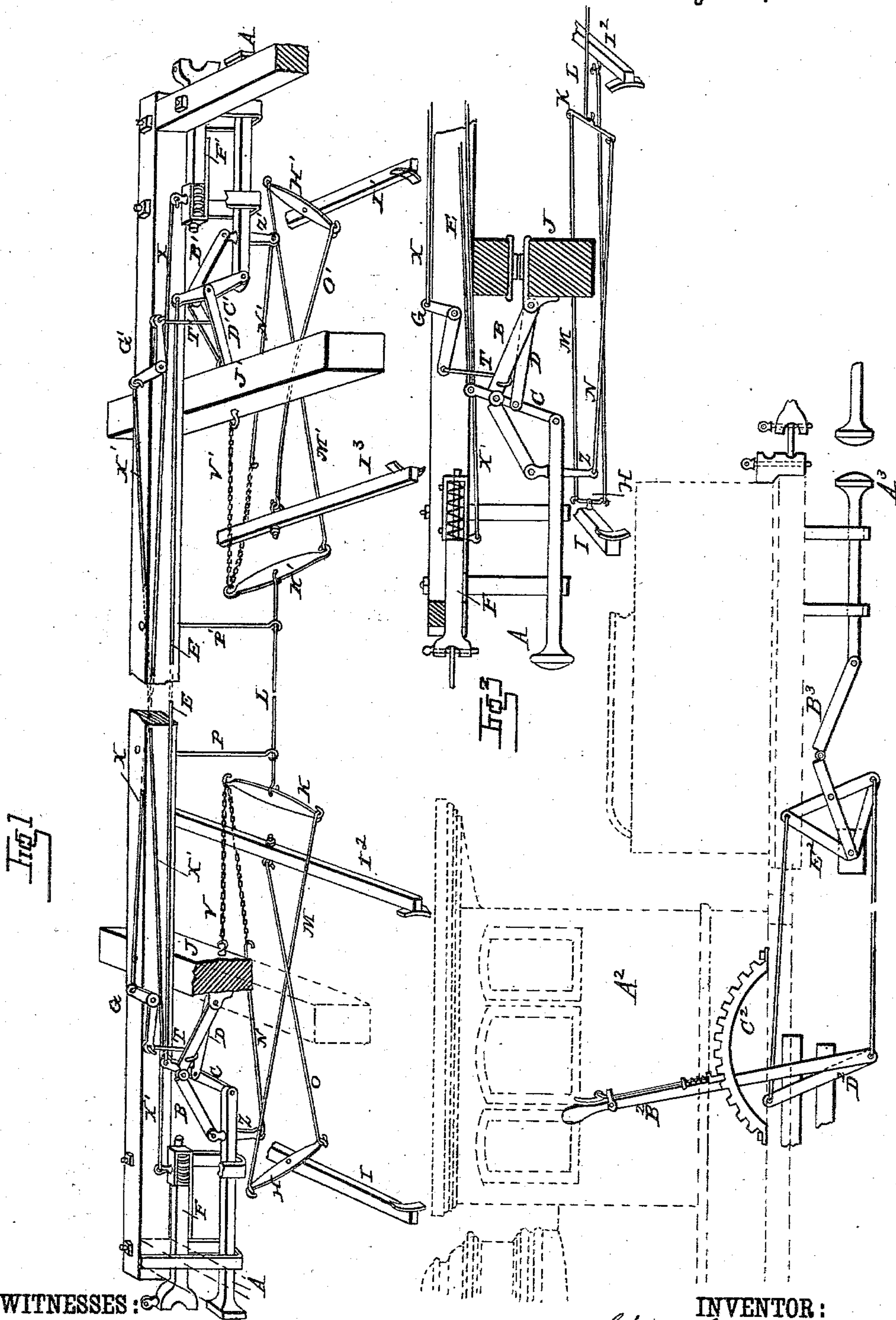


(No Model.)

C. LEDERER & F. X. MARKS.
CAR BRAKE.

No. 281,085.

Patented July 10, 1883.



WITNESSES :

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UNITED STATES PATENT OFFICE.

CHARLES LEDERER AND FRANK X. MARKS, OF NORFOLK, NEBRASKA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 281,085, dated July 10, 1883.

Application filed April 28, 1883. (No model.)

