

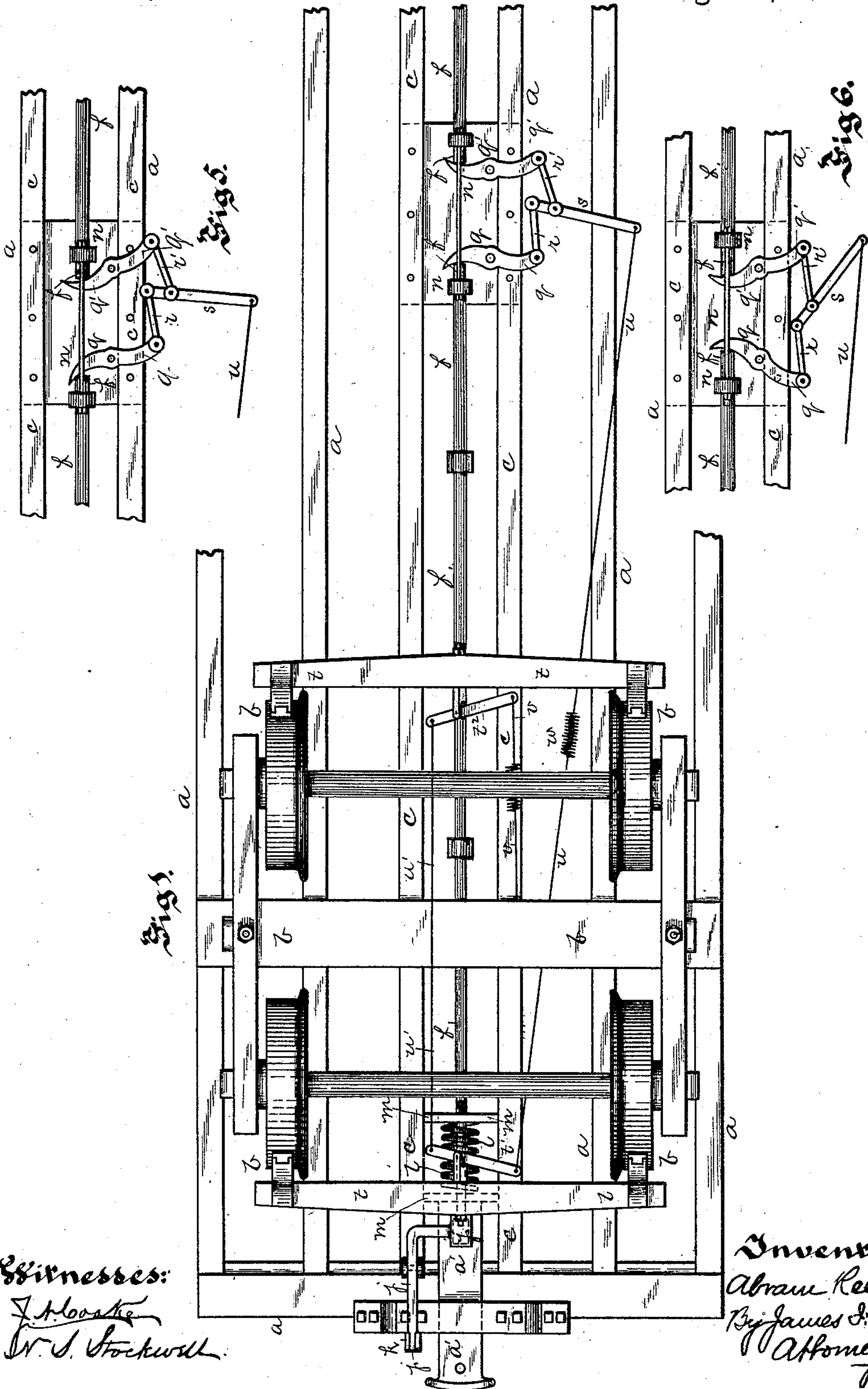
(No Model.)

2 Sheets—Sheet 1.

A. REESE.
CAR BRAKE.

No. 387,695.

Patented Aug. 14, 1888.



