F. L. KIRTLEY.

Car-Brake.

No. 164,009. Patented June 1, 1875.

Fig. 1.

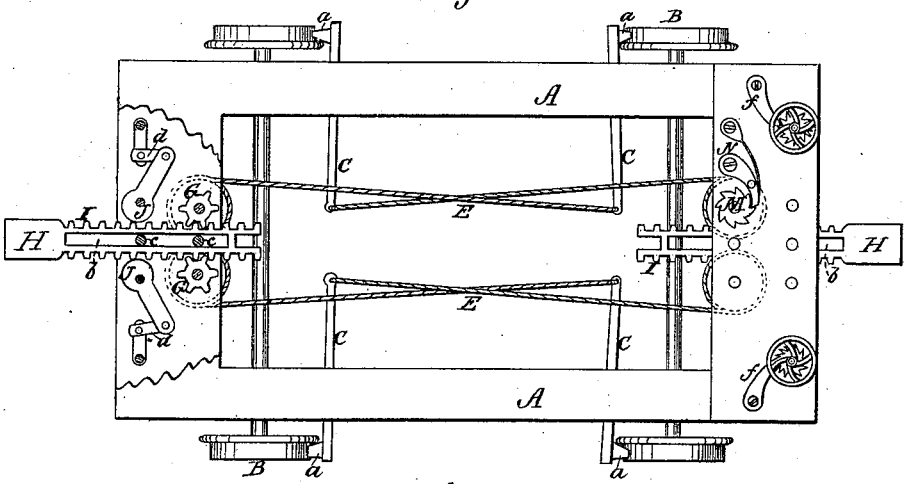
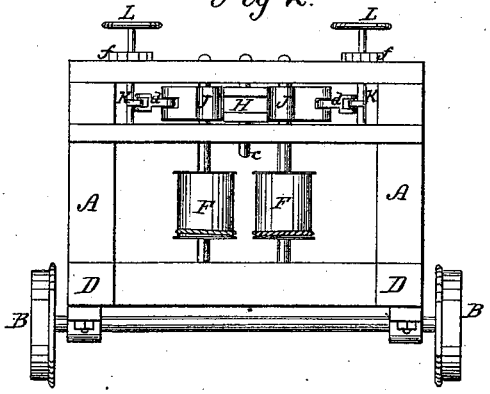


Fig 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FIELDING L. KIRTLEY, OF CLEBURNE, TEXAS.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **164,009**, dated June 1, 1875; application filed April 14, 1875.

CASE B.

To all whom it may concern:

Be it known that I, FIELDING L. KIRTLEY, of Cleburne, in the county of Johnson and State of Texas, have invented a new and Improved Automatic Car-Brake; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view with portion broken away; Fig. 2, a vertical end view.

The object of this invention is to provide a means for the automatic application of brakes to the cars of a railway-train; and it consists in a loosely-moving draw-bar attached to the car by means of bolts passing through a central longitudinal slot, and having its sides wrought into two rack-bars, which mesh with pinions upon two windlass-shafts; which arrangement, when the locomotive is "slowed," causes the impact of the cars to drive up the draw-bars and wind up cords upon the windlass-shafts, which communicate with and apply the brakes to the wheels.

The invention also consists in the combination, with the rack-bar, of a locking device to prevent the application of brakes in backing; and in a device for maintaining the brakes applied when stopping upon an incline.

In the drawing, A represents the frame of a railway-car, and B are the wheels. C are the brake-levers carrying brake-shoes *a*, and pivoted to the frame-timbers D. E are ropes or chains attached to the ends of the brake-levers, and wound upon the windlass-shafts F. Said shafts have at the top the pinions G G, in between which and meshing with the same, moves the draw-bar H. Said draw-bar has a longitudinal slot, *b*, and is held to the frame by bolts *c c* passing through said slot. The sides of said draw-bar are wrought into racks I, which gear with the pinions for the application of the brakes. By this arrangement the draw-bars when under a draft or traction have no other effect except to draw the cars; but when the locomotive is slowed or its brakes applied, the effect of the concussion or impact of all of the draw-bars of the train is to turn the pinions, wind up the cords, and to simultaneously apply all of the brakes of the train.

To provide for the backing of the train and prevent the application of the brakes, I employ a set of cams or locking-levers, J, which when brought against the rack of the draw-bar prevent the same from being driven back. To said cam I attach a connecting rod or link, *d*, and fasten the latter to the crank of a vertical shaft, K, carrying a hand-wheel, L, by means of which the cam may be applied or removed at will, the said vertical shaft being provided with a ratchet-wheel and pawl, *f*, to maintain the draw-bar in its locked position. In stopping upon a grade, moreover, the cars are liable to start on the retrograde motion from their own gravity upon the incline, the weight of the cars pulling out the draw-bars after the first impact, and thereby releasing the brakes. To provide for this difficulty, I attach to one or all of the windlass-shafts a ratchet-wheel, M, and a spring-seated pawl, N, provided with a suitable handle whereby the brakes are locked after they are applied.

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

1. The slotted draw-bar H, having racks I, in combination with the windlass-shaft F, pinion G, the brake-lever C, and the connecting cord or chain, substantially as and for the purpose set forth.

2. The combination, with the draw-bar H, of the locking-cams J, the connecting-link *d*, the vertical shaft K provided with a hand-wheel, and the ratchet and pawl *f*, substantially as and for the purpose set forth.

F. L. KIRTLEY.

Witnesses:
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CHAS. A. PETTIT.