

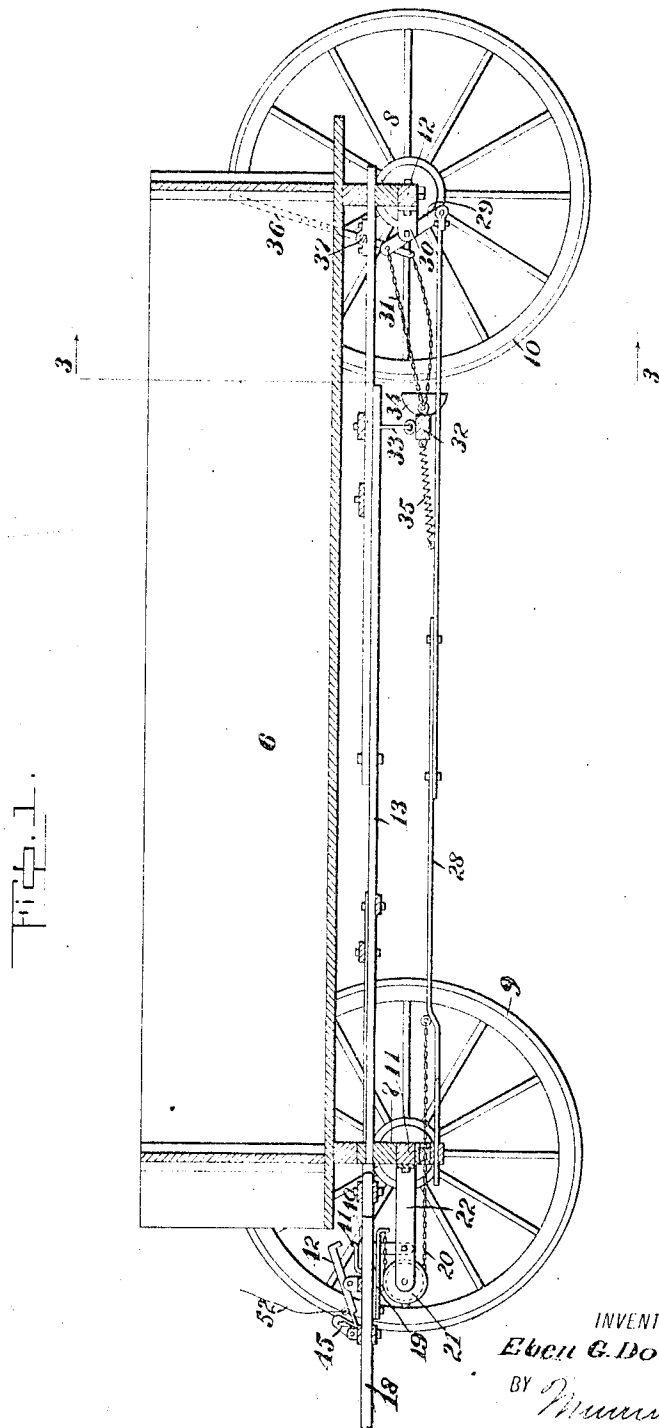
E. G. DOLAND.
WAGON BRAKE.

APPLICATION FILED MAY 29, 1909.

944,081.

Patented Dec. 21, 1909.

