

(No Model.)

L. S. COLBURN.

CAR BRAKE.

No. 299,741.

Patented June 3, 1884.

Fig 1.

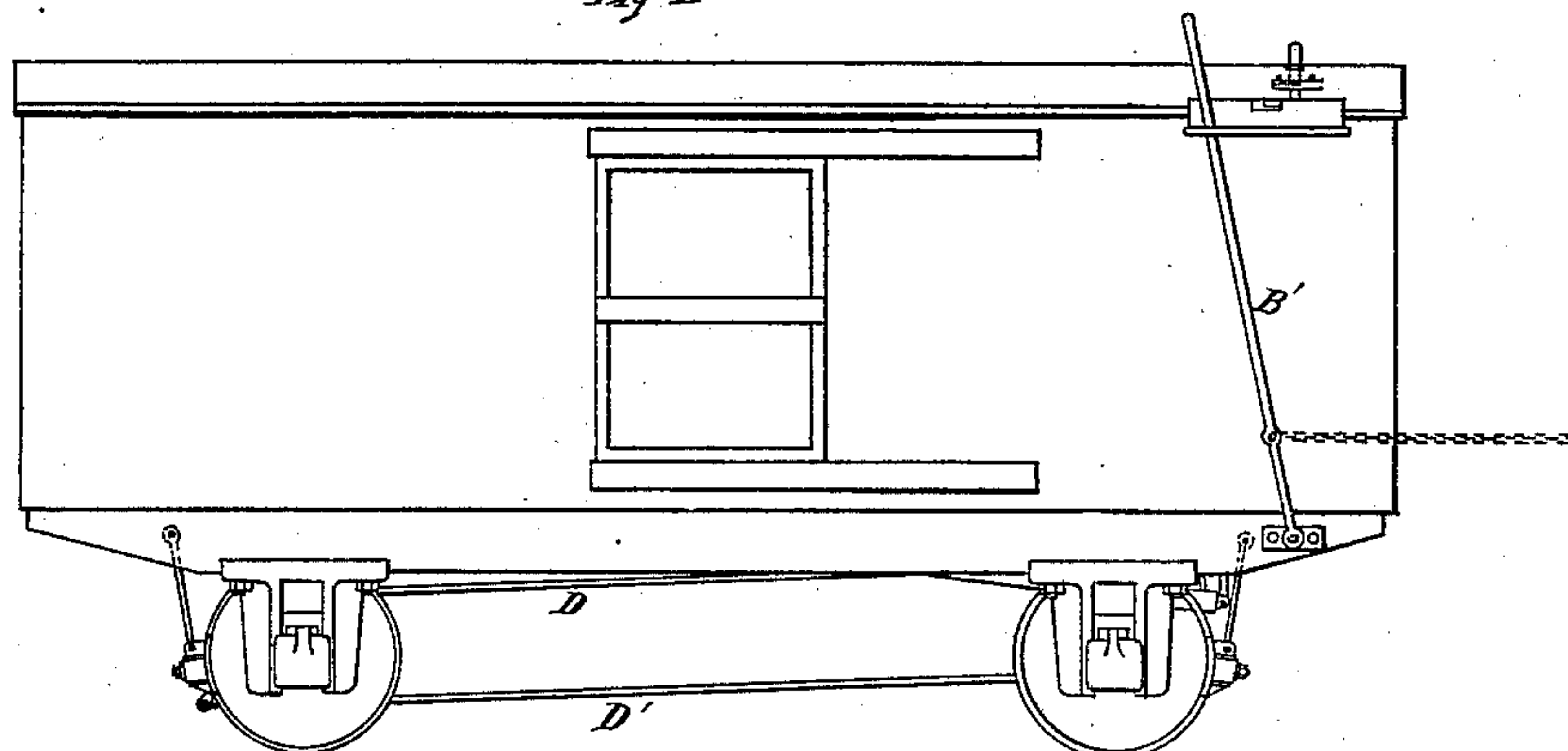


Fig 2.

