No. 735,124. PATENTED AUG. 4, 1903.

J. A. MANOR.

AUTOMATIC WAGON BRAKE.

APPLICATION FILED SEPT. 2, 1902.

NO MODEL.

Fig. 1.

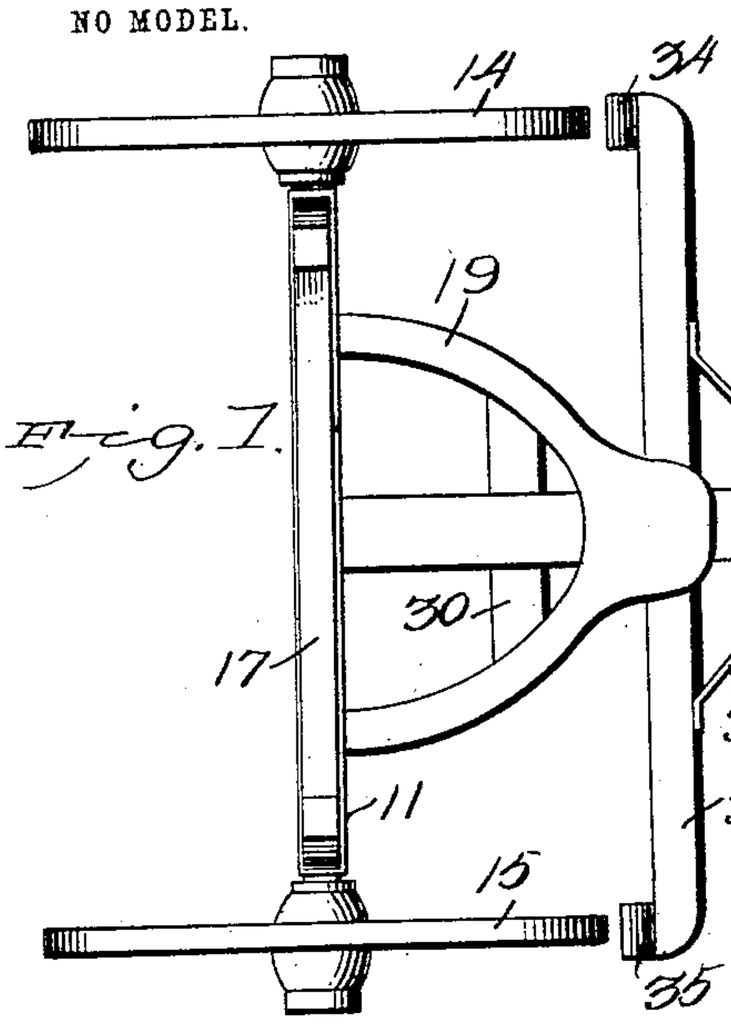


Fig. 5.

