

(No Model.)

2 Sheets—Sheet 1.

G. B. HAINES.

CAR STARTER.

No. 336,232.

Patented Feb. 16, 1886.

Fig. 1.

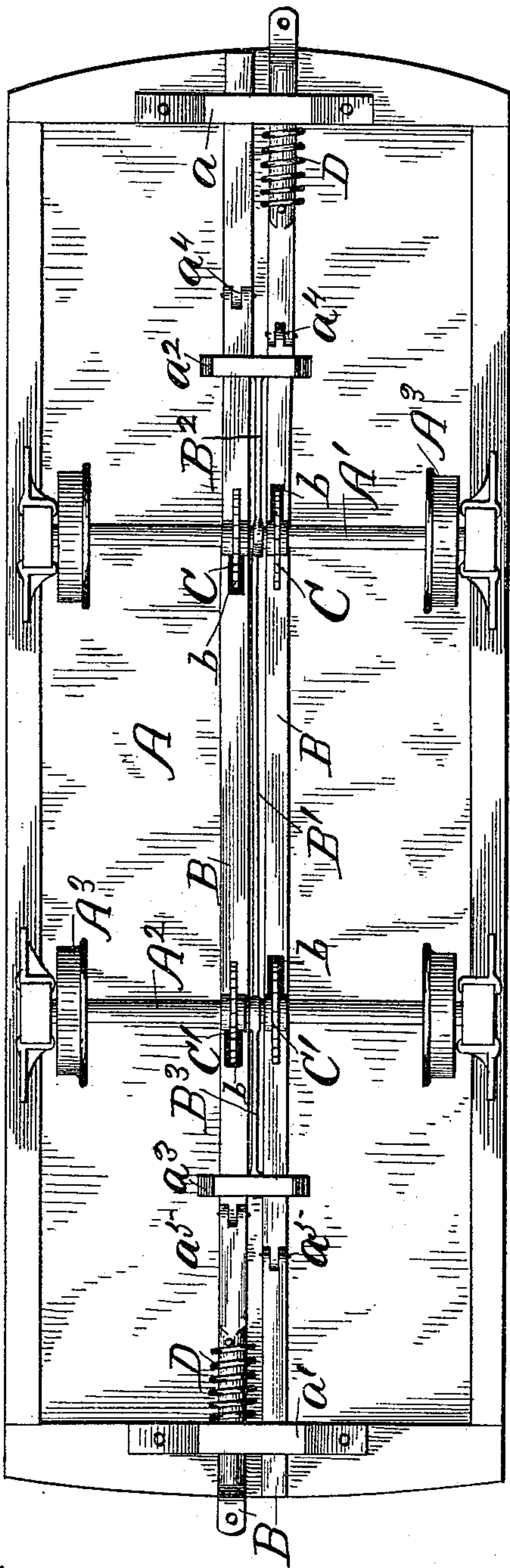
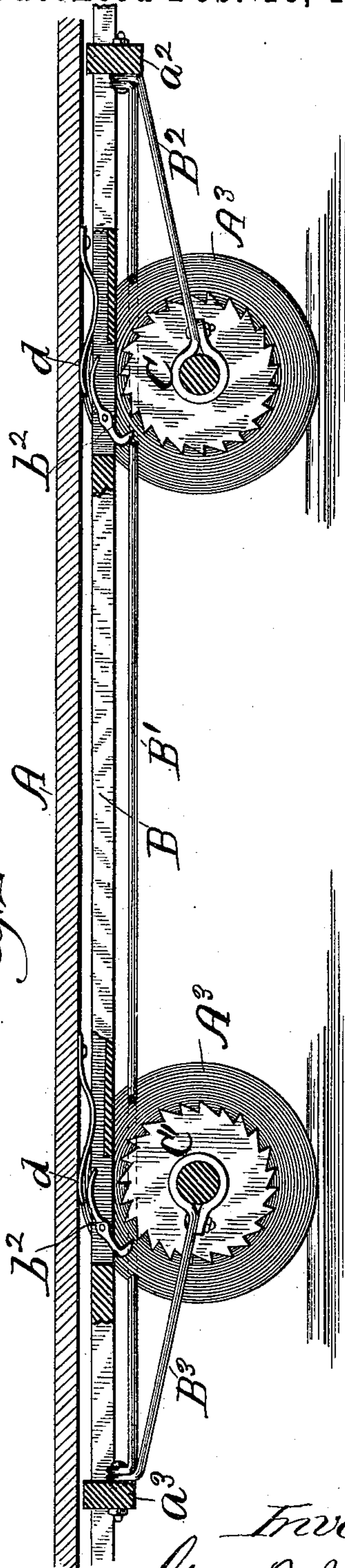


Fig. 2.



