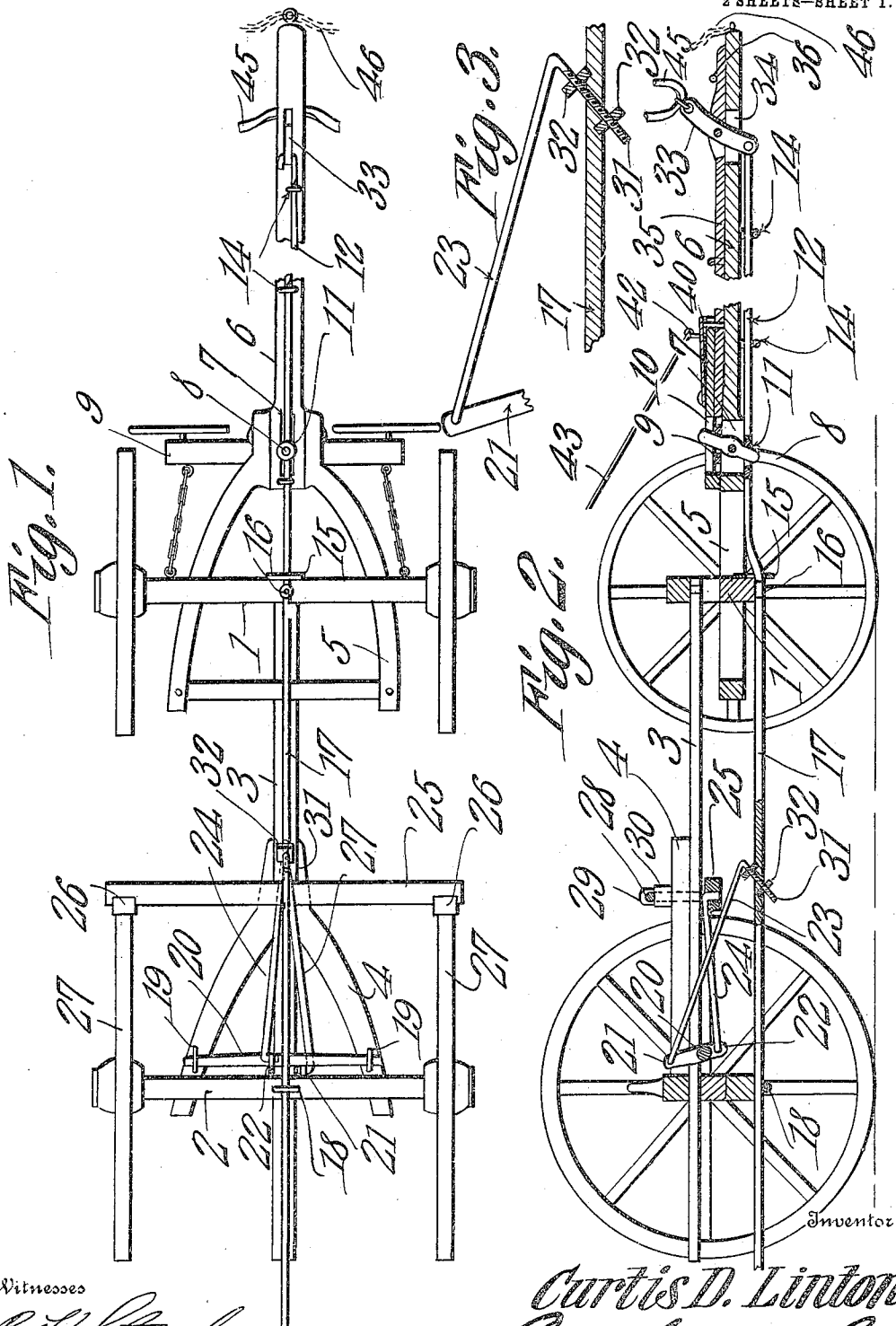


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C. D. LINTON.
WAGON BRAKE.
APPLICATION FILED DEC. 15, 1909.

Patented June 28, 1910.