To all whom it may concern:

Be it known that we, CHARLES LEDERER and FRANK XAVIER MARKS, of Norfolk, in the county of Madison and State of Nebraska, have invented a new and useful Improvement in Car-Brakes, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, forming part of this specification.

10 This invention relates to the class of car-brakes which are adapted to act automatically under the control of the engineer, who by means of a lever in his cab projects a buffer from the rear of the tender against a buffer on the forward end of the following car, and thus communicates motion to the brakes, whereby they are set and the speed of said car so slackened that the next following car, in impinging on the first, will cause its buffers to be operated in like manner, and so on to the end of the train until all the brakes are applied.

The invention consists of the novel construction hereinafter described and claimed.

25 In the drawings, Figure 1 is a perspective view of our improved car-brake. Fig. 2 is a partial outline of a tender, showing a part of our brake; and Fig. 3 is a detail view.

30 In carrying my invention into effect each car is to be provided with two buffers, A A', supported in suitable hangers underneath the draw-bars F F'. To the inner ends of the buffers are pivoted levers C C', respectively, which are supported in brackets D D' and connected together by the rod E in such manner that 35 when one of the buffers is forced inward the other will be forced outward by the oscillation of the levers C C'. The buffers A A' are provided with vertical cross-bars Z Z', to the lower ends of which the equalizers K K' are connected 40 by rods or chains N N', respectively. The equalizers consist of bars which are connected to each other at their centers by a rod, L, which is supported in hangers P P'. The equalizers, at their ends opposite to the connections of the chains N N', are connected by 45 rods M M' to the levers H H', which are pivoted to the brake-beams I I', and the levers H H', at their ends opposite to the connections of the rods M M', are connected to the inner brake-beams, I² I³, by the rods O O'. With 50 this construction, when the buffer A' is forced

outward, it draws the rod or chain N' and oscillates the equalizer K', causing the latter to draw the rod M' and oscillate the lever H', which in turn draws the rod O' and applies the brakes through the operation of the beam I³. The draft thus put upon the rods M' O' is communicated through the lever H' to the brake-beam I', so that the brakes of said beam are applied simultaneously with those of the inner beam, I².

Between the girders J J' and the upper ends of the cross-bars Z Z', respectively, are pivoted toggle-levers B B', which are adapted by gravity to assume a straight position when 65 their respective buffers are forced out, in which position they are adapted to hold their buffers out to keep the brakes applied as long as may be desired.

Above the toggle-levers are pivoted bell-cranks G G', which are connected, respectively, to the draw-heads F' F' by the rods X' X, so that when the train starts and the draw-heads are pulled out to their extreme limit the cranks will be oscillated, and by means of loops T T', 75 connected to the cranks and placed in engagement with the toggle-levers, the latter will be lifted out of a straight position to allow the brakes to return to their normal position.

V V' are chains connecting the girders J J', 80 respectively, with the equalizers K K', to take the strain of the latter when the brakes are set and held by the toggles B' B, respectively.

The engine A² is provided with a lever, B², extending up into the cab, and a rack, C², for 85 holding the lever. The lower end of the lever is connected to the lower end of a lever, D², the ends of which are connected to the ends of an oscillating device, E², to which the toggle-lever B³ is attached. A buffer, A³, is connected to the toggle-lever in the manner above 90 described, and is adapted to be forced rearward by the proper movement of the lever B² and the toggle-lever B³. When the buffer A³ is forced rearward, it impinges against the buffer A or A' of the next adjacent car and forces said buffer inward and applies the brakes at the opposite or rear end of said car, and these brakes, through the connecting-rod L, in turn apply the brakes at the forward end of said 95 car, in the manner already described.

The caboose attached to freight-trains is also

to be provided with a lever similar to the lever in the cab of the engine, for setting a firm brake as well as protruding a buffer, to be used in case the train should break in two while
5 going up a heavy grade, causing the rear end of train to recede.

What we claim is—

1. The combination of the connected buffers
A A', the brake mechanisms connected to the
10 buffers and to each other, the toggle-levers connected to the buffers and to the car, and the bell-cranks connected to the toggle-levers and to the draw-heads, whereby the brakes

may be applied and held by the inward movement of one of the buffers, substantially as 15 specified.

2. The combination, with the toggle-levers B B', of the draw-heads F F', and the bell-cranks G G', connected to the toggle-levers B B', and to the draw-heads F' F, respectively, 20 substantially as shown and described.

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Witnesses:

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