

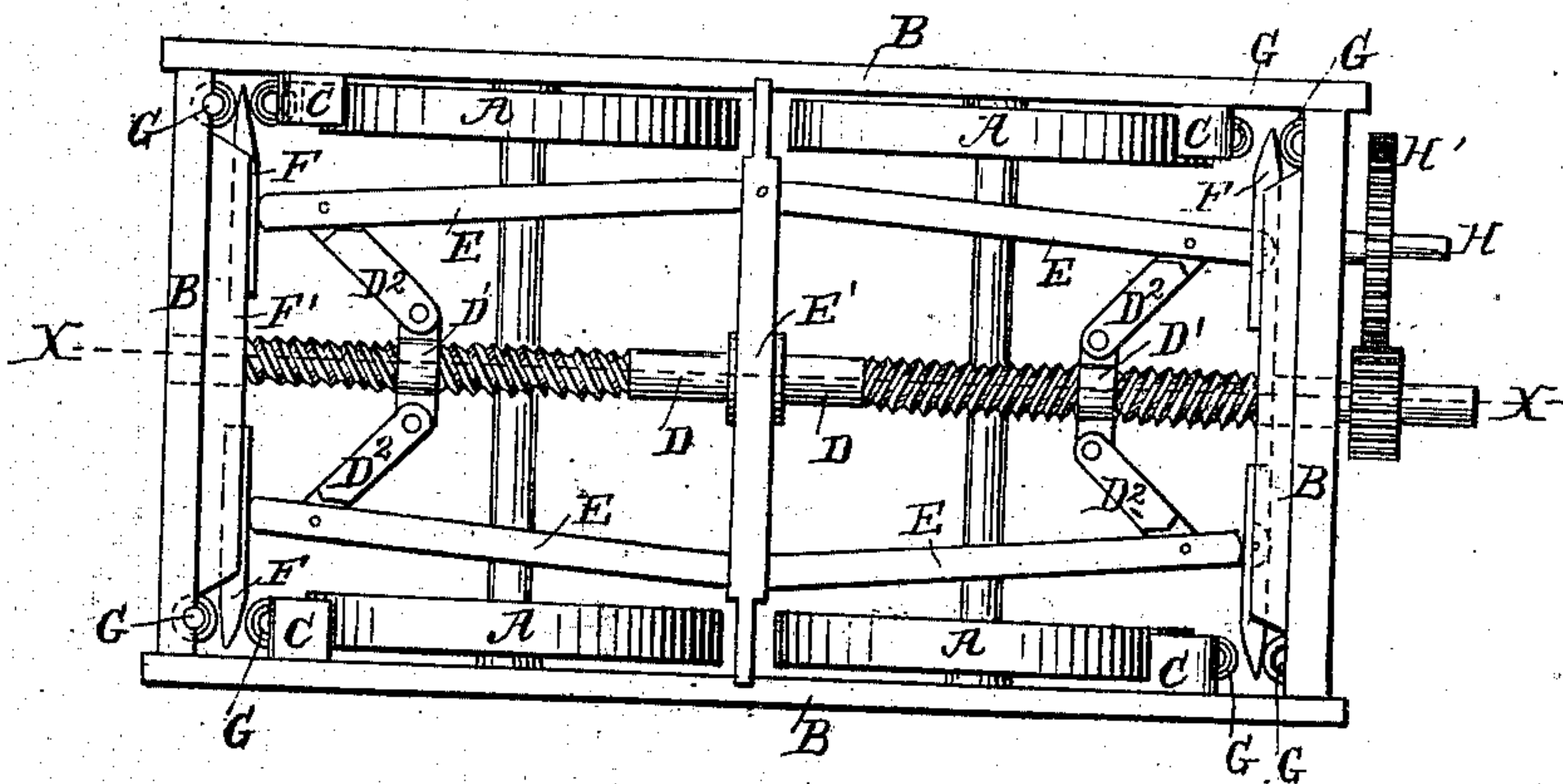
R. HURD.

Car Brake.

