

E. G. DOLAND.

WAGON BRAKE.

APPLICATION FILED MAY 29, 1909.

944,080.

Patented Dec. 21, 1909.

3 SHEETS—SHEET 1.

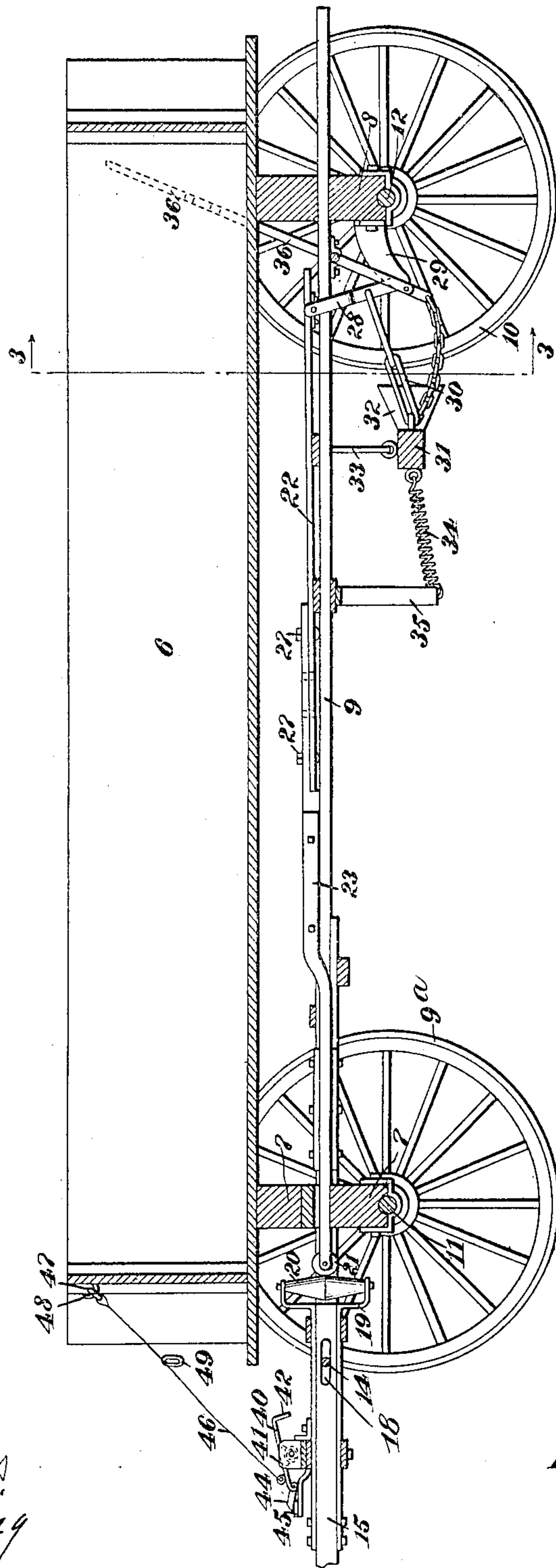


FIG. 1.

