P. R. HIGLEY.

Car Brake.

No. 41,890. Patented Mar. 8, 1864.

Fig. 3.

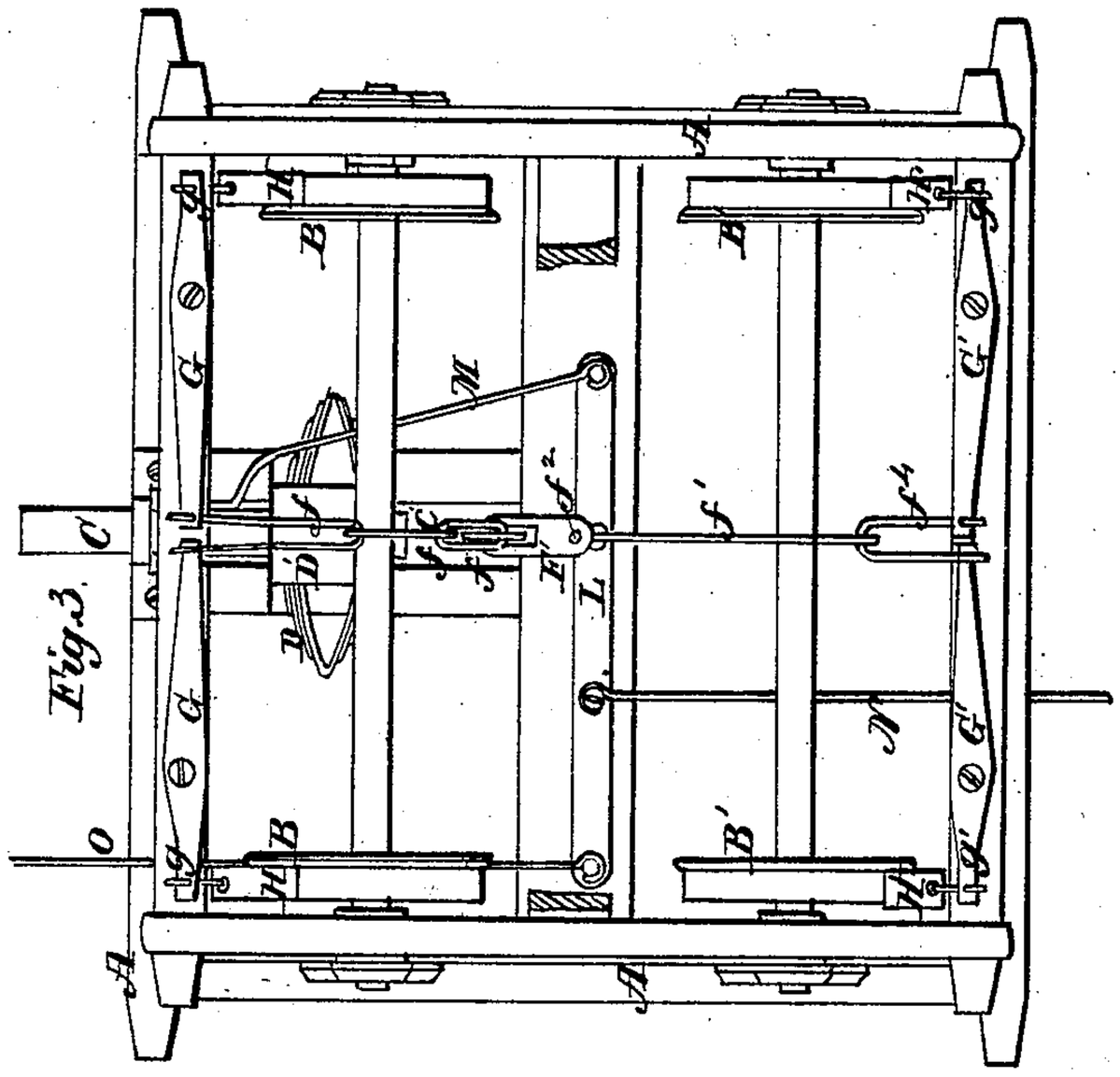


Fig. 4.

