

(No Model.)

2 Sheets—Sheet 1.

J. H. DAVIE.
AUTOMATIC WAGON BRAKE.

No. 389,447.

Patented Sept. 11, 1888.

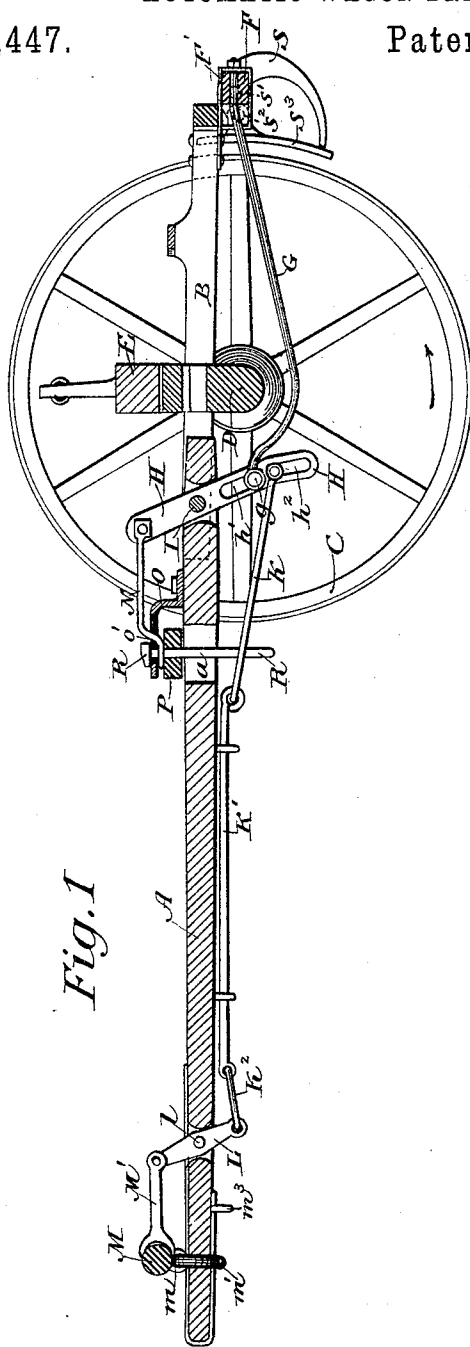


Fig. 1

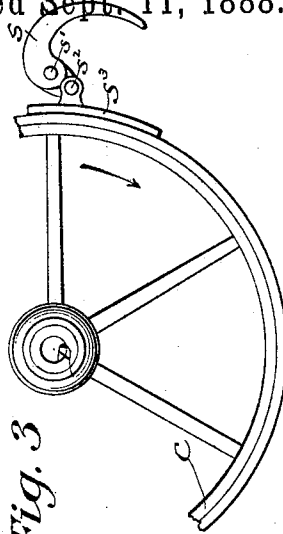


Fig. 3

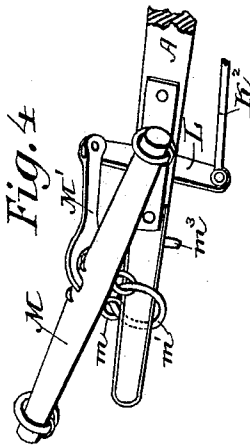


Fig. 4

Witnesses:—
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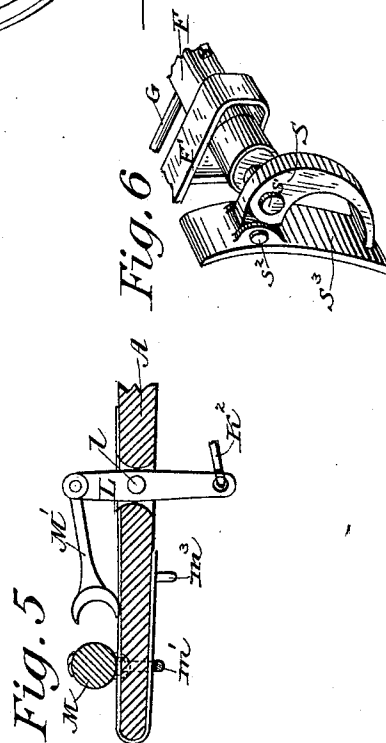
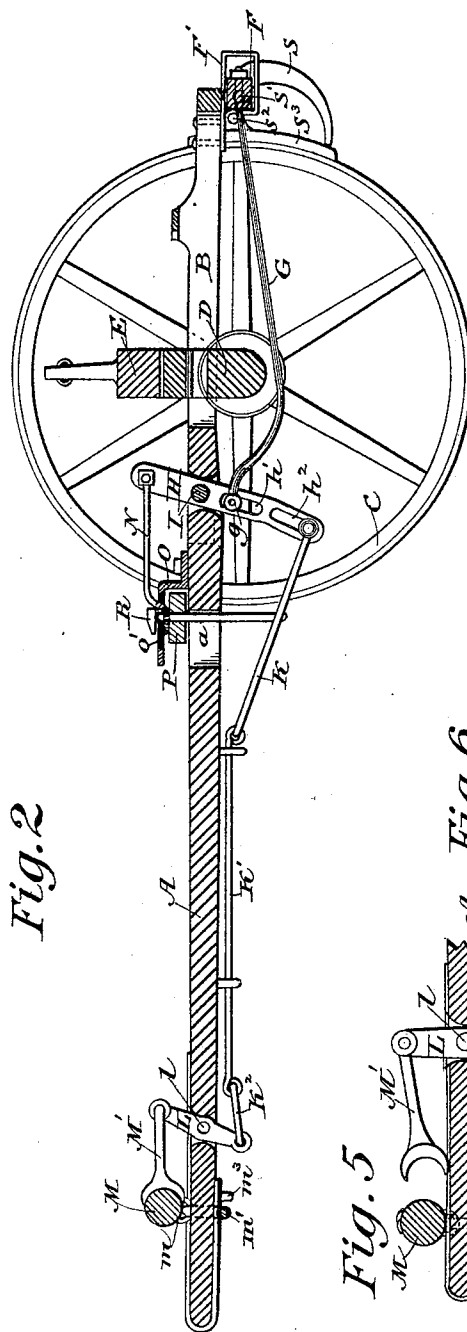
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2 Sheets—Sheet 2.

J. H. DAVIE.
AUTOMATIC WAGON BRAKE.

No. 389,447.

Patented Sept. 11, 1888.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES H. DAVIE, OF WALTON, NEW YORK.

AUTOMATIC WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 389,447, dated September 11, 1888.

Application filed April 24, 1888. Serial No. 271,702. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. DAVIE, a citizen of the United States, residing at Walton, in the county of Delaware and State of New York, have invented certain new and useful Improvements in Automatic Wagon-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic wagon-brakes.

The object of my invention is to provide a brake particularly adapted to two-horse vehicles in which the back-pressure of the team in going downhill will automatically set the brakes, and in connection therewith to provide improved means for holding the brakes off during the time that there is no setback by the team, and means for preventing the setback of the team from affecting the brake when it is desired to back, a further object being to provide an effective, inexpensive, and durable brake.

My invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a wagon-tongue and front-wheel connection with my improved automatic brake applied thereto, shown when the brake is thrown off; Fig. 2, a similar representation of the same when the brake is thrown on by the action of the team; Fig. 3, a detail of part of the wheel and brake-shoe when the wheel is backing and the brake-shoe thrown out of working contact therewith. Fig. 4 is an enlarged detail, in perspective, of my improved yoke and forward part of the brake-connections; Fig. 5, an enlarged sectional detail of the parts shown in Fig. 4 with the yoke-bar disconnected from the brake-irons, and Fig. 6 a perspective detail of my improved brake-shoe with one end of the brake-beam and its draw-bar broken away.

The tongue A is connected with the hounds B of a wagon, the front wheels, C, of which are supported upon an axle, D, and the bolster E is supported upon the axle D and

connected with the forward end of the reach in the usual manner.

The brake bar F is supported in guide-irons F', bolted to the rear end of the hounds to reciprocate therein, and is connected to the rear end of the draw-bars G, which are bowed upwardly at their forward ends and secured to a brake-lever, H, which passes through the rear end of the tongue and is pivoted thereto, preferably, by means of a queen-bolt, I, passing through the rear end of the tongue and through the forward ends of the hounds in the usual manner.