2 SHEETS—SHEET 1.



Witnesses

E. J. Linton
Mason B. Lawton

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Curtis D. Linton
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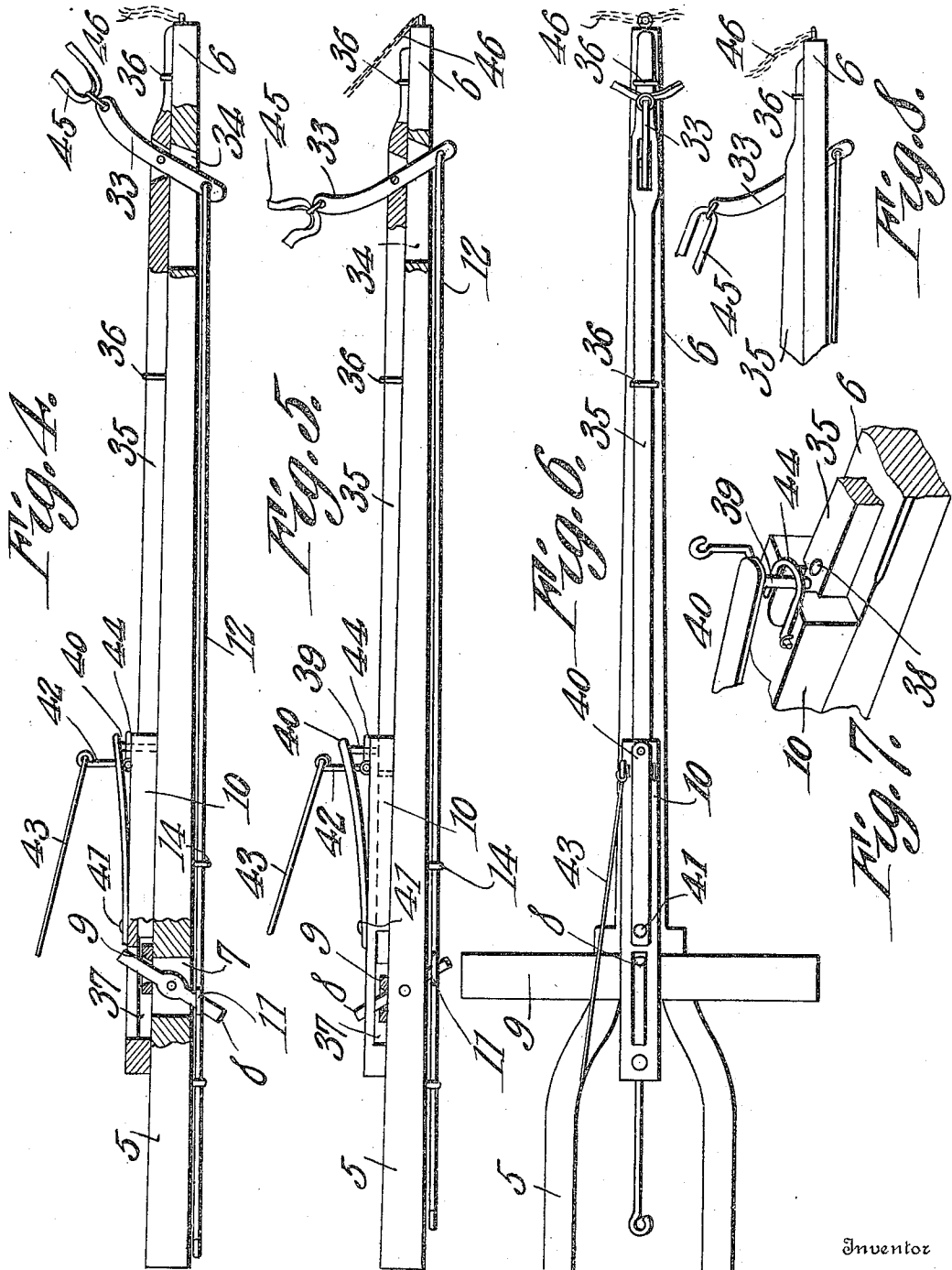
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UNITED STATES PATENT OFFICE.

CURTIS D. LINTON, OF PAINT BANK, VIRGINIA.

WAGON-BRAKE.

962,442.

Specification of Letters Patent. Patented June 28, 1910.

Application filed December 15, 1909. Serial No. 533,212.

To all whom it may concern:

Be it known that I, CURTIS D. LINTON, a citizen of the United States, residing at Paint Bank, in the county of Craig and State of Virginia, have invented a new and useful Wagon-Brake, of which the following is a specification.

The objects of the invention are, generally, the provision in a merchantable form, of a device of the above mentioned class, which shall be inexpensive to manufacture, facile in operation, and devoid of complicated parts; specifically, the provision of brake mechanism, which, as the vehicle with which it is assembled, moves upon a down-grade toward the draft-animals, will be set automatically, the brake mechanism being releasable, by the efforts of the draft-animals, when the vehicle is again upon a level, and the traces drawn upon.

Another object of the invention is to provide a brake operable as above described, and to provide a means whereby, at the option of the driver of the vehicle, the draft animals may be backed, without setting the brakes.