Witnesses:

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Inventor.
Abram Reese
By James S. Ray
Attorney

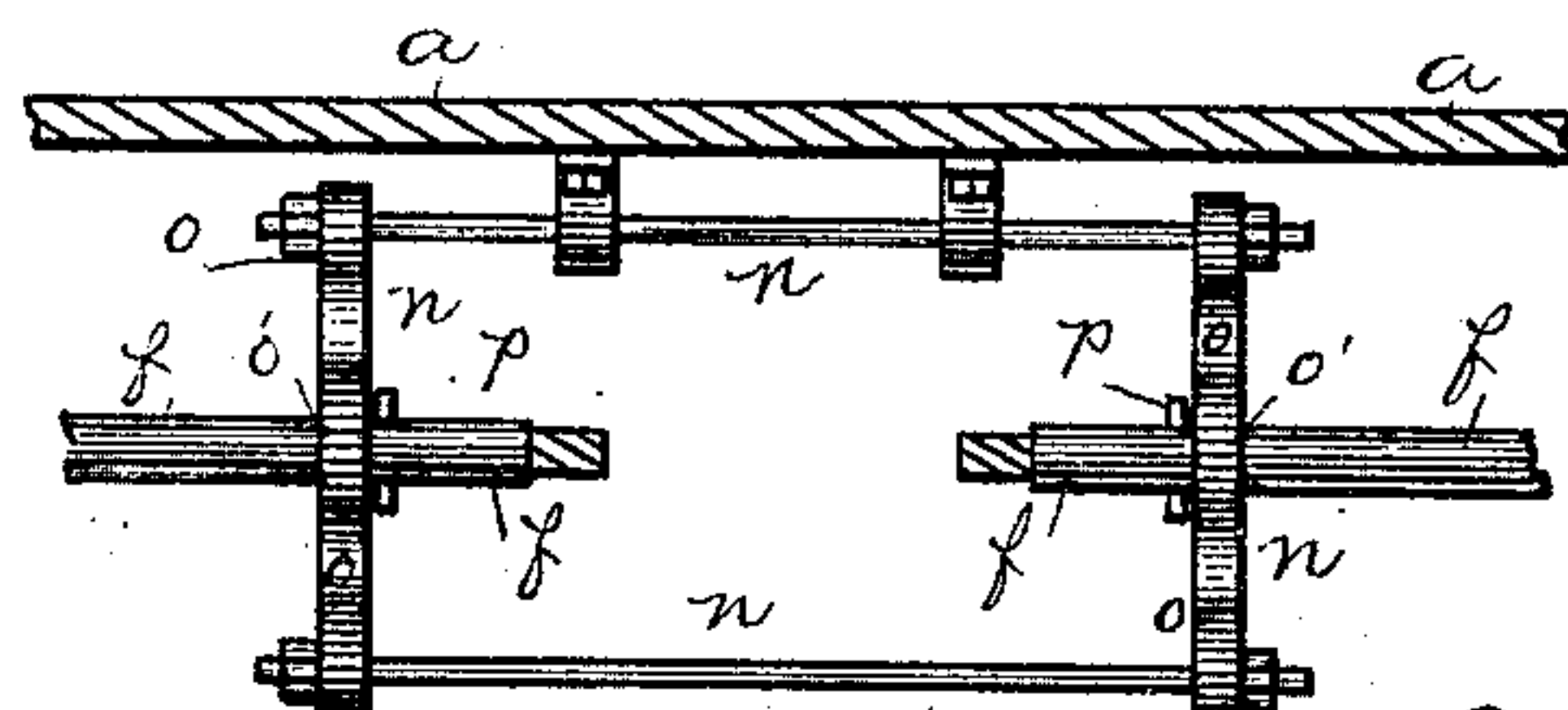