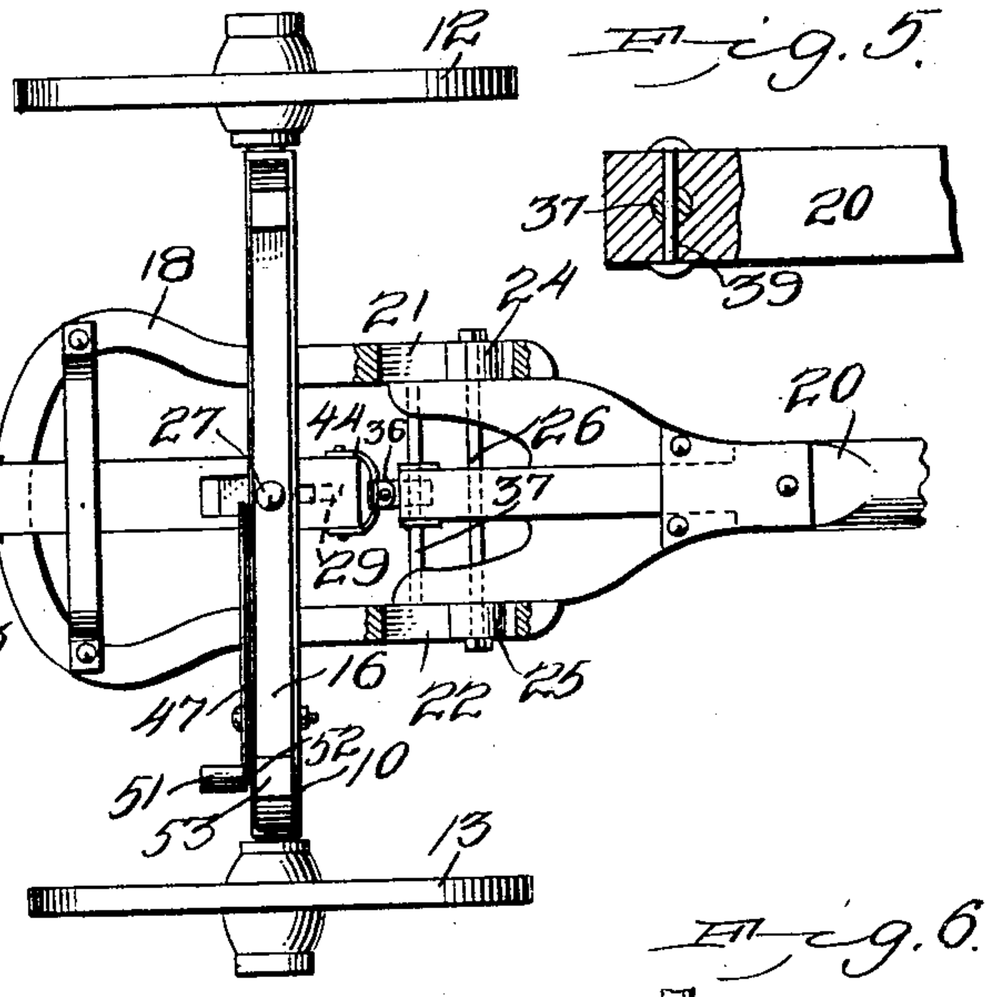


Fig. 6.

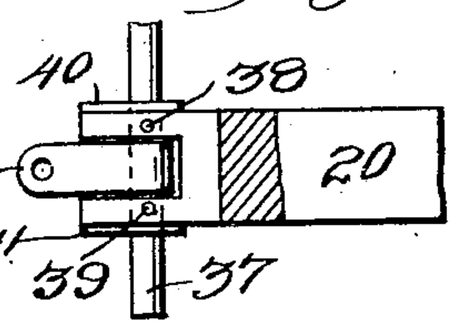


Fig. 2.