The drawings show but one form of the invention, and it is to be understood that changes, properly falling within the scope of what is claimed, may be made, without departing from the spirit of the invention.

Similar numerals of reference are employed to denote corresponding parts throughout the several figures of the drawings.

In the accompanying drawings,—Figure 1 shows my invention in bottom plan; Fig. 2 is a longitudinal section thereof, parts being shown in elevation; Fig. 3 is a fragmental elevation, parts being shown in section; Fig. 4 is a side elevation of the tongue and its attendant parts, parts being shown in section, the view illustrating the positions which the parts will assume when the draft-animals are moving forward; and Fig. 5 is a side elevation of the tongue and its attendant parts, the view illustrating the positions which the parts will assume as the draft-animals are backing; Fig. 6 is a top plan of the tongue, the parts being disposed as shown in Fig. 4; Fig. 7 is a detail perspective adapted to show the manner in which the locking device coöperates with the slidable bar which is mounted upon the tongue; and Fig. 8 is a fragmental side elevation, designed to show the positions of the flexible

members whereby the tongue is assembled with the harness, when the vehicle is moving downhill.

The frame of the vehicle may be of any type, but, in order to define the location and operation of the parts of my invention, the frame may be said to comprise a reach 3, rear hounds 4, and forward hounds 5 with which is rigidly assembled the tongue 6.

The numeral 1 denotes the front axle and the numeral 2 the rear axle; and these elements will, for convenience, be included under the term "frame."

Adjacent its point of union with the forward hounds 5, the tongue 6 is provided with a vertical opening 7, in which is pivoted, intermediate its ends, a lever 8, the upper extremity of which serves as a pivotal mounting for a double tree 9, inclosed by a casing 10, and arranged to slide upon the upper face of the tongue 6. Slidably mounted in guides 14 upon the lower face of the tongue, and in a plate 15 mounted upon the forward face of the forward axle 1, is a rod 12, having an enlargement 11, adapted to be engaged by the lower end of the lever 8. The rod 12, at its forward end, is pivotally connected with the lower extremity of an upright lever 33, which is pivoted intermediate its ends, in a bar 35, slidably mounted in guides 36, upon the upper face of the tongue 6, there being in the tongue 6, an opening 34, through which the lever 33 extends, and in which the said lever is adapted to slide, longitudinally of the tongue. The rear end of the bar 35 is adapted to extend through the casing 10, longitudinally of the same, to protrude into the openings 37 in the casing, in which the double tree 9 is disposed. The bar 35 is provided with an opening 38, adapted to receive the finger 39 of a resilient strip 40, supported by the tongue, the immediate means whereby the said strip is supported being, in the present instance, the casing 10, to which the rear end of the strip is secured, as denoted by the numeral 41.

Supported by the tongue 6, and immediately carried by the casing 10, is a bell-crank 42, with the upstanding arm of which is connected a flexible element 43, one end of which is extended to the driver's seat, and made fast thereto, or to the reins, as may be desired. The other arm of the bell-crank 42 is U shaped, as denoted by the numeral 44, to include the finger 39, the construction

being such that when the flexible element 43 is drawn upon, the portion 44 of the bell-crank will engage the strip 40, to retract the finger 39 thereof from the opening 38 in the bar 35, so that the bar may be slid rearwardly upon the upper face of the tongue.

The rod 12 is pivotally connected, as denoted by the numeral 16, beneath the forward axle 1, with a second rod 17, supported at its rear end, in a guide 18, mounted in the lower face of the rear axle 2.

