No. 659,212.

Patented Oct. 9, 1900.

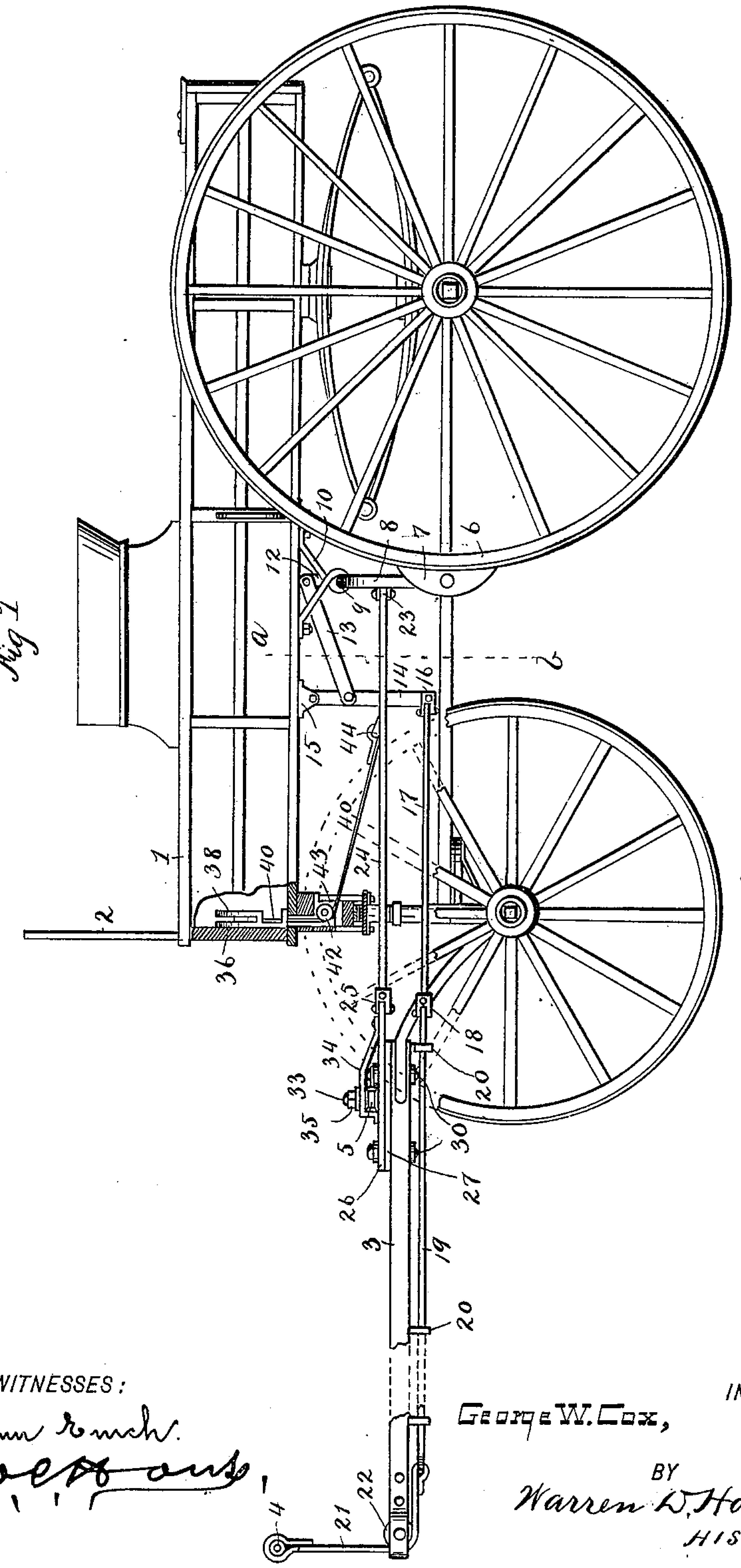
G. W. COX.

WAGON BRAKE.

(Application filed Nov. 26, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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(No Model.) 2 Sheets—Sheet 2.

