-cut face, a segment being cut there from and roughened, wings r' r' being formed diametrically opposite each other on the face of said roller r. The swivel d is connected with the spiral spring A by means of a chain or rope, d'. The roller r is journaled between the

arms of swivel d, and the roller is maintained in position with its segmented face to one side and one of its roughened surfaces in contact with the roughened surface of a wheel, E, made fast to the axle A² of the car. The wheel D has an opening formed in its grooved periphery at d², through which projects one side of roller r in such manner that said roller will come into contact with and bind upon the surface of wheel E at the end of its movement by means of springs x x', situated between said roller and the yoke of the swivel.

f f' and f² f³ are a pair of duplex lever-hooks, facing each other and pivoted to the upper side of the head B' of the pitman B, on opposite ends, respectively, of said head, the two sets of hooks serving to work the device on either side, according to the direction in which the car is moving.

Confining the description now to the duplex lever-hooks f f', a rope or chain, a, is attached to the lever-hook f', and, passing around a roller on the end of hook f, is attached to a spring-bar, i, which is secured to and depends from the car-frame. Thence the spring-bar i is connected by a rope or chain, K, with brake-shaft k. This chain K winds around the shaft k in a direction opposite to which the brake-contracting chain winds around the same shaft, so that when the latter is tightened the other will be loosened, and vice versa. So long as the brakes are off the lever-hooks are disengaged and idle; but when the brakes are put on, and at the first full turn of the shaft, the lever-hooks f f' will be brought into contact with the teeth g of the ratchet on wheel D and engage the same. The pitman-head B', being then worked up and down by the movement of eccentric C, will cause said hooks to turn the roller D and with it the swivel d, thereby distending the spring A and continuing such distention until the car comes to a full stop, thus in effect storing up the momentum of the car, to be afterward used in starting the same. Now, when the brakes are loosened and the tension on chain K and rope a is relieved, the lever-hooks f f' are disengaged from the ratchet-teeth g. Consequently the spring A, being no longer restrained, is allowed to exert its contractile force. Such contractile force is, through the roller r, brought to bear upon the wheel E,

which is drawn around, carrying with it the wheel D. Now, as the wheel E is keyed to the axle A^2 , the latter is also turned, and with it the car-wheels mounted thereon. The operation just described, involving the use of hooks $f^2 f^3$ and their connections a' , K' , and i' , is brought into requisition when the car is moving in the opposite direction. In the latter case the chain K' is attached to a brake-shaft at the other end of the car, while the levers $f^2 f^3$ engage with the ratchet-wheel g' , giving the wheel D a motion the reverse of that previously described. Under this motion the roller is completely inverted, while the swivel d adapts itself to such inversion. Upon releasing the hooks $f^2 f^3$ the wheel E is drawn around and the axle and car-wheel correspondingly rotated.

What I claim as my invention is—
 1. In a car-starting attachment, the combination, with the axle A^2 , having the wheel E and eccentric C fast thereon, of the grooved and

toothed wheel D, roller r , swiveled to wheel D, chain or cable H^2 , and spring A, and the pitman B B', carrying the duplex levers $f f'$, coupled or connected to the brake-shaft, substantially as set forth.

2. In a car-starting attachment, the combination, with the axle A^2 , of an eccentric, C, a pitman, B B', spring A, and mechanism, substantially as described, whereby said spring is distended through the operation of the pitman and eccentric.

3. The combination, in a car-starter, of the pitman B B' and the duplex levers $f f'$, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EMIL UTZ.

Witnesses:

JOHN W. SIMS,
 G. W. F. SWARTZELL.