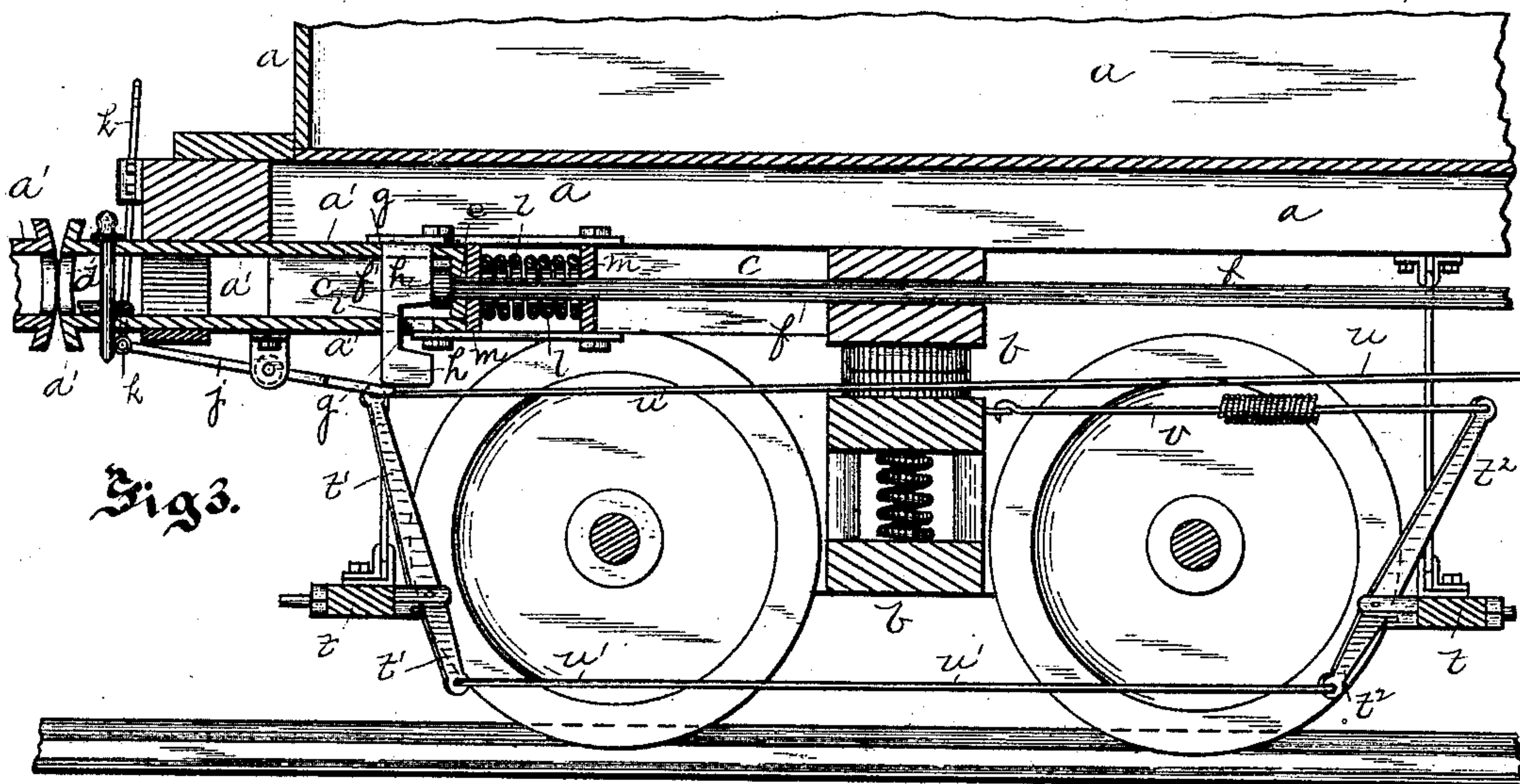
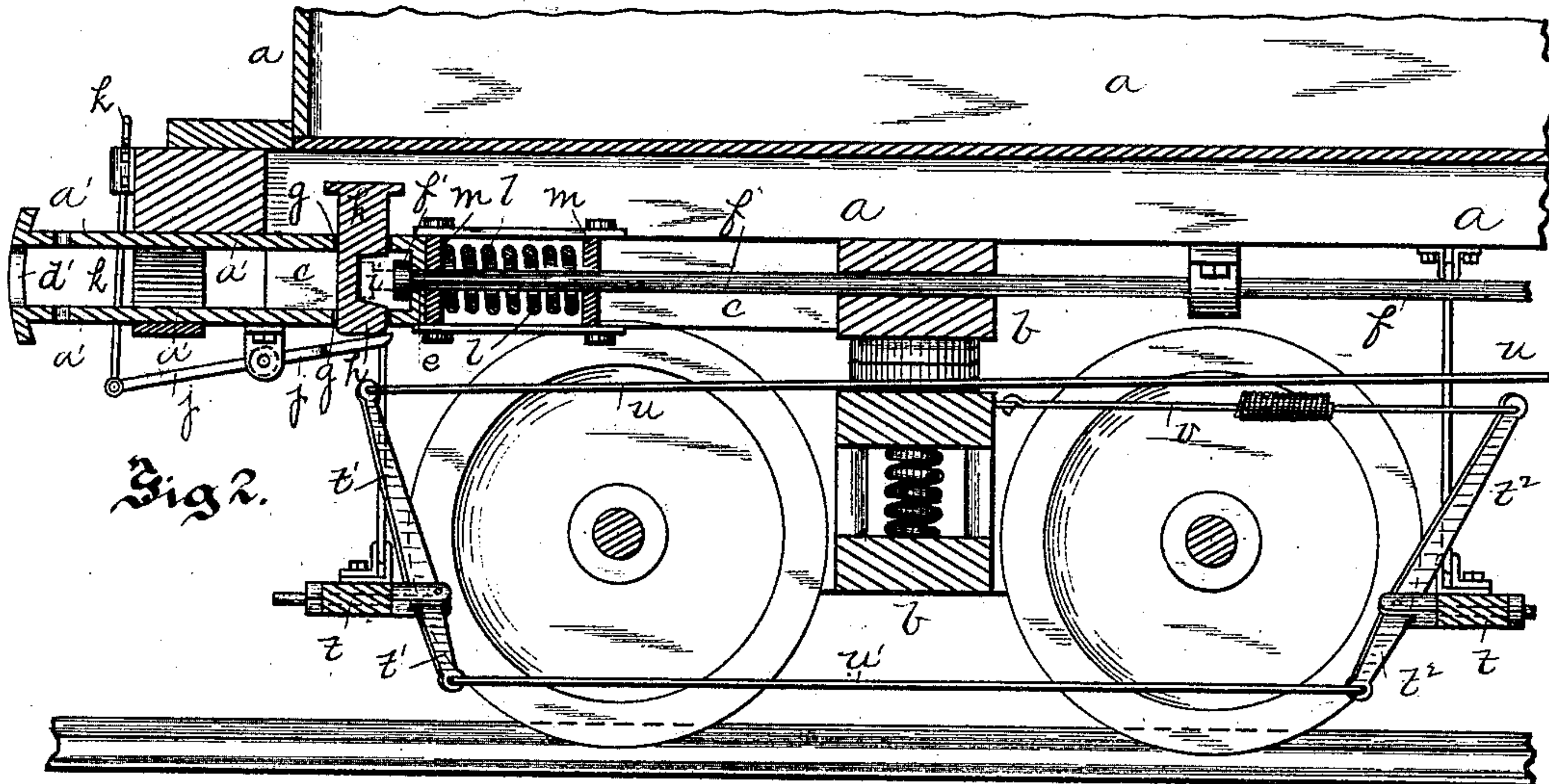
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2 Sheets—Sheet 2.

