

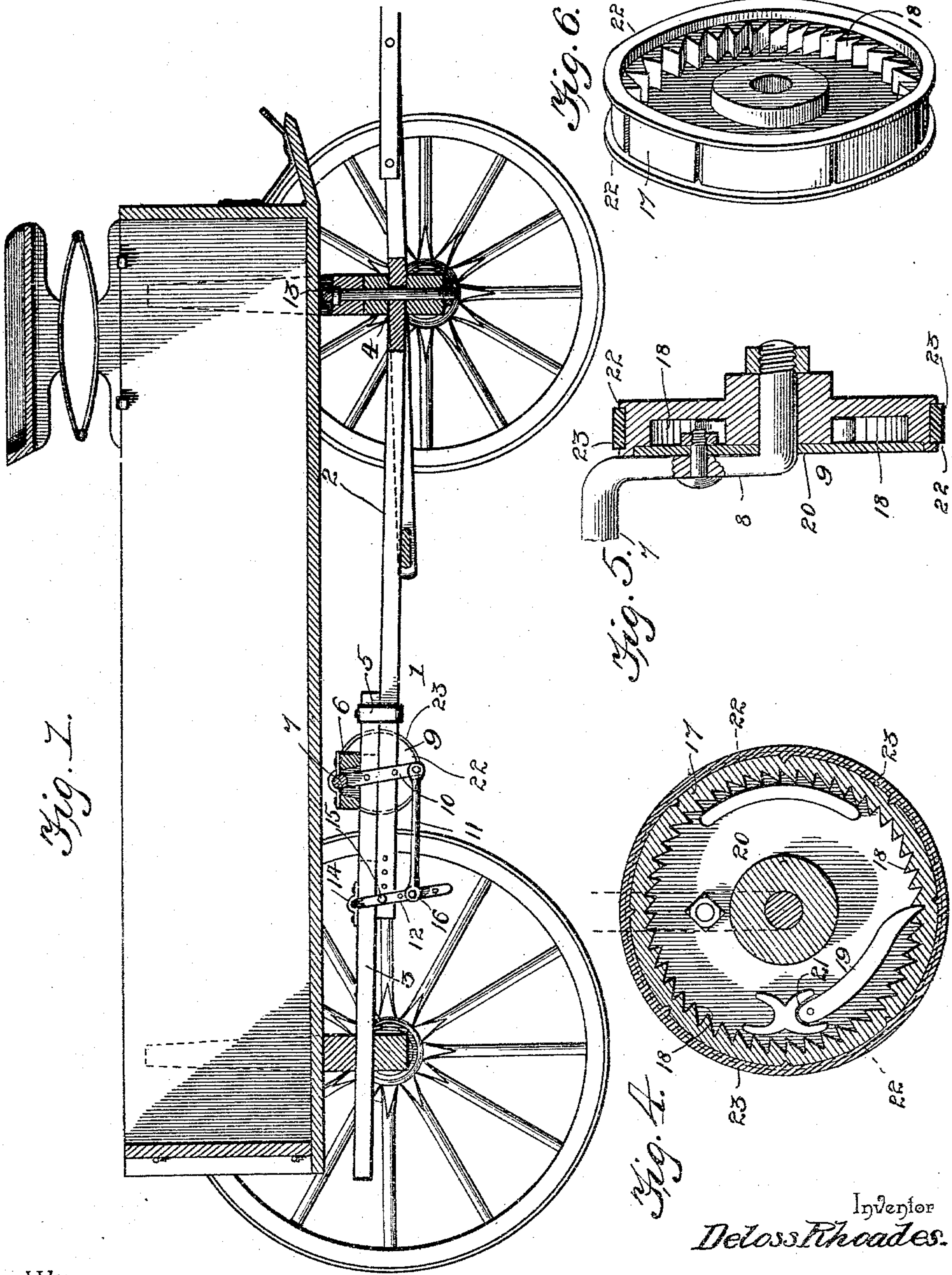
(No Model.)