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(No Model.)

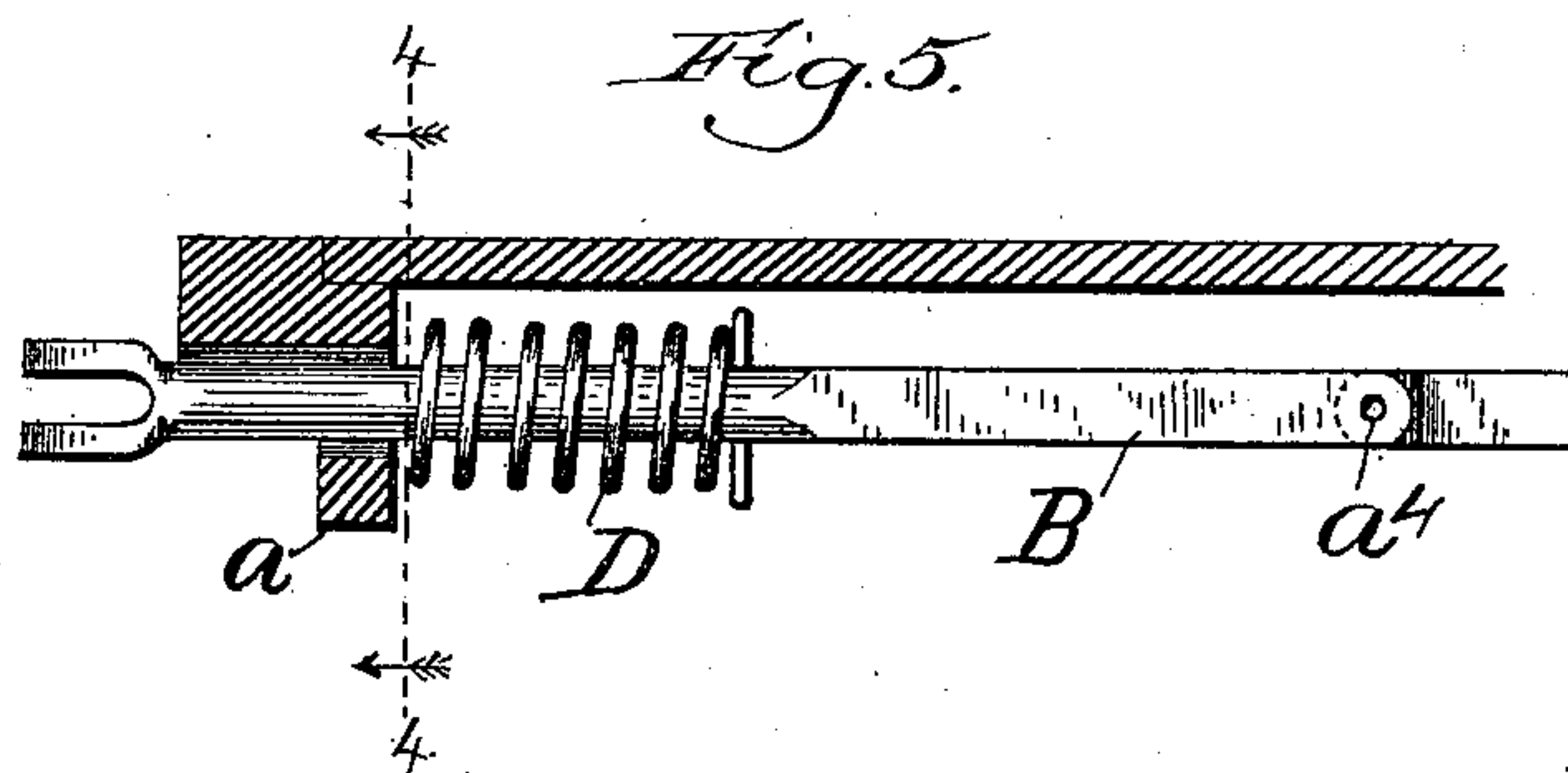
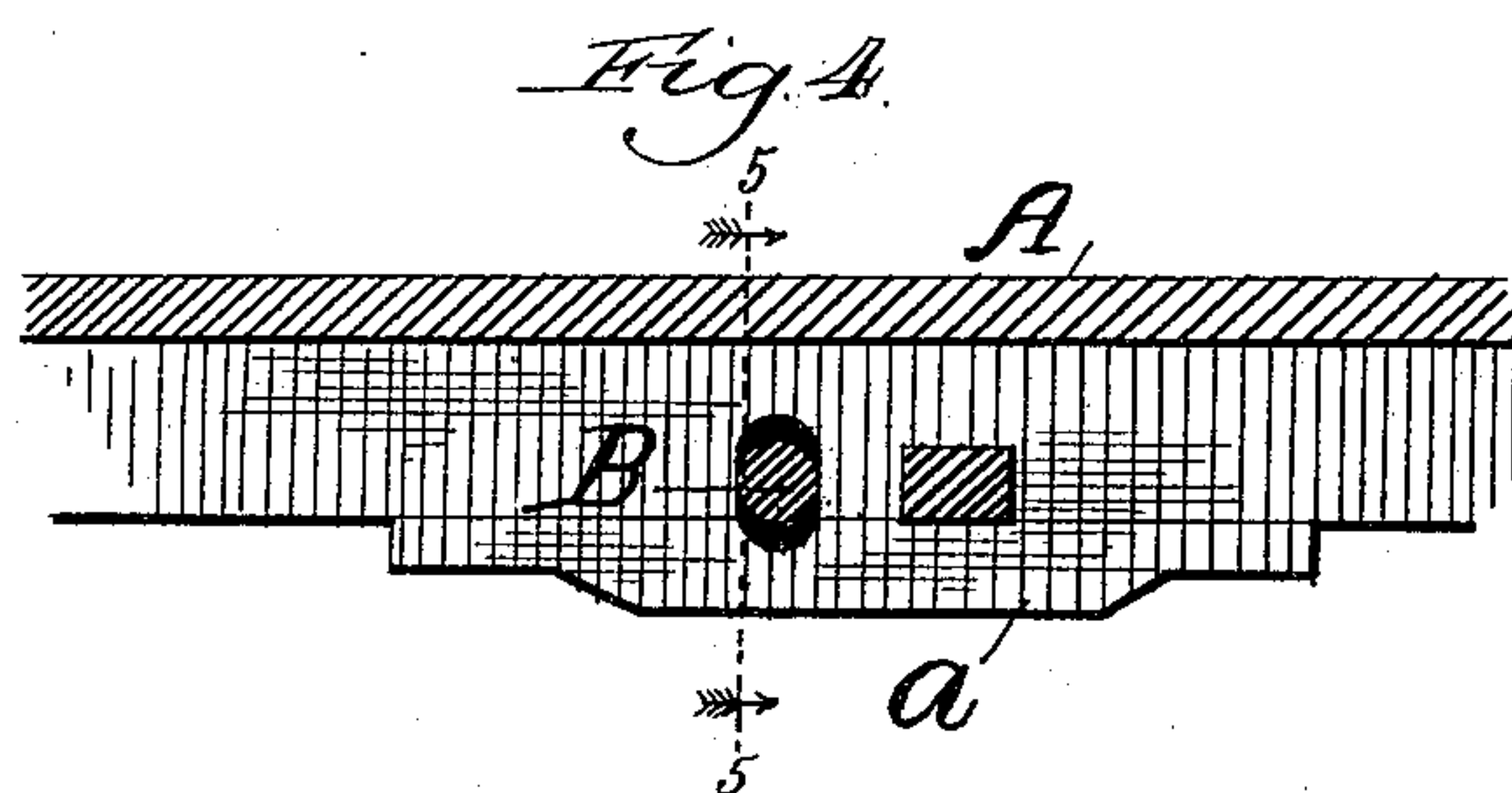
