E. F. RICKERSON.

AUTOMATIC WAGON BRAKE.

APPLICATION FILED JULY 31, 1909.

965,747.

Patented July 26, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

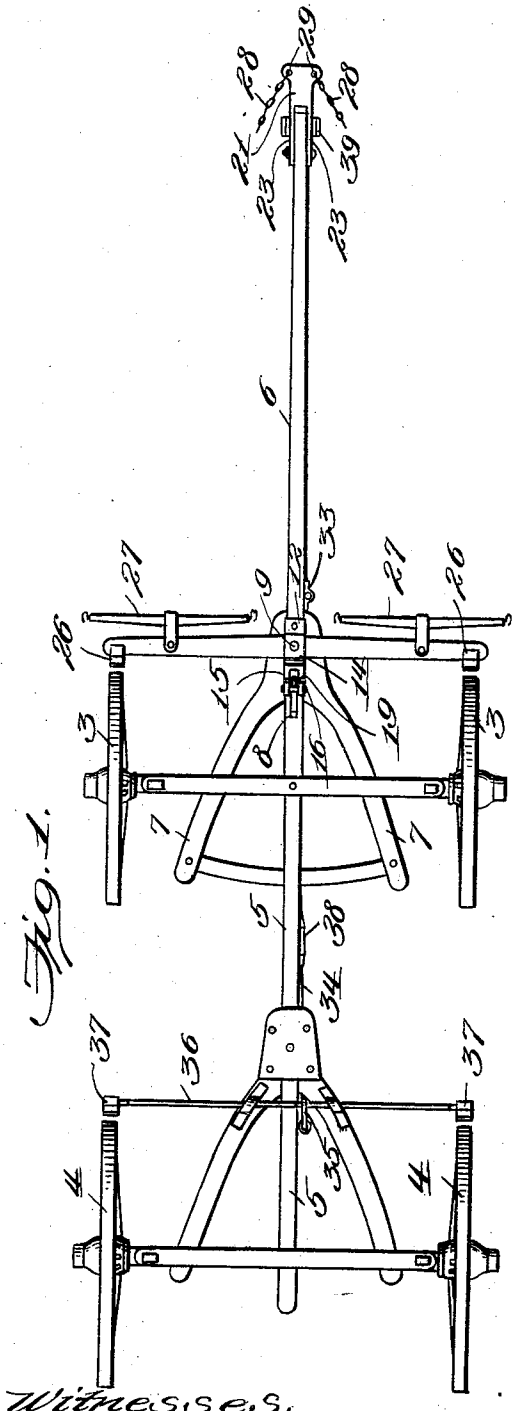
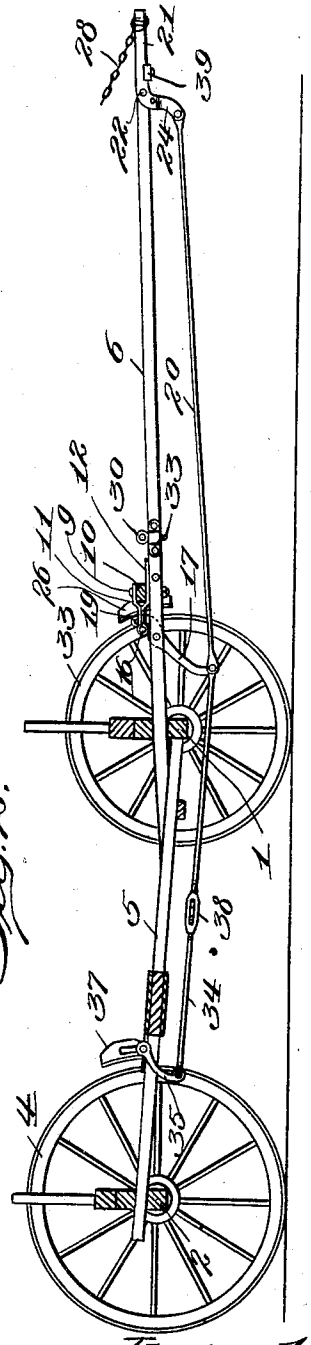


Fig. 2.



