

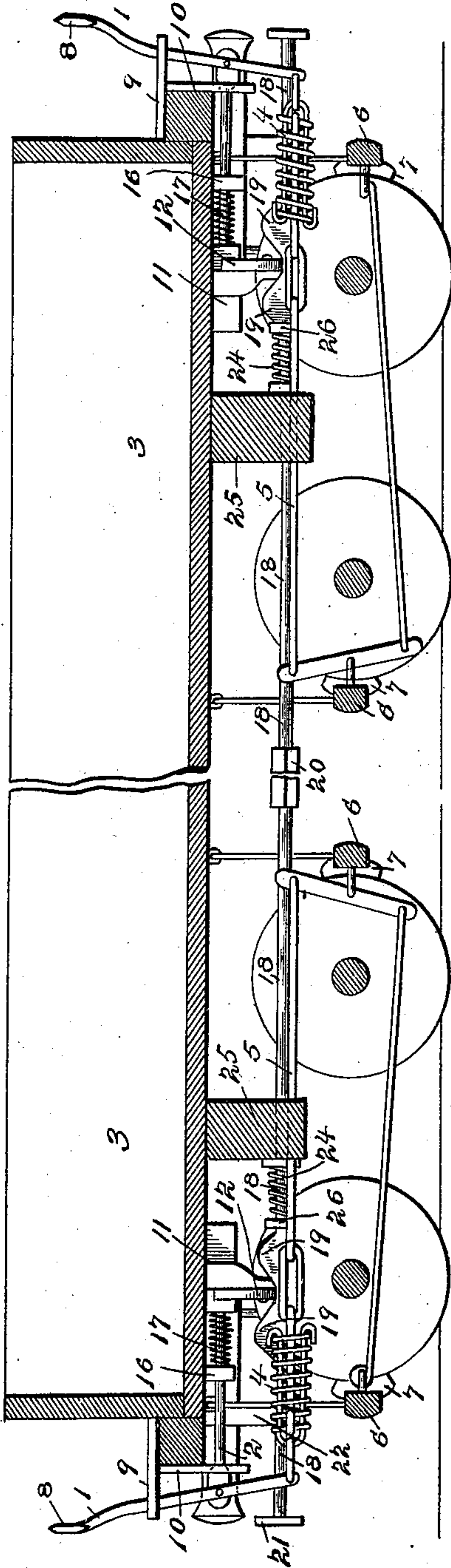
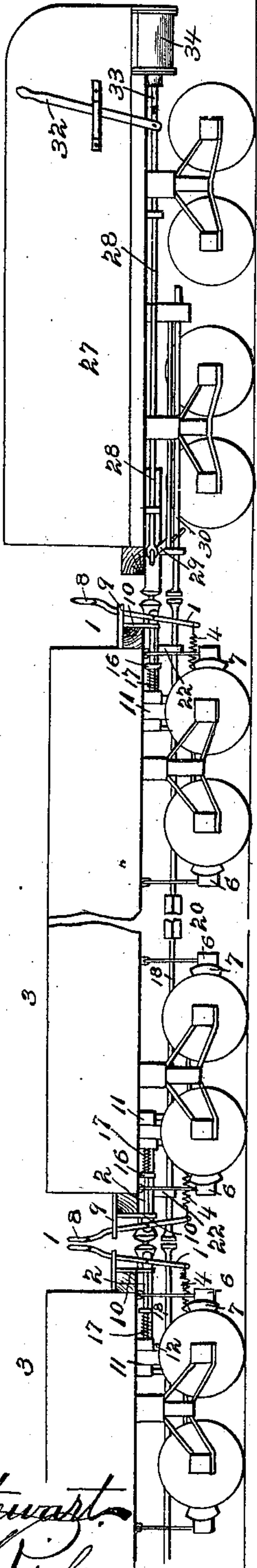
(No Model.)

2 Sheets—Sheet 1.

W. B. ANDERSON & G. L. DAUGHERTY.
CAR BRAKE.

No. 504,313.

Patented Sept. 5, 1893.