A. REESE.
CAR BRAKE.

No. 387,695.

Patented Aug. 14, 1888.



Witnesses:
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J. L. Harg.

Inventor.
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UNITED STATES PATENT OFFICE.

ABRAM REESE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE REESE SAFETY BRAKE CO., (LIMITED,) OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 387,695, dated August 14, 1888.

Application filed December 5, 1887. Serial No. 257,054. (No model.)

To all whom it may concern:

Be it known that I, ABRAM REESE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-brakes, and more especially to that class in which the brakes are applied by the impact of the preceding car on the draw-head.

In a patent granted to me July 7, 1885, No. 321,757, I have shown a brake of this class in which a movable plate or filling-block extends up through the draw-head in front of the draw-bar, so that the latter is caused to move back with the draw-head when the plate or block is in its raised position and impinge against a brake-operating lever interposed in the path of said draw-bar and connected to the brakes by suitable mechanism. By raising this block or plate, which extends up into the draw-head, the draw-bar moves with the draw-head and applies the brakes, and by lowering the block the draw-bar is permitted to recede in the draw-head when the latter is forced backward and the brakes are not applied.

My present invention is an improvement on this arrangement, in that a recessed plate or block is employed instead of a plane plate to extend up through the draw-head and bear against the head of the draw-bar, so that by raising this block a small distance the recess in the block is brought opposite the draw-bar head and the latter can recede therein without affecting the brakes, which arrangement is simpler and requires less space for its operation than that shown in the patent above referred to.

My present invention also has for its object to provide a brake of the class heretofore described for a type of cars to which the form of brake-operating mechanism described in the aforesaid patent is inapplicable.