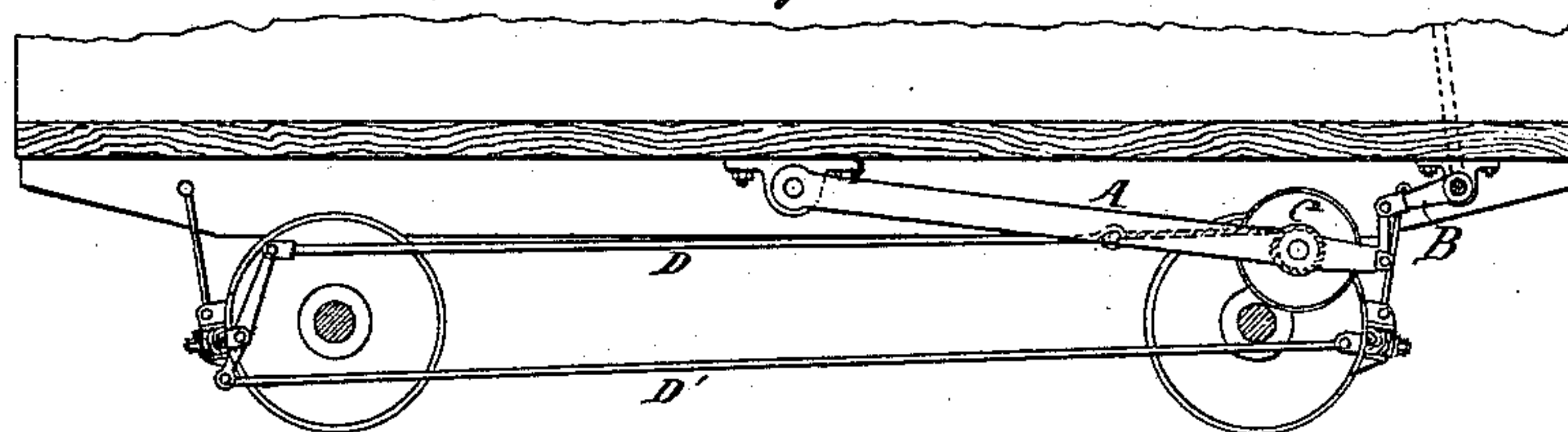


Fig 3.