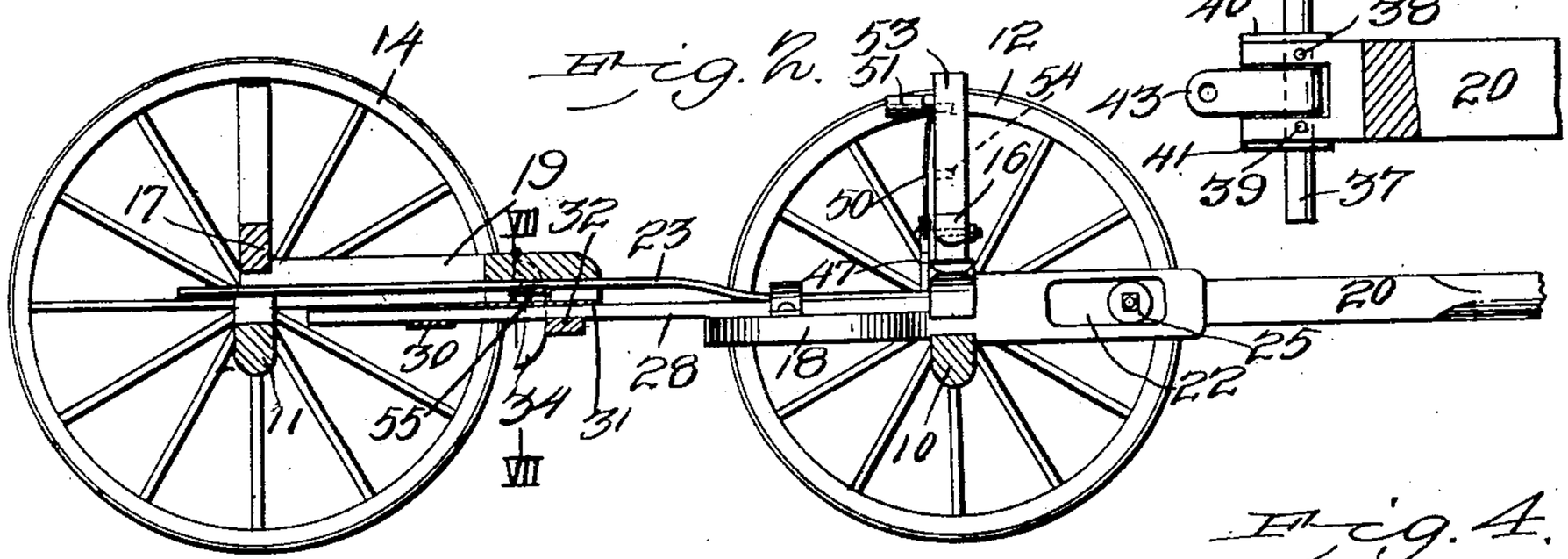


Fig. 4.

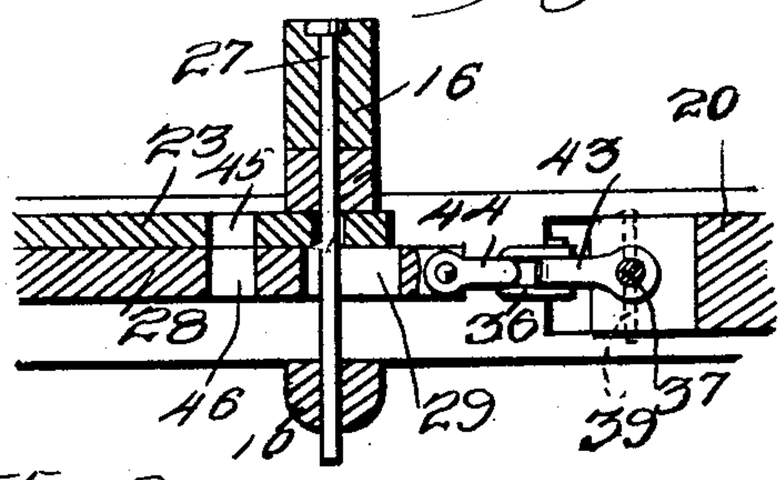


Fig. 3.

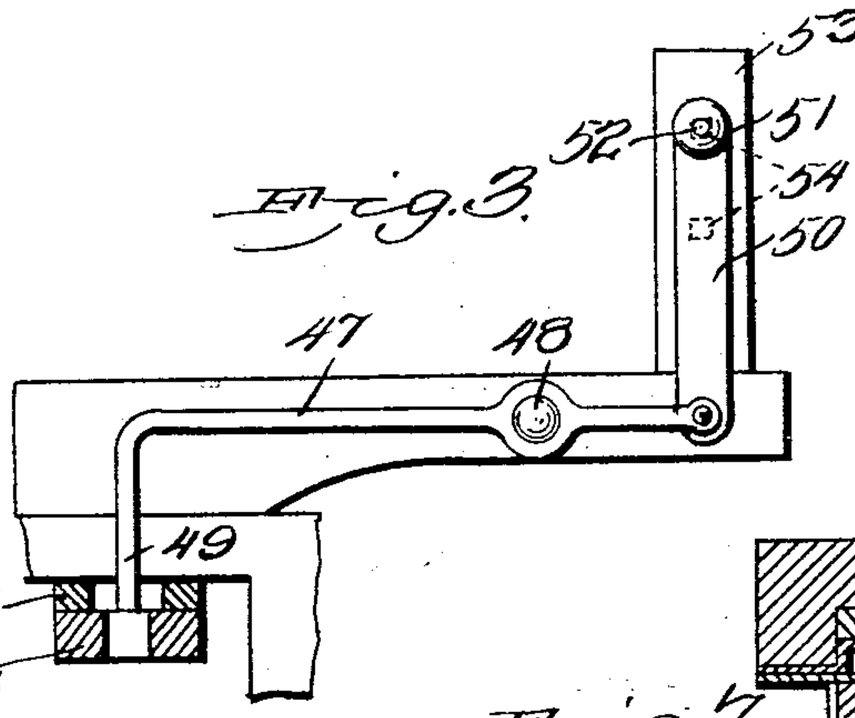
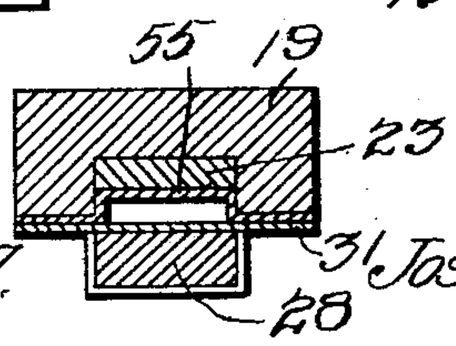


