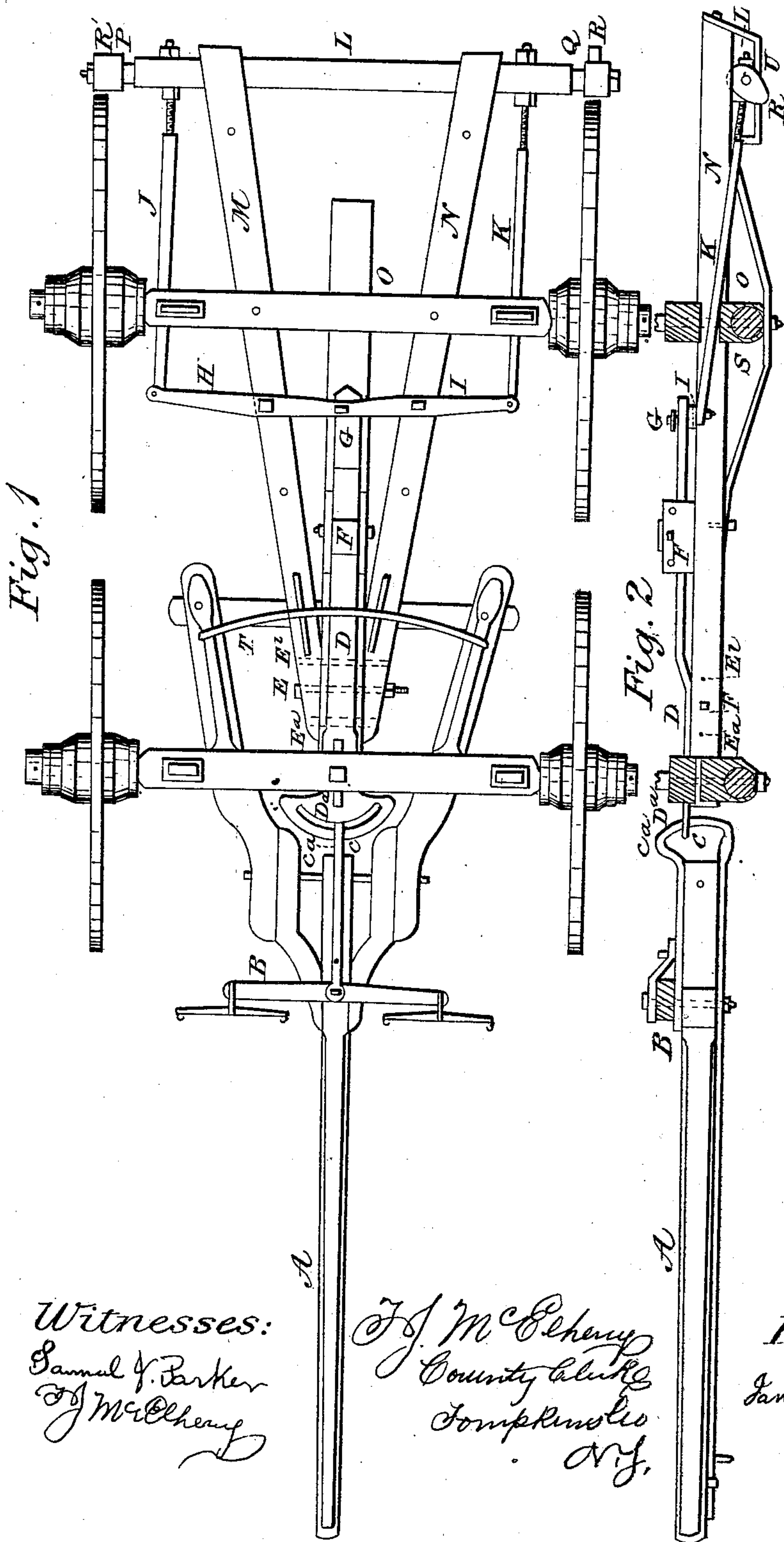


J. H. SMILEY.

Wagon Brake.

No. 73,265.

Patented Jan. 14, 1868.



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# United States Patent Office.

JAMES HARVEY SMILEY, OF CAROLINE, NEW YORK.

*Letters Patent No. 73,265, dated January 14, 1868.*

## IMPROVEMENT IN WAGON-BRAKE.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES HARVEY SMILEY, of the town of Caroline, Tompkins county, New York, have invented an Improved Wagon-Brake; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, and letters thereon.

Figure 1 is a view looking down on a wagon containing my brake, and

Figure 2 a sectional view of the same.

