(No Model.) 2 Sheets—Sheet 1.

J. KIRLIN.

AUTOMATIC WAGON BRAKE.

No. 543,532. Patented July 30, 1895.

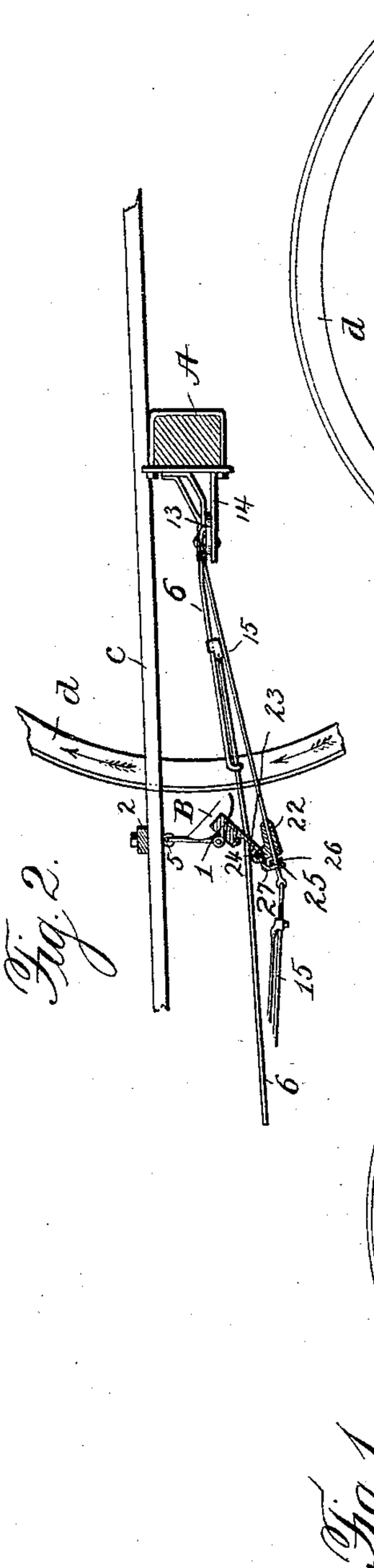


Fig. 2.