WITNESSES

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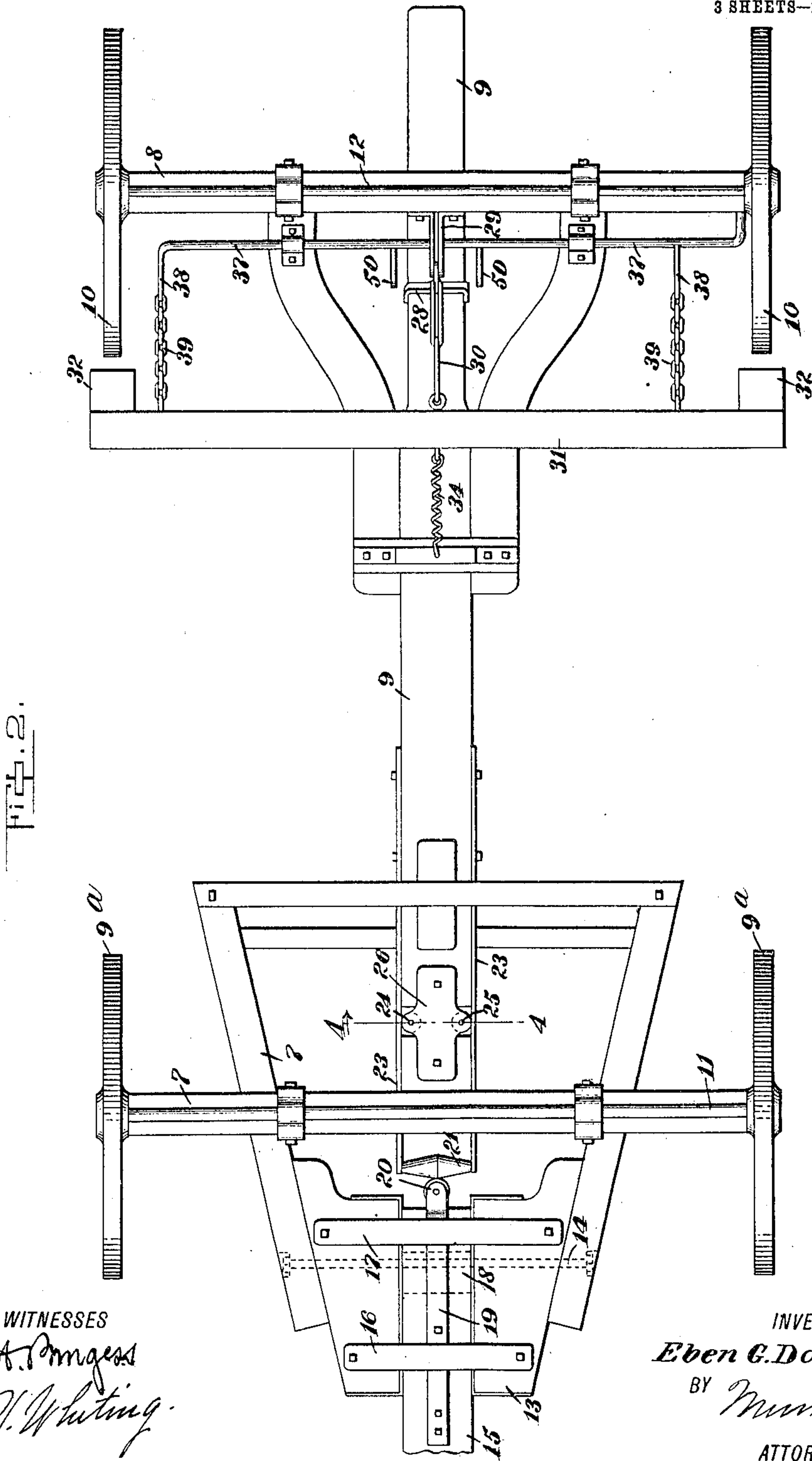


FIG. 2.

WITNESSES

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3 SHEETS—SHEET 3.

FIG. 3.