2 Sheets—Sheet 1.

D. RHOADES.
WAGON BRAKE.

No. 553,018.

Patented Jan. 14, 1896.



Witnesses

E. H. Monroe.
J. F. Riley

By *his* Attorneys,

C. A. Snow & Co.

Inventor
Deloss Rhoades.

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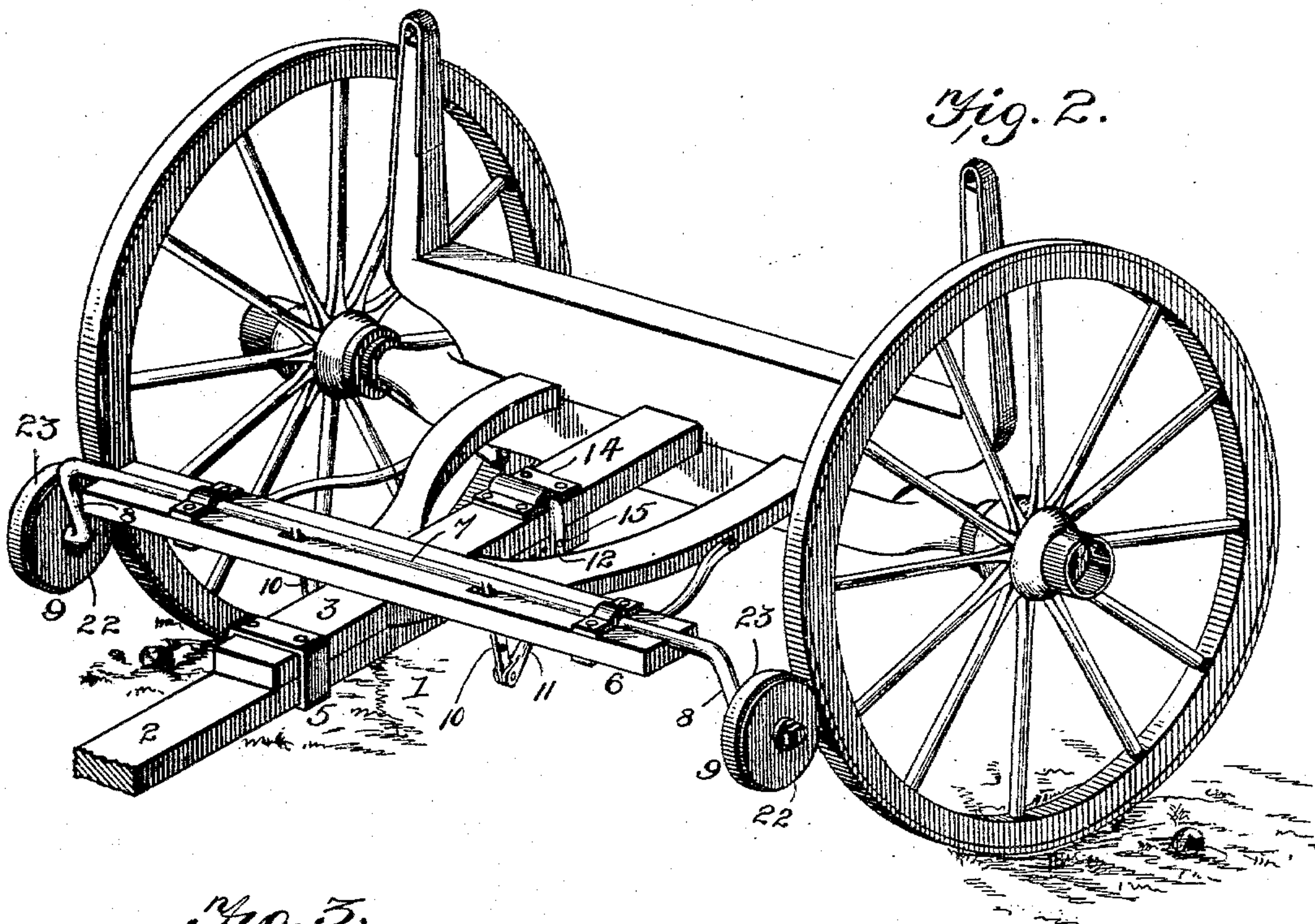
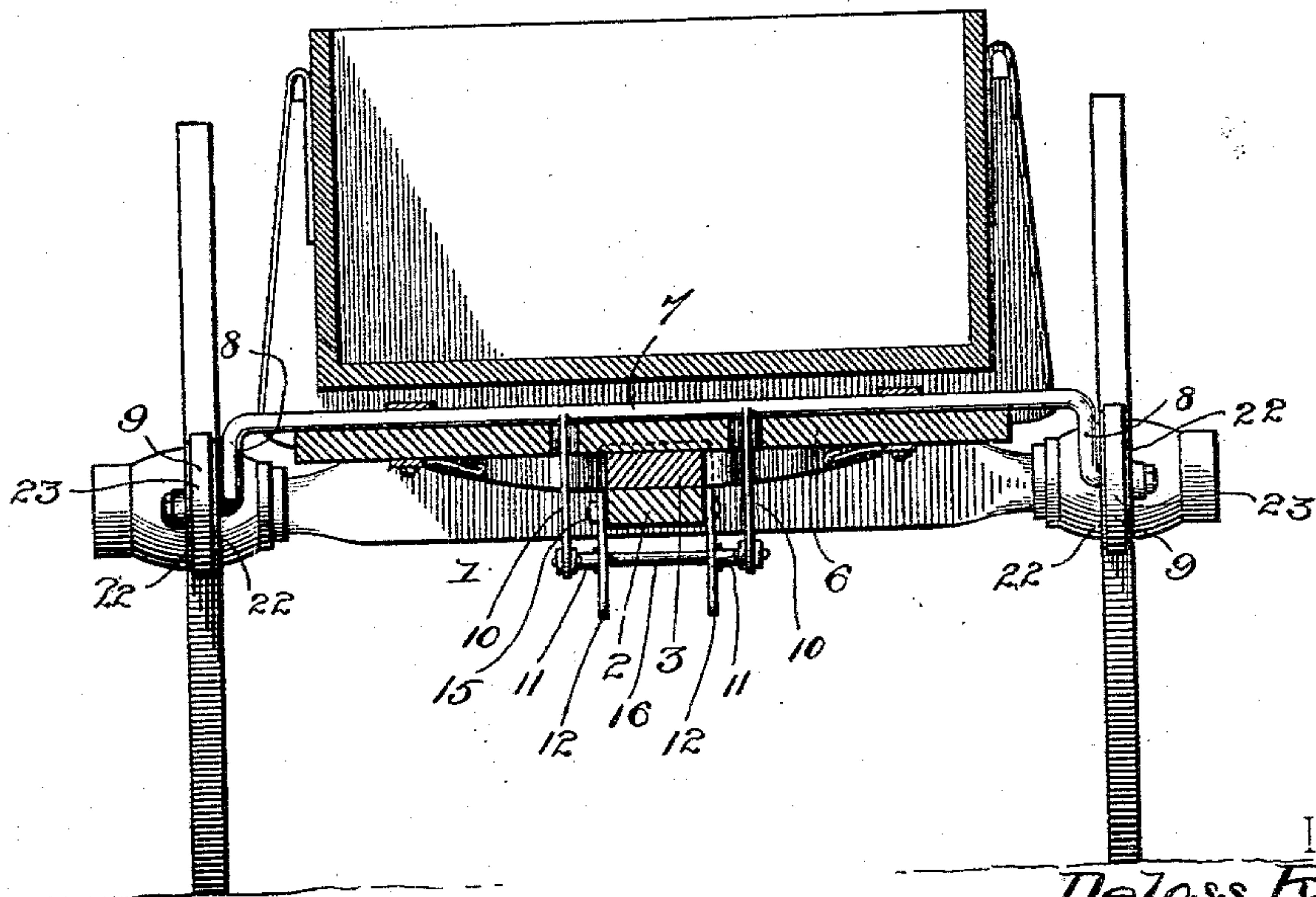


Fig. 3.



