

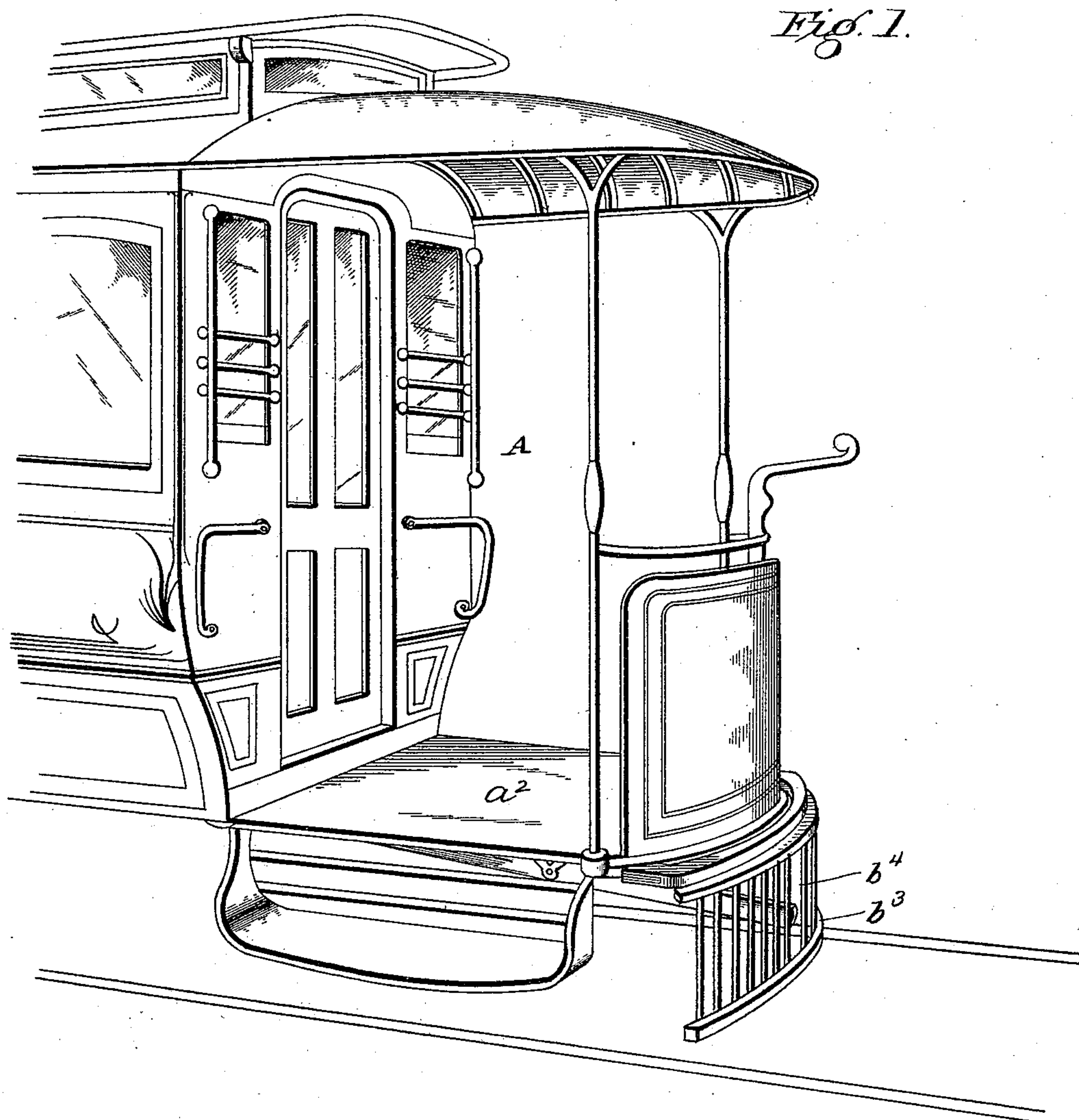
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