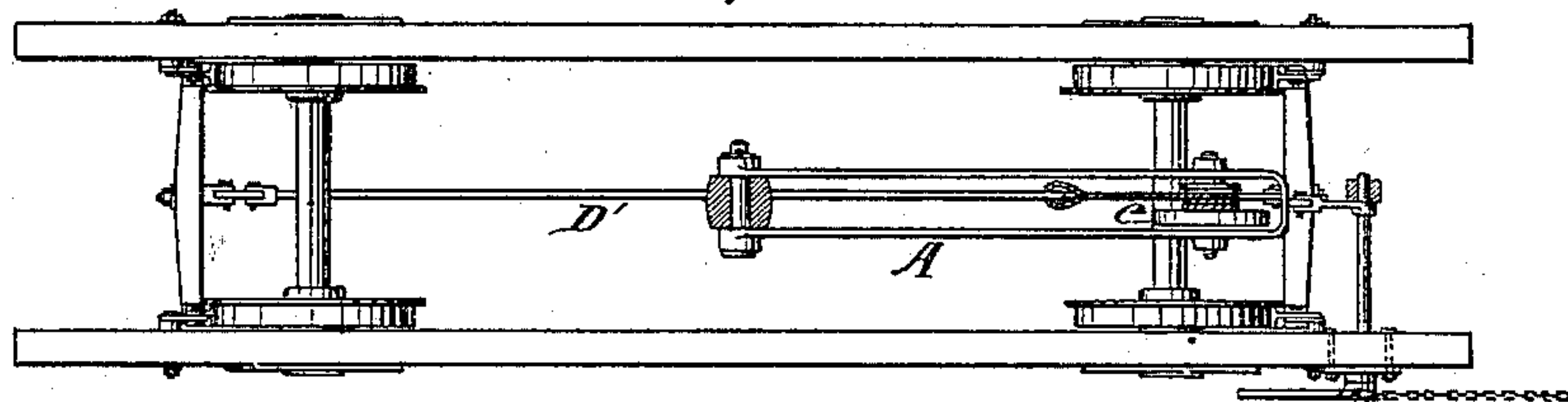


Fig 4.