Inventor
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UNITED STATES PATENT OFFICE.

DELOSS RHOADES, OF RANDOLPH, NEW YORK.

WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 553,018, dated January 14, 1896.

Application filed September 4, 1895. Serial No. 561,463. (No model.)

To all whom it may concern:

Be it known that I, DELOSS RHOADES, a citizen of the United States, residing at Randolph, in the county of Cattaraugus and State of New York, have invented a new and useful Wagon-Brake, of which the following is a specification.

The invention relates to improvements in wagon-brakes.

The object of the present invention is to improve the construction of vehicle-brakes, and to provide a simple, inexpensive and efficient one, which will be positive and reliable in operation, and which will be capable of automatic action in descending an incline.

A further object of the invention is to provide such a brake which will permit the wheels of a vehicle to rotate freely in backing.

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 central longitudinal sectional view of a vehicle provided with an automatic brake constructed in accordance with this invention. Fig. 2 is a perspective view of the rear portion of the running-gear. Fig. 3 is a transverse sectional view. Fig. 4 is a detail sectional view of one of the brake-wheels. Figs. 5 and 6 are detail views illustrating the construction of clutch.

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

1 designates a running-gear having a reach composed of front and rear sections 2 and 3, which are slidably connected. The front section 2 is provided with a perforation 4 to receive the king-bolt or pivot of the front axle, and the rear section 3 is rigidly secured to the rear axle and is supported by hounds in the usual manner, and it is provided at its front end with a depending rectangular loop or frame 5, receiving the rear portion of the front section 2.

A transverse bar 6 is mounted upon the front portion of the section 3 of the reach, and is provided with suitable bearings, and has journaled in them a transverse rock-shaft 7, terminating in crank-arms upon which are mounted brake-wheels 9. The brake-wheels

9 are journaled on the crank-arms 8, and the rock-shaft is provided at opposite sides of the reach-sections with depending arms 10, which are connected by links 11 with a lever-frame 12, and the latter is fulcrumed on the rear end of the front section 2 of the reach, and is connected at the top with the rear section 3, whereby when the rear axle and the body of the vehicle crowd forward in descending a hill or other incline, the brake-wheels will be thrown in contact with the hind wheels of the vehicle. The body of the vehicle is fixed to the rear bolster and has its front portion resting upon a transverse roller 13 of the front bolster, and the body is adapted to slide freely on the latter without friction.

The lever-frame 12 is substantially U-shaped or rectangular, and is composed of depending sides and a connecting top portion, which is journaled in a suitable bearing 14 of the rear section 3 of the reach, and the sides of the lever-frame are provided with perforations adapted to receive a pivot 15 for fulcruming the frame and pivots 16 for pivoting the link-bars to the sides of the frame, the perforations permitting an adjustment of the pivots to obtain the proper leverage to provide an effective brake. The forward movement of the rear section of the reach on the front section causes the lower portions of the depending sides of the lever-frame to swing rearward, and carry with them the depending arms of the transverse rock-shaft, thereby causing the brake-wheels to engage the hind wheels of the vehicle, and the rear end of the section 2 of the reach is provided with a series of perforations to adjust the pivot 15.

Each brake-wheel is provided with a rim 17, and is connected with the transverse rock-shaft by the clutch which locks it against rearward rotation, so as to enable it to operate as a brake-shoe in engaging the hind wheel, and which permits a free forward rotation to enable the vehicle to be backed freely. The clutch consists of a series of teeth 18 arranged on the interior of the rim 17, and a gravity-pawl 19 pivotally mounted on a disk 20, which is rigidly secured to the rock-shaft and which fits within the rim 17. The pawl 19 is pivoted in a recess 21 of a boss or enlargement at the inner face of the disk 20, and a pair of oppositely-disposed recesses is provided to limit

the swing of the pawl and to enable the clutch to be arranged at either side of the vehicle.

