J. M. VAN DERZEE.

WAGON-BRAKE.

No. 187,786. Patented Feb. 27, 1877.

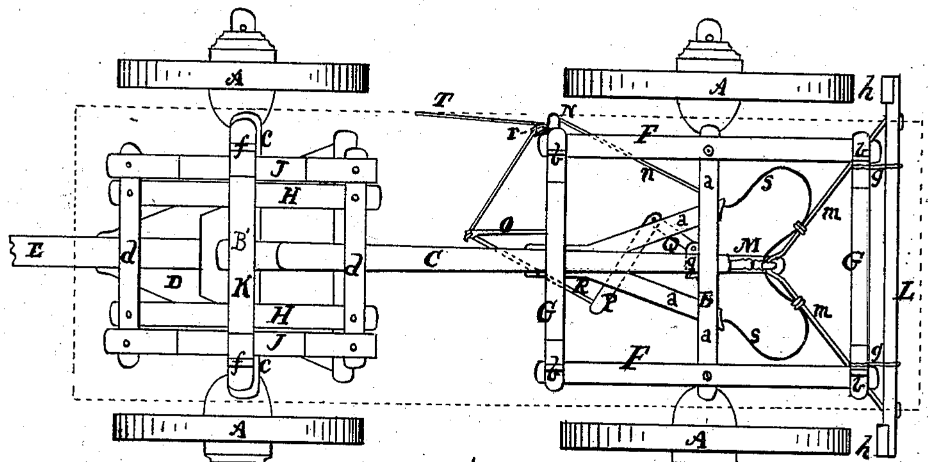

Fig.1.

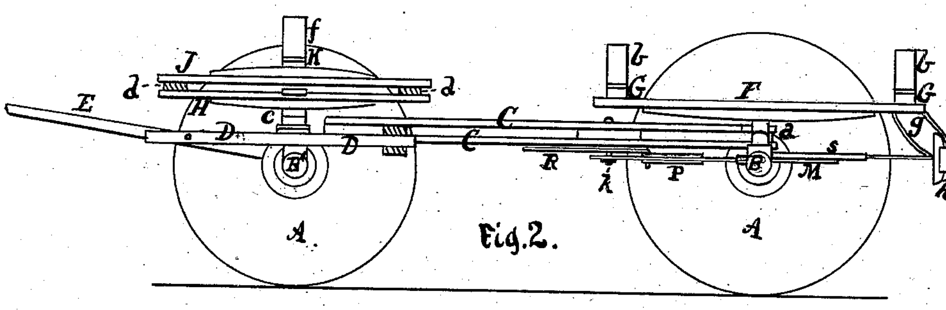

Fig.2.

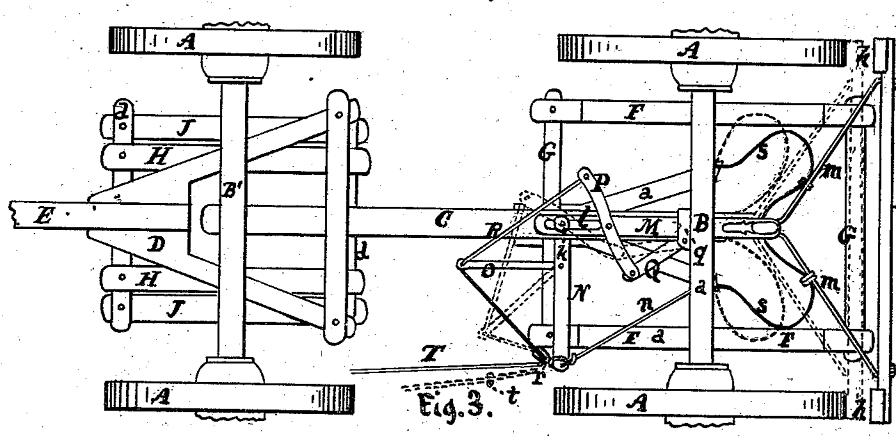

Fig.3.

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UNITED STATES PATENT OFFICE

JOHN M. VAN DERZEE, OF NEW BALTIMORE, NEW YORK.

IMPROVEMENT IN WAGON-BRAKES.

Specification forming part of Letters Patent No. **187,786**, dated February 27, 1877; application filed April 13, 1876.

To all whom it may concern:

Be it known that I, JOHN M. VAN DERZEE, of New Baltimore, county of Greene, State of New York, have invented certain Improvements in Farm-Wagons; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a plan view of the wagon embodying the improvements in this invention. Fig. 2 is a side view of the same. Fig. 3 is a bottom view of the same.

My invention relates to that class of vehicles known as "farm-wagons," usually employed for hauling heavy loads; and consists of the several devices and their combinations, hereinafter described.

The object of this invention is to relieve the wheels and axles of the concussions incidental to the draft of loaded vehicles over rough or uneven roads, and to brake the hind wheels to prevent their turning, at the will of the driver, whether the wagon is provided with a box or rigging for hay, or platform for either wood or stone, or other equivalent holding-body, which farm-wagons are usually required to be alternately provided with for the hauling of loads of different characters.

To enable others skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings and the letters of reference marked thereon, the same letters indicating like parts.

In the drawings, A A represent the wheels. B is the rear axle; B′, the front axle; C C, the reaches, made capable of changing, to shorten or lengthen the gearing between the wheels. D are the usual hounds; E, the pole or tongue—all of which are old and require no description.