3 SHEETS—SHEET 1.



WITNESSES

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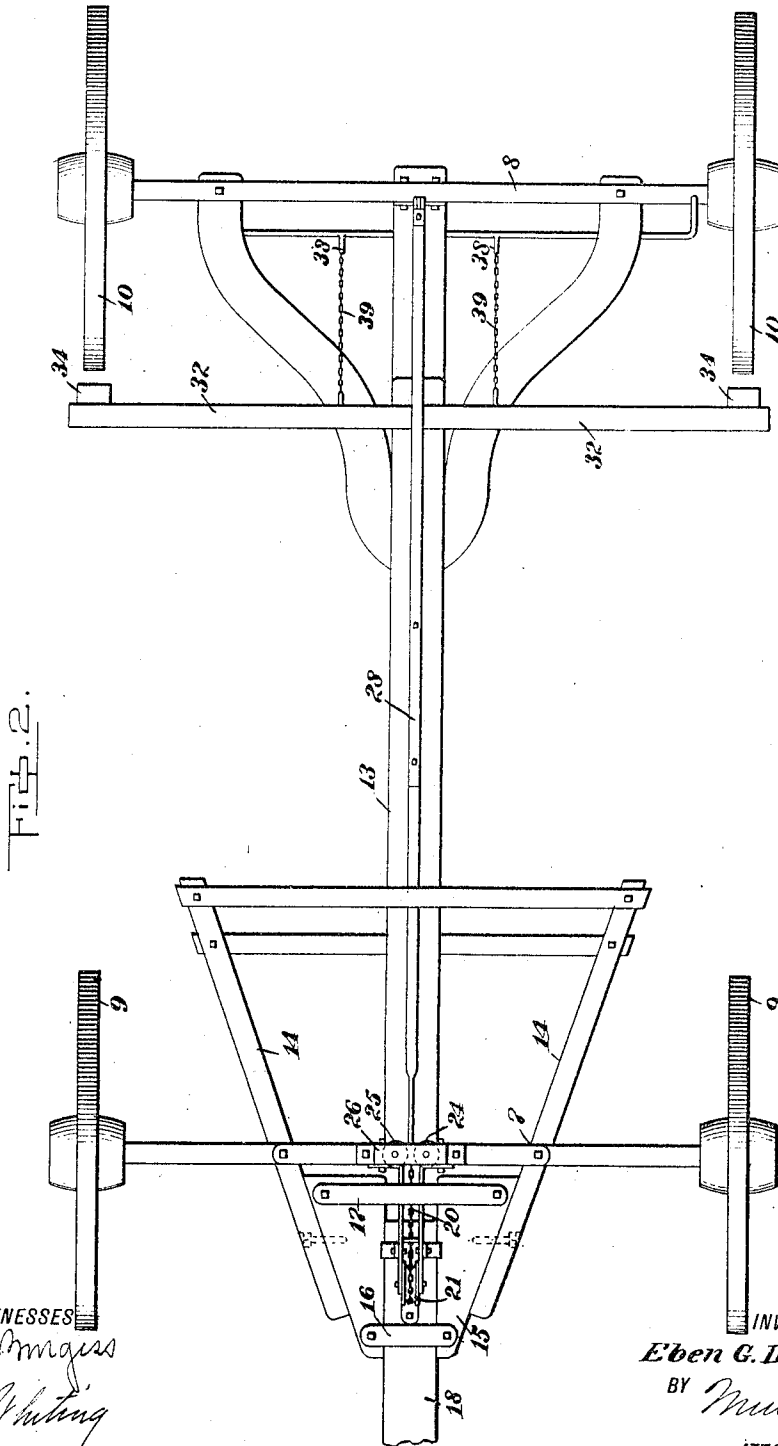
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

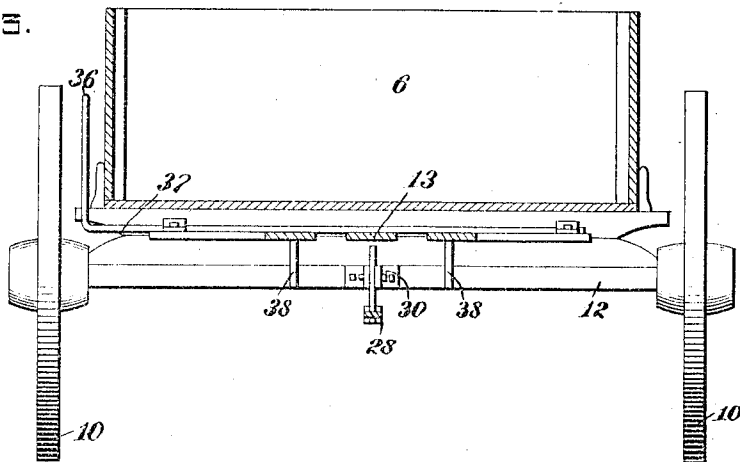


Fig. 4.

