

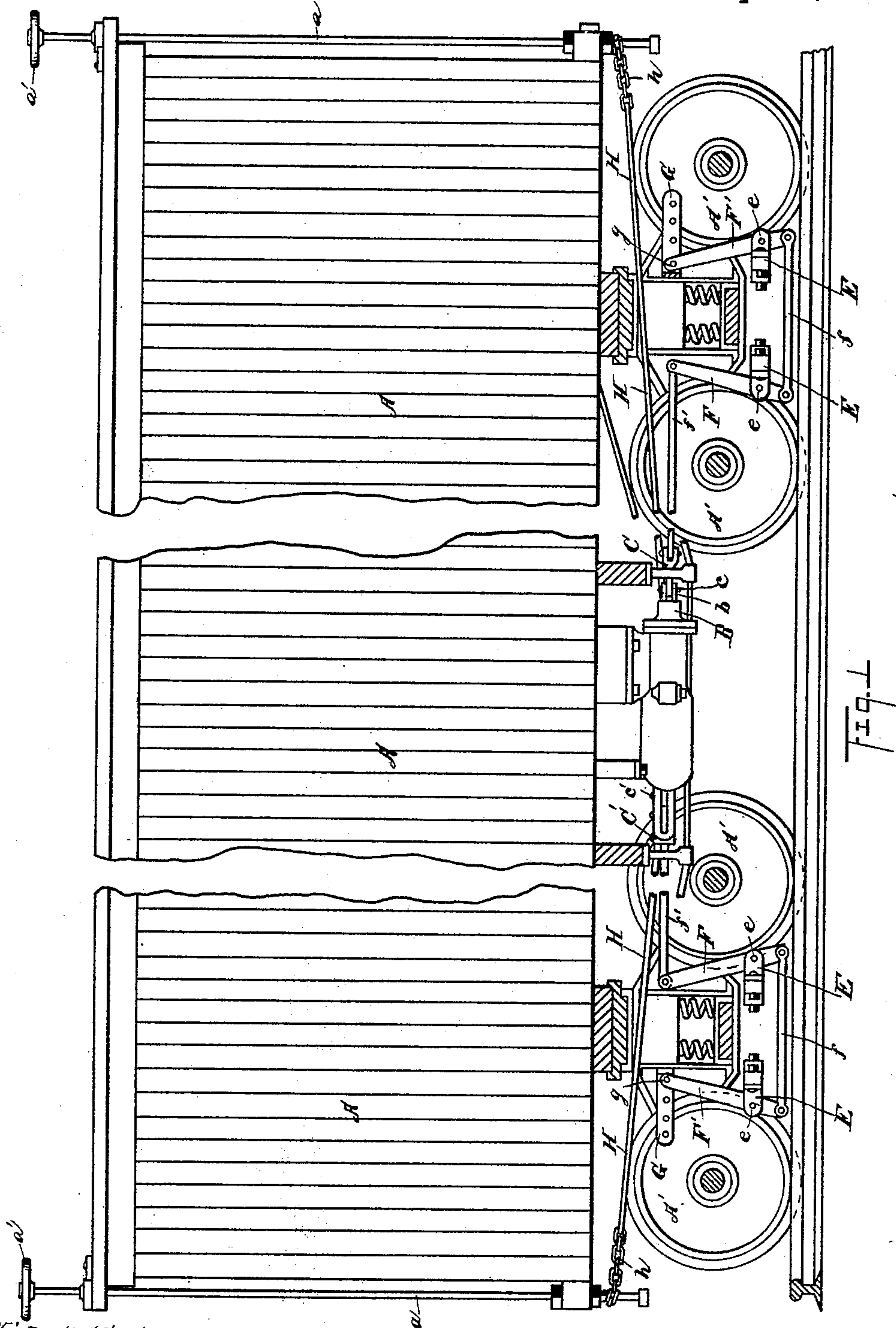
(No Model.)

2 Sheets—Sheet 1.

T. H. HABERKORN.  
BRAKE MECHANISM FOR CARS.

No. 435,418.

Patented Sept. 2, 1890.