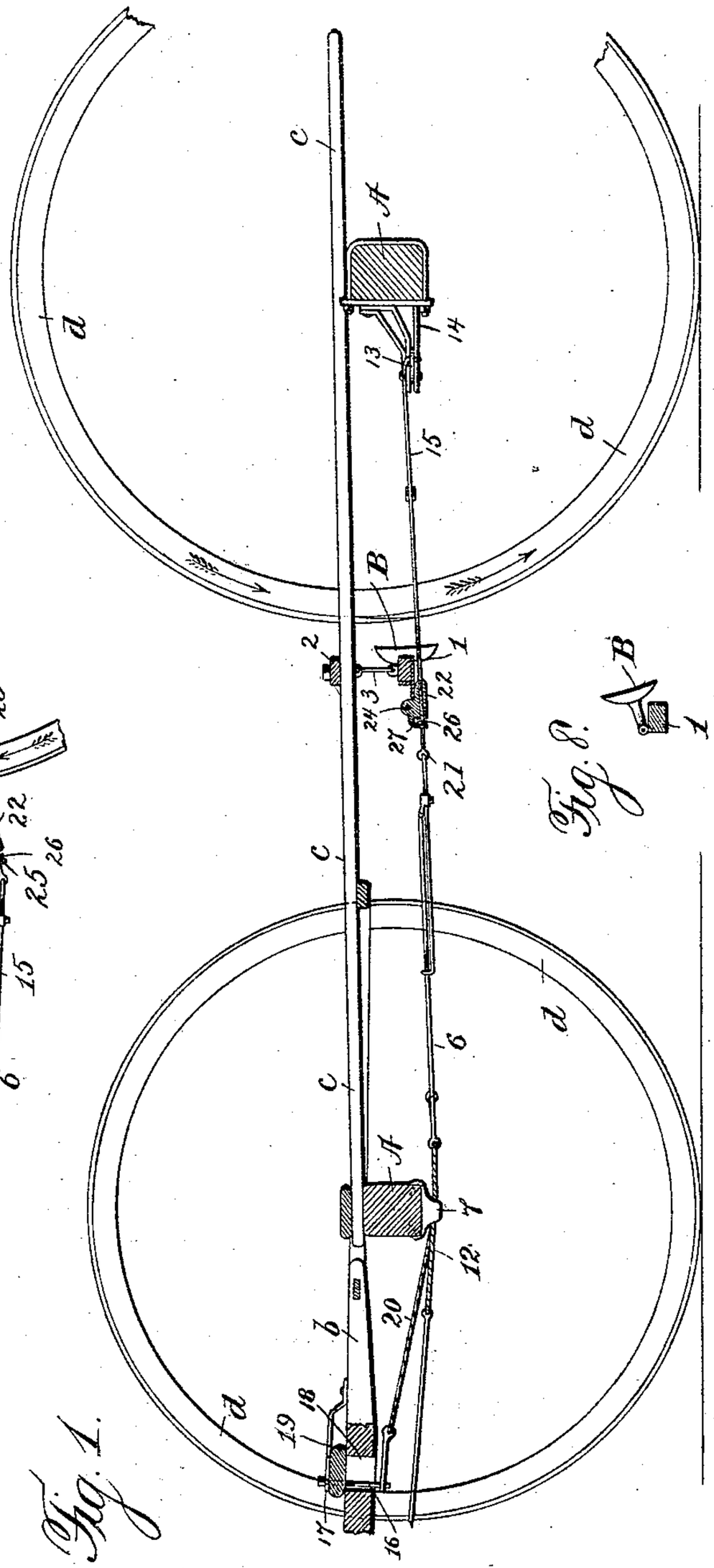


Fig. 1.

Fig. 3.

Witnesses
Jas. E. Hutchinson.
A. M. Bright.

Inventor
Jesse Kirlin
by N. A. Seymour.
Attorney

(No Model.) 2 Sheets—Sheet 2.

J. KIRLIN.

AUTOMATIC WAGON BRAKE.

No. 543,532. Patented July 30, 1895.

Fig. 3.

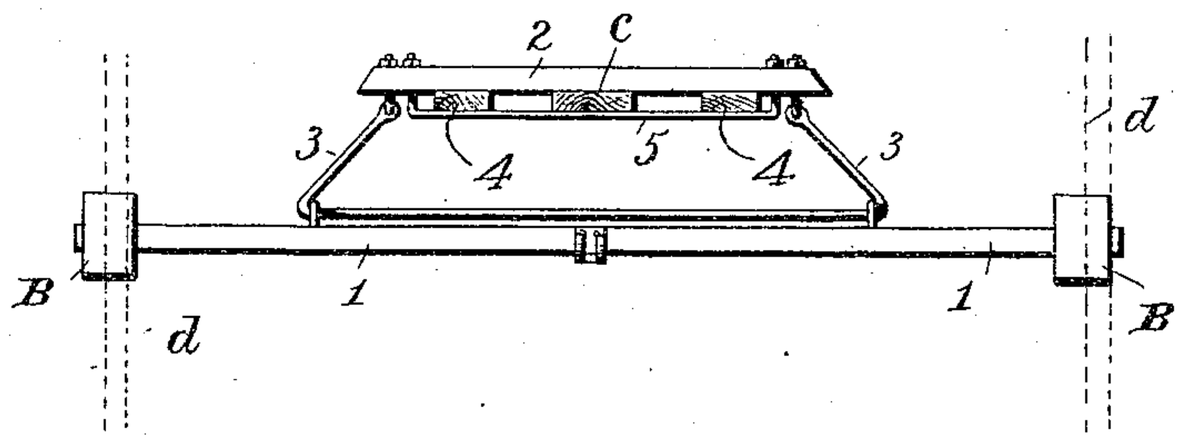


Fig. 4.

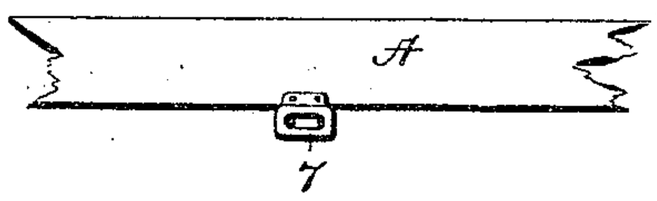


Fig. 5.

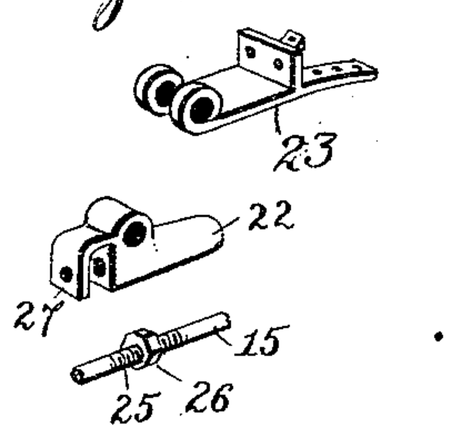


Fig. 6.