The type of cars to which I refer are those in which each draw-bar extends from the draw-head to the center of the car, where the two draw-bars are connected by a yoke, so that the pulling strain on the front draw-head is transmitted to the rear draw-head, and thus the pulling effected from the rear end of the car. All of the existing brakes which belong to the class

to which my invention pertains—that is, those which are applied by impact on the draw-head—cannot be applied to this type of car, because the pulling of the car on the front draw-head causes the rear draw-head to recede, which in the construction heretofore referred to would cause the brakes to be applied at a time when it was not desired.

My present invention obviates this difficulty; and to these ends it also consists in placing back of the end of each draw-bar and in the path of the same a pivoted lever and connecting these levers by a link to another lever between the same, which lever is connected at its opposite ends by suitable rods to the brake, as will be more fully hereinafter set forth.

My invention also consists of certain other improvements, all of which will be more fully hereinafter set forth.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a plan view of the under side of a portion of a car with my improved brake applied thereto. Fig. 2 is a vertical sectional view through the draw-head, showing the position of the filling-block when the brake is not to be applied. Fig. 3 shows a like view when the parts are in the position for the application of the brakes. Fig. 4 is a detail view showing the manner of connecting the two draw-bars at the center of the cars, and Figs. 5 and 6 show details of the position of the brake-operating levers.

Like letters refer to like parts in each of the figures of the drawings.

The car-body *a* is of the usual or any desired construction, and has the usual truck, *b*, and draft-timbers *c*. Sliding in suitable guides on these draft-timbers or other suitable portion of the car-frame, at each end of the car, is the draw-head *a'*, which is of the usual construction—that is, having the cavity *d'* and the hole *e* at its rear end, through which passes the end of a headed draw-bar, *f*, the latter being rigidly attached to the draw-head at one end of the car, and at the other end is arranged to move or not to move with the draw-head in the following manner: In front of this draw-bar *f* there is cut through the draw-head a

passage, *g*, through which slides a block, *h*, that has a recess, *i*, cut or formed therein, the recess being a little larger than the head *f'* of the draw-bar *f*, and the block being sufficiently
 5 wide to afford a recess of sufficient depth to allow the head *f'* of the draw-bar to recede therein when the draw-head is forced backward. This block *h* preferably operates in a vertical position, and has on its upper ends
 10 lateral wings to support it in its seat in the draw-head. To raise or lower the block *h*, so as to bring the recess *i* opposite or not opposite the head of the draw-bar, and thus prevent or effect the application of the brakes, as herein-
 15 after described, any suitable device may be employed; but I have shown a construction which is well adapted for the purpose. In this arrangement a lever, *j*, is pivoted to a suitable support under the draw-head, which lever
 20 at one end extends under the lower end of the block *h* and at its other end extends out to the end of the car, where it is attached to a suitable operating-rod, *k*, which runs up the side of the car and is held in the desired posi-
 25 tion by a suitable catch. By raising or lowering this rod *k* the block *h* is raised or lowered, as the block rests on the lever or is attached to it. If the block *h* is thus raised, so as to bring the recess *i* opposite the head *f'* of the
 30 draw-bar, then the draw-head can recede without affecting the draw-bar and the brakes which are operated by the latter; but if the block is lowered the thrust of the draw-head is transmitted to the draw-bar, and it moves
 35 with the former, applying the brakes. If desired, the block may be so arranged that the recess is opposite the draw-bar head when the block is lowered instead of when raised, as heretofore described.

40 In the rear of the draw-head *a'* is the usual draw-head spring or springs, *l*, held between suitable follower-plates, *m*, through which passes the draw-bar *f*. When the draw-bar does not extend farther than the rear follower-
 45 plate, as described in my patent, No. 321,757, heretofore referred to, the form of brake-operating lever described in that patent may be employed; but there are some cars in which the draw-bars extend through to the center of
 50 the car-body, where the two bars are united, so as to transmit the pulling strain to the rear end of the car through the draw-head at that end. In this form of car devices, as the rear draw-head is drawn in by the pulling of the
 55 car, it is necessary to provide some system of brake-operating levers which will not be operated by the mere forcing in of one draw-head, as is the case with the form of brake described in my patent heretofore referred to
 60 and others of a like nature. To provide for this class of cars I employ the following arrangement: The draw-bars *f*, which extend through to the center of the car, are usually connected by a yoke, *n*, the bars passing through
 65 openings *o'* in the plates *o* of the yoke, and having pins *p* in the rear of said plates, Fig. 4, so that each draw-bar can move backward

