

(No Model.)

W. S. JOBES.
BRAKE FOR VEHICLES.

No. 424,677.

Patented Apr. 1, 1890.

Fig. 1

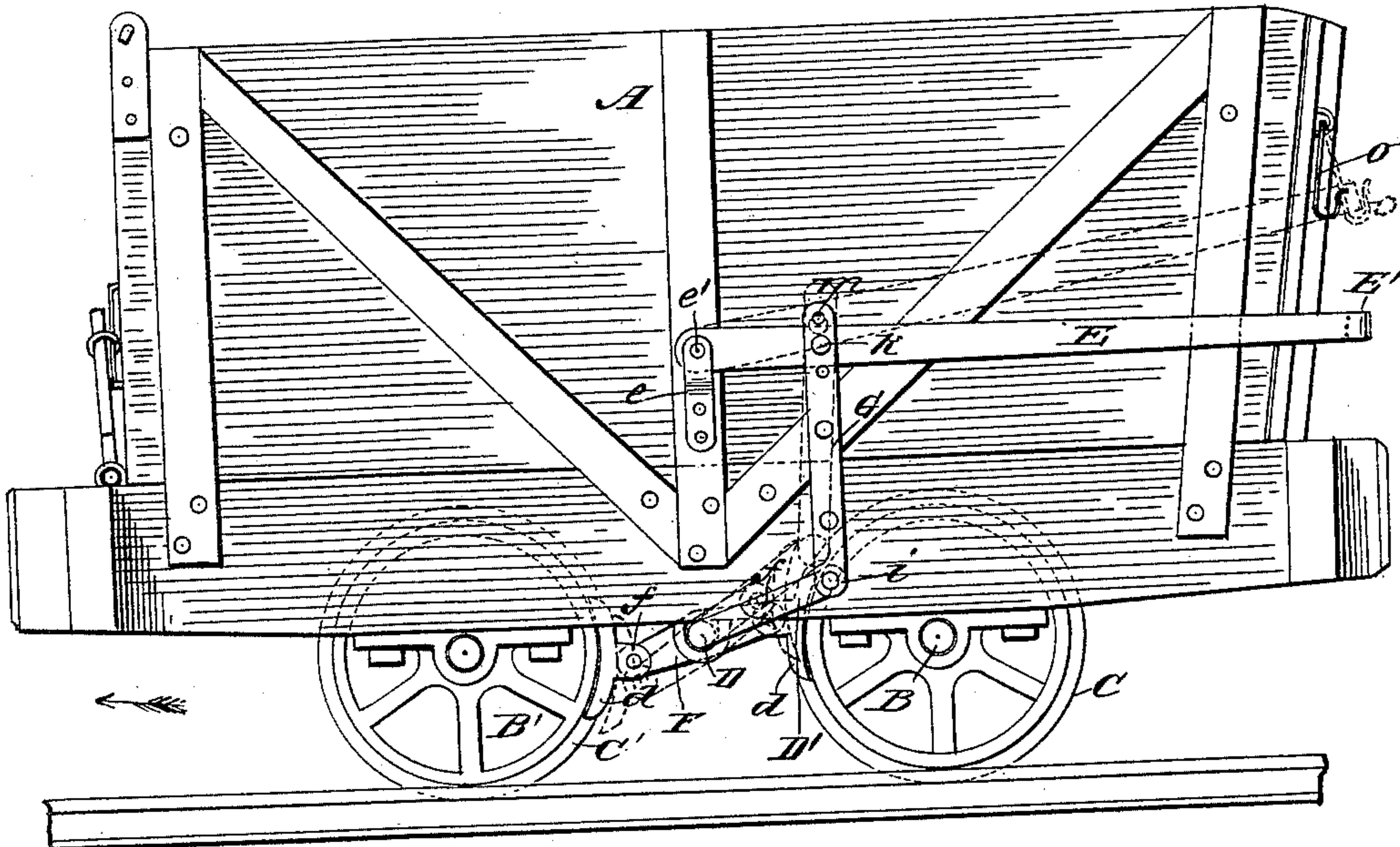
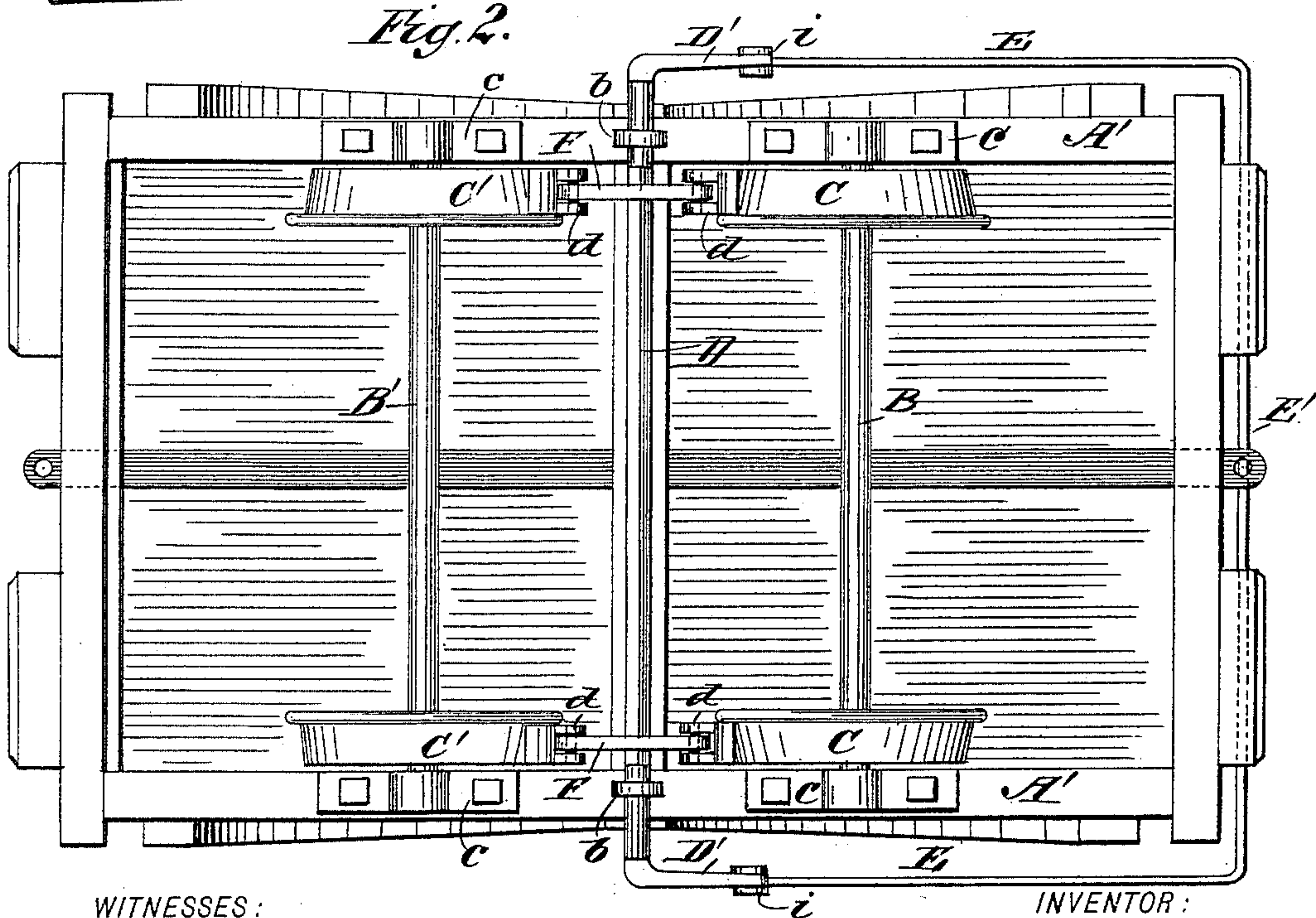