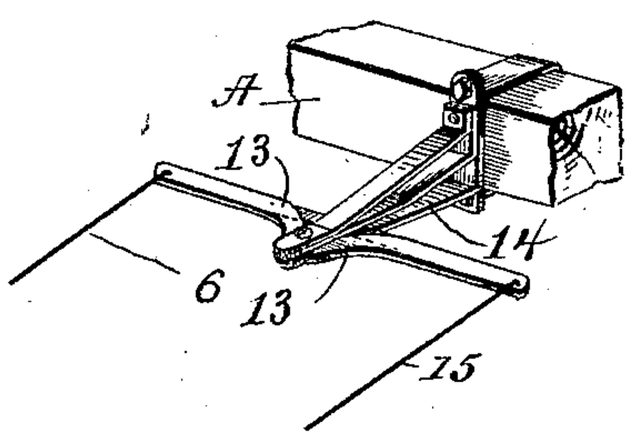
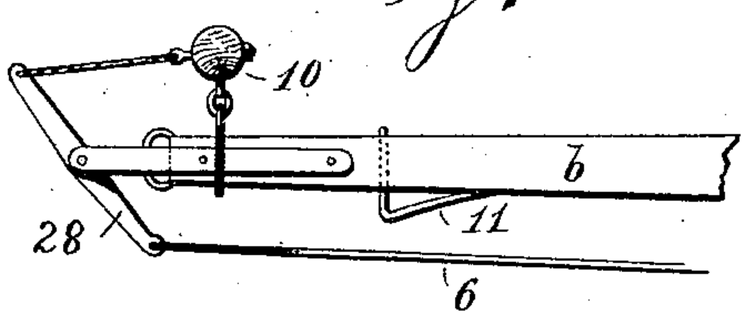


Fig. 7.



Witnesses
Jas. E. Hutchinson.
A. M. Bright.

Inventor
Jesse Kirlin
By H. A. Seymour.
Attorney

UNITED STATES PATENT OFFICE.

JESSE KIRLIN, OF STUART, IOWA.

AUTOMATIC WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 543,532, dated July 30, 1895.

Application filed July 14, 1894. Serial No. 517,589. (No model.)

To all whom it may concern:

Be it known that I, JESSE KIRLIN, a resident of Stuart, in the county of Guthrie and State of Iowa, 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 an improvement in automatic wagon-brakes, the object being to provide simple mechanism for automatically applying the brake during the descent of an incline and preventing the application of the brake during the backing of the vehicle.

A further object is to provide adjustment to compensate for wear upon the brake-shoes.

With these objects in view my invention consists in certain novel features of invention and combination of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in longitudinal section, parts being in elevation, to show my improved brake mechanism and its application to a wagon. Fig. 2 is a similar view of a portion of the vehicle and brake mechanism, showing the position assumed by the brake-shoes when the vehicle is backed. Fig. 3 is a view in front elevation to show the brake-shoes. Figs. 4, 5, and 6 are detail views, and Figs. 7 and 8 are modifications.

A A represent the axles of the wagon; *b*, the tongue; *c*, the reach, and *d d* the wheels.

B B are the brake-shoes or rubs which it is the object of my present invention to apply to the rear wheels of the vehicle at the right time—that is to say, when descending an incline, and prevent the application when the vehicle is being backed. These shoes or rubs B B are preferably wider than the wheel-tires, and secured to the brake-bar 1 at a proper distance apart to correspond with the distance of the rear wheels apart. The bar 1 is suspended from a cross-bar 2 by means of hanger-rod 3 and the cross-bar is held on the hounds 4 4 by means of an elongated clip 5, the length of which is greater than the width of the hounds, admitting of a lateral adjustment of cross-bar 2, in order to apply an unused and unworn part of the brake-shoes to the wheels after the remaining portion has been worn by use. The brake-shoes or rubs being suspended loosely a short distance in front of the rear wheels, their application is effected in the following manner and by the following mechanism: A rod or equivalent device 6, capable of tensile strain, extends from the forward end of the tongue to the rear axle of the vehicle, it passing under or over the brake-bar and loosely through a loop 7 under the front axle, which constitutes a guide therefor. At its forward end the rod has attached to it a cable or other flexible device 8, which passes around a sheave 9 at or near the end of the tongue and thence to the neck-yoke 10, to which it is secured. The neck-yoke itself has sliding connection with the end of the pole or tongue. As some flexibility is necessary at or near the point where the fifth-wheel is located, the rod 6 is made in sections, and these sections are connected at this point by a cable or flexible connection 12; otherwise there would be danger of bending the rod out of shape at this point, and in consequence impairing the operativeness of the brake. The rear end of the rod or device 6 is also preferably made in sections, so that it may be adjusted to the reach when the latter is lengthened or shortened. At its rear end this rod 6 is pivotally connected with a horizontal lever 13, the latter being pivoted on a bracket 14, secured to the rear axle. A rod or equivalent device 15 extends from the opposite end of this lever 13 to the brake and thence to the whiffletree, and the manner in which this rod is connected to the brake-bar and to the whiffletrees will now be explained. The bolt 16, which connects the whiffletree to the tongue or pole, passes through elongated slots 17 and 18 in the tongue and strap 19 respectively. A cable or equivalent flexible device 20 extends from the bolt 16 through the loop 7, and is secured at its rear end to the rod 15. This rod 15 is provided with an adjusting device the same as rod 6 for lengthening and shortening it; also the rod is made in sections, hinged or pivoted together at 21. The rear section of this rod 15 is furnished with a sleeve 22, through which the rod extends loosely. To this sleeve an arm 23, projecting forwardly from the brake-bar, is