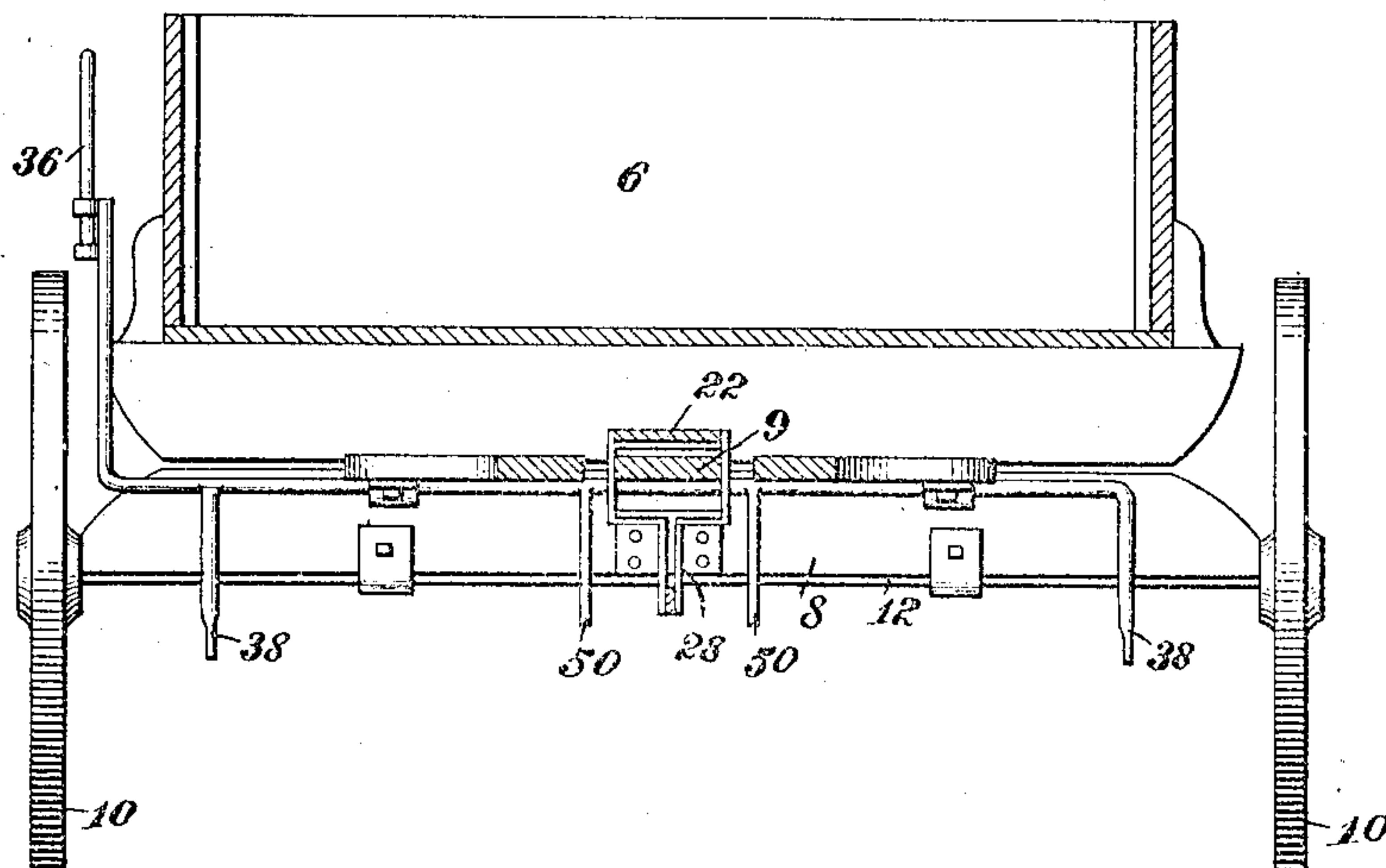


FIG. 4.