Fig 2

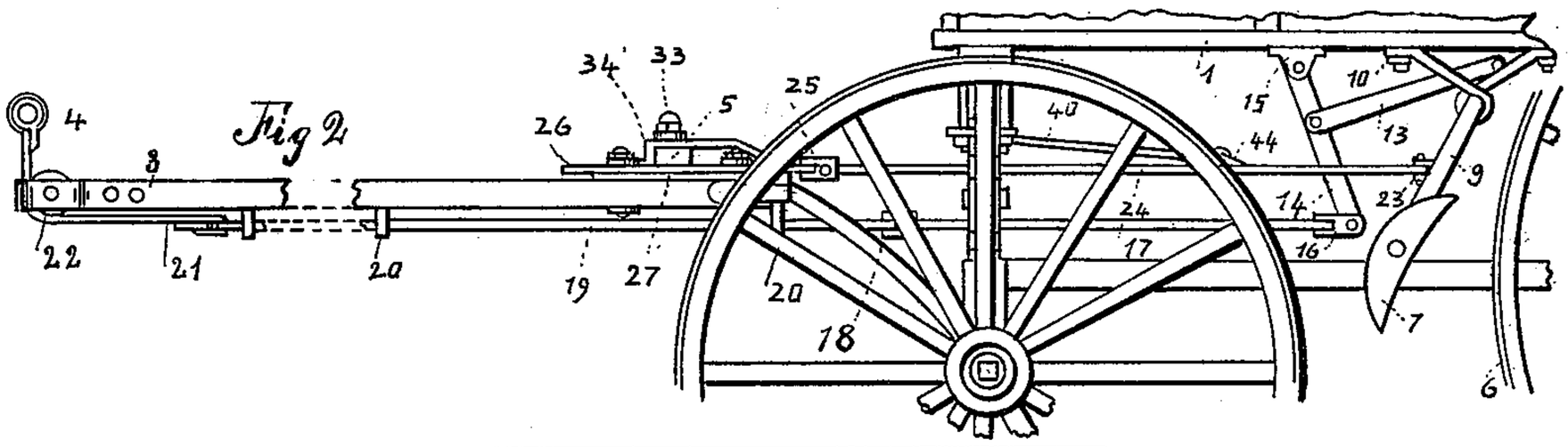


Fig 3

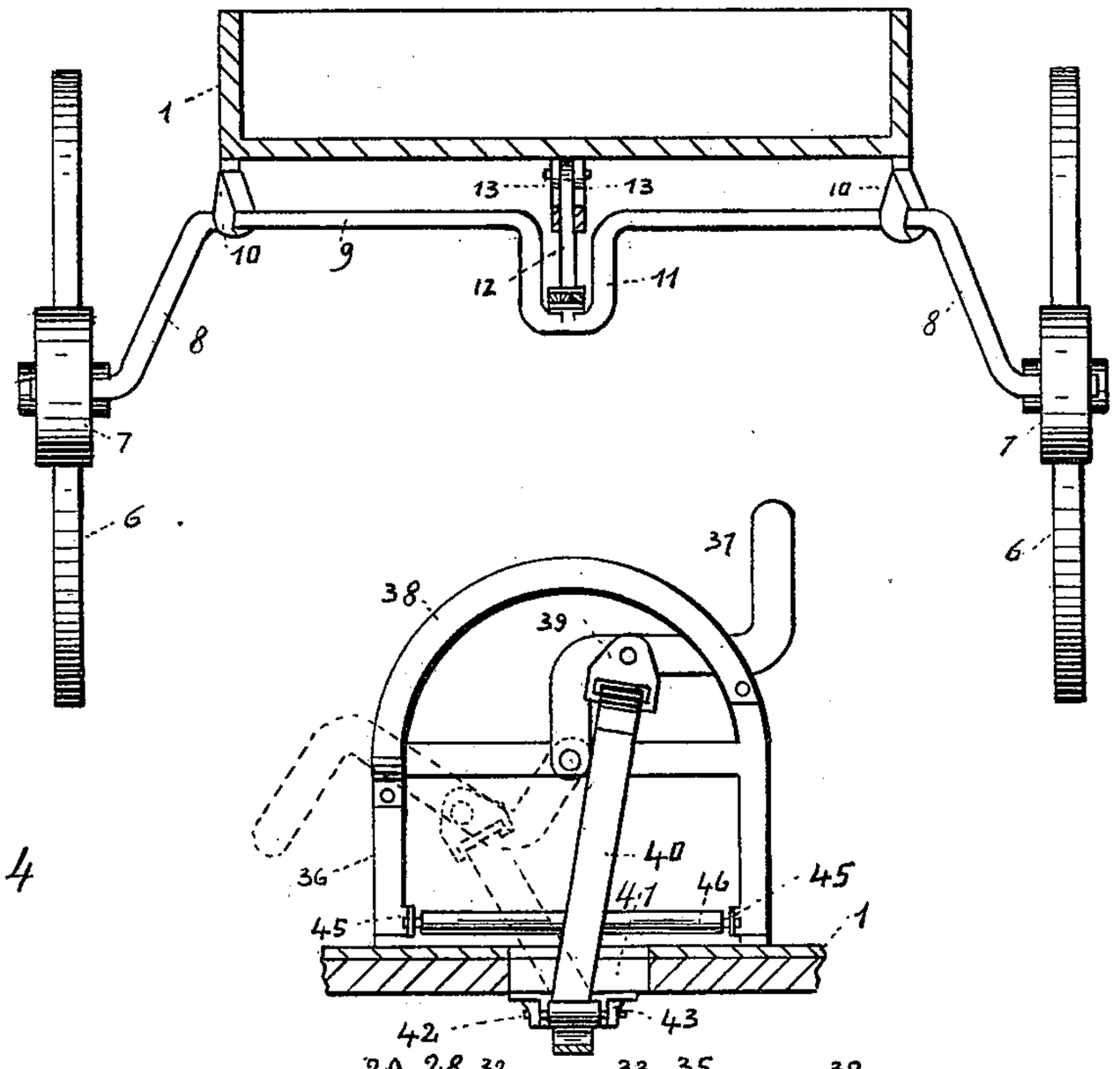


Fig 4

Fig 5

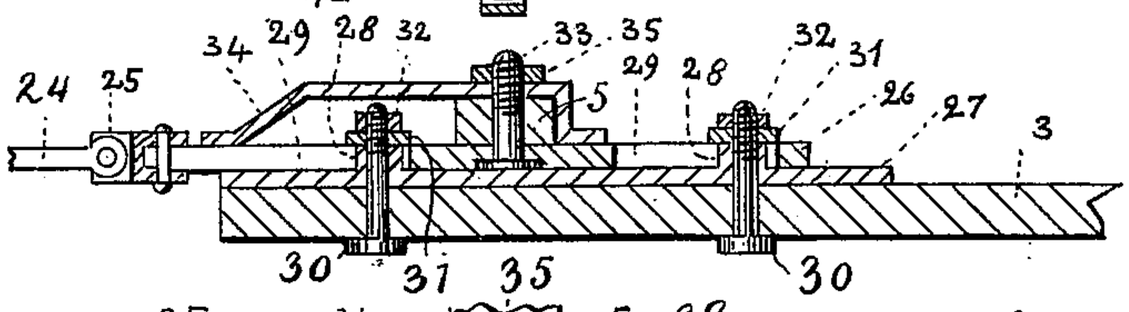