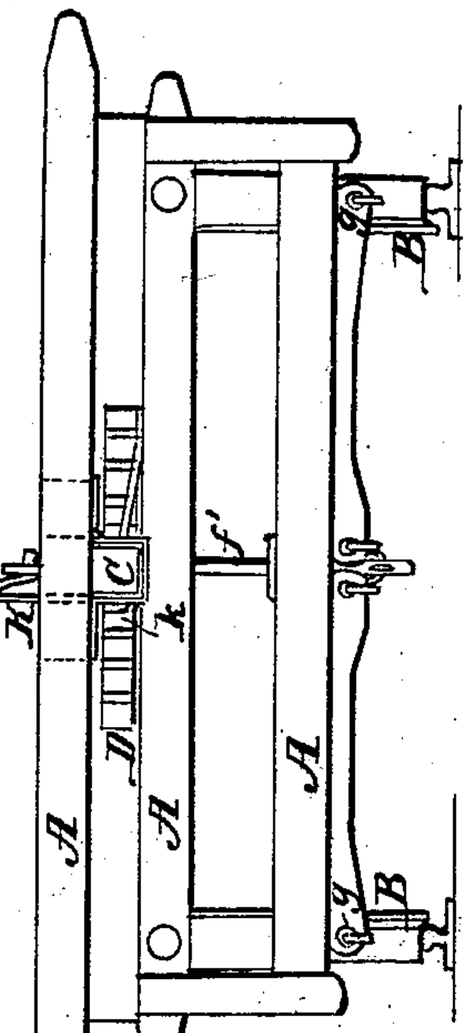


Fig. 1.