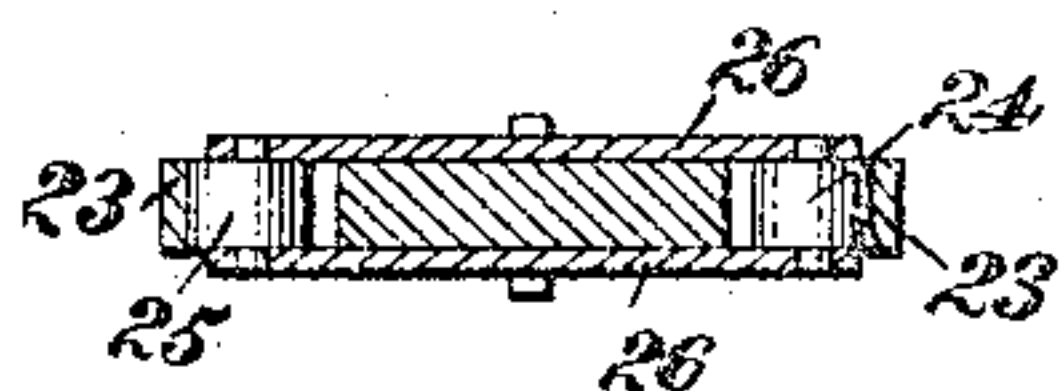
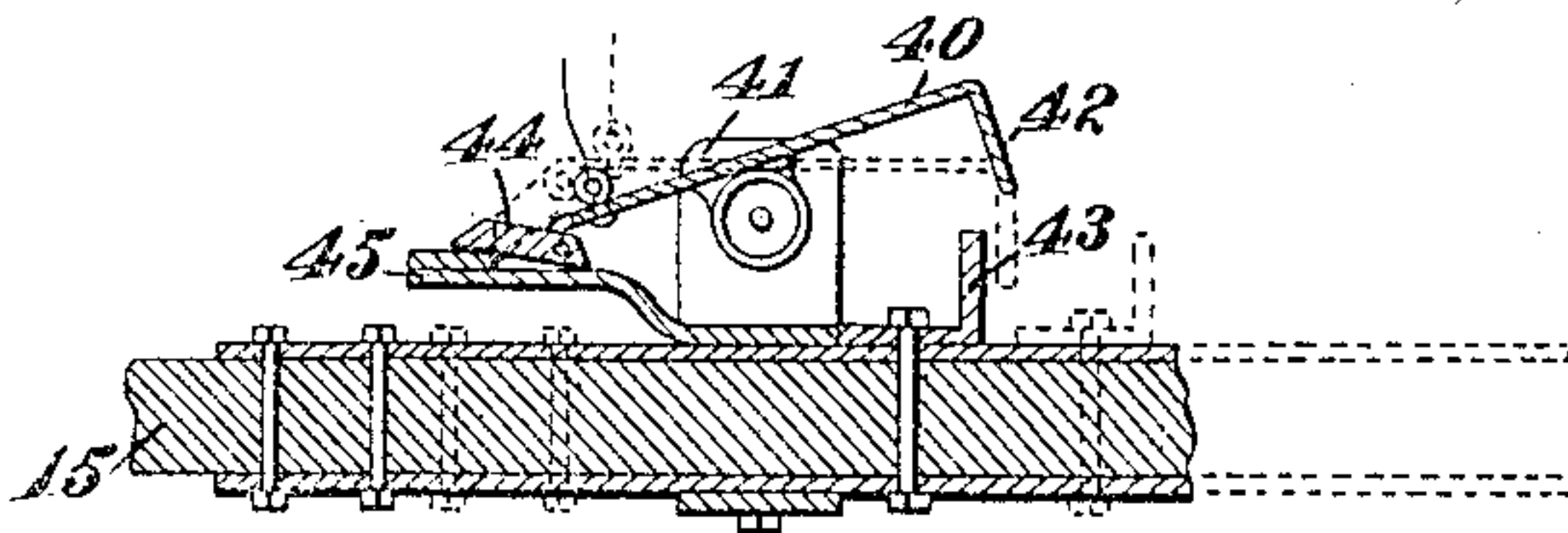


FIG. 5.



WITNESSES

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# UNITED STATES PATENT OFFICE.

EBEN G. DOLAND, OF STARKSBORO, VERMONT.

## WAGON-BRAKE.

944,080.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed May 29, 1909. Serial No. 499,168.

*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 braking mechanism attached thereto; 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 a vertical detail transverse section on the line 4—4 of Fig. 2, showing the guiding rollers for the brake-reach; and Fig. 5 is a longitudinal detail section through the locking mechanism.

Referring more particularly to the parts of the device, 6 indicates the body of a wagon, which is supported on trucks 7 and 8, which in turn are connected in any well-known manner by a reach-bar 9. The trucks 7 and 8 are suitably supported by wheels 9<sup>a</sup> and 10, which are rotatably connected to shafts 11 and 12 on the trucks 7 and 8.

The front truck 7 is pivoted to the reach-bar 9 in any well-known manner, as by means

of a king-pin, and has at the forward end thereof a suitable tongue-support 13, which is pivoted to the truck on a horizontal rod or bolt 14, which allows an up-and-down motion of the tongue-support relative to the truck and the wagon.

Slidably secured in the tongue-support 13, there is provided a suitable tongue 15, to which horses or the like may be attached, to draw the vehicle. This tongue 15 slides in the tongue-support 13 between suitable retaining members 16 and 17, which are secured in any well-known manner to the tongue-support 13. The sliding motion of the tongue 15 is permitted by reason of the fact that it has a slotted engagement with a pivoted bolt 14, as indicated at 18.

Secured to the rear end of the tongue 15, there is provided a bracket 19, in which is rotatably supported a suitable roller 20, which is in the form of a double cone with the bases facing, and formed in such a manner as to have a crown at the middle, and gradually sloping toward the ends.