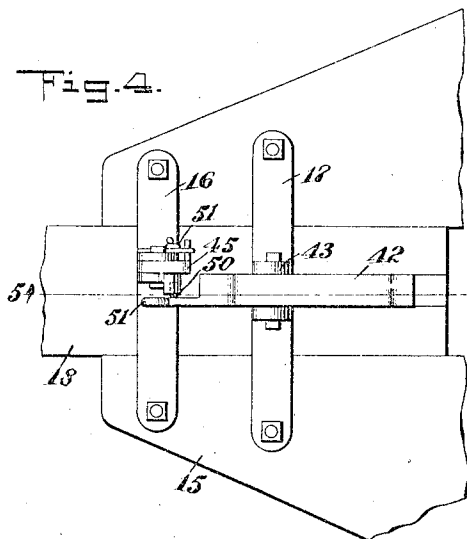


Fig. 5.

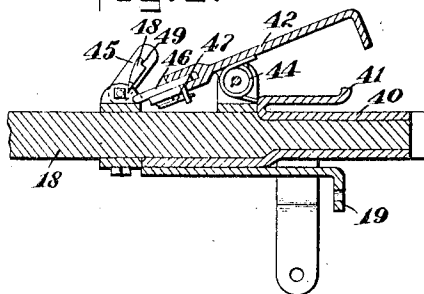
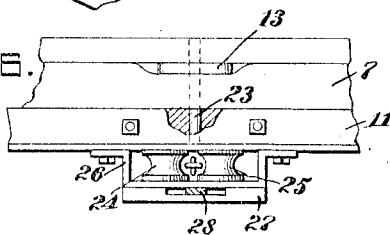


Fig. 6.



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EBEN G. DOLAND, OF STARKSBORO, VERMONT.

WAGON-BRAKE.

944,081.

Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed May 29, 1909. Serial No. 499,169.

To all whom it may concern:

Be it known that I, EBEN G. DOLAND, a citizen of the United States, and a resident of Starksboro, in the county of Addison and State of Vermont, have invented a new and Improved Wagon-Brake, of which the following is a full, clear, and exact description.

This invention relates to an automatic brake, which is adapted to be used in connection with carriages, wagons or the like, and is so arranged that it may be either thrown on by hand or applied by the backing of the horses connected to the tongue of the wagon.

An object of the invention is to provide a device which will be simple in construction, easily and quickly operated, and at the same time strong and durable.

A further and important object of the invention is to provide means whereby the brakes may be applied by backing the horses, and in such a manner that there will be no strain upon the mechanism in traveling around curves or over rough roads.

A still further object is to provide means for locking the brake-operating mechanism out of operation.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a vertical longitudinal section through a wagon having my brake attached; Fig. 2 is a bottom plan view; Fig. 3 is a vertical transverse section on the line 3—3 of Fig. 1; Fig. 4 is an enlarged top plan view showing the details of the tongue-locking mechanism; Fig. 5 is a vertical section on the line 5—5 of Fig. 4; and Fig. 6 is a detail, showing the guiding means for the connection between the tongue and the brake.

Referring more particularly to the separate parts of the device, 6 indicates a wagon of any suitable form, supported at each end by trucks 7 and 8, which in turn are supported in any suitable manner, on the ground, by wheels 9 and 10, rotatably secured on shafts 11 and 12.

Connecting the front and rear trucks 7 and 8 is provided a suitable wagon-reach 13, which may be made adjustable by any suit-

able means. Secured in any well-known manner to the front truck 7, there are provided converging hounds 14, to which is pivotally secured at the front end a suitable tongue support 15.

Slidingly secured in the tongue-support 15 by any suitable means, such as brackets 16 and 17, there is provided a suitable tongue 18. Secured to the under side of the tongue 18 in any well-known manner, there is provided a suitable attaching member 19, to which is secured a suitable flexible connection, such as a chain 20, which passes over a guide pulley 21, which may be of any well-known form, and is secured in any suitable manner, as by means of a bracket 22, to the forward truck 7.

The reach-bar of the wagon and the wagon proper are pivoted in any well-known manner to the front truck 7, as by means of a king-pin 23.