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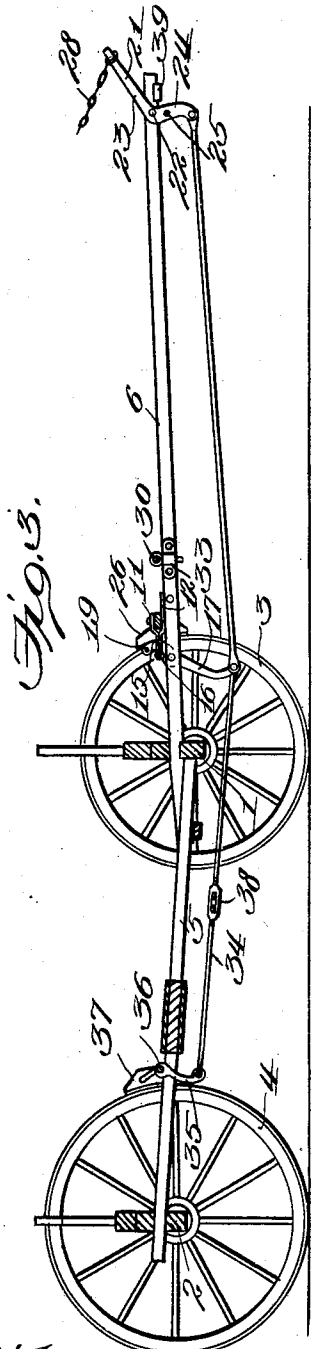

Fig. 3.

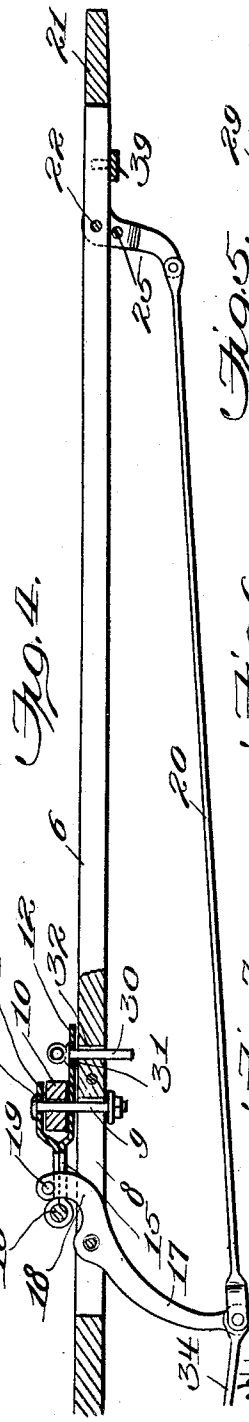

Fig. 4.

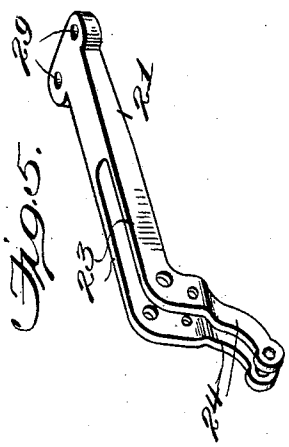

Fig. 5.

Fig. 6.

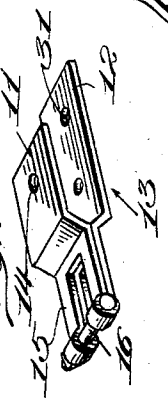

Fig. 7.

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EUGENE F. RICKERSON, OF BUTLER, GEORGIA.

AUTOMATIC WAGON-BRAKE.

965,747. Specification of Letters Patent. Patented July 26, 1910.

Application filed July 31, 1909. Serial No. 510,589.

To all whom it may concern:

Be it known that I, EUGENE F. RICKERSON, a citizen of the United States, residing at Butler, in the county of Taylor and State of Georgia, have invented new and useful Improvements in Automatic Wagon-Brakes, of which the following is a specification.

The present invention is an improvement in automatic wagon brakes, and its principal object, stated broadly, comprehends the production of an extremely simple and effective mechanism of the general type specified, in which the brakes are both set and released automatically by the pull of the draft animals.