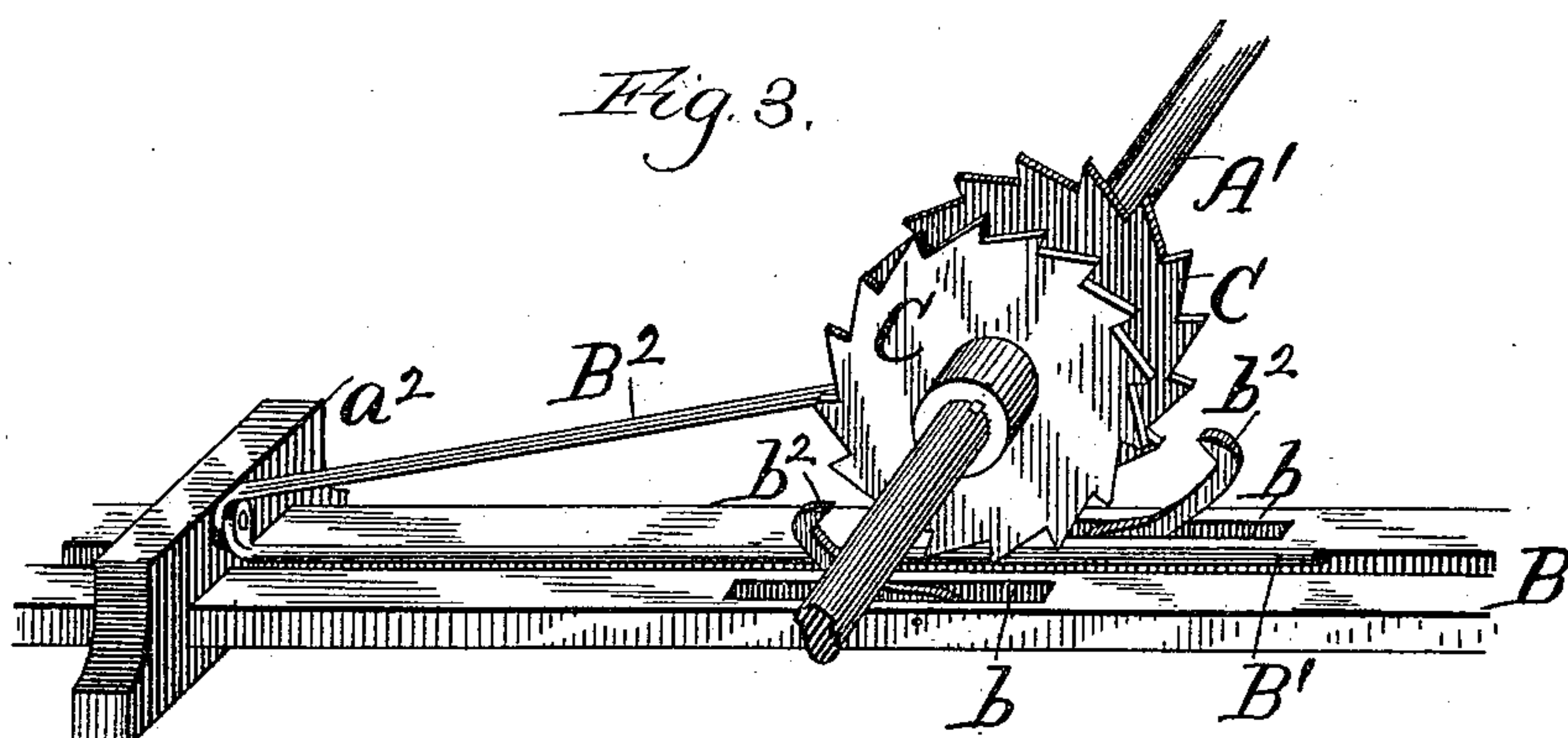
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