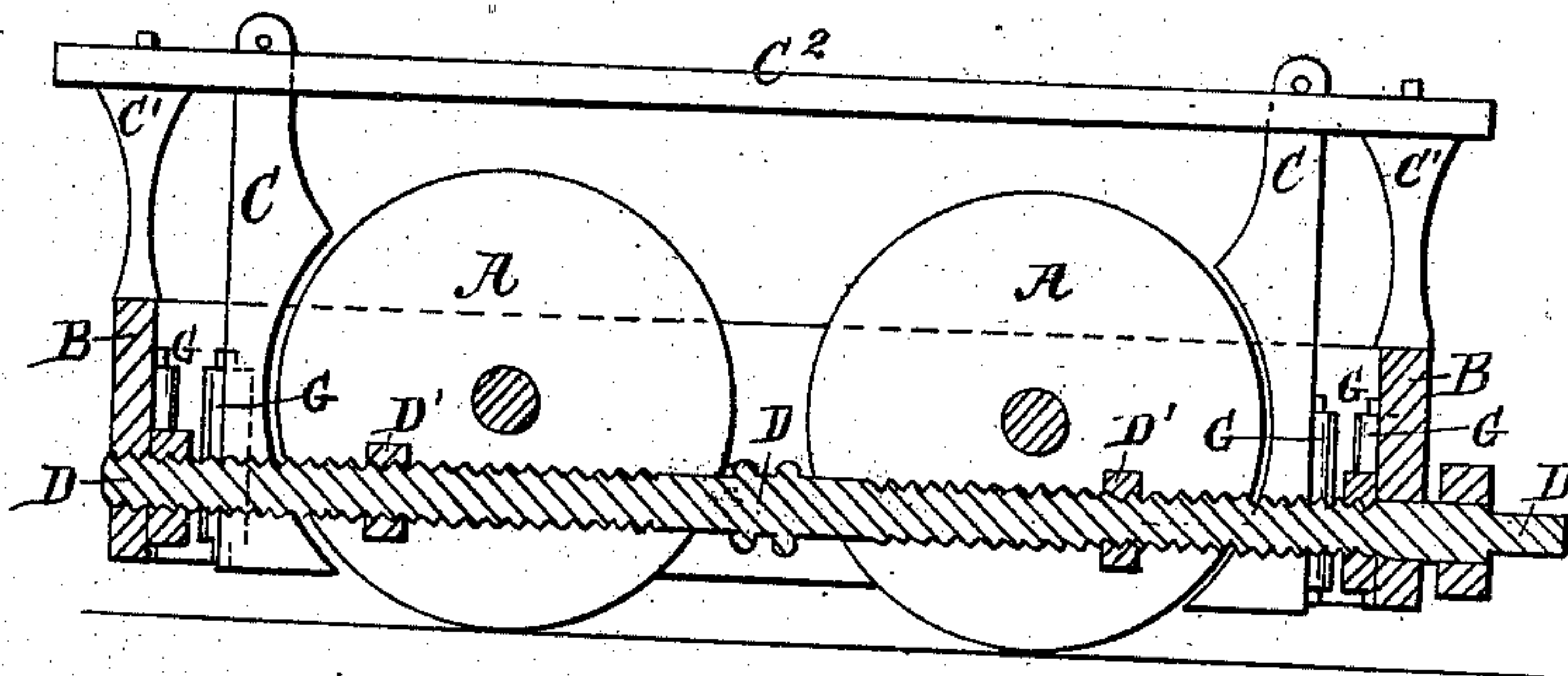
No. 104,738.

Patented June 28, 1870.

*Fig: 1.*



*Fig: 2.*



Witnesses.

*J. H. Sprague*  
*P. C. J. Eils*

Inventor.

*Reuben Hurd*  
*per Edson Brothers*  
*his Atty.*



# UNITED STATES PATENT OFFICE.

REUBEN HURD, OF MORRISON, ILLINOIS.

## IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. 104,738, dated June 28, 1870.

*To all whom it may concern:*

Be it known that I, REUBEN HURD, of Morrison, in the county of Whitesides and State of Illinois, have invented an Improvement in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Figure 1 is a plan view of my improved brake, showing the parts in position and the means for operating them. Fig. 2 is a longitudinal vertical section, taken on the line *x x* of Fig. 1.