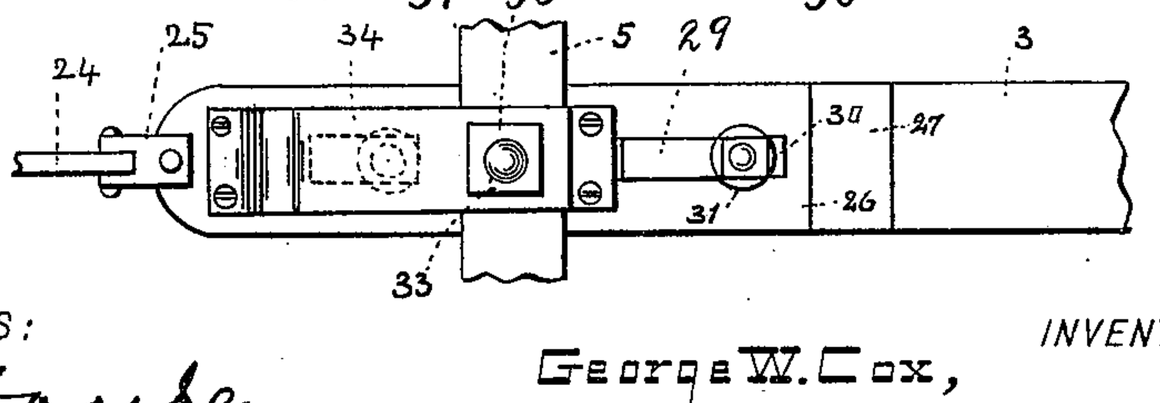


Fig 6



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WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 659,212, dated October 9, 1900.