Secured to the rear axle-bed *a* are the rear wooden side springs F F, made of hickory, ash, oak, or equivalent tough elastic wood. The said springs are made with a length of about four and one-half feet, and a width of, say, about four inches, more or less, according to the load to be carried, and with two or more pieces, each of about one and one-half inch, more or less, in thickness. G G are supporting-bars, secured to the ends of the side springs F F, as shown, and are provided with stakes *b b*, or their equivalents, which stakes are intended to hold in position from lateral shifting the body or any platform that may be employed with the vehicle. Secured to the front bolster *c* are the side springs H H, made of elastic wood of similar nature as the rear springs F, and with two or more pieces, according to the loads the wagon may be intended to carry. *d d* are each cross-bars, resting on springs H H at their ends, as shown in Figs. 1 and 2. Secured to the ends of bars *d d*, extending past the springs H H from the upper sides of the said bars, are the upper springs J J, also made of elastic wood, with the number and dimension of pieces the same as those composing the lower springs H H. Secured to the upper springs J J, midway of their length and directly over the front axle, is the upper bolster or body-supporting bar K, provided with stakes *f f*, which hold the body placed between from shifting in a lateral direction.

It will be observed that the springs F at the rear and the springs H and J at the front are all made straight, without any set whatever, and that when the said springs are unloaded their lengths are the longest, and that when loaded their ends will be deflected from a straight line, and their lengths between their end terminations shortened. The advantage obtained is, that when lightly loaded the springs will be more elastic and limber, to give ease of support to the load, than could be were the said springs made with a curve or set, in their usual manner, while, when more heavily loaded, the springs will be stiffer, and yet sufficiently elastic to prevent severe concussions to affect the axles and wheels.

It will also be observed that the springs H H are arranged inward toward the center of the length of the bolster *c*, while the springs J J are outward and from over springs H H, that, when the load deflects the said springs, they may pass each other without touching. By this mode of arranging the said front springs the height of the top surface of the bar K is preserved down to near the usual distance from the surface of the ground.

The body, platform, or rack for supporting or holding the load (shown by dotted lines in

Fig. 1) may be made with the usual form of construction now generally employed with lumber-wagons for use with the produce or articles to be carried.

Suspended from the rear supporting-bar G, by the loop or equivalent piece *g*, is the brake-bar L, provided with brake-shoes *h h*. M is a sliding bar, arranged on the under side of the reach C, and properly guided by the guide-pin *k*, working in the slot *l*, made in said sliding bar. Secured to the rear end of said sliding bar are the draw-rods *m m*, which connect with the brake-bar L, and draw the same toward the wheels when the said sliding bar is moved forward. The said brake-bar is thrown back by springs *s s*. Secured to the lower side of the reach C by the usual reach-pin *a*, and standing at right angles with the same, is the horizontal bracket-bar N, stayed in position by the brace *n*. Pivoted to the said bracket-bar is the lever O. Pivoted to the sliding bar M is the lever P, one end of which lever is pivoted to the short lever Q, working from a proper bracket, *q*, secured to the axle B. A draw-rod, R, connects the head of the lever O, and with the end of lever P opposite from the end pivoted to the short lever Q. To the outer end of the bracket-bar N is fixed a small sheave-block or pulley, *r*, over which runs the draft-rope T, one end of which is attached to the lever O, and the other end is to be carried from the pulley *r* forward and up to the driver for operating the brake. The said rope is provided with a knot or stop, *t*, at a point on the rope forward of the pulley *r*, which will be capable of operating with said pulley, to preserve the rope between the said pulley and the lever O taut, and react against the springs *s s*, that the several parts of the brake will be held at a degree of tension to prevent them rattling or shaking. When the rope T is drawn on, the several levers will be thrown to position shown by dotted lines in Fig. 3, and the brake-bar L will be thrown forward and carry the brake-shoes *h h* against the wheels to hold them. This brake operates directly on the face of the back wheels at their extreme extension rearward, and permits the usual reaches C C to be lengthened or shortened between the axles B B′, as is required in farm-wagons in the several uses which they are applied to, with the bodies, platforms, or ricks used with them.

As it is readily seen, the brake is not in the least affected by any changes made in the length of the reaches between the axles, as, by the rope employed, the brake may at all times be operated by the driver from the seat of the wagon, or the top of a load of wood or hay.

It is readily seen that all the parts of the brake are secured directly to the hind gearing of the vehicle, and not in any part to the body or platform supported above the same, which permits the reaches being changed, and the length between the wheels varied; and the springs themselves, in their operations to relieve the wagon from concussions, also operate, by their preserving the bottom of the body, rick, rack, or equivalent platform, to the usual low position, so as to permit the carrying of hay, wood, or other high piled loads in the several changes of the reaches, for shortening or lengthening the gearing between the wheels, and enable the driver to operate the brake either from the seat on a low body, or from a high position, or on an elevated load.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the rear axle of a farm or equivalent draft wagon, of the springs F, made of elastic wood, in flat and straight pieces, and the supporting-bars G G, provided with stakes *b b*, substantially as and for the purpose set forth.

2. In combination with the front gearing of a farm or draft wagon, the wooden side springs H H, secured to bolster *c*, cross-bars *d d*, upper side springs J J, out of a vertical line with side springs H, and the supporting-bar K, all constructed, arranged, and combined substantially as and for the purpose set forth.

3. The combination, with the springs F, H H, and J J, made of wood, and in the manner of form and relative arrangement substantially as described, supporting-bars G G and K, provided with stakes, with the gearing of a farm-wagon capable of having its length between the forward and hind axles variously changed, the brake comprised by the several parts arranged as set forth, and rope T, or its equivalent, substantially as and for the purpose set forth.

JOHN M. VAN DERZEE.

Witnesses:
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