The lower end of the brake-lever H has slots h' h'' at its lower end, the upper slot, h' , receiving the friction-roller pin g upon the forward ends of the draw-bars G, and the lower slot, h'' , receiving a similar friction-roller upon the end of a link, K, connected by a pull-bar, K', and link K² with the lower end of a yoke-lever, L, at the forward end of the tongue, by means of which the lower end of the brake-lever is pulled forward and the brake bar and shoes thrown in action by the backward movement of the yoke M upon the forward end of the tongue.

The yoke-lever L passes through a slot in the forward end of the tongue, and is pivoted thereto by a pin, l , and the yoke M is connected by loops m and a running ring, m' , passing through said loops and fitted to slide upon the forward end of the tongue. A stop-pin, m'' , passing into the under side of the tongue, limits the backward movement of the running ring and prevents the yoke from being pulled back so far as to crowd upon the horses.

The upper end of the yoke-lever L is connected to the yoke M by means of a link, M', pivoted at its rear end to the lever L, and having a double-jawed forward end, which embraces the yoke when the latter is in working position, and will admit of the ready removal of the yoke from the end of the tongue, as clearly shown in Fig. 5 of the drawings. The direct connection of the yoke and lever thus obtained, being free from lost motion, will thus secure a quick action upon the brake connection with but slight movement of the yoke.

The brake-lever H is connected at its upper end by a goose-neck link, N, with the hammer-bolt R, which latter passes through a slot, o' ,

in the tree-iron O and a slot, *a*, in the tongue, and also through the tree P, by means of which the tree will, when drawn forward by the team, throw the brake-shoes S in working contact with the wheel.

The shoe S is pivoted at S' to the end of the brake-bar F, and is also pivoted at S² to a block, S³, which bears against the rear side of the wheel, and the said shoe S is curved to project downwardly and bear against the lower end of the block when the brake is on, thus extending the surface-bearing of the block upon the wheel.

Both of the pivots S' and S² are horizontally in line with the center of the wheel when the brake is off, as shown in Fig. 1, the pivot S' thrown slightly above the said horizontal line to break joint and cramp the wheel with gradually-increasing force when the brake is on, as shown in Fig. 2, and the said pivot S' is pulled slightly below the horizontal line, as shown in Fig. 3, when the brake-shoe is rendered inoperative by the backward movement of the wheel.

When the brake is thrown on, as shown in Fig. 2, the friction-rollers upon the forward end of the draw-bars G will be drawn up to the upper end of the slot *h'* in the brake-lever, and as the fulcrum distance decreases the power of the lever will increase in proportion, and, together with the double pivoted connection of the brake-shoe, will give great power to the brake, while the roller upon the rear end of the link K will follow down to the lower end of the slot *h*² and increase its leverage to still increase or augment the power of the brake.

When the friction-roller upon the link K is in the lower end of the slot *h*² and the brakes are on, it will have a quick initial movement to throw the brakes off when moved in the position shown in Fig. 1, and as the fulcrum distance of said roller decreases in passing to the upper end of said slot the throw of the brake-bar will be correspondingly increased to give the shoe the greatest possible amount of clearance with a limited movement of the yoke when the brake is thrown off.

The lever H is bowed at its lower end to bring the slot *h*² square with the link K when the brake is thrown on, and will thus prevent the friction-roller from slipping or rolling upwardly in the slot.

It is manifest that the brake-shoe herein described and claimed may be attached to any form of brake; that my brake may be connected with the rear wheels instead of the front wheels of the wagon; that the brake-lever may be provided with a handle or treadle extension within reach of the driver which will admit of his working the brake to relieve the horses when required, and that various parts of my invention may be used separately, some of which may be combined for use upon a single as well as a two horse wagon.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, in an automatic brake, of the brake-bar and draw-bar with the brake-lever fulcrumed upon the rear end of the tongue, connected at its upper end with the tree and at its lower end with the yoke, and having slots *h'* *h*² at its lower end to receive the draw-bar leading to the brake and the link leading to the yoke, substantially as described.

2. The brake-shoe S herein described, in combination with the draw-bar pivot pins S' S² and brake-block S³, substantially as described, for the purpose specified.

3. In an automatic brake, the combination of the yoke fitted to slide upon the forward end of the tongue, the link having jaws to embrace the yoke, and the upper end of the yoke-lever connected with said link above the tongue and with rods beneath the tongue leading to and connected with the brake-lever, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. DAVIE.

Witnesses:

WM. H. ROWE,
D. E. MCLEAN.