E. S. JONES.

CAR-BRAKE.

No. 191,594. Patented June 5. 1877.

Fig: 1.

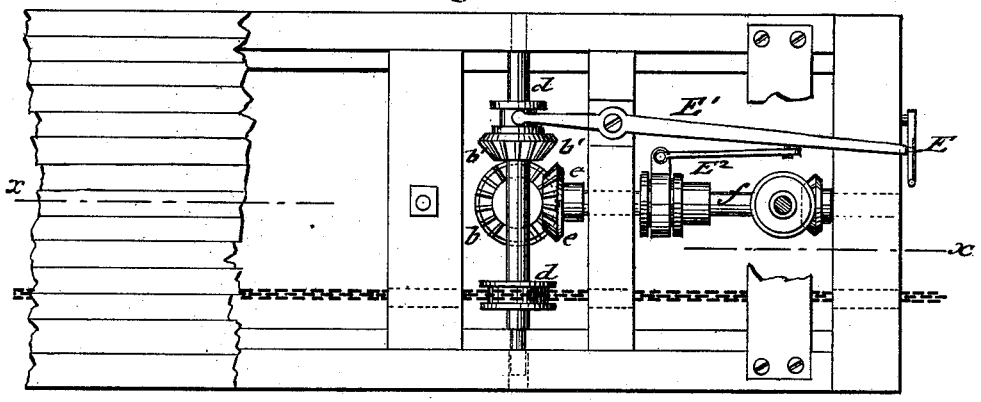


Fig: 2.

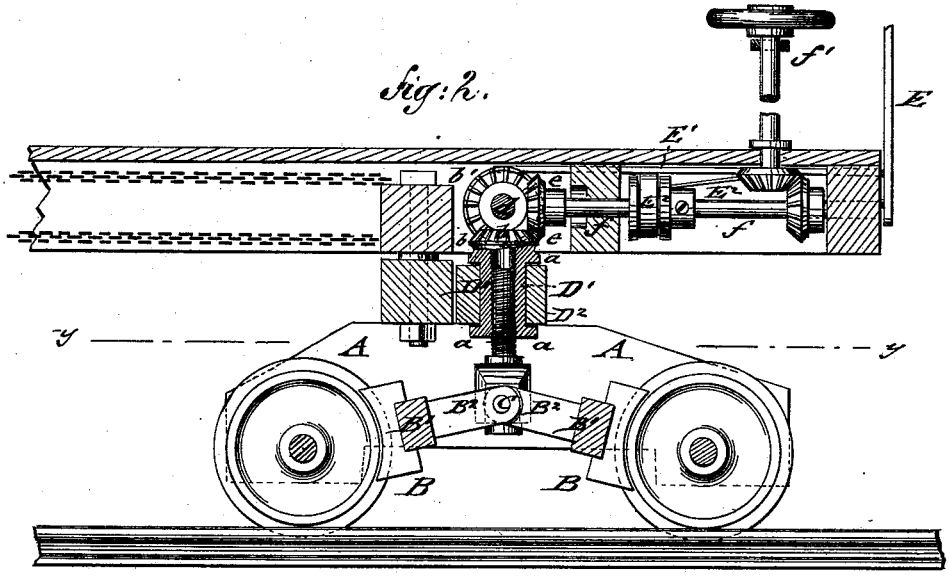
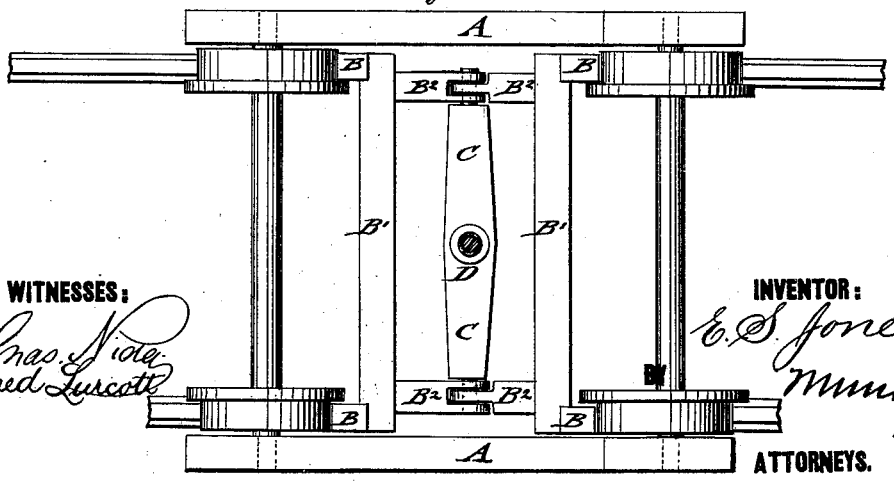


Fig: 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD SPENCER JONES, OF PULASKI, TENNESSEE.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **191,594**, dated June 5, 1877; application filed April 9, 1877.