In order to allow for the pivotal motion of the front truck relative to the wagon, there is provided a pair of facing pulleys 24 and 25, which are pivotally secured in any well-known manner to a bracket 26, which in turn is secured to the under side of the axle 11. The pulleys 24 and 25 are so arranged as to be located at either side of the king-pin 23, and are adapted to form a guide for the flexible connection 20 which passes between them.

Directly below the pulley-supporting bracket 26, and secured thereto in any well-known manner, there is provided a slotted guide 27, which is adapted to slidingly-secure a connecting rod 28, to which is secured in any well-known manner the end of the flexible connection 20. The connecting rod 28 is composed of two parts overlapping at their ends and adjustable relative to each other in any well-known manner, so as to provide means whereby the length of the rod may be adjusted. The other end of the rod 28 extends to the rear of the wagon, and is pivotally secured in any well-known manner to a lever 29, which in turn is fulcrumed on a suitable bracket 30, secured in any well-known manner to the rear truck 8. The opposite end of the lever 29 is secured to a connecting chain 31, which is secured at its opposite end to a brake-beam 32, and is adapted to operate the same. The brake-beam 32 is pivotally supported in any well-known manner from the running gear of the wagon, as by means of links 33, and has on opposite

ends brake shoes 34, which are adapted to engage the wagon wheels 10.

It will thus be seen, as far as has been described, that by the backing action of the horses, on the tongue 18, the flexible connection 20 will be drawn upon, and the connecting rod 28 pulled in such a manner as to force the brake-shoes 34 into engagement with the wheels 10.

In order that the brake may be automatically released, there is provided a spring 35, which is connected at one end to the brake-beam 32 and at the opposite end to the connecting rod 28, and acts simultaneously to draw the brake-shoes 34 from the wagon wheels 10, and to return the connecting rod 28 to its rearward position.

In order that the brake may be applied manually, there is provided a suitable hand-lever 36, which is secured in any well-known manner to a cross shaft 37, on which are attached a plurality of cranks or arms 38, which in turn are connected by suitable flexible connections, such as chains 39, to the brake-beam 32.

Now, at times it is desired that the automatic tongue-braking means be thrown out of operation, as for example, when it is desired to back the wagon up against a building or the like. In order to accomplish this result, there is provided a lock-engaging member 40, which is preferably in the form of a strip of metal bent back on itself to form a lock-engaging toe 41, which is adapted to engage a lock 42, pivoted in any well-known manner to a bracket 43 on the retaining guide 17. This lock 42 is so arranged as to be normally spring-pressed, by means of a suitable spring 44, away from the engaging toe 41.

In order to retain the lock 42 in engagement with the toe 41, there is provided a latch 45, which is pivoted in any well-known manner to the bracket 16, and is adapted to engage a slide 46 slidingly secured in a slot in the rear end of the lock 42. The slide 46 is normally pressed to the limit of its inward travel by means of a spring 47. The latch 45 is normally pressed toward the slide 47 by means of a spring 51, and has a locking member 48, which has a ridge 49 thereon, adapted to engage a pin 50 on the slide 46 to hold the lock 42 with its rear end up, and its front end in engagement with the toe 41.

There is provided a suitable flexible connection 52, which is secured to the lock 42, and is for the purpose of operating the lock from the seat of the vehicle.

The operation of the device may be readily understood from the above description. However, in order to make this operation clear, a complete cycle will be gone through with. If we start with the tongue of the wagon locked to the supporting member