The rim 17 of the brake-wheel is provided with annular flanges 22 located at the edges of the rim and forming an intermediate recess or groove for the reception of a band 23 of leather, rubber, or other suitable material for engaging the hind wheel of the vehicle. The belt or band 23 is locked against slipping by means of cogs, serrations or notches arranged at intervals and formed in the face of the wheel between flanges 22.

The front terminals of the links 11 are bifurcated or forked to receive the depending arms of the transverse rock-shaft, and those arms are provided with series of perforations to receive the connecting-pivots of the links, to enable the parts to be adjusted to obtain the proper leverage.

It will be seen that the automatic brake is simple and inexpensive in construction, that it is positive and reliable in operation, and that it is applied in proportion to the load to be checked. It will also be apparent that it will enable a heavy vehicle to be easily controlled by the draft-animals, and that as soon as the front axle is started the hind wheels are relieved of the brake-wheels.

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.

What I claim is—

1. In an automatic brake, the combination of a brake-wheel adapted to engage a vehicle wheel, a clutch concealed within the brake wheel and protected by the same and capable of locking the brake wheel against rearward rotation to enable the same to operate as a brake shoe and adapted to permit a free forward rotation of the brake wheel, to permit the vehicle to be backed, and means for throwing the brake wheel into and out of engagement with the vehicle wheel, substantially as described.

2. In an automatic brake, the combination of a brake wheel provided with a rim and having an annular series of ratchet teeth, and a fixed disk fitting within the rim and provided with a pivoted pawl engaging the ratchet teeth and locking the brake wheel against rearward rotation and permitting a free forward rotation to enable a vehicle to be backed, substantially as described.

3. In an automatic brake, the combination of a running gear having a reach composed of two sections arranged to slide on each other, a transverse rock-shaft carried by the rear

section and located in advance of the hind wheels and provided at its ends with crank arms, brake wheels journaled on the crank arms and arranged to engage the hind wheels, clutches connecting the brake wheels with the rock-shaft, and connections between the rock-shaft and the reach sections, whereby when the rear reach section crowds forward the brake wheels will be thrown against the vehicle wheels, substantially as described.

4. In an automatic brake, the combination of a running gear provided with a reach composed of two sections slidingly connected, a transverse rock-shaft journaled in suitable bearings and carried by the rear section of the reach and provided with depending arms, wheel engaging devices located at the ends of the rock-shaft for engaging the hind wheels of the running gear, a lever frame pivoted to the rear reach section and provided with opposite sides depending therefrom, a pivot connecting the lever frame with the front reach section, and link bars connecting the sides of the lever frame with the depending arm of the rock-shaft, substantially as described.

5. In an automatic brake, the combination of a running gear provided with a reach composed of two sections slidingly connected, a transverse bar mounted on the rear section of the reach, a rock-shaft journaled on the transverse bar and provided at its terminals with crank arms and having depending arms at opposite sides of the reach sections, brake-wheels journaled on the crank arms and connected with the rock-shaft by clutches, a rectangular lever frame pivoted to the upper reach section and depending therefrom, a pivot connecting the sides of the lever frame to the front reach section, link-bars connecting the depending arms of the rock-shaft with the lever frame, a body mounted on the running gear and fixed to the rear bolster, and a roller mounted on the front bolster and supporting frame, substantially as described.

6. In a brake, the combination of a brake wheel provided at its periphery with flanges, and having in the space between the flanges recesses or serrations, and a band arranged on the brake wheel in the space between the flanges and engaged by the said recesses or serrations, whereby the band is prevented from slipping, substantially as described.

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

DELOSS RHOADES.

Witnesses:

ODELL H. DEAN,
JOHN I. GILBERT.