Witnesses

E. H. Stewart
N. P. Riley

Inventors

William B. Anderson

By their Attorneys, Geo. L. Daugherty,

C. A. Snow & Co

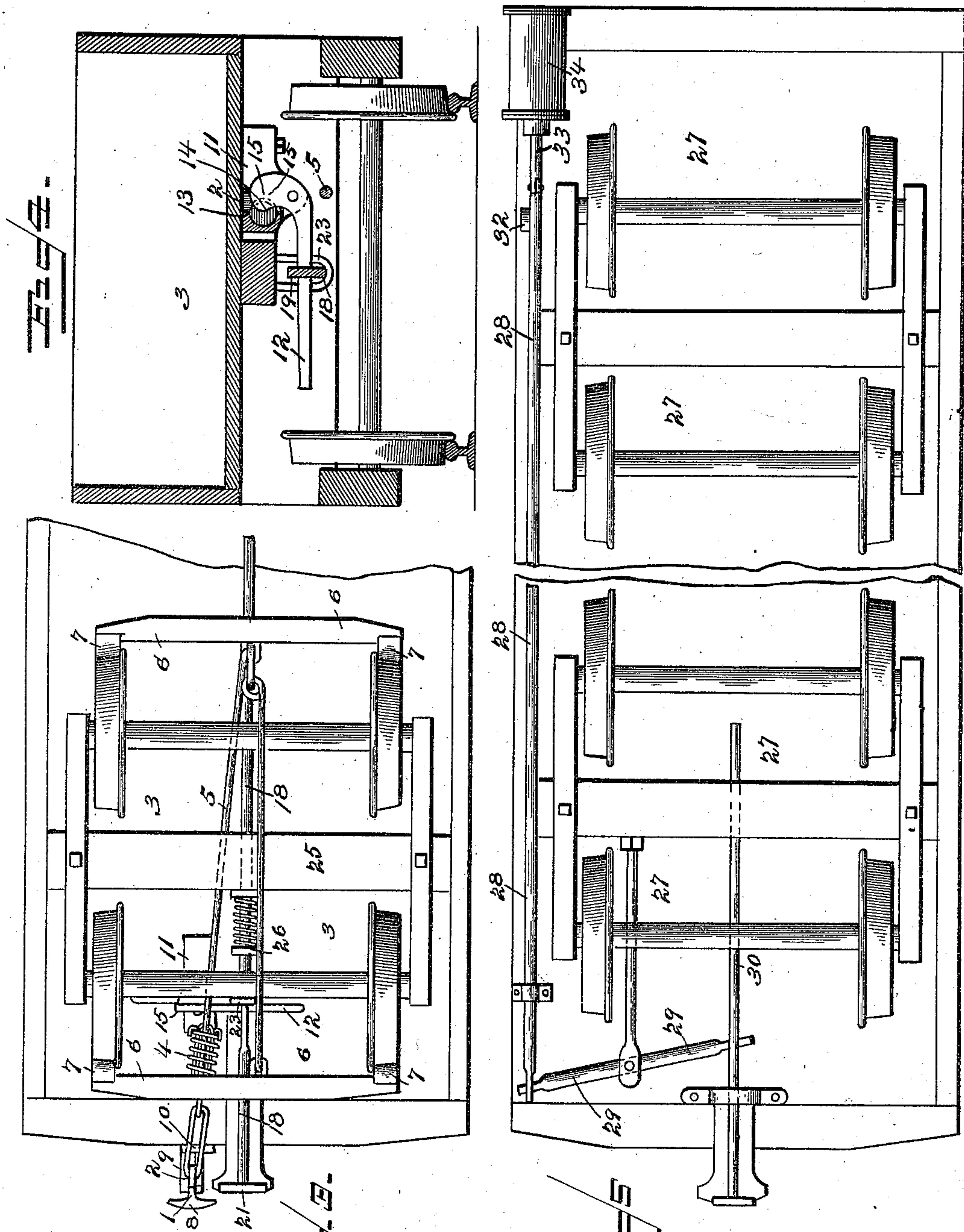
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UNITED STATES PATENT OFFICE.

WILLIAM B. ANDERSON AND GEORGE L. DAUGHERTY, OF ELIZABETHTOWN,
KENTUCKY, ASSIGNORS OF ONE-THIRD TO R. P. DAUGHERTY, OF SAME
PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 504,313, dated September 5, 1893.

Application filed March 7, 1893. Serial No. 464,943. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM B. ANDERSON and GEORGE L. DAUGHERTY, citizens of the United States, residing at Elizabethtown, in the county of Hardin and State of Kentucky, have invented a new and useful Brake, of which the following is a specification.

The invention relates to improvements in brakes.

