E. J. HOCKADAY.

Car-Brakes.

No. 153,567. Patented July 28, 1874.

Fig: 1.

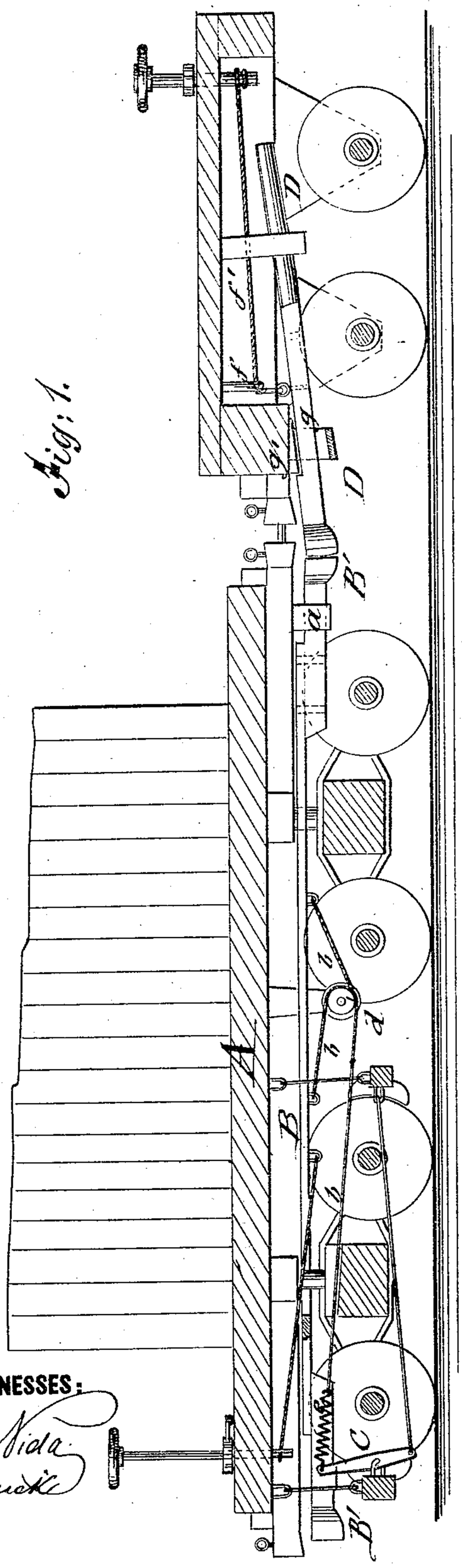
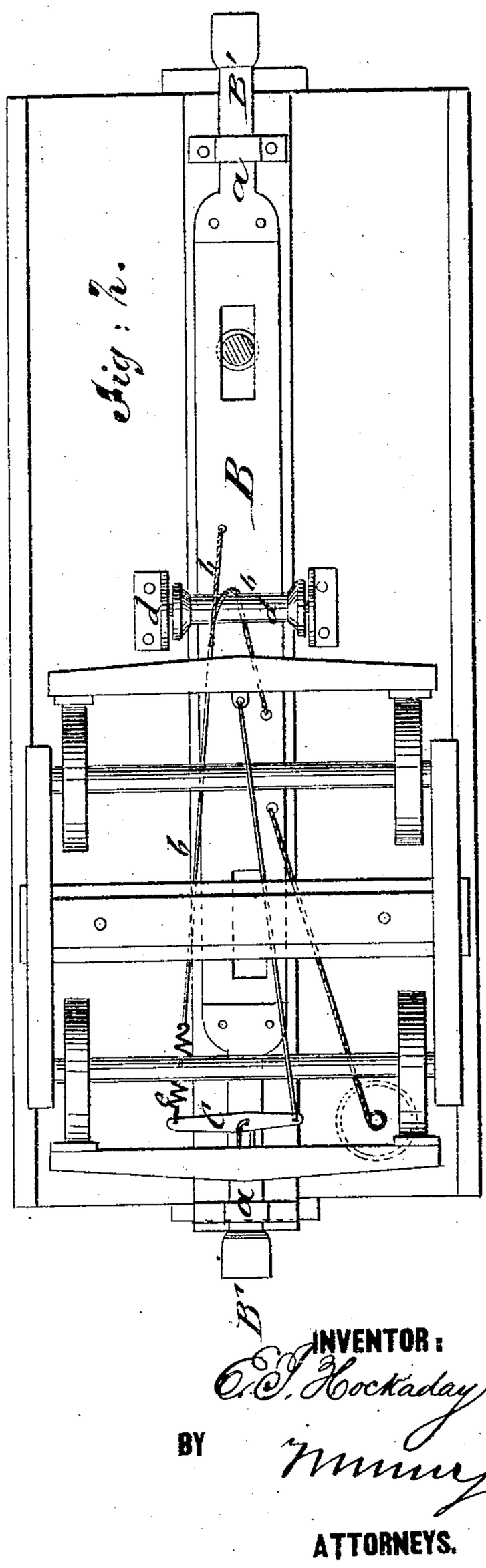


Fig: 2.