15, the lock 42 will be in engagement with the toe 41, and thereby prevent the tongue from sliding relative to its support and the truck proper. When it is desired to apply the brakes in going down hill, by means of the animals attached to the tongue, all that is necessary to do is to pull on the flexible connection 52, which action will remove the pin 50 from the ridge 49. When this has been done, the latch 45 immediately springs toward the lock 42, and when the tension on the flexible connection 52 has been removed, the pin 51 on the slide 46 will slip over the cam-surface on the engaging member 48, which action is permitted by the spring 47, and the rear end of the lock 42 will be lowered, and the front end, which was in engagement with the toe 41, will be raised, permitting the tongue 18 to have a sliding motion relative to its support 15. By the backward pull of the animals, on the tongue 18, the flexible connection 20 will be drawn upon, and will in turn pull the connecting rod 28 to its forward position, thereby operating the lever 29 to throw the brake-shoe 34 into engagement with the wheels 10. When the rearward pull of the tongue 18 has ceased, and the tongue starts to move in the opposite or forward direction, the spring 35 automatically withdraws the brake-beam 32 and at the same time forces the connecting rod 18 to its rearward position. As has been indicated, the brake may be also thrown manually by means of the hand-lever 36, which, if desired, may also be connected to the front end of the vehicle by suitable connecting links and levers.

There has thus been provided a simple and efficient automatic brake, which is adapted to be operated by the backing action of the animals attached to the tongue, which operation may be rendered inoperative if desired. The means of connecting the tongue to the brake mechanism has been so arranged as to permit a pivotal motion of the tongue in both directions without placing any strain on said brake mechanism. This latter is very essential in making short turns in traveling over rough and rocky roads.

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

1. The combination with a wagon, of a brake for said wagon, a slidable tongue, means for operating said brake from said tongue, and a spring connection between said brake and said last-mentioned means, whereby said brake and said means are simultaneously drawn in opposite directions.

2. The combination with a wagon, of a forward truck for said wagon, a tongue slidingly secured to said truck, a lock-engaging member on said tongue, a lock on said truck, normally spring-pressed away

from said lock-engaging member, and a spring-pressed latch adapted to engage said lock to hold said lock in engagement with said lock-engaging member.

5 3. The combination with a wagon, of a tongue slidably secured to said wagon, a lock-engaging member on said tongue, a lock on said wagon, normally held out of engagement with said lock-engaging member, and a pivoted latch on said wagon, adapted to retain said lock in engagement with said locking member.

15 4. The combination with a wagon, of a slidable tongue for said wagon, a lock-engaging member on said tongue, a lock on said wagon, normally held out of engagement with said lock-engaging member, a latch on said wagon, and a slide on said lock adapted to engage said latch, to hold said lock in engagement with said locking member.

25 5. The combination with a wagon, of a slidable tongue for said wagon, a lock-engaging member on said tongue, a spring-pressed lock pivotally secured to said wagon, normally held out of engagement with said lock-engaging member, a spring-pressed slide on said wagon, and a spring-pressed latch on said lock adapted to engage said latch to hold said lock in engagement with said locking member.

30 6. The combination with a wagon, of a slidable tongue for said wagon, a lock-engaging member on said tongue, a lock on said wagon, normally held out of engagement with said lock-engaging member, a latch on said wagon, adapted to retain said lock in engagement with said lock-engaging member, and a flexible connection for said lock adapted to operate the same.

40 7. The combination with a wagon, of front and rear trucks for said wagon, means

for pivoting said front truck to said wagon, a tongue slidably secured to said front truck, a lock normally held out of engagement, adapted to hold said tongue from sliding motion, a brake for said wagon, a connection between said tongue and said brake, whereby said tongue is adapted to operate said brake, a plurality of guide pulleys for connection, and a spring connection between said brake and said connection, whereby said brake is adapted to be automatically released.

55 8. The combination with a wagon, of a forward truck for said wagon, a tongue slidably secured to said truck, means for locking said tongue against sliding motion, a rear truck for said wagon, a brake adapted to be applied to the rear truck, a brake-reach for said brake, and a flexible connection between said tongue and said brake-reach, adapted to transmit the motion of said tongue to said brake-reach but in the opposite direction.

65 9. The combination with a wagon, of a forward truck for said wagon, a tongue slidably secured to said truck, means for locking said tongue against sliding motion, a rear truck for said wagon, a brake adapted to be applied to said rear truck, a brake-reach for said brake, a flexible connection secured to the rear end of said tongue and to the forward end of said brake-reach, and a guide pulley for said flexible connection adapted to reverse the travel of said flexible connection.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EBEN G. DOLAND.

Witnesses:

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VERNE W. ELLISON