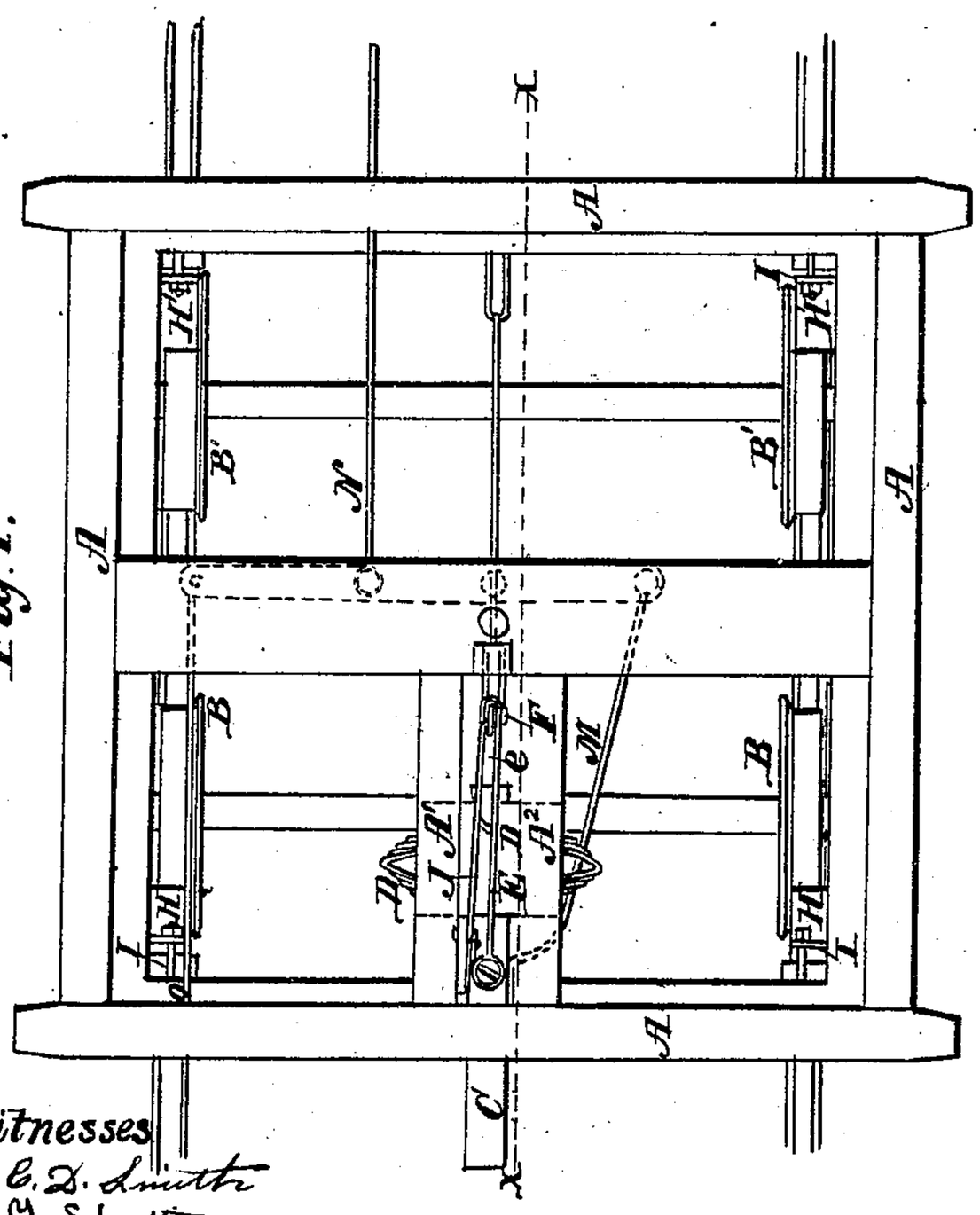
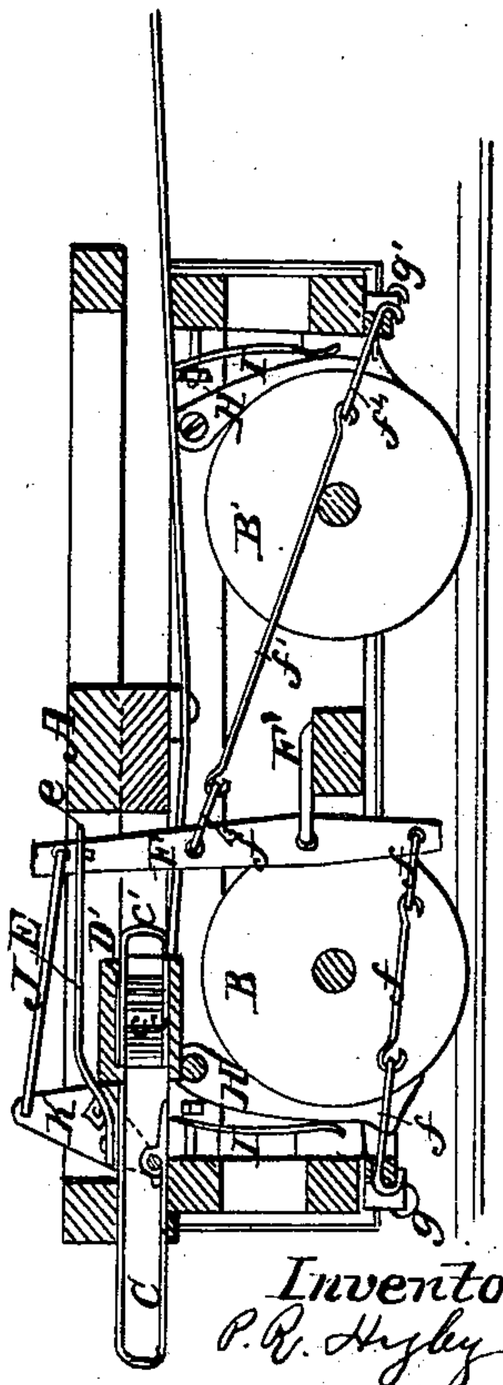


Fig. 2.



Witnesses
C. D. Smith
J. Schaeffer

Inventor:
P. R. Higley
By Munn & Co Attys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

P. R. HIGLEY, OF OSHAWA, CANADA, ASSIGNOR TO WM. P. SPROULE, OF SAME PLACE.

IMPROVEMENT IN AUTOMATIC RAILROAD-CAR BRAKES.

Specification forming part of Letters Patent No. **41,830**, dated March 8, 1864.

To all whom it may concern:

Be it known that I, P. R. HIGLEY, of Oshawa, in the county of Ontario and Province of Canada, have invented a new and useful Improvement in Automatic Railroad-Car Brakes; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a plan of a car-truck embodying my invention. Fig. 2 is a vertical longitudinal section of the same in the line *x x*, Fig. 1. Fig. 3 is an underside view of the same. Fig. 4 is an end elevation.