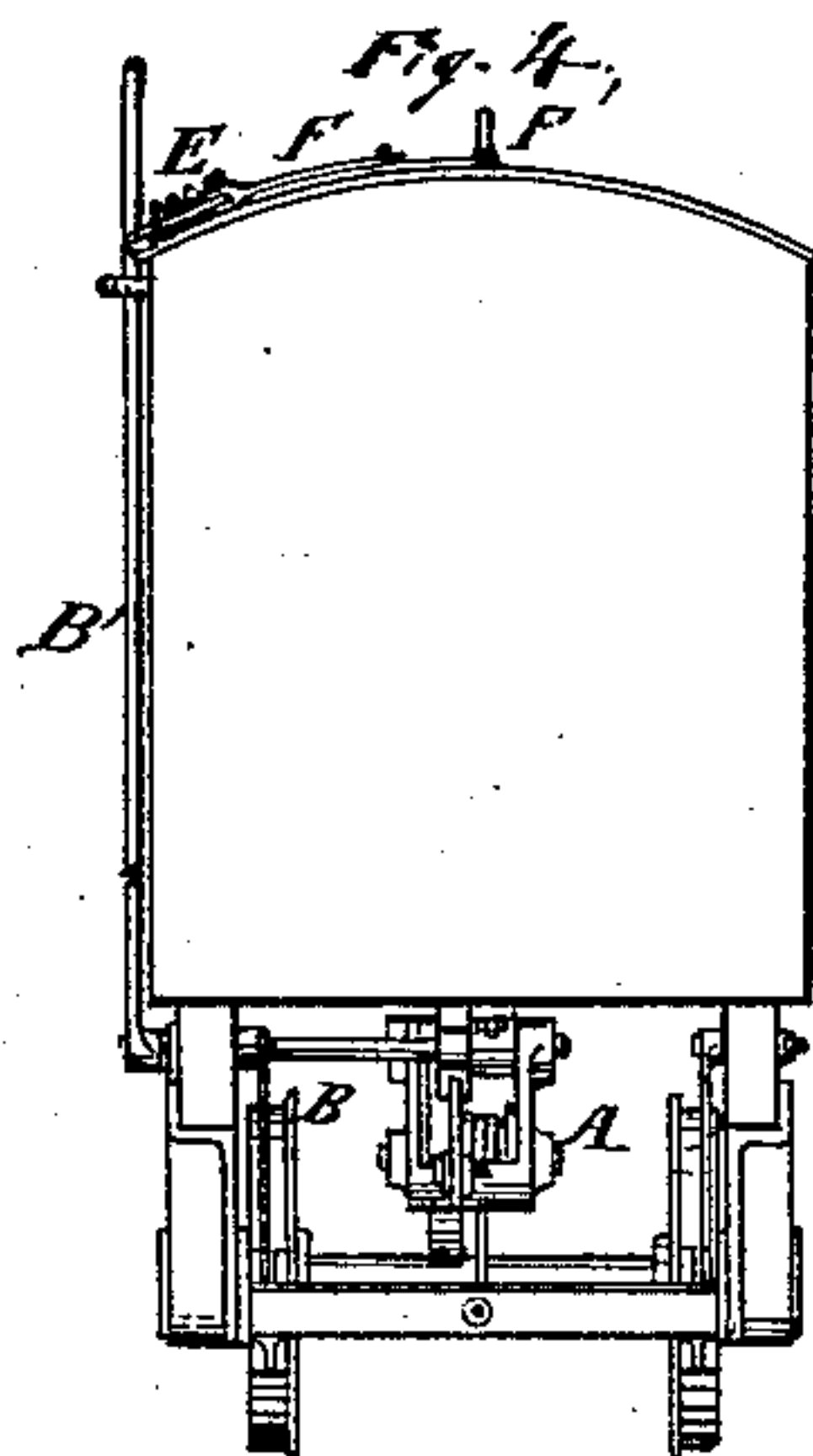
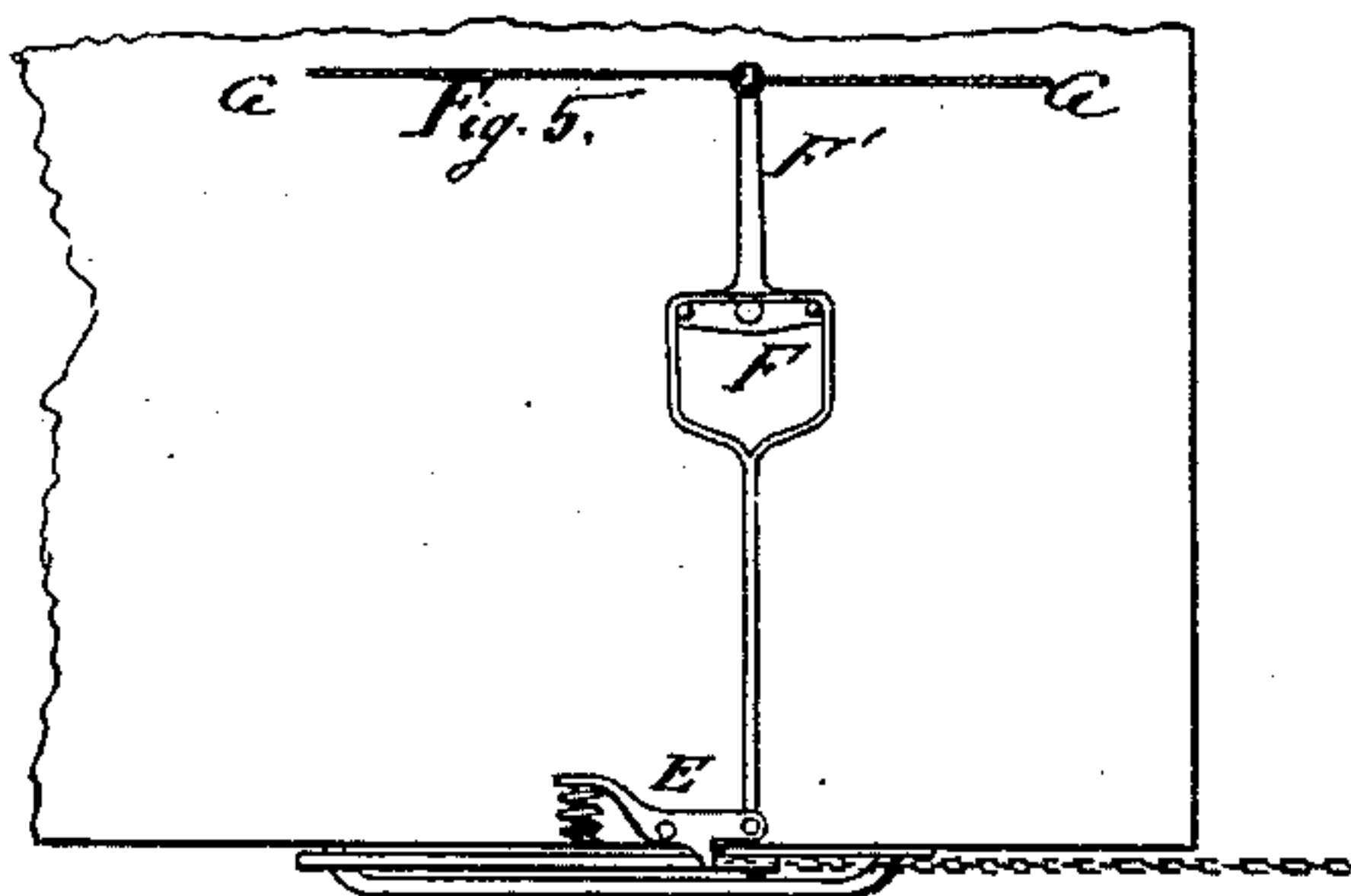


