

(No Model.)

H. CLARK.

CAR STARTER.

No. 288,016.

Patented Nov. 6, 1883.

Fig. 1.

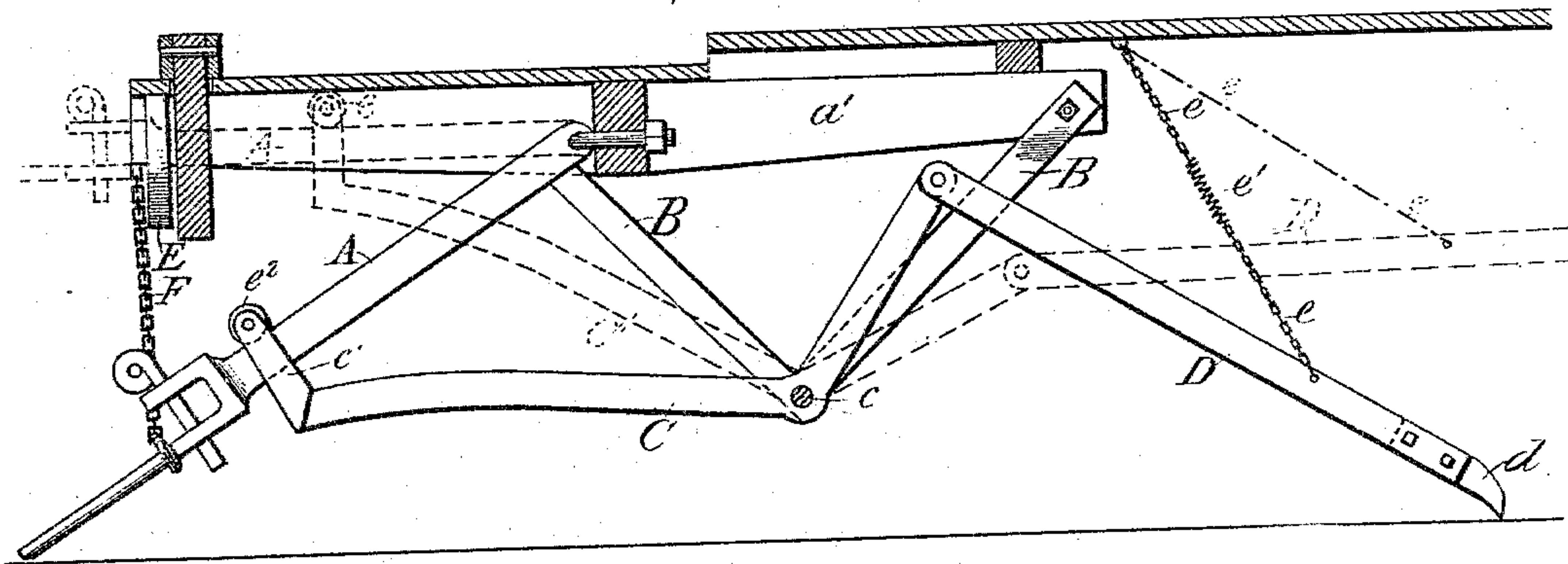
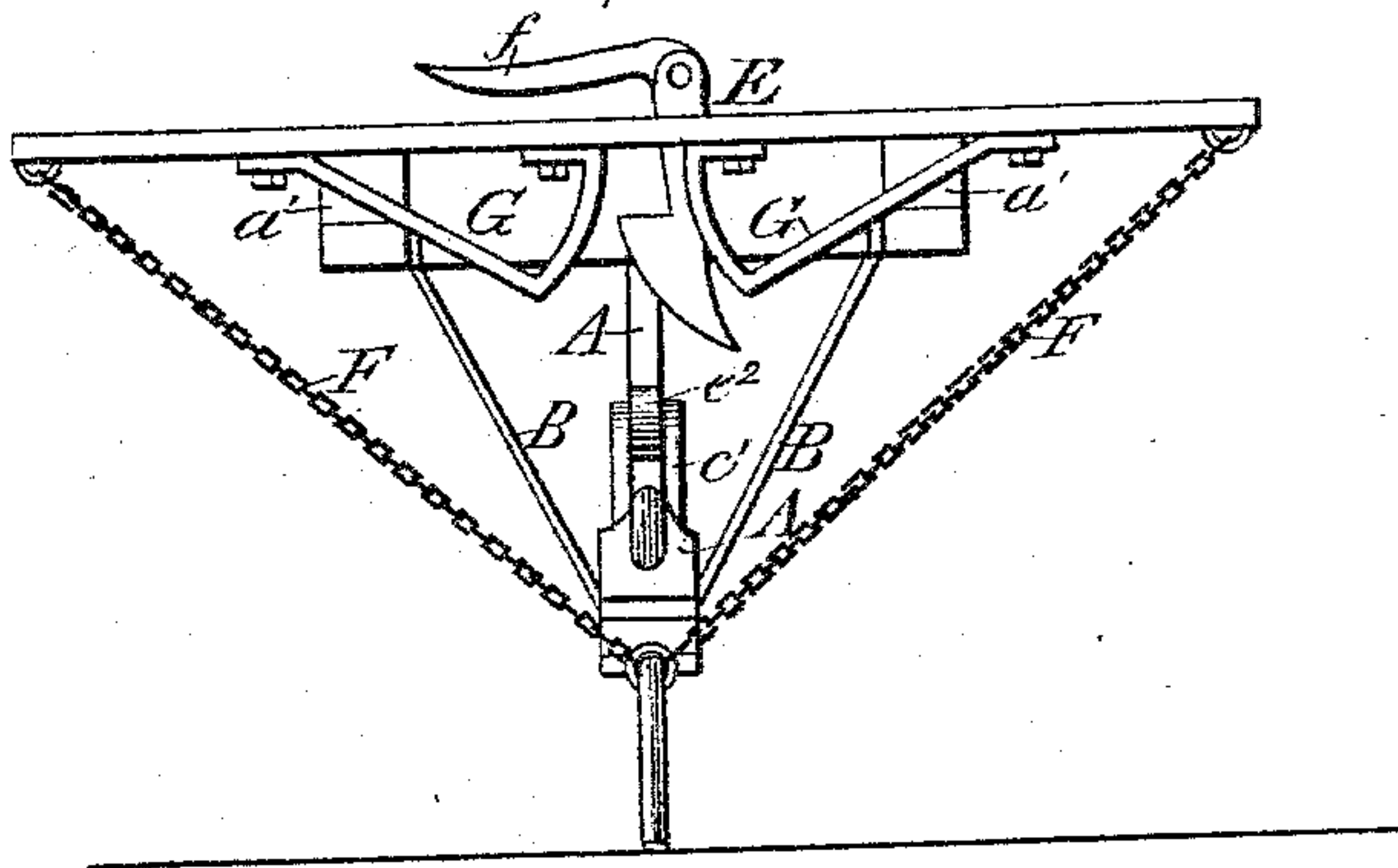