The object of the present invention is to provide an automatic brake for railroad cars, adapted to be applied by the latter on a down grade in crowding on one another, and capable of being readily thrown out of such operation and of preventing such operation when it is desired to back the cars.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a side elevation of a portion of a train of cars provided with an automatic brake constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view. Fig. 3 is a reverse plan view of one end of a car. Fig. 4 is a transverse sectional view. Fig. 5 is a reverse plan view of the tender.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

The improvements hereinafter specifically described are connected with and applied to the ordinary construction of brake rod which is usually connected by a chain with a vertical shaft having a hand wheel at the upper end, the transverse brake-bars, which carry the brake shoes, and the levers and connections being of the ordinary construction.

1 designates a brake operating lever fulcrumed on the outer end of a bar 2 and extending upward from beneath a car 3 and having its lower end connected by a spiral spring 4 with a brake-rod 5, which is connected in the usual manner with brake-bars 6, carrying shoes 7. The upper portion of the lever 1 is bent outward and provided with an enlarged head 8, which is adapted to

engage a similar head of an operating lever on another car, whereby in running down grade when the cars crowd together and forward, the upper ends of the levers will be forced inward, thereby drawing on the brake rods 5 and applying the brakes. The operating lever has its upper portion arranged in an opening of a guide 9, in order to insure the operating levers of adjacent cars properly engaging each other.

The fulcrum bar 2 is arranged at its front end in a hanger plate 10 and has its rear portion mounted in a casing 11 and normally engaged by a gravity latch lever 12, which is arranged to close the way 13 of the casing to prevent the fulcrum bar 2 moving rearward; but which is adapted to disengage the fulcrum bar to allow the latter to move inwardly to release the brake and relieve the wheels of the brake-shoes instantly.

The casing is provided with an opening 14 communicating with the way 13; the gravity latch lever 12 is disposed transversely of the car and is fulcrumed on the casing; and it has its end 15 bent upward and arranged at the opening 14. The lever 12 is fulcrumed near its turned up end 15, and the weight of the longer arm or portion is sufficient to hold the end 15 in the opening 14, to prevent the fulcrum bar 2 moving inward and to form a rigid fulcrum for the operating lever 1. The fulcrum bar has disposed on it between a flange or stop 16 and the front end of the casing 11 a spiral spring 17, adapted to throw the fulcrum bar outward after the same has been moved inward in releasing the brake, to cause the fulcrum bar to be automatically locked rigidly in position for an application of the brake, as soon as the operating lever is relieved of pressure. The long arm of the gravity latch lever is raised to release the brake by a push-rod 18 which is provided on its upper side with oppositely disposed wedge shaped lugs 19 arranged on opposite sides of the lever 12, whereby when the push-rod section is moved in either direction one of the lugs will engage the lever 12 and release the fulcrum bar.

A push-rod is arranged at each end of a car, but instead of employing two push-rod sec-

tions to a car a continuous rod may be employed. The inner ends of the push-rods are connected by a turn buckle 20, and the outer end of each is provided with a circular head 5 21 adapted to fit against a similar head of the push-rod of another car, whereby when a train of cars are coupled together the push-rods will practically form one continuous rod and will require when the cars are crowded 10 together but little movement to actuate all of the push-rods. Each push-rod section is suspended in a hanger 22 and is prevented turning by a vertical guide 23 to maintain the lugs in operative position, and the guide 15 is arranged adjacent to the lugs at which point the rod is preferably flattened.

The guide rods of each car are maintained in proper position by spiral springs 24, disposed between transverse beams or bolsters 20 25 and shoulders or stops 26. When cars are of such construction that the push-rods cannot be arranged beneath them, they may be located at the sides; and on the tender 27 is mounted a main push-rod 28 which has its rear end connected by a lever 29 with a push-rod section 30. The front end of the main push-rod 28 may be operated by a hand lever 32 or a piston 33 of a cylinder 34 designed to be controlled by suitable means on the en- 30 gine of a train.

In applying the improvements herein described to a car the vertical shaft for operating the brake and a chain thereof need not be removed, to enable the brake to be applied 35 by the ordinary means. The spiral spring 4 is of sufficient strength to permit the brake to be readily applied, but in case the strain or pressure exerted by loaded cars should be of such a nature as would break the operat- 40 ing levers, the springs would give sufficiently to prevent such breakage. When the cars of a train traveling down a steep incline crowd forward on one another the brakes will be applied; but, as soon as the engine draws on 45 any car it will move the same forward and carry its operating lever away from the adjacent one, thereby releasing the wheels of that car. It will thus be apparent that the cars will be automatically and successively re- 50 lieved of their brakes in starting a train.