Fig 5.



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# UNITED STATES PATENT OFFICE.

LYMAN S. COLBURN, OF OBERLIN, OHIO.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 299,741, dated June 3, 1884.

Application filed December 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LYMAN S. COLBURN, of Oberlin, county of Lorain, and State of Ohio, have invented a new and Improved Car-Brake; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to letters of reference marked thereon.

My invention relates to improvements in car-brakes, and has for its object the addition to the ordinary brakes on steam-cars of a supplementary brake for operating automatically one or all the brakes on a train, by which one man may instantly apply all the brakes on all the cars of any train, however long said train may be, or on whatever car the operator may at the moment be placed. In addition to this the proposed attachment will automatically, in the event of the breaking of a coupling and the separation of one or more cars from the train, apply the brakes to all the cars as effectively as if the train were unbroken. I accomplish this by means of the apparatus illustrated in the accompanying drawings, in which—

Figure 1 is a side view of an ordinary freight-car, showing a portion of my improvement. Fig. 2 is a longitudinal section through the center of the same, showing another portion of my improvement, showing its application and mode of operation. Fig. 3 is a plan of the trucks and side rails of an ordinary car, giving another view of my improvement and its mode of application. Fig. 4 is an end view of same car, showing the common brakes with my improvement in the center, with operating-lever at the side. Fig. 5 is a deck view of a car, showing tripping device, and the method of connecting it with the remainder of the train.

The construction and arrangement of an ordinary freight-car, brakes, &c., are so well understood that no description will be necessary, and I shall confine myself to a delineation of the parts proposed to be added.

A, Figs. 2 and 3, is a U-shaped hanger, having an open space in the center for the reception at one end of the friction-wheel C, with a short shaft or drum securely fastened to one side, and turning freely on its axle or pin.

The other end of hanger A is pivoted to the sill or bottom timbers of the car, as shown in Fig. 2, while that bearing friction-wheel C rests on the axle of the car, or left free to be raised or lowered. A few inches forward of the free end of hanger A a rock-shaft is fastened to the under side of the floor-timbers of the car. This rock-shaft is capable of a limited rotation on its axis, and is provided with a short arm or lever projecting from one side directly over the free end of hanger A, to which it is joined by a link or chain. To the outer end of said rock-shaft an upright lever, B', is securely fastened, which extends above the deck of the car, as shown at B', Fig. 1. The rock-shaft and arm B and lever B' form what might be called a "right-angled" or "bell-crank" lever, as the two levers through the rock-shaft act as one.

E, Fig. 5, is a spring hook or catch for holding in place lever B'. Said catch is operated by the tripping device F, Fig. 5, which consists of a double right-angle lever, F', having studs at the extremities of its arms, engaging the opposite sides of loop F in such a manner that, when tension is brought to bear on cord G G in either direction, catch E will be drawn back, and leaving lever B' to assume the position shown in Fig. 1. From lever B' a chain or cord leads forward to a similar lever on the next car and another chain from that to the next preceding car, and so on through the whole train, thus coupling all the levers B' with each other in such a way that any force applied to the forward one will draw forward the whole series. Catch E, it will be seen, is beveled on face in such a way that when lever B' is drawn forward it will recede and allow said lever to pass; but as soon as it has done so said catch is immediately forced back to its original position, where it effectually locks fast lever B' in the position indicated by the dotted lines in Fig. 1. It will be seen that friction-wheel C, when in position indicated by Fig. 2, rests firmly on the axle of the car-truck, and is held there by its own weight. It will also be understood that when lever B' is thrown forward in the position indicated by the dotted lines in Fig. 1, said friction-wheel C will be raised by the action of the short arm B entirely clear of said car-axle.