Briefly described, the improved brake mechanism comprises front and rear brake rods, each connected to and operated by a separate brake lever, the rear lever being connected to the front lever and the latter, in turn, to a nose piece pivoted to the front end of the tongue, so that the two levers have a synchronous movement. The actuation of the front lever is effected by the pivotal movement of the nose piece, which latter is rocked in one direction by the backward pull of the draft animals during the descent of an incline, and in the other direction during ascent thereof or during the passage of the wagon over a flat stretch of road. The brake levers, themselves, together with their specific connections with each other and with the brake rods present the more important features of the invention, the connections between the two levers being of such a nature as to permit of their disengagement and the subsequent complete detachment of the rear braking devices as an entirety, if deemed expedient.

The invention also resides in the provision of a device for locking the brake mechanism against operation when the wagon is being backed, and in the further provision of means for supporting such device when not in use.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view illustrating the application of the brake mechanism to the running gear of a wagon. Figs. 2 and 3 are longitudinal sectional views of Fig. 1, showing the two positions of the brake rods. Fig. 4 is an enlarged fragmental detail view of the tongue, partly in section, showing the locking device in operative position. Figs. 5, 6 and 7 are detail views, respectively, of the nose piece, the front lever and the sliding yoke with which the latter is connected.

Reference being had to the drawings, and to the characters marked thereon, 1 and 2 designate, respectively, the front and rear axle-trees, 3 and 4 the wheels carried thereby, and 5 the connecting reach between the two axles. These parts are of the ordinary construction, and, hence, require no extended description.

The tongue 6, which is connected with the front axle through the medium of the front hounds 7, has formed therein adjacent its rear end a longitudinal slot 8 wherein works the bolt 9 by means of which the main draft element 10 is attached to the tongue. This element is in the nature of a double-tree and is embraced or straddled by the two plate-like arms 11 and 12 of the yoke member 13 shown in Fig. 7, the bolt 9 passing through the alining perforations 14 in said plates and through the central portion of the doubletree. The stem 15 of the yoke is bifurcated and the legs which result from such construction are beaded at their free ends to receive a bolt 16. The yoke is slidably mounted upon the upper face of the tongue, its shifting movement being effected through the medium of the front brake lever 17, which latter is pivoted intermediate its ends in the slot 8, and is formed at its upper end with a forwardly-curved hook 18. The hook end of the lever is arranged to extend through the space between the legs of the yoke stem, so as to engage the bolt 16 when the lever is rocked in one direction, displacement of the hook from such position being prevented by means of a lateral pin 19 with which the terminal of the hook is provided. The lower portion of the lever has a slight rearward curve and is pivotally connected at its terminal to the rear end of a rod 20 whose forward end is connected with the nose-piece 21. This member is located at the front end of the tongue and has the rear portion thereof bifurcated to receive the tongue end, attachment of the nose-piece to the tongue being effected by a horizontal pivot bolt 22 which passes through the legs 23, thus formed, and through the tongue. These legs are provided with integral angular extensions 24 connected by a central cross-pin 25 and bent slightly toward each other, the free or lower ends of said extensions being pivotally connected to the front

end of rod 20. The nose-piece and brake lever are thus arranged to move in unison, thereby imparting a sliding movement to the yoke and doubletree with which said lever is connected.

The doubletree has a length slightly greater than the distance between the front wheels and carries at each end a brake shoe 26 of any suitable construction, and in addition thereto a swingletree 27. Hence, it will be apparent that this element performs a double function, since it serves not only as a draft element but also as a brake rod, the brakes being set when the nose-piece is rocked in one direction and released upon movement in the opposite direction. This rocking movement is effected automatically by the action of the draft animals, (not shown,) which are hitched to the swingletrees 27 in the ordinary manner and have their collars connected by chains 28 with the eyes 29 formed upon opposite sides of the front end of the nose-piece, the backward pull of the animals during the passage of the wagon down-hill having the effect of raising the front end of the lever into the position shown in Fig. 3, thereby setting the brakes, while their forward pull while traveling uphill or along a level stretch will return said lever to its normal position, (Fig. 2,) and thus release the brakes.