Witnesses.

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W. R. Edelen

Inventor

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Biggett and Biggett.  
Attorneys.

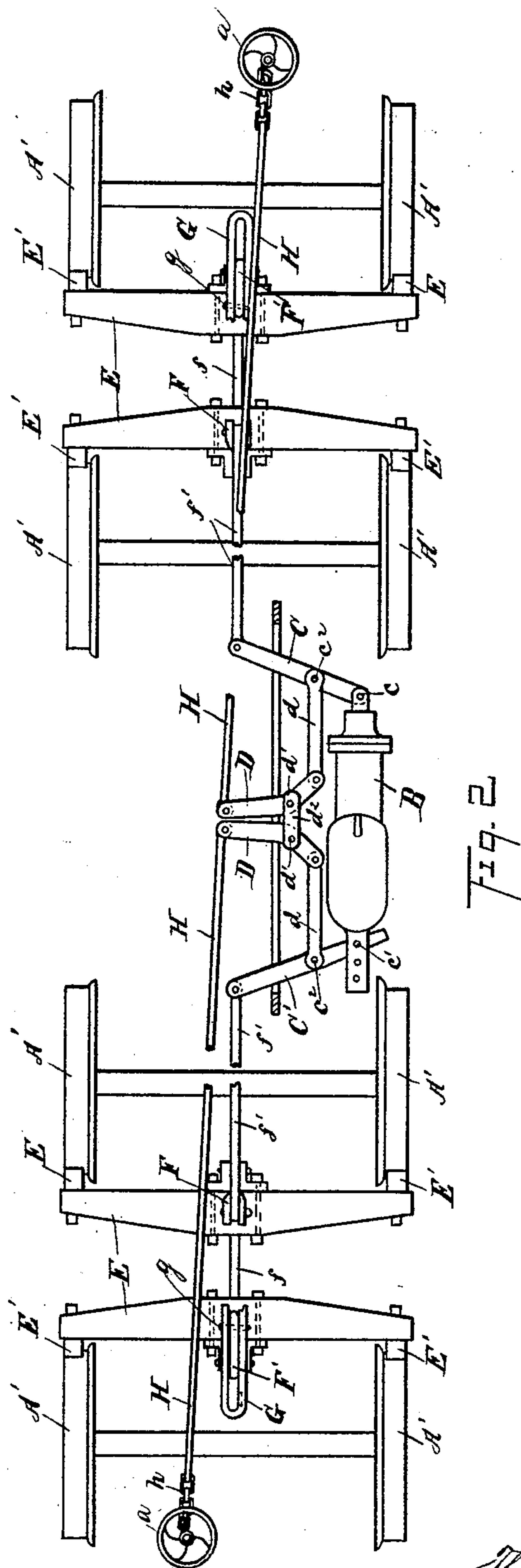
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Bill S. Lorne.

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Attorneys.



# UNITED STATES PATENT OFFICE.

THEODORE H. HABERKORN, OF FORT WAYNE, INDIANA.

## BRAKE MECHANISM FOR CARS.

SPECIFICATION forming part of Letters Patent No. 435,418, dated September 2, 1890.

Application filed February 11, 1890. Serial No. 339,972. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE H. HABERKORN, of Fort Wayne, in the county of Allen and State of Indiana, have invented certain  
5 new and useful Improvements in Brake Mechanism for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains  
10 to make and use the same.

My invention relates to improvements in brake mechanism for cars; and it consists in certain features of construction and in combination of parts, hereinafter described, and  
15 pointed out in the claims.

In providing air-brake mechanism, more especially for freight-cars, it is desirable to retain the mechanism for operating brakes by hand, for the reason that freight-cars are  
20 likely to travel over various railroads throughout the country, and hence might be coupled with cars that had no air-brakes or means of supplying air to such system. It is also important that the mechanism, respectively, for  
25 setting the brakes by hand and for setting the brakes by air-pressure should be so arranged and constructed that the disability of the one will not affect the other, and my invention has this object in view.