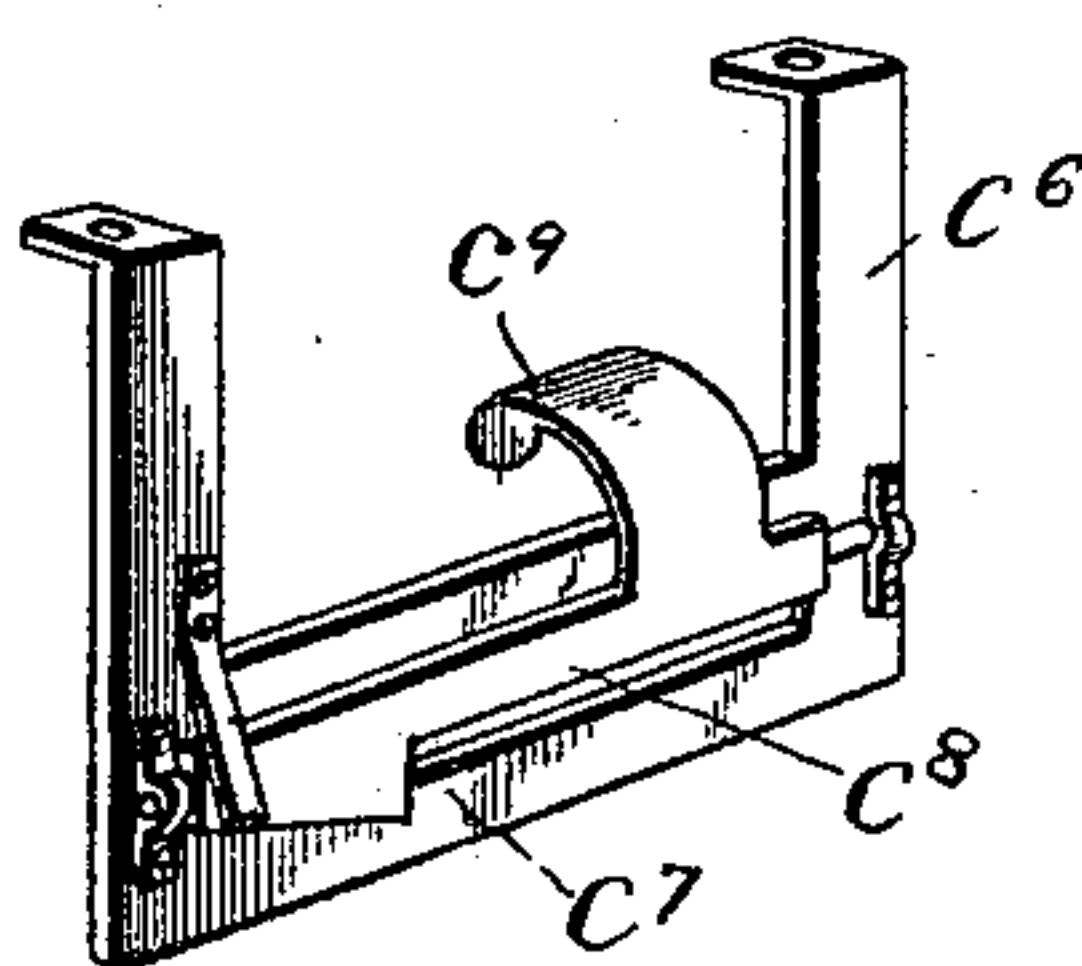
F. McDOWELL.  
CAR FENDER.