Fig. 7.



Witnesses

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No. 735,124. Patented August 4, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH A. MANOR, OF FRISTOE, MISSOURI.

AUTOMATIC WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 735,124, dated August 4, 1903.

Application filed September 2, 1902. Serial No. 121,899. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. MANOR, a citizen of the United States, residing at Fristoe, in the county of Benton and State of Missouri, have invented a new and useful Automatic Wagon-Brake, of which the following is a specification.

This invention relates to wagon-brakes, and has for its object the production of a brake mechanism adapted to be operated automatically by the load upon the wagon when moving down an incline or grade; and the invention consists in certain novel features of construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, Figure 1 is a plan view of the running-gear of a wagon, partially in section, with the improvement applied. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is an enlarged detail, illustrating the construction and operation of the locking mechanism. Fig. 4 is an enlarged sectional detail of the forward bolster and tongue-connecting mechanism. Figs. 5 and 6 are enlarged sectional details illustrating the tongue construction and coupling. Fig. 7 is a transverse section on the line VII VII, Fig. 2.

The invention may be applied to any ordinary form of farm or freight wagon, or what are known as "lumber-wagons," and for the purpose of illustration the ordinary running-gear of a conventional wagon of this class is shown with such modifications as may be necessary to illustrate the improvements.

The forward axle is represented at 10, the rear axle at 11, the forward wheels at 12 13, the rear wheels at 14 15, the forward movable bolster at 16, the rear stationary bolster at 17, the forward hounds at 18, the rear hounds at 19, and the tongue at 20, all these parts being of the usual construction except such slight modifications as are required to enable the improvements to be applied and which will be hereinafter explained.

The forward hounds 18 are formed with their sides parallel forward of the forward axle, as shown, and the rear portion of the tongue 20 is shown correspondingly parallel-sided and movably supported between the parallel portions and the hounds, as shown.

The forward portions of the hounds 18 are formed with oppositely-disposed horizontal slots 21 22, and within these slots friction-pulleys 24 25 are adapted to move, the pivots of the pulleys being the pivot-pin 26 of the tongue 20, so that the tongue, while free to vibrate in the usual manner upon its pivot-pin 26, will likewise be horizontally movable within the slots 21 22 and the friction of such movement minimized by the pulleys 24 25, as will be obvious.

The improved brake mechanism contains two reaches—an upper reach 23, engaged by the linchpin 27 by its forward end within the forward axle, as shown more clearly in Fig. 2, the linchpin passing downward through the movable bolster 16 and also through all the parts of the forward axle in the ordinary manner, and a lower reach member 28, having a longitudinal slot in its forward end, (indicated at 29,) the slot engaging the linchpin 27, as shown in Fig. 3, so that the reach member 28 may be moved longitudinally with reference to the forward axle. The rear end of the reach member 28 extends beneath the reach member 23 and is engaged by a keeper 30, attached to the rear hounds 19, as indicated in Fig. 2. Between the reach member 28 and the hounds 19 is a wear-plate 31, extending above the reach member 28, as shown.

Supporting the reach member 23, beneath the rear hounds 19, is a wear-plate 55, preferably arching upward, so as to keep the reach members 23 28 slightly separated at their rear portions to reduce the friction.

The brake-beam is represented at 32, connected transversely to the reach member 28 and supported therefrom by suitable braces 33.