Application filed November 26, 1897. Serial No. 659,797. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. COX, a citizen of the United States, residing at Union, in the county of Osage and State of Kansas, have invented certain new and useful Improvements in Wagon-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in wagon-brakes.

It relates more particularly to the class of automatic wagon-brakes in which the brake is applied to the wagon-wheels by the action of the horses used in drawing the wagon.

My invention comprises a construction in which the brake-shoes are applied to the wheels when the horses pull on the neck-yoke, as in holding back while going downhill, and released therefrom by the drawing strain upon the doubletree.

My invention comprises, further, a forwardly and rearwardly sliding doubletree, mechanism supporting the brake-shoes, mechanism connecting the said brake-shoe mechanism with the doubletree, and mechanism connecting the neck-yoke with the brake-shoe mechanism, all so combined that the brake-shoes are applied to the wheels by a strain put upon the neck-yoke in the proper direction and released therefrom by the drawing forward of the sliding doubletree.

My invention provides, further, a device adapted when operated to prevent the application of the brake-shoes to the wheel when the horses are backed.

My invention provides, further, certain peculiarities of construction hereinafter fully described and claimed.

In the accompanying drawings, which illustrate my invention as applied to a two-horse wagon, Figure I represents a side elevation of a wagon furnished with a brake constructed in accordance with the principles of my invention. In this view a portion of the tongue is broken away and also portions of the forward wheel and wagon-bed are broken away in order to better disclose the construction of the invention. Fig. II represents a view similar to the one in Fig. I, portions of the wagon directly connected with the brake mechanism only being shown. In this view the mechanism is shown in the position assumed by it when the brakes are not applied to the wheels; while in Fig. I the parts are shown in the position assumed by them when the brake-shoes are applied to the wheels. Fig. III represents a cross-section looking rearward, taken on the dotted line *a b* of Fig. I, the bed and wheels only of the wagon being shown. Fig. IV represents an elevation view looking toward the dashboard of the device used to prevent the application of the brake, the parts being shown in the position occupied by them when the device is so used. The positions of the operative parts of the devices occupied by them when the device is not in use are shown in dotted lines. Fig. V represents a vertical longitudinal sectional view of the parts immediately connected with the sliding doubletree. Fig. VI represents a top view of the same.

Similar numerals of reference indicate similar parts throughout the various figures.

1 indicates the wagon-bed, 2 the dashboard, 3 the tongue, 4 the neck-yoke, 5 the doubletree, 6 the rear wheels, and 7 the brake-shoes, all of which may be of the ordinary pattern. The brake-shoes 7 are secured to the outer ends, respectively, of two downwardly-extending arms 8, with which the two ends of a horizontal rock-shaft 9 are provided. The rock-shaft 9 is transversely disposed under the bed of the wagon in front of the two rear wagon-wheels and is rotatably mounted in bearings 10, secured to the under side of the bottom of the wagon-bed. By rocking the rock-shaft 9 in its bearings the brake-shoes may be forced against or away from the rear wagon-wheels 6.

In order to apply the brake-shoes against the wagon-wheels for the purpose of braking, the following mechanism is provided: Projecting below the axial center of the rock-shaft 9 midway of its length and preferably formed in the shaft is a U-shaped crank 11, from the center of which upwardly projects a lever 12. Pivoted at their rear ends to the lever 12 at a point above the axial center of the rock-shaft 9 are the bars 13, the forward ends of which are pivotally connected to a downwardly-extending lever 14, the upper end of which is pivotally secured to a bearing 15, which in turn is secured to the under side of the wagon-bed forward of the rock-shaft 9.