Facing the roller 20 and adapted to co-act therewith, there is provided a similar roller 21, which, however, is pivotally secured to a brake-reach 22, at right-angles to the roller 20. The method of securing the roller 21 to the brake-reach 22 consists in having a pair of metal brackets 23, which are secured in any well-known manner to the brake-reach 22 and extend along the sides of the wagon-reach 9, and have suitable pivots at their outer ends, to which the roller 21 is rotatably secured.

In order that there may not be an excessive friction of the brackets 23 on the sides of the wagon-reach 9, there are provided suitable anti-friction rollers 24 and 25, which are rotatably supported in a suitable bracket 26 secured to the wagon-reach 9.

The brake-reach 22 is formed in two parts, which are adjustable relative to each other by any suitable means, such as a plurality of bolts 27, passing through aligned perforations in the over-lapping ends. To the rear end of the brake-reach 22, there is pivotally secured in any well-known manner a bifurcated lever 28, which extends to either side of the wagon-reach 9, and is fulcrumed on a suitable supporting bracket 29, which is secured in any well-known manner to the rear truck 8. Intermediate the connecting point of the lever 28 to the brake-reach 22 and its fulcrum 29, there is pro-



vided a suitable securing means, to which a connecting chain 30 is attached, said connecting chain being secured at its opposite end to a brake-beam 31, which has brake-shoes 32 on each end thereof, which are adapted to engage the wheels 10. The brake beam 31 is flexibly supported in any well-known manner to the running gear of the wagon, as by means of links 33.

In order to hold the brake-shoes and beams away from the wheels 10, there is provided a suitable spring 34, which is connected at one end in any well-known manner to the brake-beam 31, and at the other end to a U-shaped bracket 35, which is secured in any well-known manner to the under side of the wagon-reach 9.

As far as has been described, it will thus be seen that the backing motion of the horses connected to the tongue 15 will force the brake-reach 22 backward, and thus draw the brake-shoes 32 into engagement with the wheels 10. When the horses start up again, the spring 34 will automatically withdraw the brake-shoes from the wheel. The brake may also be thrown in by hand, by means of a lever 36, which is secured to a cross shaft 37, which is pivoted in any well-known manner to the under side of the rear truck, and has one or more lever-arms 38 secured thereto which are adapted to draw the brake-beam 31 toward the wheels 10 by means of suitable flexible connections, such as chains 39. This lever 36 may be connected up by suitable connecting links and levers to the front end of the wagon, if desired.

In order to back the wagon without throwing in the brakes, there is provided a suitable locking mechanism on the tongue-support, which prevents the relative motion of the tongue and tongue-support. For this purpose, there is provided a suitable lock 40, which is pivotally secured in brackets 41 secured in any well-known manner to the tongue-support 13. This lock 40 has an engaging flange 42, which is normally spring-pressed away from a flange 43, secured in any well-known manner to the tongue 15. In order to lock the flange 42 in engagement with the flange 43, and thus prevent rearward motion of the tongue, there is provided on the opposite end of the lock 40, a pivoted latch 44, which is adapted to engage a ridge on a suitable spring member 45, and thereby hold the flange-end 42 of the lock member 40 down in the dotted-line position shown in Fig. 5.

In order that the lock 40 may be manipulated by a driver on the vehicle, there is provided a suitable flexible connection 46, which is attached to the lock 40 at one end, and has a link 47, which is adapted to engage a suitable hook 48 on the vehicle, by means of which it is fastened to the vehicle. There

is also provided on this flexible connection 46 an intermediate link 49, which assists in the manipulation of the lock 40, and is also adapted to support the lock in its locked position.

In certain types of wagons, and for certain purposes in the same wagon, it is desirable to have the brake-reach below the wagon-reach. I have therefore provided on the transverse shaft 37 a pair of arms 50, to which the brake-reach may be pivoted and thus operate the brake-beam through the same means utilized by the lever 36 to throw the brakes into engagement with the wheels 10. In this case, the brake-reach 22 would be supported by the U-shaped bracket 35.