Mounted upon the lower face of the rear hounds 4, are bearings 19, in which is mounted a rock shaft 20, provided with a radially extending upper arm 21, and with a radially extending lower arm 22. A rigid connection 24 unites the lower arm 22 with the intermediate portion of a brake beam 25 carrying shoes 26 adapted to engage the rear wheels 27 of the vehicle, the brake beam 25 being suspended upon the ends of a hanger 28, the intermediate portion of which extends, transversely of the vehicle, along the upper face of a supporting beam 30 which is mounted on the hounds 4, the hanger 28 being adapted to rock in bearings 29 mounted upon the upper face of the supporting beam. A connection 23 unites the upper arm 21 with the intermediate portion of the rod 17, and this connection, preferably takes the form of a resilient rod, the rear end of which is connected with the upper arm 21, the forward extremity of the rod being bent as denoted by the numeral 31 at an acute angle to the arm 21 and extended through the intermediate portion of the rod 17. The bent portion 31 of the member 23 is secured to the rod 17 by means of nuts 32, located upon the portion 31 of the connection 23, upon both sides of the rod 17. When the rod 17 is drawn upon, the connection 23, through the upper arm 21, will rock the shaft 20, the lower arm 22 causing the connection 24 to move rearwardly, drawing the pivotally suspended beam 25 rearwardly, causing the shoes 26 to engage the wheels 27 of the vehicle. It is to be noted that the portion 31 of the connection 23 is securely mounted in the rod 17, and, when the rod 17 is drawn upon to set the brakes, the connection 23, which, it should be remembered, is resilient, will flex slightly, as the shoes 26 move toward the wheels 27. The connection 23 will thus act as a resilient element tending, in the initial movement of the rod 17, to prevent a breakage of the parts by a sudden and violent application of the brakes; the resiliency of the rod, however, not being sufficient to prevent the shoes 26 from being set snugly against the wheels, by the ultimate movement of the rod 17. A pull upon the rod 17 to set the brake shoes 26 will occur under the following conditions: When the vehicle is moving down-hill, as the traces become slack, and the vehicle moves to-

ward the draft animals, the lever 33 will be tilted out of the position shown in Fig. 4 of the drawings, the rod 12 moving forwardly, and setting the brake shoes as hereinbefore described, the finger 39 being already in engagement with the bar 35 and thus preventing the said bar from having movement longitudinally of the tongue. When the vehicle is again upon level ground and the draft animals tighten the traces, the double tree 9 will move forwardly, engaging the upper extremity of the lever 8, and causing the lower extremity thereof to move rearwardly, sliding the rod 12 rearwardly, and releasing the brake shoes 26.

The lever 33 is operated to set the brakes, when the vehicle is moving down-hill, by means of straps 45, connected with the upper extremity of the lever 33, and with any suitable portions of the harnesses of the draft animals. When the vehicle is being backed upon level ground, this backing will be accomplished by means of the backing chains 46 which rise from the tip of the tongue 6 to their usual points of attachment with the harnesses. It should be noted that when the animals are backing the wagon, either upon a down-grade or upon level ground, the construction is such that the members 45 will tighten before the backing chains 46 tighten, the brakes thus being set before the backing chains 46 are operative to exercise their function. The foregoing arrangement would obviously operate satisfactorily upon a down-grade, but, otherwise, it would prove unsatisfactory, for the reason that when it is desired to back the vehicle upon level ground, before the backing chains 46 would become taut, the member 45 would have already tightened, setting the brakes and impeding the backing of the vehicle. To obviate this difficulty, the slidably mounted bar 35 and its locking mechanism is provided.

Referring to Fig. 4 of the drawings, it will be seen that when the flexible element 43 is drawn upon by the driver, the bell-crank 42 will be tilted, lifting the free end of the strip 40, and withdrawing the finger 39 thereof from the opening 38 in the bar 35. The bar 35 is thus rendered free to slide rearwardly, the lever 33 sliding rearwardly, in the opening 34 in the tongue 6. This rearward sliding movement in the bar 35 will slacken the members 45, so that the entire rearward pull of the draft animals may be exerted upon the vehicle through the medium of the backing chains 46. The brake mechanism will therefore be rendered inoperative during the backing of the vehicle. When the bar 35 slides rearwardly, the lower extremity of the finger 39 will bear upon the upper surface of the said bar, and slide therealong. When the backing operation ceases, and the draft animals start

to move forwardly, the double-tree 9 will engage the rear end of the bar 35, sliding the bar forwardly, so that the finger 39 may again register in the opening 38 of the bar, thus locking the bar in its forward position, in which position the brake will be set automatically when the vehicle moves down-hill, or when the draft animals are again backed, unless the driver of the vehicle should elect to tilt the bell-crank 42, thus permitting the draft animals to back the vehicle without being interfered with by the setting of the brakes.

From the foregoing it will be seen that I have devised a vehicle brake which will be thoroughly effective upon a down grade, automatically to set the brakes, the construction being such that the driver of the vehicle may, when it is desired to back the vehicle upon level ground, render the braking mechanism inoperative.

Owing to the fact that the portion 31 of the connection 23 is disposed at an angle to the arm 21, by adjusting the nuts 32 upon the portion 31, it is possible to change the angle of the arm 21, thereby adjusting the space which will normally exist between the brake shoes 26 and the periphery of the wheels 27. Owing to the fact that the pivotal connection 16 between the rods 12 and 17 is located in the axis of oscillation of the front axle 1, the brake shoes 26 will be unaffected when the vehicle rounds a corner.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:—

1. In a device of the class described, a vehicle frame; a transverse shaft journaled for rotation on the frame and provided with upper and lower radial arms; a brake beam suspended from the frame; a connection between the brake beam and the lower arm; a rod secured to the frame for longitudinal reciprocation only; a resilient rod rigidly secured at one end to the slidable rod and at the other end pivoted to the upper arm; and means for operating the slidable rod.