No. 544,742.

Patented Aug. 20, 1895.



*Fig. 6.*



Witnesses  
*J. M. Johnson*  
*W. H. Humphrey*

Inventor  
*Francis McDowell*  
By *Geo. H. Holgate*  
his Attorney

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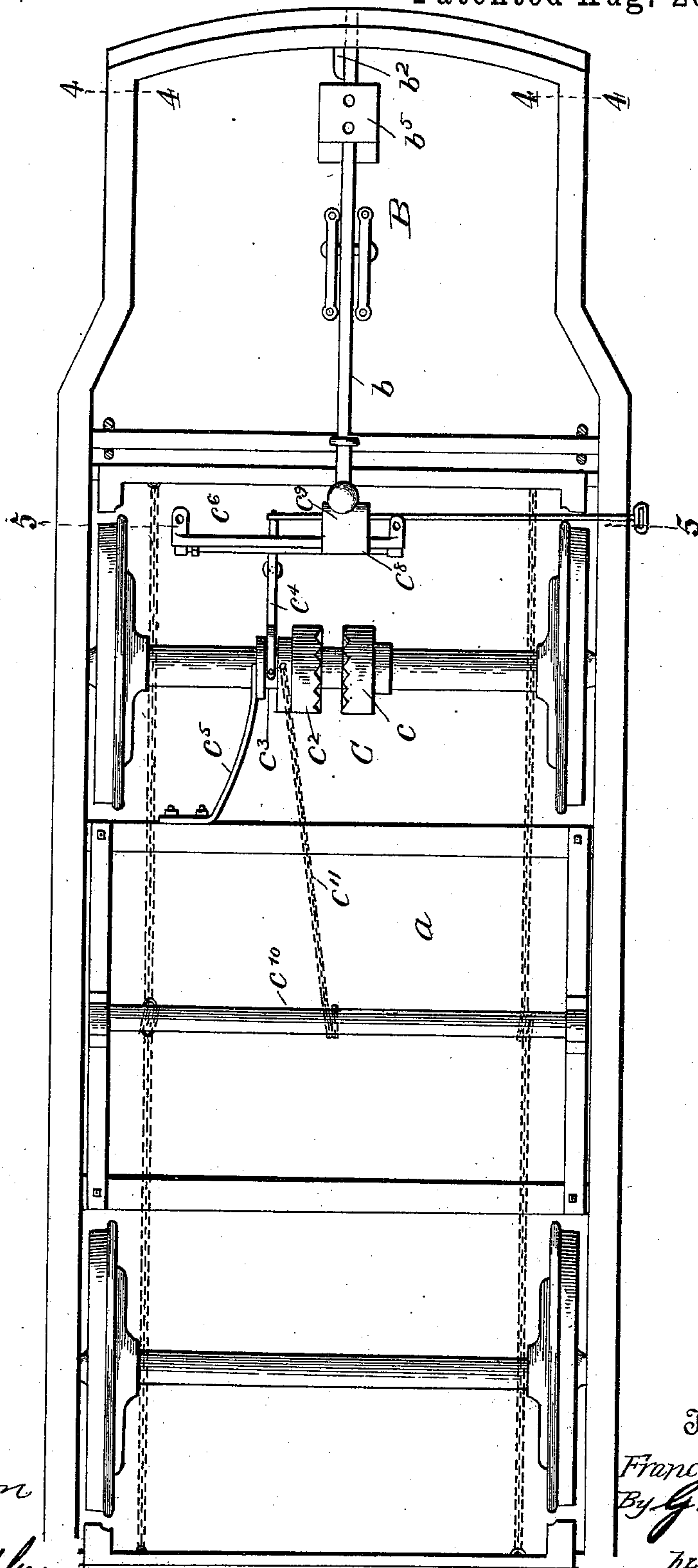


Fig. 2.

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(No Model.)

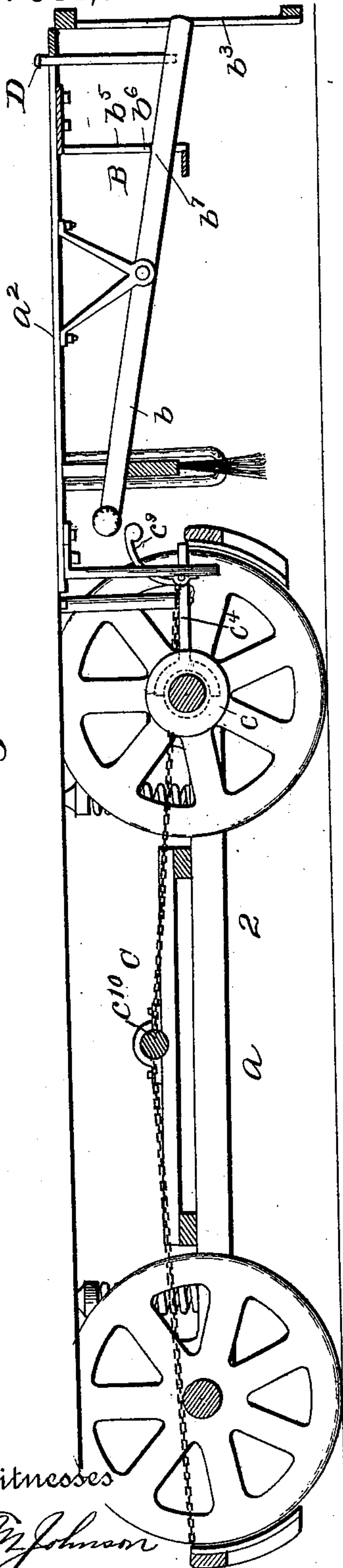
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Fig. 3.



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W. H. Humphrey

Fig. 5.