Similar letters of reference designate identical parts in both figures.

This invention relates to an improvement in brakes for railroad-cars; and it consists in the method of operating such brakes, and in the combination and arrangement of the parts, as will be more fully described hereinafter.

The importance of having a brake so constructed and arranged as that it can be applied to the wheels of a car when in motion, and with any required amount of force, has long been known and appreciated by railroad men, and this improvement is intended to supply such want.

To enable others skilled in the art to which my invention relates to make and use the same, I will proceed to describe its construction and operation.

A A in the drawings refer to wheels, which may be of any approved construction, and be secured to axles in the usual manner, such axles having their bearings in journal-boxes working in pedestals secured to the truck or frame of the car in the usual manner. B B refer to the truck or car-frame to which the parts are attached, and by which they are supported. This frame may be of any desired form of construction that will adapt it to receive the operating parts of the mechanism, its general outline being shown in Fig. 1 of the drawing. C C refer to the brake-blocks, of which there are to be four to each truck or car. They are to be pivoted to the frame of the car, from which pivoted point they extend downward, and are made to conform to the periphery of the wheel, and to embrace a portion of the circumference thereof, as shown in said figure. D refers to a rod of metal, which has upon or

near its ends a screw thread or threads, one to be a right-hand, and the other to be a left-hand one, so that as the rod is turned the nuts upon the opposite ends thereof may be carried in opposite directions. This rod or screw has its bearings in the ends of the frame B, through one end of which it extends for a sufficient distance to receive a gear-wheel and a crank, with which to turn the same. At the center of this screw or rod there is placed two collars, between which there is a journal which rests in a cross-bar upon the frame, the object being to prevent the longitudinal movement of said screw. D' D' refer to nuts which are fitted to the screws upon the rod D, they being provided with arms or extensions upon them for the reception of links D<sup>2</sup> which connect them to the levers E in the manner shown in Fig. 1. E E refer to levers which are pivoted to the cross-bar E' at the center of the frame B B, from which point they extend to and connect with wedges F F, soon to be described. These levers are connected in such a manner that as the rod D is rotated the outer ends of the levers will be carried outward or in a line at right angles to the axis of the rod or screws, their action being like that of a toggle-joint, and as a matter of course enabling the operator to apply the blocks C C to the wheels with any required amount of force. F F refer to wedges which are pivoted to the outer ends of levers E E, and slide in guides F' F' attached to the inner surfaces of the ends of frame B. The outer ends of these wedges are pointed, to enable them to pass between rollers, and thus force the blocks into contact with the wheels. G G refer to the rollers above alluded to, the outer ones having their bearings in the frame B, while the inner ones have theirs in the brake-blocks C C, or in boxes attached thereto. These rollers are disposed vertically, as shown in Fig. 2, so that as the wedges F F are forced outward their pointed ends shall enter the space between such rollers, and force the brake-block against the wheels without loss of force by friction, and so that they may be withdrawn readily when it is desired to release the brakes from contact with the wheels. H refers to a counter-shaft, which is secured to the frame B, so as to be parallel to the rod or screw D. Upon the outer end of this shaft there is placed a gear-wheel, H', which is to



mesh with and drive the one on the end of rod or screw D. This wheel may be rotated by means of a crank upon the outer end of its shaft, or it may have upon its face beveled teeth, which may mesh into a beveled pinion upon the vertical shaft to which the brake-wheel is attached, or it may be operated in any other manner, according to the position in which it is placed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

The combination of the rod or screw D, nuts

D<sup>1</sup> D<sup>1</sup>, links D<sup>2</sup> D<sup>2</sup>, levers E E, and wedges F F, substantially as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name to this specification this 12th day of March, 1870, at the city of Washington, District of Columbia, in the presence of two attesting witnesses.

REUBEN HURD.

Witnesses:

JOSEPH R. EDSON,

C. F. CLAUSEN.