WITNESSES:

Chas. Nida
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UNITED STATES PATENT OFFICE.

EDMUND I. HOCKADAY, OF PLEASANT HILL, MISSOURI.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **153,567**, dated July 28, 1874; application filed May 29, 1874.

To all whom it may concern:

Be it known that I, EDMUND I. HOCKADAY, of Pleasant Hill, Cass county, Missouri, have invented a new and Improved Car-Brake, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of a railroad-car and tender with my improved car-brake attached, and Fig. 2 is a bottom view of the same.

Similar letters of reference indicate corresponding parts.

The invention is an improvement in the class of brakes which are so constructed and applied to railway-cars that the whole series may be simultaneously operated by means under the control of the engineer. The improvement relates to the construction and arrangement of parts, as hereinafter described generally, and specifically indicated in the claim.

In the drawing, A represents the bottom of frame of a railroad-car; B, the sliding bar, applied to the under side of bottom A, and guided in suitable stirrups or bands *a*, and provided at both ends with buffer-heads B′, its whole length being somewhat less than the distance from draw-head to draw-head in order to allow for the compression of the draw-head springs. The sliding bar B is constructed to correspond with the special kind of car to which it is applied, and may be made either bent or straight at the ends in front of the trucks, or the broader head parts may be separately hung and connected to the main slide-bar by suitable chains and pulley attachments. The sliding bar B connects with the brake mechanism by a chain, *b*, with double end parts, which are attached to the bar B at both sides and equal distance from a pulley, *d*, hung suitably below the same, so that the brake may be operated by pulling the sliding bar in either direction. Chain *a* is attached to the brake-lever C by a coiled spring, *e*, which, by its elasticity, distributes the pressure upon the bars, thus obviating slight inequalities in the slack of different cars. The sliding bar is furthermore connected, by a chain, to the common hand-wheel and shaft mechanism, for braking the car independently in the usual manner, for switching, and other purposes. The tender is provided under the rear draw-head with a short sliding buffer-rod, D, which is operated by means of a pulley and chain, *f′*, from a brake-shaft and wheel at the forward end of the tender. The buffer-rod D is guided under suitable inclination back of the rear truck of the tender, and projects, when in regular position, beyond the draw-head far enough to take up nearly the entire slack space between the tender and first car. An inclined groove or notch, *g*, at the upper part of buffer-rod D, serves for being placed firmly over a downward-projecting inclined shoulder or seat, *g′*, of the bottom frame of the tender, so that the buffer-rod is firmly held thereon in the required position for the braking action.

For throwing the buffer-rod out of position, the pressure of the brake-wheel is released, so that the rod is dropped down from the shoulder or seat, and slides out of the way without engaging the connecting sliding bars of the cars.

The operation of the brake is as follows: The buffer-rod is required to be always in position on the shoulder or seat of the tender-frame when the train is running in forward direction, so that its head projects the requisite distance beyond the rear draw-head. On the discovery of sudden danger the engine is reversed, or its motion is retarded, so that the momentum of each car carries it forward the full length of its slack, and produces the action of the buffer-rod of the tender on the sliding bar and brake of the first car which carries back that of the second, and so on till the whole train is acted upon by the brakes in a perfectly automatic manner.

In order to release the brakes and back the train, the engine is slightly moved forward, the brake-wheel connecting-chain is released, so that the buffer-rod drops out of position and discontinues its action on the sliding bar. The dropping of the buffer-rod is, however, only required for backing the train. During the forward motion the rod is required to be in position on the shoulder for producing the automatic action of the brakes in case of danger immediately on the backing of the engine.

I do not claim the application of sliding bars to railway-cars to operate the brakes thereof by the action of one bar on another; but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the fixed roller *d*, cord or chain *b*, spring *e*, lever C, and brake-beams with the sliding bar B B′, applied to the bottom of the car, all constructed to operate as shown and described.

2. The combination, with the sliding bar B B′, fixed roller *d*, cord or chain *b*, brake lever and beams, of the inclined sliding buffer D, having notch *g*, the projection *g′* on the tender, and the lever chain and pulley, all to operate as set forth.

EDMUND I. HOCKADAY.

Witnesses:

BARTON WHERRITT,

WILLIAM M. MILLS.