Fig. 2.



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BRAKE FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 424,677, dated April 1, 1890.

Application filed September 26, 1889. Serial No. 325,153. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. JOBES, a resident of West Leisenring, in the county of Fayette and State of Pennsylvania, have invented a new and useful Improvement in Brakes for Cars or Wagons, of which the following is a full, clear, and exact description.

My invention relates to an improvement in brakes for cars or wagons, and particularly to a type of cars or heavy wagons used in coal or ore mines, the object being to provide such vehicles with simple, strong, and reliable brake mechanism which is adapted to be operated manually from the sides or one end of the car or wagon, as may be necessary.

With this object in view my invention consists in the construction and combination of parts, as hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of a coal or ore car, technically known as a "wagon," having the improved brake mechanism in position, the brakes being shown as "set" to hold the car by the full lines, "off brakes" being represented in dotted lines and Fig. 2 is a bottom plan view of the car and attached brakes, the latter being set to hold the car.

A represents the body of a four-wheeled car to which the brake mechanism is applied. On the under surface of its frame-timbers A' the journal ends of the axles B B' are revolvably secured by boxes c, the wheels C C' being affixed to the axles inside of these longitudinal frame-timbers, as shown in Fig. 2. The pair of wheels C on the axle B are located a suitable distance from the wheels C' on the other axle to afford room between their peripheries for the introduction of the brakes.

