

(No Model.)

2 Sheets—Sheet 1.

J. McARTHUR.
CAR BRAKE.

No. 467,257.

Patented Jan. 19, 1892.

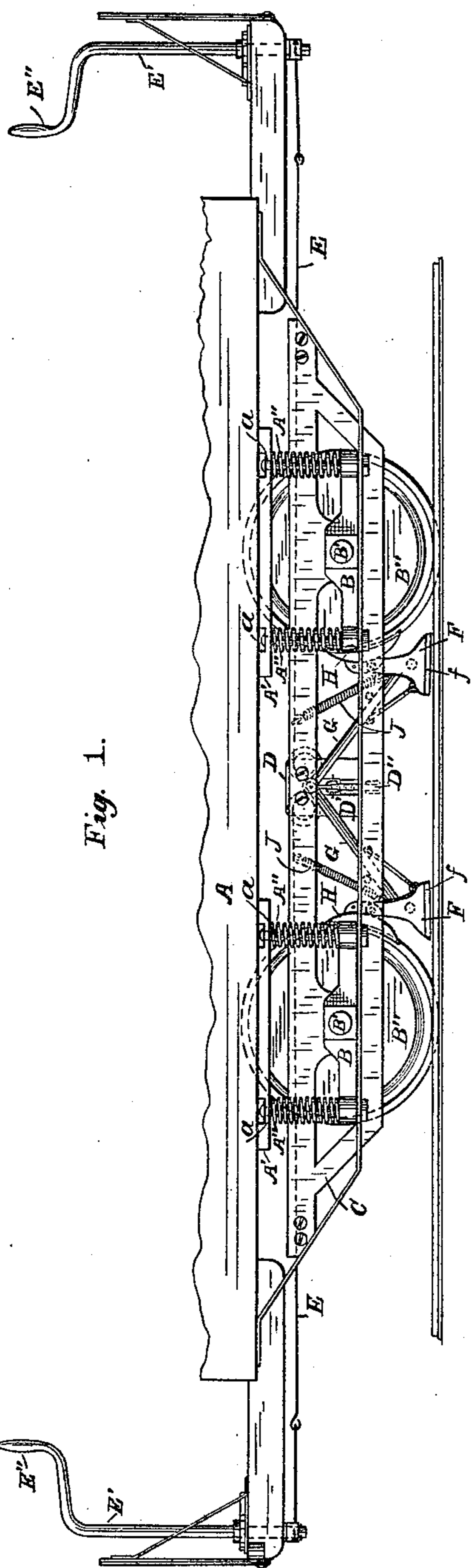
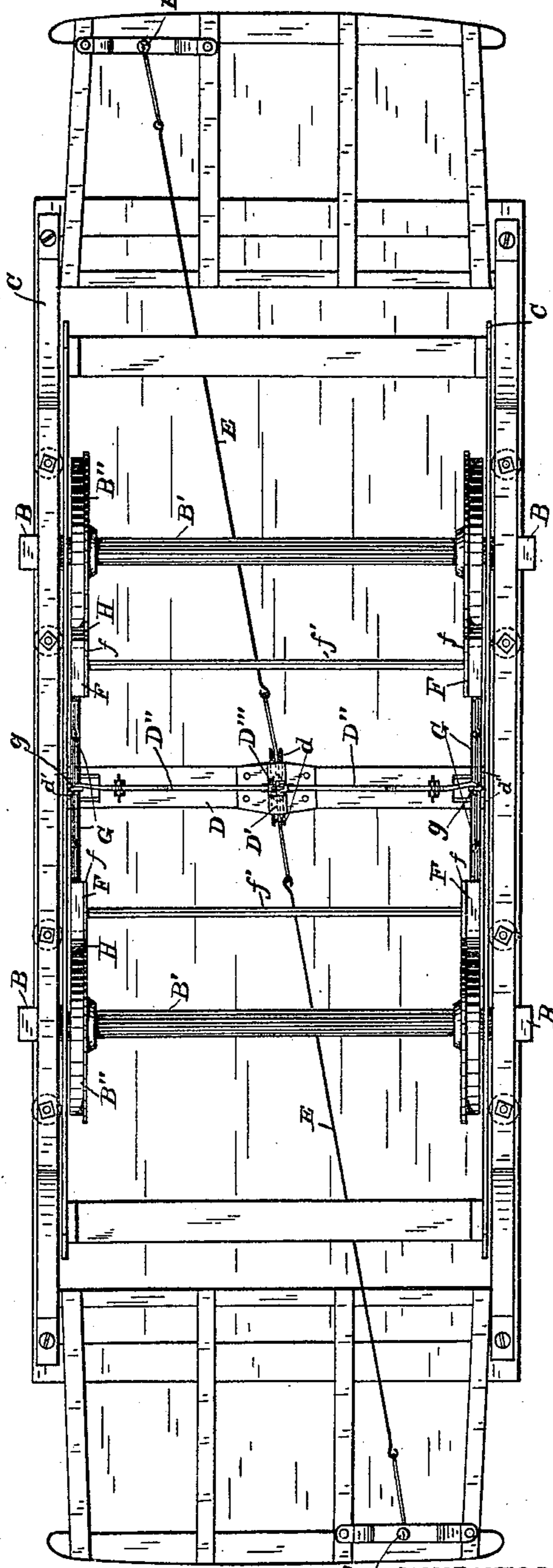