From the above description, it will readily be seen that a strong and efficient device has been provided, by means of which the brakes may be set on the wagon, either by hand or by the backward pull of the horses on the tongue. There has also been provided means whereby the automatic tongue-braking mechanism may be locked out of operation, so that the driver may back the vehicle, if he so desires, without setting the brakes. By reversing the flange 43 and its pivotal connection with the tongue, the latch 40 may be made to engage this flange so as to lock the brakes in their set position. It will also be seen that the engaging beveled rollers 20 and 21 provide a simple and efficient means for permitting vertical and horizontal motions of the tongue relative to the wagon, without causing a strain to be placed on the braking mechanism, and yet which will provide a positive and quick-acting connection between the tongue and the brake.

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 reach for said brake, a slidable tongue for said wagon, and co-acting beveled rollers on said tongue and said reach, whereby said tongue is adapted to operate said brake.

2. The combination with a wagon, of a brake for said wagon, a reach for said brake, a slidable tongue for said wagon, and co-acting crown rollers on said tongue and said reach, whereby said tongue is adapted to operate said brake.

3. The combination with a wagon, of a brake for said wagon, a reach for said brake, a slidable tongue for said wagon, co-acting crown rollers on said tongue and said reach, whereby said tongue is adapted to operate said brake, means for preventing said tongue from sliding, and means for automatically releasing said brake.

4. The combination with a wagon, of front and rear trucks for said wagon, a tongue slidably connected to said front truck, a brake for said wagon, a reach-bar



for operating said brake, a beveled roller pivoted to said tongue, a beveled roller pivoted to said reach-bar and engaging said first-mentioned beveled roller, and a lock adapted to prevent the sliding motion of said tongue.

5. The combination with a wagon, of front and rear trucks for said wagon, a tongue slidingly connected to said front truck, a brake for said wagon, a reach-bar for operating said brake, a beveled roller pivoted to said tongue, a beveled roller pivoted to said reach-bar and engaging said first-mentioned beveled roller, a lock adapted to prevent the sliding motion of said tongue, and a spring adapted to automatically release said brake.

6. The combination with a wagon, of front and rear trucks for said wagon, a tongue slidingly connected to said front truck, a brake for said wagon, a reach-bar for operating said brake, a crown roller pivoted to said tongue, a crown roller pivoted to said reach-bar and engaging said first-mentioned crown roller, a lock adapted to prevent the sliding motion of said tongue, and a hand-lever for said brake.

7. The combination with a wagon, of front and rear trucks for said wagon, a tongue slidingly secured in said front truck, a flange on said tongue, a lock on said truck normally spring-pressed away from said flange, a latch adapted to hold said lock in engagement with said flange, whereby said tongue is held from sliding motion relative to said truck, a brake for said wagon, a reach-bar for said brake, and co-acting beveled rollers pivoted to said tongue and said reach-bar, whereby said tongue is adapted to operate said brake.

8. The combination with a wagon, of front and rear trucks for said wagon, a

tongue slidingly secured in said front truck, a flange on said tongue, a lock on said truck normally spring-pressed away from said flange, a latch adapted to hold said lock in engagement with said flange, whereby said tongue is held from sliding motion relative to said truck, a brake for said wagon, a lever fulcrumed on said rear truck and connected to said brake, a reach-bar pivoted to said lever, a beveled roller pivoted to said reach bar, and a beveled roller pivoted to said tongue and co-acting with said beveled roller on said reach-bar, whereby said tongue is adapted to operate said lever to set said brake.

9. The combination with a wagon, of front and rear trucks for said wagon, a tongue slidingly secured in said front truck, a flange on said tongue, a lock on said truck normally spring-pressed away from said flange, a latch adapted to hold said lock in engagement with said flange, whereby said tongue is held from sliding motion relative to said truck, a brake for said wagon, a bifurcated lever pivoted to said rear truck and connected to said brake, a reach-bar pivoted to said lever and adapted to operate the same, a crown roller pivoted to said reach-bar, a crown-roller pivoted to said tongue and co-acting with said first-mentioned crown roller, whereby said tongue is adapted to operate said reach-bar to set said brake, and a spring adapted to automatically release said brake.

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

EBEN G. DOLAND.

Witnesses:

FRED F. HILL,

VERNE W. ELLISON.