To all whom it may concern:

Be it known that I, EDWARD S. JONES, of Pulaski, in the county of Giles and State of Tennessee, have invented a new and Improved Car-Brake, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a plan view, and Fig. 2 a vertical longitudinal section, of my improved car-brake on line *x x*, Fig. 1, and Fig. 3 is a horizontal section of the same on line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved brake for railroad-cars of all kinds that may be operated by hand or steam power, so as to check the speed and stop the train in quick and reliable manner; and the invention consists of brake-shoes which are applied by pivoted lever-arms to a cross-piece that is raised or lowered by a screw-bolt and nut and suitable gearing, either by an endless-chain connection with the locomotive, or by shaft-and-gear connection with a hand-wheel at end of car.

A suitable lever arrangement throws the brake mechanism either into gear with the hand-wheel or with the gear worked from the locomotive.

In the drawing, A represents a car-truck on which the body or frame of the car is supported in the customary manner. The brake-shoes B are applied to the wheels of the truck, and attached to cross-pieces B^1 that are hung by chains or otherwise to the car-frame, and pivoted by lever-arms B^2 to a cross-piece, C, arranged intermediately between the truck-wheels. An upright screw-post, D, is secured to the center of the cross-piece C, and operated by a nut, D^1, that is seated by top and bottom flanges *a* on the supporting cross-piece D^2 of the truck-frame, the nut being revolved in either direction by means of a bevel-wheel, *b*, secured to its top, and by a suitable gear-connection either with the locomotive or hand brake-wheel, so as to either lower or raise the screw-post, and thereby apply or release the brake-shoes to or from the wheels.

When the brakes are to be worked from the locomotive, the bevel-wheel *b* is thrown into gear with a bevel-wheel, *b'*, of a lateral sliding shaft, *d*, that is turned into either direction by a spur-wheel, and an endless chain, running in suitable guide-holes and pulleys from car to car to the locomotive, where it is passed around a drum worked by suitable steam mechanism when the steam is put on, so as to operate all the brakes at once and stop thereby the train.

The actuating-chain is coupled from car to car, passing from the operating drum or pulley of the locomotive below each car, and around the spur or sprocket wheel of the shaft *d*, and over a pulley of the last car, and forward again over suitable guide-pulleys of the cars to the locomotive, so as to form an endless chain that may be turned in either direction, revolving shaft *d* and nut D^1, and applying or releasing thereby the brakes in quick and powerful manner.

When the brakes are to be applied by hand, the bevel-wheel *b* of nut D^1 is connected with the bevel-wheel *e* of a longitudinal shaft, *f*, that is turned by bevel-gear connection with the upright shaft of the hand-wheel *f'* on the platform or top of car, as shown in Fig. 2, so that when the hand-wheel, with its customary ratchet-and-pawl mechanism, is turned in one direction, the brakes are applied in analogous manner, as before, and taken off by releasing the pawl on turn of wheel.

For the purpose of admitting the use of either locomotive or hand power for working the brakes, the nut D^1 has to be thrown into gear either with the lateral shaft *d*, actuated by the endless chain, or with the longitudinal shaft *f*, worked by the hand-wheel. This is accomplished by a hand-lever mechanism, E, that is worked from the platform or top of the car, and connected by a fulcrumed lever, E^1, with a collar of shaft *d*, and by a link-rod and band, E^2, with a collar of the longitudinal shaft *f*. By turning the lever E outwardly, the bevel-wheel of the lateral shaft is thrown into gear with the wheel of the nut D^1, and the bevel-wheel of the longitudinal shaft withdrawn from the wheel of the nut. By swinging the lever E inwardly the hand-wheel shaft is thrown into gear, and the locomotive chain-shaft thrown out of gear, as will be readily seen in Figs. 1 and 2. The brake-mechanism is thus capable of being worked by either

steam or hand power, as required by the service, and forms thereby a simple, powerful, and effective brake construction for rolling-stock.

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

1. The combination of the brake-shoes B, bar B^1, pivoted to a cross-piece, C, by means of arms B^2, with upright screw-post D, screw-nut D^1, and the endless chain for connecting with the locomotive, substantially as and for the purpose set forth.

2. The combination of the lever-acted brake-shoes B attached to a brake-bar, which is pivoted by arms B^2 to a cross-piece, C, having upright screw-post D, and screw-nut D^1, substantially as and for the purpose described.

3. The lever E and rod E^2, the bevel-gear b' sliding on shaft *d*, the collar on sliding shaft *f*, the gear *e*, and gear *b*, all combined as shown and described, for the purpose specified.

EDWARD SPENCER JONES.

Witnesses:

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W. F. BALLENTINE.