Similar letters of reference indicate corresponding parts in the several figures.

The subject of this invention is a railroad-brake so constructed and arranged that when the cars start forward or backward the power applied to the draw-heads will be transmitted through said levers and rods to the brakes, whereby they are thrown off or retracted from the wheels, and when the speed of the cars is slackened and the tension on the draw-heads ceases the brakes are thrown on by means of suitable springs, all as will be hereinafter fully explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings, A A′ A² may represent various parts of a car-truck of common construction, which is mounted upon wheels B B′.

C represents a draw-bar the rear end of which is formed of two strong parallel bars, *c c*, connected together as shown at *c′*. These bars *c c* are adapted to slide on the upper and under side of a buffer, D, which rests within a metallic box, D′, secured to the under side of the parallel bars A′ A².

E represents a rod, which is attached at one end to the draw-bar C, and at the opposite end formed with a loop, *e*, which passes over the upper end of a lever, F. This lever F is supported by and pivoted upon a link F′ and has its upper end moved forward at the starting of the car by the rod E.

To the lower end of the lever F is attached a series of links, *f f f*, which connect said lever to the pivoted horizontal levers G G which at their outer ends are connected with the pivoted brakes H H by means of links *g g*, so that when the lower end of the lever F is moved backward by the starting of the car the levers G G are turned on their pivots and retract the brakes H H from the front wheels, B, of the truck. The link F′ may be secured by means of a pivot, f^2, in order that the lever F may, without injury, conform to any lateral movement which the car-body may receive.

f′ represents a rod connected at its forward end to the lever F through the medium of a link, f^3, at a point between the pivoted link F′ and the upper end of said lever F, and at its rear end connected to the pivoted horizontal levers G′ G′ at the rear of the truck through the medium of a link, f^4.

To the outer ends of the levers G′ G′ are connected the pivoted brakes H′ H′ of the wheels B′ at the rear of the truck by means of links *g′ g′*, so that when the upper end of the lever F is turned forward at the starting of the car the inner ends of the levers G′ G′ are drawn forward, and the brakes H′ H′ thereby moved out of contact with the wheels B′.

From the above description it will be seen that the same movement of the lever F causes power to be transmitted in opposite directions through the links *f* and rod *f′*, the former being attached below and the latter above the pivot on which said lever turns, and that such movement of the lever produces the simultaneous removal of the brakes from contact with the wheels.

I may represent strong springs which exert a continual pressure on the several brakes, H H′, and serve to throw and retain them in contact with the wheels B B′ when the tensional force upon the draw-bar G ceases or is lessened to a certain extent in consequence of the stopping or lessening of the speed of the engine.

J represents a rod, which is attached at its respective ends to the upper extremities of the levers F and K. The lever K is pivoted to the bar A′, and its longer end is acted on by a pin, *k*, projecting from the draw-head and in front of the said lever.

When the motion of the locomotive is re-

versed, the backward movement which the draw-bar C receives causes the pin *k* to press back the lower end of the pivoted lever K and the consequent forward movement which the upper end of the said lever and the rod J receive produces the same result as that effected by the advancement of the draw-bar C—that is to say, the upper end of the lever F is turned forward and the brakes H H′ thrown off in the manner described.

It will thus be seen that by starting the cars either forward or backward the corresponding movement of the draw-bar will produce the desired effect upon the brakes with equal effectiveness.

L represents a pivoted lever moved by a rod, M, from the draw-bar C. N is a rod attached to the lever M and designed to connect with the brakes on the other end of the same car.

The rod O may be connected with a hand-lever on the side of the car, so as to take the brakes off by hand.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. A brake for wheel-vehicles, held in contact with the wheel by a weight or spring and retracted therefrom by the power applied to draw the vehicle, substantially as described.

2. The combination of the draw-bar C, connecting-rods E *f′* J, links *f*, levers F K G G, and pin *k*, all operating in the manner described to retract the brakes by either the forward or backward movement of the cars.

The above specification of my improved automatic railroad brake signed this 16th day of November, 1863.

P. R. HIGLEY.

Witnesses:

OCTAVIUS KNIGHT,

CHARLES D. SMITH.