Fig. 1.

Fig. 2.



WITNESSES:

Alex. Stewart
Abraham Macaulay

INVENTOR,

James McArthur
BY
Church & Church
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

J. McARTHUR.
CAR BRAKE.

No. 467,257.

Patented Jan. 19, 1892.

Fig. 3.

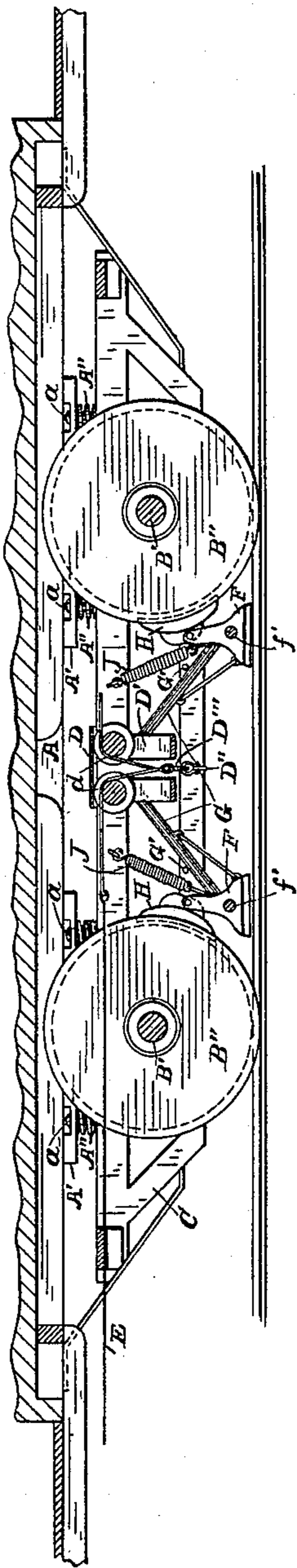


Fig. 4.