without affecting the yoke or the other draw-bar; but if they are drawn forward the other must move with it. Under the car-body, and
 70 supported by the frame of the same at the point of normal position of the yoke *n*, a lever, *q q'*, is pivoted back of each draw-bar and at a suitable distance apart, so that one end of each lever bears against the end of a draw-
 75 bar, Figs. 1, 5, and 6, and the other end, which forms the longer arm of the lever, is connected by a link, *r r'*, to a brake-operating lever, *s*, the lever *q* being connected by the link *r* to the inner end of the lever *s* and the lever
 80 *q'* by the link *r'* to the lever *s* between the ends of the same and nearer to the inner end. This brake-operating lever *s* is connected at its outer end to the brake-bars in any suitable
 85 manner, that shown in the drawings being well adapted for the purpose. In this arrangement there is fulcrumed on each brake-shoe bar *t* a lever, *t' t''*, the lever *t'* being connected at one end by a rod, *u*, to the outer end of the
 90 brake-lever *s* and at its other end by a rod, *u'*, with one end of the lever *t''*, the other end of the latter being connected to the truck *b* by the rod *v*. As the power which is applied to the levers *q q'* is very great, in order to avoid
 95 too severe a strain on the pivots of these levers and too great grip of the brake-shoes on the wheels I prefer to place a spring, *w*, at some point in the rod or connection *u*, so that the excess of power will be taken up by the
 100 spring.

The operation of the brakes is as follows: When the car is being drawn along, the pull on the front draw-head is transmitted to the rear draw-head by the draw-bars *f* and yokes
 105 *n*, so that the rear draw-head is drawn in, which causes the end of its draw-bar to impinge against the end of the lever *q'*, forcing the latter forward; but as the end of the other draw-bar is also moved forward by the draft on it the lever *q* can also move forward, as
 110 shown in Fig. 5, and hence the force transmitted from the lever *q'* to the brake-operating lever *s* expends itself in drawing forward the lever *q*, and the outer end of the brake-operating lever *s* is not affected, as shown in Fig.
 115 5, as there is no force to resist the movement of the inner end of this lever, and hence there is no fulcrum on which it can turn to operate the brakes. If, however, the block *h* is lowered at the draw-head in which it is placed or
 120 other devices arranged so that the backward movement of the draw-heads, caused by the impact of the preceding and following car thereon, is transmitted to the draw-bars, the latter impinge in their backward movement
 125 against the ends of the levers *q q'*, forcing them toward each other, which draws the inner ends of the brake-operating lever *s* forward and its outer end in the opposite direction, as indicated in Fig. 6, multiplying the amount
 130 of movement of the draw head and bars and effectively applying the brakes. On the other hand, if the block *h* is raised, so that the recess *i* therein is opposite the head *f'* of the

draw-bar, then the draw-head can move back without affecting the former, and the brake-operating apparatus remains passive, as shown in Fig. 1.

5 As there are a large number of cars now in use which belong to the type for which my invention is designed, it supplies a brake which can be applied to these cars with but slight changes in their construction.

10 Having now described my invention, what I claim is—

1. In a car-brake apparatus, the combination of a draw-head, a draw-bar, a movable recessed filling block or plate extending into the draw-head in front of the draw-bar, and suitable connections between said draw-bar and the brakes, substantially as and for the purpose set forth.

2. In a car-brake apparatus, the combination of a draw-head, a draw-bar, a movable recessed filling-block extending into the draw-head in front of said draw-bar, and lever mechanism for moving said filling-block, substantially as and for the purpose set forth.

25 3. In a car-brake apparatus, the combination of the draw-heads and the draw-bars mov-

ing with the same with a lever pivoted in the rear of each draw-bar and having one end in the line of movement of the same and connected at their other end to a single brake-operating lever, substantially as and for the purpose set forth. 30

4. In a car-brake apparatus, the combination of the draw-heads and the draw-bars capable of movement with the same with a lever pivoted with one end in the line of movement of each draw-bar and connected by links at their other end to a brake-operating lever, substantially as and for the purpose set forth. 35

5. In a car-brake apparatus, the combination of the draw-heads *d*, draw-bars *f*, moving with the same, levers *q q'*, pivoted in the rear of said draw-bars, and a brake-operating lever, *s*, connected by links *r r'* to said levers *q q'*, substantially as and for the purpose set forth. 40 45

In testimony whereof I, the said ABRAM REESE, have hereunto set my hand.

ABRAM REESE.

Witnesses:

N. S. STOCKWELL,
ROBT. D. TOTTEN.