My object is to make a convenient brake, acting mainly by the yoke, and through the draught of the team. This I accomplish by several devices, which are mainly as follows:

I make longer than usual the braces of the back axle, connecting them to the reach near the forward axle, and, extending them back of the hind axle, I support my brake in rear of the hind wheels. By a rod, which holds the neck-yoke stop, I make a backward thrust, by the self-action of the team on a loose joint between the neap and tongue, and a connecting-rod on the reach, and this also retracts the whiffle-trees, thus providing for both the tightening and loosening of the brake by the team alone. The connecting-rod on the reach is jointed to two transverse levers, which, in their turn, are fastened to connecting-rods that reach to and are variable in their adjustment to the transverse brake-bar. The brake-bar has, on each end, an ovoid or cam-shaped rubber-piece, which, by the described arrangement, acts on the rear of the wheels of the back axle. The sharp end of the rubber-piece acts, when turned up by hand or a lever, as a block to the wagon in going up hill. Thus the team and variations of surface do all the working of the brake, except the blocking of the wheels in going up hill. In connection with this, I make holes through the back-axle braces and reach, and an adjustable fixture on the reach-rod, for the purpose of lengthening the reach for various uses. These and other parts are clearly seen in the drawings.

In fig. 1, A is the pole or tongue of the wagon, having the rod that operates the brake beneath it; and B is the evener, with the whiffle-trees; and C is the loose joint, so made as to allow motion in the pole, and, at the same time, insure proper action on the reach-rod. This joint is made of the parts C a, and the loop of the pole playing in the slotted plate D a of the reach-rod. This plate has two slots, the forward one for the pole-loop just named, and the other one for the king-bolt that holds the back-axle braces, reach, and other parts, to the forward axle. At E is the bolt that holds the back-axle braces to the reach, thus making an adjustable sliding fixture, the dotted lines E a and E b being for the diverse lengths of the reach; and, to meet this change, a sliding fixture, F, is made to unite the two parts of the reach-rod D. This is made by simple holes in the two pieces of the reach-rod, and a bolt and nut, or, as in the drawing, by a boxing, and holes, bolt, and nut. At G is a simple joint of the reach-rod, for the two levers H and I, which connect with the rods J and K, and which, by adjustable nuts on their threaded parts, fasten to the brake-bar L. These transverse levers, their rods, and the brake-bar, are supported by the braces M and N, which extend back of the rear axle O. The ends of the brake-bar L, at P and Q, are made round and smooth, and have the ovoid pieces R' and R'' hinged on them. This shape secures the tightening of the brake by the action of the team, and also makes sure the blocking in going up hill, as already named, whenever the point of the ovoid is thrown up by hand, by a foot-lever, or other means.

In fig. 2, which is a side view of the brake attached to the wagon-gearing, the same letters refer to the same parts, and by them the facts already described are seen. The position of the ovoid rubber is that which it has when acting by the team on the wheels. The brace S bends from the axle-braces, beneath the axle O, to that part of them behind the axle, and then becomes horizontal, so that it supports and allows a sliding motion to the brake-bar L.

Whenever the blocking, in going up hill, is to be made, a simple raising up of the point of the ovoid rubber is effected, when gravity and friction do the rest of the action of the rubber on the wheel.

The uses and advantages of my invention are apparent to those skilled in the art to which it appertains.

### Claims.

1. The extension of the rear-axle braces M and N behind the rear axle, and suspension on the extremities thereof of the brake-bar and brake, as described.
2. The construction of the metallic braces S, from beneath the rear-axle braces, in front of the hind axle,



to the under side of the axle, and thence to the end of the braces M and N, where they support these braces, and give bearings for the brakes and bar, as set forth.

3. Constructing the joint between the tongue and reach by the loop on the end of the tongue-rod, and playing in the slot D *a* of the plate D, when arranged substantially as described.

4. Constructing the tongue-rod or bar by the long part under the tongue, held by the loop near the yoke-pin, and extending thence to the rear end of the tongue, where it makes the loop C *a*, and thence is continued, over the top of the tongue, to the evener of the whiffle-trees, and thus binding the lower part of the bar to the upper and the tongue, by the evener-bolt in its slot in the tongue, for the purpose of actuating the brake by the yoke-pin, and releasing the brake by the whiffle-trees, in the manner substantially as set forth.

5. The combination of the forward and broad end of the plate D with the slot D *a*, for the tongue and reach-joint, and the slot for the king-bolt, and connecting with the reach-rod in the rear of the plate, as described.

6. The combination of the bolt E, in the holes E *a* E *b*, with the bolt and holes F, for the purpose of lengthening the reach, as described.

7. The combined whole, made substantially as described, for the purposes set forth.

JAMES HARVEY SMILEY.

Witnesses:

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