The rear end of a coupling 16 is pivoted so as to swing in a vertical plane to the lower end of the lever 14. The forward end of the coupling 16 is pivoted so as to swing in a horizontal plane to the rear end of a connecting-rod 17, the forward end of which is pivoted so as to swing in a vertical plane to the rear end of a coupling 18, similar in construction to the coupling 16, and having its forward end pivoted so as to swing in a horizontal plane to the rear end of a sliding bar 19, which is supported in bearings 20, secured to the under side of the wagon-tongue 3. The forward end of the sliding bar 19, which may be provided with an eye for that purpose, has secured to it the rear end of a strap 21, which passes around the forward face of a friction-roller 22, secured at the forward end of the tongue, and has its forward end secured to the neck-yoke 4. When the neck-yoke is drawn upwardly or rearwardly, the sliding bar is drawn forward and, through the intermediacy of the couplings 16 and 18 and connecting-rod 17, draws the lower end of the lever 14 forward, thus rocking the rock-shaft 9 in a direction such as will force the brake-shoes 7 against the peripheries of the rear wheels 6 through the intermediacy of the bars 13, the lever 12, and the crank 11. One end of a coupling similar in construction to the coupling 16 and designated by the numeral 23 is pivoted so as to swing in a vertical plane to the lever 12 at a point below the axial center of the rock-shaft 9. The other end of the coupling just mentioned is pivoted so as to swing in a horizontal plane to the rear end of a connecting-rod 24, the forward end of which is pivoted so as to swing in a vertical plane to a coupling 25, the forward end of which is pivoted so as to swing in a horizontal plane to the rear end of a sliding plate 26, which is longitudinal upon a horizontal plate 27, secured to the rear end of the tongue 3, upon the upper side thereof. The plate 27 is provided with two upwardly-projecting studs 28, located, respectively, in the two slots 29, with which the slide-plate 26 is provided. Through each stud 28 and through the plate 27 and the tongue 3 in openings provided therefor extends a vertical bolt 30, the upper end of which is screw-threaded and provided with a washer 31, which rests upon the upper end of the stud 28 and retains the plate 26 against displacement, and a nut 32. Upon the upper side of the plate 26, secured by means of the hammer-bolt 33, is the doubletree 5. The plate 26 is provided with a vertical opening therethrough between the slots 29 to receive the hammer-bolt, a recess also being provided in the under side of the said slide-plate to receive the head of the hammer-bolt. The upper end of the hammer-bolt extends through an opening provided in the hammer-strap 34, located above the doubletree 5 and having its ends secured to the upper side of the slide-plate 26. Upon the hammer-bolt 33, above the hammer-strap 34, is secured a nut 35. When the horses draw upon the doubletree, the slide-plate 26 is forced forward upon the plate 27, thus drawing forward the connecting-rod 24 and rocking the shaft 9 in a direction such as will force the brake-shoes away from the wheels.

It will be noted that whenever the horses pull the neck-yoke upwardly or rearwardly the rock-shaft 9 will be rocked in a direction such as will force the brake-shoes toward the rear wheels and at the same time drawing the slide-plate 26, carrying the doubletree 5, with it rearwardly, and thus taking up the slack in the traces occasioned by the holding back of the horses. With this construction the traces are not liable to become unfastened from the singletrees. If, however, it is desired to back the horses for any purpose, it is usually not desirable to have the brakes applied, and to prevent the application of the brake-shoes at such times I have devised the following-described mechanism: Immediately in the rear of the dashboard 2, with its lower end secured to the bottom of the wagon-bed, is located a vertical inverted-U-shaped plate 36, provided with a transverse cross-piece, to which is pivotally secured one end of a lever 37, the shape of which is best illustrated in Fig. IV, and which is adapted to swing to the right and left between the plate 36 and an arcuate-shaped plate 38, the lower ends of which are secured to the plate 36, the points of union between the two plates serving as the seats for supporting the lever 37 in the two positions occupied by it. Pivoted to the lever 37 is a plate 39, which is provided with a slot in which is secured the forward upper end of a strap 40, which passes down through an opening or slot provided in the bottom of the wagon-bed (indicated by 41) and around a friction-roller 42, which is rotatably mounted in bearing-brackets 43, secured to the under side of the wagon-bed, the rear end of the strap 40 being secured to a loop 44, provided on the connecting-rod 24. The plate 36 is provided at each side, near the bottom, with forwardly-extending projections 45, provided with transverse openings, in which are rotatably mounted the two ends of a friction-roller 46, located to the rear of the strap 40 and preventing the contact of the strap with the dashboard. If the lever 37 is swung into the position shown in solid lines in Fig. IV, the strap 40 will be drawn forwardly, thus drawing the connecting-rod 24 forwardly and rocking the shaft, so as to bring the shoes 7 away from the wheels 6. It will be noted that the strap 40 in this position is to the right of the pivotal point between the lever 37 and the plate 36, and any strain down on the strap will cause the lever 37 to rest more securely in its seat at the right side of the plate 36. If while the lever 37 is in this position the horses are backed, thus drawing upon the neck-yoke and strap 21 and tending to force the brake-shoes against the wheels, this tendency to apply the