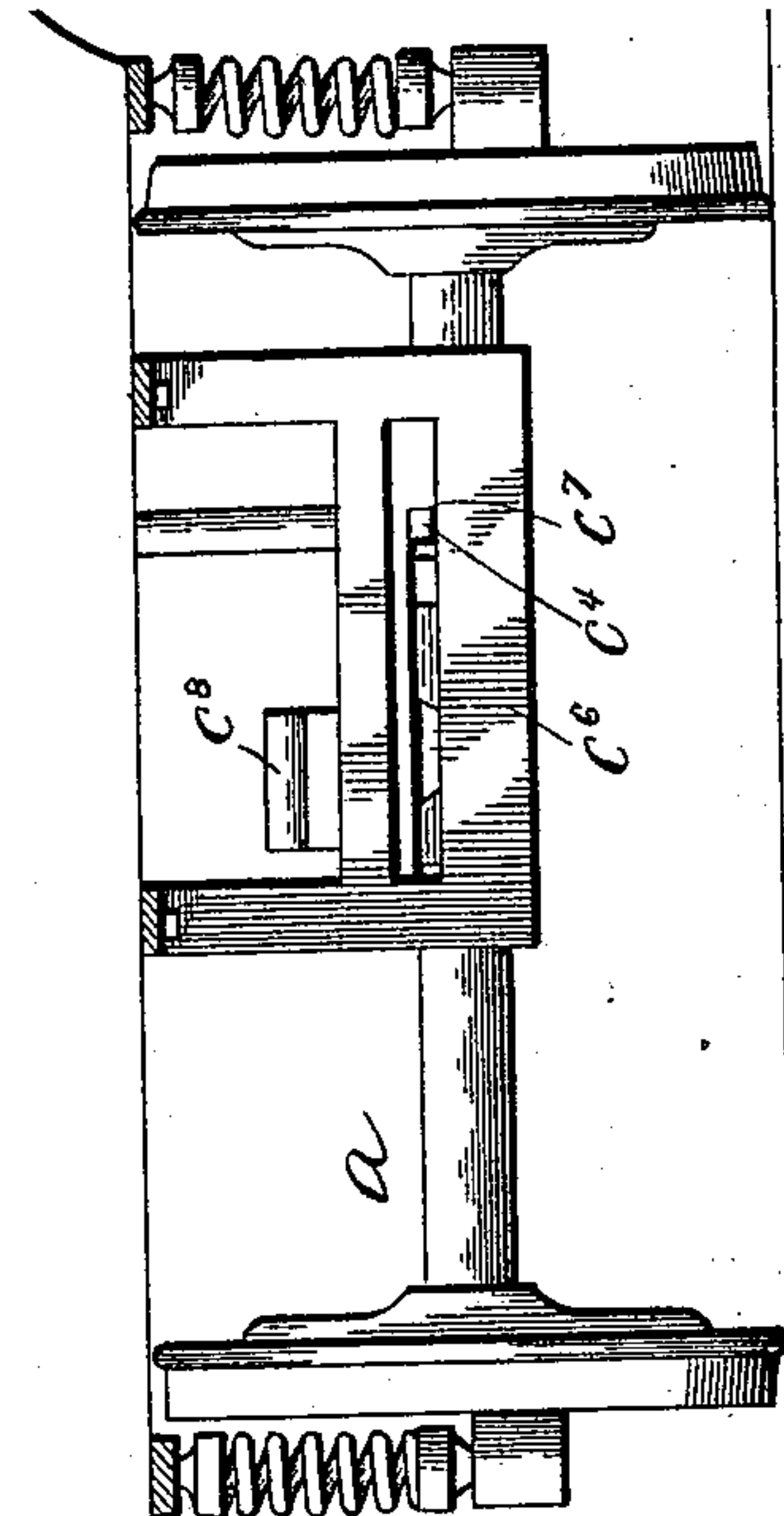