G G are cords attached to the end of lever F', and leading forward to all the similar levers on other cars of the train in such a way that force applied at any point, either forward or backward, will unlock all the levers B', permitting friction-pulley C to fall upon the car-axle in the position shown in Fig. 2.

The operation of this device is exceedingly simple. When it is desired to apply the brakes to a moving train, all that will be necessary will be for the brakeman or engineer to apply a slight force to the cords G G at any point or in either direction, when the catches will be withdrawn by the action of the tripping device F on all the cars, thus releasing levers B' and permitting the friction-wheels C to rest firmly on the different axles, wheel C immediately beginning to revolve by the action of the axle on which it rests. In doing so it causes chain on the end of rod D to be wound around drum on axle of wheel C, and drawing forcibly together the brake-beams, whereby the brake-shoes are firmly applied to the faces of all the wheels in the train to which this device may be attached.

Of course it will be understood that this apparatus may be applied to any car without in any way disturbing the present arrangement of brakes, or operated singly, independently of other cars in the train, lever B' being operated by the hand of a brakeman or attendant. When it is desired to release the brakes, all that will be necessary will be for the brakeman or engineer to pull forcibly upon the chain connecting the several levers, B', until said lever is in the position shown by the dotted lines in Fig. 1, when friction-wheel C will be raised from the axle and at liberty to revolve in the other direction, unwinding chain on drum, and thus permitting the brakes to fall away from the face of the wheels.

It will readily be understood that should the cars in a train separate by the breaking of a pin or link, or from other cause, such separation would bring a tension on cord G, by which all the brakes would be instantly released, and the train be promptly brought to a standstill.

In examining Fig. 2 it will be observed that the point of support for frame A is above

the line of force acting on rod and chain D. Consequently, when chain D is being wound on the shaft of friction-wheel C, its whole tendency will be to draw down said wheel C more and more closely upon the car-axle, thereby increasing the force of traction to any desired amount. Under certain conditions this force may be so great as to cause the car-wheels to stop revolving and slide upon the rails. To guard against this, friction-wheel C is to be fitted with a friction attachment (not shown in the drawings) in such way that when the tension reaches a certain point the revolutions of wheel C will be suspended, and no further force will be brought to bear upon the brakes of the car.

Having thus fully described my improvements, what I wish to claim as my invention, and to secure by Letters Patent, is—

1. In a device for applying brakes to the wheels of steam-cars, a U-shaped frame or hanger, A, carrying a friction-wheel, C, in connection with a rock-shaft operated by upright lever B', and coupled with the end of hanger A, by means of arm B and chain or link, with locking spring-catch E, tripping device F F' and G, or their equivalents, constructed and arranged substantially as and for the purpose stated.

2. In a device for applying brakes to steam-car wheels, the tripping device F F', with locking spring-catch E, and tripping-cords G G, or their equivalents, constructed and arranged substantially as described, and for the purpose stated.

3. In automatic apparatus for applying brakes to wheels of steam-cars, the combination of friction-wheel C, hanger A, rod and chain D, lever E, rod D', right-angled lever B B', locking spring-latch E', tripping device F, F', and G, or their equivalents, all constructed and arranged substantially as shown and described, and for the purpose stated.

This specification signed and witnessed this 28th day of August, 1883.

LYMAN S. COLBURN.

Witnesses:

GEO. C. DAVIES,  
JAS. GOSWEILER.