2. In a device of the class described, a vehicle frame; a transverse shaft journaled for rotation on the frame and provided with upper and lower radial arms; a brake beam suspended from the frame; a connection between the brake beam and the lower arm; a rod secured to the frame for longitudinal reciprocation only; a resilient rod pivoted at one end to the upper arm and at the other end bent at an acute angle to the upper arm and secured, adjustably, in its bent portion, to the sliding rod; and means for operating the sliding rod.

3. In a device of the class described, a vehicle frame and a tongue attached thereto; a rod jointed beneath the front axle of the frame and slidably mounted beneath the tongue and the frame and comprising a forward part and a rearward part, the rearward part being mounted for longitudinal reciprocation only; a lever pivoted adjacent the extremity of the tongue and connected at its lower end with the forward part of the rod; a lever pivoted intermediate its ends in the tongue and engageable at its lower end by the forward part of the rod; a double-tree slidably mounted upon the tongue and pivoted upon the upper end of the last-named lever; a transverse shaft rotatably mounted upon the frame and provided with upper and lower radial arms; a brake beam suspended from the frame; a connection between the brake beam and the lower arm; and a resilient rod secured, adjustably, at one end to the rear part of the first-named rod, and at its other end pivotally connected with the upper arm.

4. In a device of the class described, a tongue; a rod slidably mounted beneath the tongue; brake mechanism adapted to be set by the forward movement of the rod; a lever fulcrumed intermediate its ends in the tongue and engaged at its lower end by the rod; a tree pivoted upon the upper end of the lever; a bar slidably mounted upon the upper face of the tongue and arranged to be retracted thereon; a lever fulcrumed intermediate its ends in the bar and connected at its lower end with the rod, said lever being slidable in the tongue and arranged at its upper end to receive a harness connection; and a manually operable locking device supported by the tongue and arranged to engage the bar to hold the same in advanced position.

5. In a device of the class described, a tongue; a rod slidably mounted beneath the tongue; brake mechanism adapted to be set by the forward movement of the rod; a lever fulcrumed intermediate its ends in the tongue and engaged at its lower end by the rod; a bar slidably mounted upon the upper face of the tongue and arranged to be retracted thereon; a tree pivoted upon the upper end of the lever, the bar being engageable by the tree to advance the bar; a lever fulcrumed intermediate its ends in the bar and connected at its lower end with the rod, said lever being slidable in the tongue and arranged at its upper end to receive a harness connection; and a manually operable locking device supported by the tongue and arranged to engage the bar to hold the same in advanced position.

6. In a device of the class described, a tongue; a rod slidably mounted beneath the tongue; brake mechanism adapted to be set by the forward movement of the rod; a lever fulcrumed intermediate its ends in the tongue and engaged at its lower end by the rod; a bar slidably mounted upon the upper face of the tongue and arranged to be retracted thereon; a tree pivoted upon the

7. In a device of the class described, a tongue; a rod slidably mounted beneath the tongue; brake mechanism adapted to be set by the forward movement of the rod; a lever fulcrumed intermediate its ends in the tongue and engaged at its lower end by the rod; a bar slidably mounted upon the upper face of the tongue and arranged to be retracted thereon; a tree pivoted upon the

upper end of the lever and arranged to engage the bar to advance the bar; a lever fulcrumed intermediate its ends in the bar and connected at its lower end with the rod, 5 the said lever being slidable in the tongue and arranged at its upper end to receive a harness connection; a resilient strip supported by the tongue and arranged at one end to engage the bar to hold the same in 10 retracted position; and a bell-crank pivotally supported by the tongue and arranged to engage the strip to break the engagement between the strip and the bar.

7. In a device of the class described, a 15 tongue; a rod slidably mounted beneath the

tongue; a bar slidably mounted upon the tongue; a lever fulcrumed in the bar and slidable in the tongue, the lever being operatively connected with the rod and adapted to receive a harness connection; a locking device arranged to engage the bar to 20 hold the same in fixed position; and brake mechanism adapted to be set by the rod.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature 25 in the presence of two witnesses.

CURTIS D. LINTON.

Witnesses:

PARIS V. JONES,
H. W. YODER.