GEORGE B. HAINES, OF CHICAGO, ILLINOIS.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 336,232, dated February 16, 1886.

Application filed October 29, 1885. Serial No. 181,214. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. HAINES, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Car-Starters, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

10 This invention relates to an improved device for assisting the horses or other motive power in starting a street-car and in overcoming the dead stop or weight of the same, as will be hereinafter set forth.

15 Figure 1 is a plan of the under side of a car embodying my improved features; Fig. 2, a vertical central longitudinal section; Fig. 3, an enlarged detail; Fig. 4, a transverse sectional detail in the plane 4 4, Fig. 5; and Fig. 5, a longitudinal section in the plane 5 5, Fig. 4.

Referring to the drawings, A represents the under side of a car, A' A' the car-axles, and A³ the truck-wheels.

25 In Fig. 1 two draw-bars are shown and the improvement illustrated in duplicate. This arrangement provides means for the car being drawn from either end, and also the coupling together of two or more cars, as circumstances may require.

30 When the car is turned around at each end of the route, but one bar is necessary. When a car is provided with two bars, they are arranged close together in the center, as shown in Fig. 1.

35 As all my improved features are used in connection with a single bar, a description of one will answer for both, the same reference-characters being employed on duplicate parts.

40 The draw-bar B runs the entire length of the car, and is adapted to have a limited longitudinal or endwise movement independent of the car, and is arranged a little below the bottom of the same, leaving the space between the two, as shown in Fig. 2. The bar is supported at the ends in relation to the car by the cleat-brackets a a'. The bar is also further supported and stiffened by the brace-rod B', which connects the two bearing-blocks a² a³, in which the draw-bar slides, and the braces B² B³, connected at one end to the blocks a² a³ and the opposite ends to the axles, as shown in Fig. 2.

The bar B is constructed in three parts and hinged or pivoted together at a⁴ a⁵, which form of construction renders the bar less rigid, and adapts the same to conform more readily to the movement of the car, and thus relieve the line of draft from the jar incident thereto.

The ratchet-wheels C C' are rigidly mounted on the axles A' A' and placed in the longitudinal center of the same. That portion of the draw-bar that moves back and forth above the ratchet-wheels is provided with the elongated slots b b', in which is located the pawl b², pivoted to the draw-bar.

The spring D, placed upon the draft end of the draw-bar, serves to return the same to a normal position when the car comes to a stop, as illustrated in the drawings, in which position the pawl or pawls b² are adapted to engage with the ratchet-wheels when the motive power is applied to the draw-bar, thereby causing the truck-wheels to begin to move and make a partial revolution before the power is transferred to the car proper. When the draw-bar has compressed the spring D and reached the position in which it is held by the motive power, the pawl or pawls b² become disengaged from the ratchet-wheels, and the spring d prevents the same from having a clicking contact with said wheels as the car moves along in the usual manner. When the strain is relaxed on the draw-bar, it is again returned to a normal position by the means described, and when the motive power is again applied the pawls engage the ratchet-wheels in the same manner, start the truck-wheels rolling, and relieve the power of the dead-weight, and so on as often as the car is stopped.

The spring D not only returns the draw-bar to a normal position, but also relieves the horses or other power of any jerk or jar incident to starting, as the spring is very gradually compressed.

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

1. In a car-starter, the combination, with a draw-bar adapted to have an independent endwise movement relative to the car proper, of the cleat-brackets a a', the bearing-blocks a² a³, the brace-rod connecting said blocks, and the brace-rods B² B³, having one end of each at-

tached to said blocks and the opposite ends to the car-axles, whereby said draw-bar is supported in position, substantially as set forth.

2. In a car-starter, the combination, with a
5 draw-bar extending the whole length of and adapted to have a limited independent end-wise movement of the car, said draw-bar being constructed in three parts and hinged together, as described, of the means for returning said
10 draw-bar to a normal position, the pawl or

pawls b^2 , the springs d , the ratchet-wheels C C' , the axles $A' A^2$, and the truck-wheels, all constructed, combined, and arranged to operate substantially as and for the purpose set forth.

GEORGE B. HAINES.

Witnesses:

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