hinged or pivotally connected at point 24. The forward end of this rear section of rod 15 is screw-threaded, as at 25, and a nut 26 on this threaded portion between the sleeve and guard 27 is adapted to be turned to move the brake-bar and attached shoes forward or rearward to effect their adjustment relative to the wheels when occasion may require their adjustment.

In the modification shown in Fig 7, in lieu of the sheave at the end of the tongue or pole, the rod 6 is connected to the lower end of a lever 28, and the lever is fulcrumed at or near its center on the end of the tongue, while the upper end is connected by a short rod or similar means to the neck-yoke, so that a backward pull operates the brake as before.

In the modification shown in Fig. 8 the shoe B is hinged to bar 1.

In operation the team is held back in descending a hill, in the usual manner, by the bit. This draws rod 6 forward and the brake shoes or rubs backward against the rear wheels. In starting forward again the first draft applied to the whiffletree causes a reverse movement to the brake-shoes. Of course it will be borne in mind that the wheels in descending a hill are turning just the same as they are in ordinary transit, and therefore the tendency is to carry the brake-shoes downward, the rods stopping them and holding them in place against the wheels. Now, in backing the wagon, the wheels turn in the opposite direction and cause the brake-shoes to tilt upward, as shown in Fig. 2, practically out of frictional contact with the wheels.

The lever 13 is so connected with other parts of the brake mechanism that the end where rod 15 is pivoted to it stands about one inch from the bracket 14 when the wagon is descending a hill. Consequently as the brake-bar 1 is rocked over into the position shown in Fig. 2 by the friction of the wheels against the shoes in backing it allows rod 15 to move back still farther until the end of the lever 13, to which it is attached, engages the bracket 14, which forms a stop for it, and thus any additional backward hold instead of being applied to the brake-bar is received directly upon the bracket 14.

Other slight variations in details may be resorted to without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the precise construction herein shown; but,

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

1. In an automatic brake mechanism for vehicles, the combination with the vehicle, a brake bar suspended from the vehicle and capable of rocking over, and shoes or rubs attached to the brake bar, of a lever pivoted to the vehicle, one end of this lever having connection with the brake bar and adapted to be fastened to a neck yoke or the hold back part of the vehicle and the other end of the lever having connection with the draft part of the vehicle, this lever constructed to strike the vehicle to limit its vibration in one direction when the brake bar is rocked whereby to receive the application of the backward hold and take it from the brake shoes or rubs, substantially as set forth.

2. In an automatic brake for vehicles, the combination with the vehicle, a lever pivoted thereto, and rods extending from the ends forward, one connected with the neck yoke and the other with the whiffletrees, of a brake bar located above both rods and having a hinged connection with one of the rods, said bar carrying brake shoes or rubs, substantially as set forth.

3. In an automatic brake mechanism for vehicles, the combination with the vehicle, a whiffletree, and a neck yoke, each of which has a sliding connection with the tongue of the vehicle, of a lever pivotally connected with the vehicle, rods extending from the ends of the lever forward, one to the neck yoke and the other to the whiffletrees, these rods having flexible connections, and a brake bar connected with one of these rods and carrying shoes or rubs adapted to engage wheels of the vehicle, substantially as set forth.

4. In an automatic brake for vehicles, the combination with the vehicle, and brake bar suspended therefrom, of a lever having pivotal connection with the vehicle, rods extending from the ends of this lever forward, a sleeve through which one of these rods extends and to which an arm extending from the brake bar is hinged, and means for adjusting the rod through this sleeve and securing it in said adjustment, substantially as set forth.

5. The combination with a vehicle, of a brake bar having shoes or rubs thereon, and means for shifting this bar endwise to throw different portions of the shoes opposite the wheels, substantially as set forth.

6. The combination with a vehicle, of brake-bar having shoes thereon of greater width than the width of the wheel tires, a cross bar connected with the vehicle, a hanger for connecting the brake-bar to the cross bar, and means for effecting a lateral adjustment of this cross bar relative to the vehicle wheels to apply different portions of the brake-shoes to the wheels, substantially as set forth.

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

JESSE KIRLIN.

Witnesses:
D. H. PECK,
EMMA KIRLIN.