The push-rods are designed to prevent the application of the brakes in backing; but if cars be standing on an incline the push-rods may be employed to relieve them of the brakes 55 to start them.

The construction, operation and the advantages of the invention will readily be understood and appreciated by those skilled in the art.

60 Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

65 What we claim is—

1. The combination of a car having a brake provided with a brake rod, an operating lever

mounted on the car and having one end connected with said brake-rod and extending upward and having its upper end arranged to 70 engage a similar operating lever of another car, and means for shifting the fulcrum of the lever, whereby the brake will be released and the lever will be prevented from operating, substantially as described. 75

2. The combination of a car, a brake having a brake-rod, a fulcrum bar mounted on the car and having a longitudinal movement thereon, an operating lever fulcrumed on said bar and connected with the brake rod, a 80 gravity latch lever arranged to engage the fulcrum bar to prevent the same moving inward, and means for disengaging the latch lever from the fulcrum bar, substantially as described. 85

3. The combination of a car, a brake having a brake-rod, a longitudinally movable fulcrum bar mounted on the car, a latch lever arranged to engage the fulcrum bar to lock the same against longitudinal movement; an 90 operating lever fulcrumed on said bar and connected with the brake-rod, and a push-rod having a beveled lug arranged to engage the latch lever to lift the same out of engagement with the fulcrum bar, substantially as 95 described.

4. The combination of a car, a brake having a brake-rod, a longitudinally movable fulcrum bar mounted on the car, a brake operating lever pivoted to the fulcrum bar and 100 connected with the brake rod, a pivoted latch lever arranged to engage the fulcrum bar to lock the same against longitudinal movement, a push rod provided with oppositely disposed beveled lugs arranged at each side 105 of the latch lever whereby when the push-rod is moved in either direction the latch-lever will be lifted out of engagement with the fulcrum bar, substantially as described.

5. The combination of a car, a brake having a brake-rod, a longitudinally movable fulcrum bar mounted on the car, an operating lever pivoted to the fulcrum bar and connected with the brake-rod, a pivoted latch lever arranged to engage the fulcrum bar, a 110 push-rod extending beneath the car and provided with a head to engage the head of a similar push-rod and provided with beveled lugs arranged at each side of the latch lever, 115 substantially as described. 120

6. The combination of a car, a brake having a brake-rod, a movable fulcrum bar mounted on the car, an operating lever pivoted to the fulcrum bar and connected with the brake-rod, a pivoted latch lever arranged to engage 125 the fulcrum bar to hold the same against movement, and a push-rod extending beneath the car and provided at each end with a head to engage a similar head of another push-rod and provided with oppositely disposed beveled lugs arranged on each side of the latch lever, and a spiral spring disposed on the 130 push-rod to return the same to its normal position, substantially as described.

7. The combination of a car, a brake having a brake-rod, a movable fulcrum bar mounted on the car, an operating lever pivoted to the fulcrum bar and connected with the brake-rod, a casing having a way and receiving the inner end of the fulcrum bar and provided with an opening communicating with said way, a pivoted latch lever having one end bent upward and arranged at said opening, and a push-rod for lifting the latch lever out of engagement with the fulcrum bar, substantially as described.

8. The combination with a train of cars, brakes arranged on the cars and having brake-rods, fulcrum bars mounted for movement on the cars, operating levers pivoted to the fulcrum bars and connected with the brake rods and provided with engaging heads, latch levers for holding the fulcrum bars against movement, push-rods extending beneath the cars and provided at the ends of the same with engaging heads and having oppositely beveled lugs for engaging the latch levers, and means for actuating the push-rods, substantially as described.

9. The combination with a push-rod sec-

tion 30 having a head, a main push-rod 28, a lever connecting the rear end of the main push-rod 28 with the push-rod section, and a cylinder having a piston connected with the main push-rod, of a brake having a brake-rod, a longitudinally movable fulcrum bar, an operating lever pivoted to the fulcrum bar and connected with the brake-rod, a pivoted latch lever arranged to engage the fulcrum bar, and a push-rod section adapted to disengage the latch lever and arranged to be engaged by the push-rod section 30, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM B. ANDERSON.
GEORGE L. DAUGHERTY.

Witnesses as to Wm. B. Anderson:

JOHN H. SIGGERS,
BERNICE A. WOOD.

Witnesses as to signature of G. L. Daugherty:

JAMES MONTGOMERY,
G. D. FRANK.