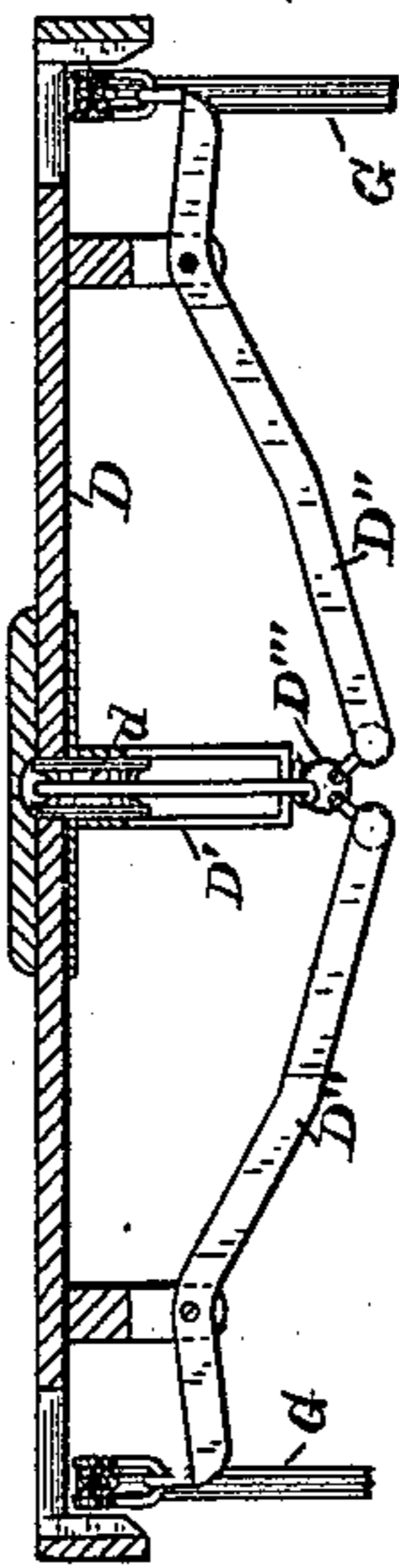
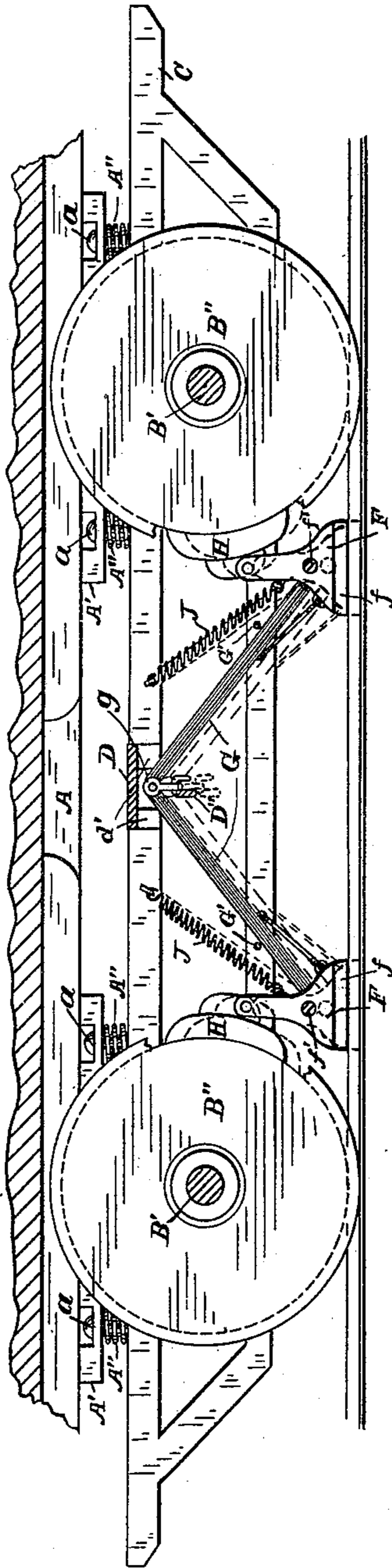


Fig. 5.



WITNESSES:

Ally Stewart
Abraham Macaulay.

INVENTOR,

James McArthur
BY
Church & Church
His ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES MCARTHUR, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF
TO CHARLES J. WICHMAN, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 467,257, dated January 19, 1892.

Application filed August 18, 1891. Serial No. 403,013. (No model.)

To all whom it may concern:

Be it known that I, JAMES MCARTHUR, of Rochester, in the county of Monroe and State of New York, have invented certain new and
5 useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters of reference thereon.

10 My present invention has for its object to provide an improved brake for cars adapted to be operated by hand or power, which may be readily applied with great force to suddenly arrest the momentum, or, if desired, so
15 as to gradually and easily check the car; and to these ends consists in certain novelties of construction and combination of parts, all as will be hereinafter fully described, and pointed out in the claims at the end of this spec-
20 ification.

In the drawings, Figure 1 is a side elevation of a portion of a car provided with my invention; Fig. 2, a bottom plan view of the same; Fig. 3, a longitudinal sectional view;
25 Fig. 4, a cross-sectional view of Fig. 3; Fig. 5, a view showing the manner of applying the wheel-shoes in full and the track-shoes in dotted lines.

Similar letters of reference indicate similar
30 parts.

A indicates the sill of the car-body, provided with the depending bolts a , passing loosely through the lower horizontal frame A' and encircled by the spring A^2 , bearing on the up-
35 per sides of the journal-boxes B , in which the axles B' , carrying the wheels B^2 , rotate. C indicates the truck in which the journal-boxes are secured and on which the car-body rests through the springs A^2 . These parts
40 are of the ordinary or any preferred construction and form no portion of my invention.