Centrally between the "treads" of the two pairs of wheels a transverse rock-shaft D is supported by the looped bolts b, which engage journals formed on the shaft and permit it to rock, while they retain it secured below and to the longitudinal timbers A'.

On each end of the rock-shaft D a crank-arm D' is formed or secured. These arms lie in the same plane and are of equal length.

Upon the rock shaft D, inside of its supports b, two cross-bars are mounted. These are perforated near their longitudinal centers for attachment to the rock-shaft, as shown in Fig. 2, thus affording four arms F of equal length, which project in pairs oppositely and are pivoted at their ends f to the brake-shoes d, holding said shoes in proper position to engage the treads of the four wheels C C'.

A bail-shaped brake-lever E E' is pivoted by the terminal ends e' of its parallel limbs E to the sides of the car-body at opposite points, bracket-plates e being provided to aid in sustaining the ends of the limbs and permit them to be vibrated. The transverse bar E', connecting the limbs E, and preferably made integral with them, is located across the end of the car-body outside of the same in convenient position for access thereto when the brake-shoes are to be adjusted either from the end of the car or the sides of the same.

The limbs E of the bail-shaped brake-lever are respectively connected to the corresponding rock-shaft arms D' by the duplicate links G, that are pivoted by their lower ends to the crank-arm ends, as at i, their upper extremities being similarly secured to the limbs E at such a distance from the terminal ends of said limbs as to afford a nearly upright position to the links when the brake-shoes d are in contact with the treads of the wheels C.

Spaced perforations m are formed in the links G near their upper ends to allow the points of pivotal connection of the links and limbs to be changed, and thus afford means for adjustment of the bail-lever when the shoes d become worn and the cross-bar E' of the lever dropped too low for effective use.

The length of the shoe-supporting arms F is so proportioned to the thickness of shoes d and space between the treads or faces of the wheels C C' that when the shoes are set in contact with these treads the arms will be in the same diagonal plane, so that the shoes which engage opposite wheel-treads on the same side of the car will be wedged forcibly against the same by a downward movement of the cross-bar E', a lifting of said bar instantly releasing the shoes.

A hook o is provided that is fastened by a

staple to the end of the car in proper position to engage the cross-bar E' and hold the brake-shoes away from the wheels.

Construction of the parts as stated affords
 5 powerful compound levers on each side of the car, which can be moved simultaneously to set or release the brake-shoes by the bar E'.
 The location of the shoes and their points of pivotal connection with the arms F above
 10 and below the centers of the axles B B' produce toggle-joints at these points *f*, so that a slight exertion of force upon the cross-bar E' to depress it will force the shoes in opposite directions and wedge them tightly against
 15 the wheels.

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

1. The combination, with a car or wagon
 20 body and revoluble axles having wheels secured thereon, of a bail-shaped lever pivoted by the ends of its limbs to the sides of the body, a rock-shaft, two crank-arms secured to the ends of the rock-shaft, inclined shoe-
 25 supporting arms affixed to the ends of rock-shaft, shoes pivoted to the ends of these arms, and links which connect the crank-arms to the limbs of the bail-shaped lever, substantially as shown and described.

30 2. The combination, with a car or wagon body, a bail-shaped lever, two bracket-plates secured to the body rigidly and pivotally sup-

porting the lever ends, two axles revolubly secured to the timbers of the body, and two wheels rigidly mounted on each axle, the pairs 35 of wheels being spaced apart to receive brake mechanism between them, of a transverse rock-shaft, two crank-arms attached to the ends of the rock-shaft, shoe-supporting arms secured on the rock-shaft in the same diagonal plane, four brake-shoes jointed to the ends 40 of the shoe-supporting arms, and two links which loosely connect the crank-arms with the limbs of the bail-shaped lever, substantially as set forth. 45

3. In a car or wagon brake, the combination, with a body and wheels secured on axles adapted to revolve on the body, of a transverse rock-shaft located between the wheels, shoe-supporting arms mounted on the rock- 50 shaft and lying in the same inclined plane, shoes jointed to these arms, crank-arms secured to the ends of the rock-shaft, side levers pivoted at their inner ends to the body, links G, pivoted at their upper and lower 55 ends to the side levers and crank-arms, respectively, and provided with the adjusting-holes *m*, whereby wear of the jointed shoes may be compensated for, all substantially as shown and described.

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Witnesses:

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 J. C. WORK.