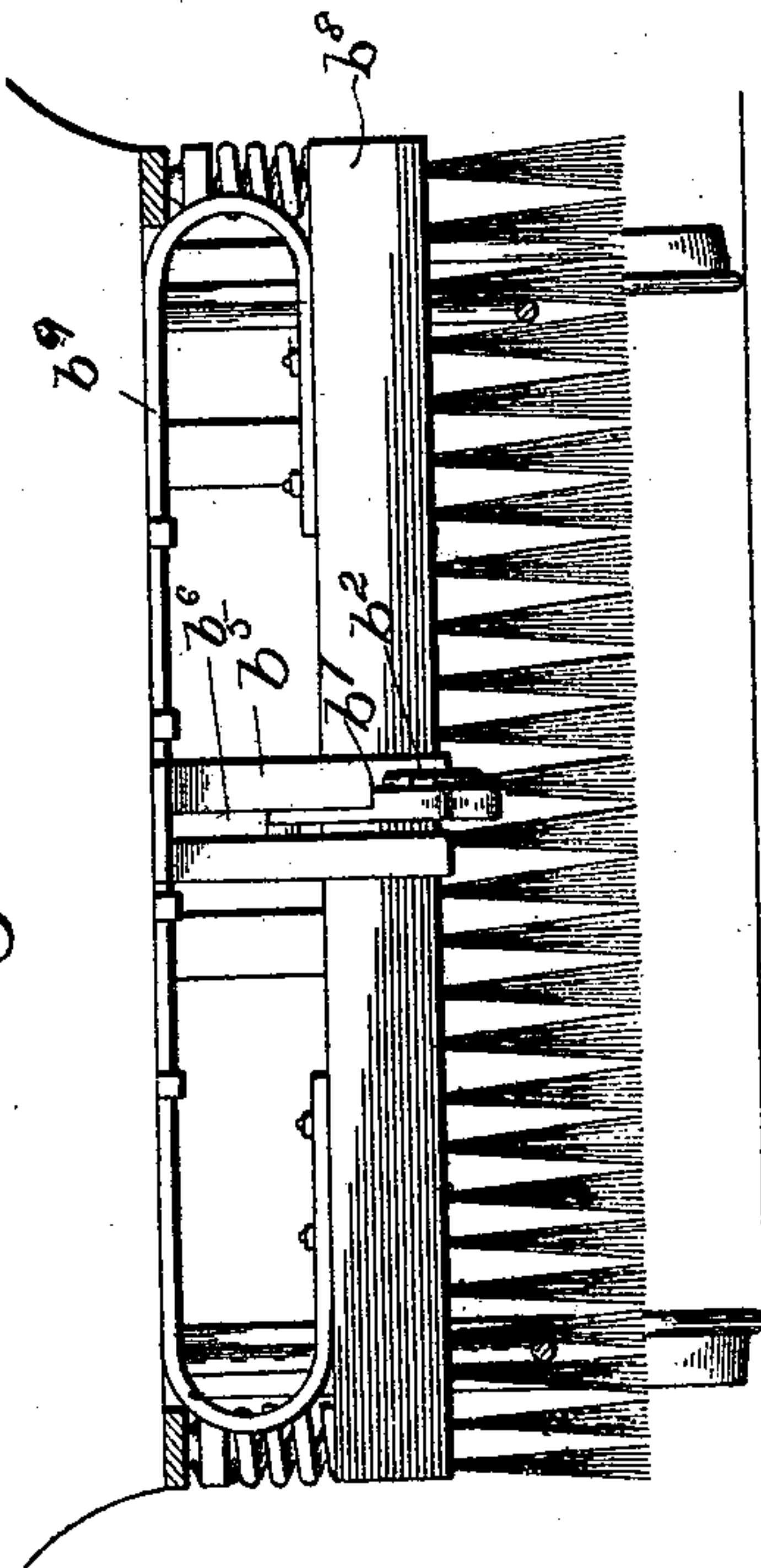