Fig. 2.



Witnesses:

Edgar
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UNITED STATES PATENT OFFICE.

HENRY CLARK, OF MILWAUKEE, WIS., ASSIGNOR OF TWO-THIRDS TO FRANK W. ERBACHER AND CHRISTIAN HELMS, JR., BOTH OF SAME PLACE.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 288,016, dated November 6, 1883.

Application filed September 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY CLARK, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, 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 thereof.

My invention relates to starters for horse-cars, and will be fully described hereinafter.

10 In the drawings, Figure 1 is a vertical section through center of car-floor, showing side elevation of my improved starter; and Fig. 2 is a front view of the same.

A is the draw-bar, hinged in any suitable manner in cross-piece *a*, held between the two longitudinal beams *a'* *a'*, fastened underneath the car. On the inside face of these beams are bolted the ends of angular truss-bars B B, which are bent down toward each other, to support between them at a proper distance from the bottom of car the crooked lever C, hinging in the same on pin *c*. On the rear arm of said lever C is freely jointed an arm, D, provided on its free end with a prong or tooth, *d*, and connected at about one-third of its length from said free end with the bottom of said car by means of a chain, *e*, this last being in two parts, united together by a spiral spring, *e'*. The front arm of said lever C has its end *c'* bent up and forked to pass up on each side of said draw-bar A, along which said arm C is made to slide up rearward by means of a roller, *e''*, hung in its forked end *c'*.

E is a pawl hung in proper position to the front platform of car to support the draw-bar in its place when the starter is not needed, said pawl or clutch E being provided with a tripper, *f*, to enable the driver instantly to set said starter at work with his foot.

40 A chain, F, hooked on both sides of the car and properly attached to the draw-bar A, is designed to guide said draw-bar in its up and down motion, and to limit its descent to the top of the road-bed, and prevent its end from catching in ruts or holes in said road-bed.

G are guide-brackets bolted underneath the car-platform to hold said draw-bar in the line of draft.

This device, which is an improvement on the 50 car-starter for which Letters Patent No.

280,450 have been granted to me under date July 3, 1883, operates as follows: When the car is drawn along, the draw-bar A is kept in its ordinary position, as indicated by the dotted lines of the drawings, and the prong or tooth *d* is raised with arm D from the ground; but when the car is stopped and the draft on the draw-bar A ceases, the weight of said bar and of the front arm of lever C, as well as that of the arm D with prong or tooth *d*, brings down said prong or tooth *d* in contact with the ground, as shown in the drawings. The moment the draft is renewed it is exerted through lever C on the point of the road-bed, against which the prong *d* of said arm D impinges with about three times the power of the direct pull and starts the car, thus doing away with the difficulty experienced and the delay met with in such cases. When the strength of the horses, concentrated for an instant on a single point of the road-bed, has overcome the inertia of the loaded car, the draw-bar naturally takes up its position underneath the car, where it is held by the pawl E until the driver trips it again for a new start, and the arm D also resumes its position, as indicated by the dotted lines.

It must be understood that the chain *e* is made just long enough to allow of the prong or tooth *d* to impinge in the road-bed, the spring *e'* being provided to enable it to follow said arm D in its rearward course, while its contraction brings said arm D safely back from the ground after it has done its work.

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

1. A starter for horse-cars, consisting of a jointed lever fulcrumed underneath the car, the front arm of which is freely connected to the draw-bar, and drops with it when said draw-bar is tripped, and an arm carrying a prong or tooth, and hinged on the rear arm of said lever which is made to impinge in the road-bed, and whereby the energy of the draft is concentrated thereon in a degree sufficient to overcome the inertia of the load, as set forth.

2. In a starter for horse-cars, the draw-bar A, hinged underneath the car, and having guide-chains F F, in combination with pawl E 100

and tripper *f*, substantially as shown and described, and for the purpose set forth.

3. In a starter for horse-cars, the lever *C*, hung on truss-bars *B B*, and having roller *e*² 5 in forked end of its front arm, in combination with an arm, *D*, hinged on the rear arm of said lever *C*, and provided with a prong or tooth *d*, substantially as shown and described, and for the purpose set forth.

10 4. In a starter for horse-cars, the arm *D*, having a tooth or prong, *d*, in combination with

lever *C* and chain *e e*, having spiral spring *e'* and attachments, substantially as shown and described, and for the purpose set forth.

In testimony that I claim the foregoing I 15 have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

HENRY CLARK.

Witnesses:

STANLEY S. STOUT,
M. KAUMHEIMER.