30 In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a plan taken below the body of the car.

A represents the body of the car, and A' the car-wheels, all of ordinary construction,  
35 as are also the upright brake-shafts *a*, with brake-wheels *a'* attached for setting the brakes by hand.

B represents the air-cylinder, the same being suspended from the underside of the car,  
40 the cylinder being provided with piston-rod *b* in the usual manner.

C C' are primary levers, usually arranged in a horizontal plane, lever C being pivoted at *c* to piston-rod *b* and lever C' being pivoted  
45 at *c'* to attachment of member B. With my lever system this attachment is provided with holes, as shown, for receiving in turn the pivotal bolt or pin *c'* for purpose of taking up the lost motion caused by wear. Levers  
50 C C' connect at *c*<sup>2</sup>, respectively, with links *d d*, these links in turn connecting with

the short arms of levers D D. Levers D D are of the "bell-crank" variety, fulcrumed, respectively, at *d'* to plates or straps *d*<sup>2</sup>, the latter being arranged usually above and below  
55 these levers. Levers D D are arranged in the reverse order shown, with the short ends thereof extending approximately in opposite directions and the long arms thereof normally bearing against each other. 60

E E are the brake-beams, suspended in the usual manner and provided with brake-shoes E', the brake-beams being arranged, as shown, between the car-wheels of a truck.

F F' are upright levers, pivotally connected,  
65 respectively, at *e* with attachments of the brake-beam at the longitudinal center of the latter. Levers F F' are connected below by means of links *f*. The upper and longer arms of levers F are connected by rods *f'*, respectively, with the extremes of levers C C', as  
70 shown. The upper ends of levers F' are respectively fulcrumed at *g* to members G, the latter being attachments of the car-trucks, members G having usually several holes for  
75 receiving, respectively, the pivotal bolts or pins *g*, whereby the lost motion caused by wear may be taken up. The longer arms of bell-crank levers D D connect, respectively, with rods H, the latter terminating in chains  
80 *h* for attaching to and winding on the respective brake-shafts *a*. With such construction it is evident that actuating rods *f'* in the direction to farther separate the upper  
85 ends of opposing levers F F' will cause the brakes to be set, and that such movements of rods *f' f'* is caused by the longer arms of levers C C' approaching each other. In operating the brakes by air-pressure the fulcrums of levers C C' are respectively at *d*, and the  
90 outward movement of the piston-rod causes the longer arms of levers C C' to approach each other, whereby the brakes are set, and it is evident that if rods H and the brake-shaft—either or all of these members—were  
95 disabled or entirely removed it would not affect the setting of the brakes by air-pressure. In setting the brakes by hand the winding of either chain *h* on the connected brake-shaft will separate the longer arms of the bell-  
100 crank levers D D, which will cause the outer ends of levers C C' to approach each other,



the fulcrums of these levers in such case being at *cc'*. It is obvious that if for want of air-pressure in the cylinder or from any other cause the brakes could not be operated from such source this would not in the least affect the setting of the brakes by hand. I represents a horizontal bar suspended from the car at the ends thereof for supporting the lever mechanism that rests thereon.

10 What I claim is—

1. In brake mechanism, the combination, with brakes, air-cylinder, and primary levers operatively connected with the air-cylinder attachments and with the brakes, substantially as indicated, of bell-crank levers arranged back to back and coupled together in the reverse order shown, the extremes of the bell-crank lever being operatively connected, respectively, with the hand brake-shafts and  
20 with the primary levers between the extremes of the latter, substantially as set forth.

2. In brake mechanism, the combination,

with brakes and a cylinder, of primary levers, one pivotally connected to the cylinder and the other connected to the piston, rods 25 connecting said primary levers with the brakes, and levers and rods connecting said primary levers with hand braking devices, the said parts being so arranged that the connections of the primary levers with the cylinder and its piston form the fulcrums of the primary levers when the latter are actuated by hand, and the connections of the primary levers with the hand braking apparatus form the fulcrums of the primary levers when the 35 latter are actuated by steam or air pressure, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 30th day of January, 1890.

THEODORE H. HABERKORN.

Witnesses:

PAUL F. KUHNE,  
CHAS. W. KUHNE.