In order to prevent the operation of the brakes when the wagon is being backed, means are provided for holding the yoke 13 against movement, such means consisting preferably of a headed pin 30 arranged for insertion in openings 31 and 32, formed, respectively, in the lower yoke plate 12 and the tongue, said openings registering with each other when the yoke is in its forward position. When not in use, the locking pin is supported in a bracket 33 secured to one of the side faces of the tongue.

The lower portion of the brake lever is connected by a rearwardly-extending rod 34 with a depending crank arm or lever 35 suitably attached to a horizontal rock shaft 36 arranged transversely of the running gear and removably journaled in bearings secured to the reach 5. This shaft carries at each end a brake shoe 37 arranged for engagement with the adjacent rear wheel 4, the shaft thus acting as the rear brake rod. Rod 34 which connects the two brake levers is composed of two separate sections whose confronting ends are detachably joined together by a coupling 38. The ends of the rod, considered as a whole, are likewise detachably connected to the brake levers, so as to permit the rear braking device to be completely removed from the running gear.

When the draft exerted by the animals is normal, or, in other words, forward, the body portion of the nose-piece lies in the plane of the tongue, as shown in Figs. 2 and 5, and rests in such position upon a transversely-arranged strap 39 bolted to the under face of the tongue, the ends of the strap extending beneath the legs 23 and being slightly upturned.

From the foregoing, it will be apparent that both brake levers, when employed, move in unison, owing to their connection with each other, their operation being effected automatically by the movements of the nose-piece, which latter is in turn operated by the pull of the draft animals. When the roads over which the wagon is to pass are comparatively level, or the load is light, the front brakes will be sufficient to hold the wagon, and the rear brakes may accordingly be removed, as already explained. Finally, the locking pin 30, when engaged with the yoke and tongue, will effectively hold the former against movement during the time that the wagon is being backed, thereby preventing setting of the brakes.

What is claimed is:

1. The combination, with a wagon tongue, of a bifurcated yoke slidable thereon, a whiffle tree carried directly by said yoke and provided at its ends with brake shoes, a lever pivoted to the tongue and having one end thereof extending through the bifurcation in said yoke and engaged with the latter, and means operated by the pull of the draft animals and connected with the other end of said lever, for rocking the same, to shift the yoke and the whiffle tree bodily along said tongue.

2. The combination, with a wagon tongue, of a bifurcated yoke slidable thereon and having its stem portion bifurcated, a member connecting the ends of the legs formed by the bifurcation, a brake rod carried by said yoke and seated in the body of the same, a lever pivoted to the tongue and formed with a hooked end extending through said bifurcation for engagement with said connecting member, and means operated by the pull of the draft animals and connected with the other end of said lever, for rocking the same, to shift the yoke and the brake rod bodily along said tongue.

3. The combination, with a wagon tongue having a longitudinal slot formed therein, of a member slidable upon said tongue directly over said slot and formed with a bifurcation registering with the latter, a brake rod carried wholly by said member, a lever pivoted in said slot and having one end extending through said bifurcation and engaged with said member, and means operated by the pull of the draft animals and connected to the opposite end of said lever for rocking the same, to shift said member and rod bodily along said tongue.

4. The combination, with a wagon tongue having a longitudinal slot and a perforation formed therein adjacent to each other, of a

member slidable upon said tongue directly over said slot and having one end portion formed with a bifurcation registering with the slot, and the opposite end portion formed with a perforation adapted to register with the first-named perforation, a brake rod carried by the body portion of said member, a lever pivoted in said slot and having one end extending through said bifurcation and engaged with said member, means operated by the pull of the draft animals and connected to the opposite end of said lever for rocking the same, to shift said member and rod bodily along said tongue, and means arranged for engagement in said perforations to lock said member and rod against such movement.

5. The combination with a wagon tongue having a longitudinal slot formed therein, of a member slidable upon said tongue directly over said slot and formed with a bifurcation registering with the latter, a whiffletree carried by said member and provided at each end with a brake shoe, a lever pivoted in said slot and having one end extending through said bifurcation and engaged with said member, and means operated by the pull of the draft animals and connected to the opposite end of said lever for rocking the same, to shift said member and whiffletree bodily along said tongue.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EUGENE F. RICKERSON.

Witnesses:

A. BYRD,

J. H. CHILDRES.