Fig. 4.



Inventor  
Francis McDowell  
By Geo. H. Holgate  
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# UNITED STATES PATENT OFFICE.

FRANCIS McDOWELL, OF PHILADELPHIA, PENNSYLVANIA.

## CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 544,742, dated August 20, 1895.

Application filed February 7, 1895. Serial No. 537,567. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS McDOWELL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

The invention relates to a car-fender combined with an automatic brake.

The object is to provide a car with a guard or fender adapted to be sustained normally out of operative position, and which on engaging an obstruction upon the track will become self-adjusting to serve as a wheel-guard, and at the same time automatically set the brakes and thereby prevent serious accidents on street-railways.

With these objects in view the invention consists in the combination and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, in which similar letters of reference indicate similar parts in the several views, Figure 1 is a view in perspective of one embodiment of the invention applied. Fig. 2 is a plan view of the car-truck and the fender, showing the brake-operating mechanism. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a cross-section on the line 4 4 of Fig. 2. Fig. 5 is a similar view on the line 5 5 of Fig. 2. Fig. 6 is a detail view in perspective of the engaging-hanger for the trip-lever.

In the drawings, A designates the body of a street-car,  $a$  the truck, and  $a^2$  the platform thereof.

B designates the fender, which comprises a longitudinally-disposed tripping-bar  $b$ , pivotally supported beneath the car body and platform and provided on one of its sides with an enlargement  $b^2$ . The inner end of this bar is loosely connected with the fender or wheel-guard, as will be described later on.

To the front of the car is pivotally attached a swinging guard  $b^3$ , having at its center an opening  $b^4$ , through which the front end of the tripping-bar  $b$  is adapted to extend. Secured to the bottom of the car, between the swinging guard  $b^3$  and the pivot-point of the tripping-bar  $b$ , is a retaining-catch  $b^5$ , having openings  $b^6$ , through which the tripping-bar is adapted to pass, a rest or shoulder  $b^7$  being

formed in the opening, by which the tripping-bar is adapted to be held in operative position. Secured vertically movable in suitable guide-ways is the fender proper  $b^8$ , which consists, as seen in the drawings, of a cross-bar, to which is attached brooms or their equivalents, it being essential, however, that one or more downward-acting springs, such as  $b^9$ , be secured to the cross beam or support.

C designates the brake mechanism, consisting of a clutch having a fixed member  $c$  and a loose member  $c^2$ , each provided with engaging-teeth adapted to interlock. The loose member  $c^2$  is grooved at  $c^3$  to receive the forked end of a shifting-lever  $c^4$ . A spring  $c^5$  is interposed between the loose member  $c^2$  and the framework of the truck and serves to force the loose member toward the fixed member, engagement being prevented, however, by the position of the lever  $c^4$ , as will be described. To a suitable support attached to the car-body is pivoted this clutch operating or shifting lever, the front or free end of which extends forward through a slot of a hanger  $c^6$ , it being held about centrally of the slot, in which position the clutch members will be separated by a shoulder  $c^7$  of a rotatable spring trip-lock  $c^8$ , from which an arm  $c^9$  extends forward beneath the inner end of the trip-bar proper.

Beneath the car and between the axles of the wheel is located a cross-rod  $c^{10}$ , to which chains are attached, and at their opposite ends are secured to the brake-blocks or block-holders a chain  $c^{11}$ , being attached at one end to the loose member of the clutch and at its opposite end to the cross-rod.

The operation is as follows: Upon meeting with an obstruction the guard will be pushed backward, and engaging the enlargement on the tripping-bar will cause the bar to be moved laterally a distance sufficient to release it from engagement with the shoulder  $b^7$  and thereby allow the springs  $b^9$  to act and force the fender downward into position. The dropping of the trip-bar serves to release the clutch-operating lever and allow the spring  $c^5$  to act and throw the loose member into engagement with the fixed member, thereby causing the chain to be wound on the drum of the loose member, and, rotating the cross-rod, apply the brakes. To avoid any danger of



the clutch breaking, the teeth are formed of a pitch of about forty-five degrees, and should the chain be wound too tight the loose member will pass a tooth, the spring  $c^5$  allowing  
5 the loose member to be moved away from the fixed member upon undue strain being applied. To set the fender, the front end of the tripping-bar is lowered until it engages the  
10 shoulder  $b^7$ , the other parts being actuated thereby and caused to assume proper position. By this construction it will be obvious that the fender will operate quickly, and should the object struck pass the guard the fender  
15 proper would prevent it from passing under the wheels of the car. At the same time that the guard is oscillated the rod to which are attached the brake-chains will be rotated and the brakes set by the rotating action of the front axle, making stoppage of the car almost  
20 instantaneous.

In the use of this fender upon electrically-propelled cars it may be at times found convenient to interpose a switch in the main circuit, to be opened by the action of the tripping device in releasing the fender. It will

also be obvious that the motorman, by depressing the headed pin D which projects through an opening in the platform of the car, may at any time operate the trip to release the fender and thereby apply the brake. 30

Having thus described my invention, what I claim as new is—

The combination with a car, of a fender vertically movable in guides, a tripping-bar pivotally attached to the bottom of the car and 35 connected at its rear end with the fender, a spring adapted to yieldingly retain the fender in a lowered position, a device for normally retaining the forward end of the tripping-bar depressed, means for releasing the bar, and 40 brake mechanism adapted to be actuated by the release of the bar, for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of two 45 subscribing witnesses.

FRANCIS McDOWELL.

Witnesses:

JOSEPH M. ENGEL,  
J. H. BUNN.