Extending across the truck is a beam D , having near its central portion a depending housing D' , in which are journaled two small
45 rollers d , and near its outer ends are depending lugs d' d'' , between which are pivoted levers D^2 , connected at their inner ends by links with the ring D^3 , to which are connected the ends of cords or chains E , extending to
50 the vertical shafts E' at the ends of the car, adapted to be rotated by the handles E^2 . Ar-

ranged on opposite sides of the truck, between the wheels, are two pairs of brake-shoes F , preferably having flanges f , each pair connected by a rod f' , and one of each pair fast-
55 ened to or formed with a rod or arm G , said arms being pivoted together in line with the beam D and connected by links g with the hooked ends of levers D^2 . Pivoted to the upper portion of the shoes F are brake-shoes
60 H , adapted to co-operate with the wheels, and by reason of their pivotal connection have a firm and even bearing thereon when pressed into contact, and arranged upon the lower bars of the truck-frame are lugs or projections
65 G' , against which the arms G of all the shoes are normally held by means of springs J , secured to said track-shoes and to the upper part of the truck. It will be noted that the bars G form toggles and that the springs are
70 so arranged as to keep them flexed upward, the location of the lugs G' being such that when in this position the shoes will be removed from the wheels and track; but when it is desired to apply the brakes and arrest
75 the movement of the car the operator, by turning the handle E^2 , winds the chains E on the shaft and draws the inner ends of the levers D^2 upward, thereby straightening out the toggles formed by bars G , when their outer
80 or lower ends will be turned slightly upward by the springs J , (the bars pivoting on the lugs G'), causing the shoes H to be applied to the wheels, as in full lines, Fig. 5, by the
85 pressure of the springs, which will give sufficient friction to arrest the car under ordinary conditions. If, however, it is desired to arrest the car suddenly or apply more brake-pressure, a further movement of the levers
90 D^2 will force the shoes F down upon the track, at the same time applying the shoes H with more power to the wheels, being assisted by the springs J , and it will be understood that with the parts properly arranged and
95 proportioned the car could be lifted bodily upon the track-shoes and be thereby arrested, if desired. By such a construction as mine, therefore, either ordinary or, when desired, extraordinary brake-power can be applied, and this without the employment of compli-
100 cated mechanism.

Of course many modifications in the con-

struction of the various parts could be made without departing from the spirit of my invention, so as to adapt it to six-wheel trucks, for instance, and the means for applying the
5 brake could be greatly modified and air or steam operated pistons employed for moving the levers D².

The feature of allowing the springs to apply a portion of the pressure when the toggles are straightened is desirable, the operator moving the wheel-shoes so that the
10 springs can act.

While I have in the claims employed the term "frame," I do not wish to be understood
15 as confining my invention to a construction employing a truck-frame on which the wheels are located as necessarily separate from the car-body and connected only by the spring, as the invention could as well be employed in
20 other structures.

I claim as my invention—

1. The combination, with the frame and the wheels thereon, of the toggle-arms pivoted together, the brake-shoes thereon co-operating
25 with the wheels, the stops or lugs on the frame with which the toggle-arms co-operate, the springs connected to said arms, and means for operating the toggles, substantially as described.

30 2. The combination, with the frame and the wheels thereon, of the toggle-arms pivoted together, having the track-shoes, the wheel brake-shoes pivoted thereon, the stops or lugs on the frame with which the toggle-arms co-

operate, the springs connected to said arms, 35 and means for operating the toggles, substantially as described.

3. The combination, with the frame and the wheels thereon, of the toggle-arms pivoted together, having the track-shoes, the wheel-
40 shoes pivoted thereto, the stops or lugs on the frame with which the toggle-arms co-operate, the springs connected to said arms and operating to hold them against the lugs and to press the shoes on the wheels when the
45 toggles are operated, and means for operating the toggles, substantially as described.

4. The combination, with the frame and the wheels thereon, of the toggle-arms pivoted together, having the wheel and track shoes
50 thereon, the springs for retracting said shoes, the levers pivoted on the track and connected to the pivots of the toggles, and the operating-chains connected to the other ends of said levers, substantially as described. 55

5. The combination, with the frame and the wheels thereon, of the toggle-arms pivoted together, having the wheel and track shoes
thereon, the springs for retracting said shoes, the cross-beam, the housing and the rollers
60 located thereon, the levers pivoted on said beam and connected to the toggles, and the chains connected to the levers, substantially as described.

JAMES MCARTHUR.

Witnesses:

FRED. F. CHURCH,
H. L. OSGOOD.