brakes will be resisted by the strap 40, which holds the connecting-rod 24 from rearward movement, and thus prevents the rocking of the shaft 9, and consequently prevents the application of the brake-shoes to the wheels.

My invention is adapted to be applied to most any form of wagon or buggy and may be subjected to various modifications to suit the style of vehicle with which it is to be used without departing from its spirit.

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

1. In a wagon-brake, the combination with a rock-shaft adapted to support the brake-shoes, of a lever secured to and extending beyond the axial center of the rock-shaft in opposite directions, a forwardly and rearwardly movable support for the doubletree, mechanism connecting the said support with one end of the said lever, and mechanism, operated by the horses when pulling backward, and connected with the said lever upon the other side of the rock-shaft, substantially as described.

2. In a wagon-brake, the combination with a rock-shaft provided at its ends with arms adapted to support the brake-shoes, a lever secured to the rock-shaft and extending at each side of the axial center thereof, a forwardly and rearwardly movable support for the doubletree, mechanism for rocking the shaft connecting the lever at one side of the rock-shaft with the said support, a forwardly and rearwardly movable bar provided with means for connecting the neck-yoke at one end, and mechanism connecting the other end of the said bar with the said lever upon the opposite side of the rock-shaft from the first-named connection therewith, substantially as described.

3. In a wagon-brake, the combination with a rock-shaft provided with arms at its ends for supporting the brake-shoes, of a forwardly and rearwardly movable support for the doubletree, a forwardly and rearwardly movable bar provided with means for attaching to the neck-yoke so as to be moved forwardly thereby, a lever secured to and projecting each side of the rock-shaft, mechanism for rocking the shaft connecting the movable support and one end of the said lever, and mechanism connecting the other end of the said lever with the movable bar, substantially as described.

4. In a wagon-brake, the combination with a rock-shaft provided with arms for supporting the brake-shoes, of the wagon-tongue, a sliding bar supported by the tongue, a strap secured at one end to the forward end of the said sliding bar and passing over a bearing provided therefor in the forward end of the tongue and adapted to have its forward end secured to the neck-yoke, a forwardly and rearwardly movable support for the doubletree mounted upon the tongue, a lever secured to the rock-shaft and extending each side of the axial center thereof, mechanism connecting the movable doubletree-support with one end of the said lever, and mechanism connecting the sliding bar with the other end of the said lever, whereby the rock-shaft may be rocked in two directions alternately by the moving of the sliding bar and the doubletree-support, substantially as described.

5. In a wagon-brake, the combination with a rock-shaft provided with arms for supporting the brake-shoes, of a lever 18 secured thereto and extending each side of the axial center thereof, the forwardly and rearwardly movable bar 19, the forwardly and rearwardly movable doubletree-support 26, the rod 24, couplings 23 and 25 for connecting the ends of the rod 24 with one end of the lever 12 and the doubletree-support respectively, the lever 14, the link 13 pivoted at its ends to the other end of the lever 12 and to the lever 14, the rod 17 and couplings 16 and 18 connecting respectively the two ends of the rod 17 with the lever 14 and the bar 19, substantially as described.

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

GEORGE W. COX.

Witnesses:
HENRY ARNOLD,
C. H. REDMON.