The outer ends of the brake-beam 32 are provided, respectively, with brake-shoes 34 35, adapted to engage the rear wheels 14 15 when the member 28 is moved backwardly or the wheels moved forwardly in engagement with the shoes. The forward end of the member 28 is flexibly coupled to the rear end of the tongue 20 by a link 36, and when the tongue is relaxed the rear portion of the running-gear is free to move forward and cause the wheels 14 15 to press against the brake-shoes, and thus set the brake.

The manner of coupling the member 28 to the tongue is shown more clearly in Fig. 4.

This consists of a transverse tie-bolt 37, secured through the rear ends of the tongue members and providing a brace thereto, as shown. The ends of the brace 37 will be secured by riveting the ends in recesses in the outer surfaces of the tongue members or by employing nuts on the ends of the bolt or securing it in any other suitable manner so that no part projects to interfere with the slidable action of the tongue between the hound members 18.

The portion 20 of the tongue extends rearwardly in substantial alinement at its rear end with the rear ends of the side braces of the tongue, so that the bolt 26 passes through the three portions of the tongue, as indicated in Fig. 4.

Formed vertically through the rear portion of the tongue member 20, and also through the bolt 37, are perforations through which rivets 38 39 are secured to firmly unite the bolt 37 in the tongue, and thus greatly increase the strength of the parts and prevent any tendency of the tongue member to split or the bolt to become loosened therein.

As an additional strengthening means, tie-plates 40 41 will be attached to the sides of the rear of the tongue member 20 and secured thereto as by riveting or by other suitable means.

Formed in the rear end of the central tongue member 20 is a recess 42, through which the tie-bolt 37 passes, and engaging the tie-bolt within this recess is a link 43, the latter correspondingly engaging the link 36, above mentioned. The link 36 is coupled flexibly to the member 28 by a yoke 44, the latter in turn being connected to the member 28, as shown. By this simple means the connection between the member 28 and the tongue member is freely yieldable both vertically and laterally, so that the various movements between the tongue and the hounds 18 and between the forward running-gear and the reach members will be accomplished without cramping the parts or producing any undue strains or friction. By this arrangement the horizontal movement of the tongue member will be communicated to the member 28, while at the same time not affecting the relative lateral or vertical movements between the parts. A "universal" joint is therefore formed between the parts, which will effectually prevent breakage or undue strains.

The reach members 23 28 will be provided, respectively, with perforations 45 46, as shown in Figs. 3 and 4, these perforations adapted to register vertically when the member 28 is in its forward position or when the draft strain of the horses is upon the tongue 20, in which event the latter will be drawn forward to its forward position, carrying the member 28 and the brake-beam with it. This will be the relative positions of the parts when the brake is not in action or when the wagon is running on a level grade or up an incline, and when this takes place it may be necessary to lock the brake mechanism in its disengaged position, and the registering apertures 45 46 provide for thus locking the brake mechanism. This locking mechanism consists in a lever 47, pivoted at 48 to the forward movable bolster 16 and with one end turned downward at 49 and adapted, when the lever is depressed, to enter the cavities 45 46, and thus serve as a means for locking the two reach members together, as shown in Fig. 3. The opposite end of the lever 47 is provided with a spring-plate 50, having an operating-handle 51 on one side and provided with a stud 52, extending from the other side toward the bolster. The spring-arm 50 extends upward alongside one of the stakes 53 of the bolster, and the stake will be provided with spaced recesses 54, adapted to receive the pin 52 at its uppermost and lowermost positions. Thus it will be obvious that if the operating-handle 51 be drawn outward, thus releasing the pin 52 from the recesses, the end 49 of the lever may be moved downward to engage the recesses 45 46 or moved upward to disengage it therefrom, as required, and the lever locked in either one of its two positions by the resiliency of the spring-arm 50. By this simple means when the brake mechanism is not required the tongue member can be locked into its forward position, so that it will not affect the brake mechanism. By this simple arrangement when the wagon starts down an incline the action of the horses in holding back will cause the rear wheels 14 15 to be forcibly pressed against the brake-shoes 34 35, and the harder the horses hold back the harder will the brake be applied, so that the steeper the incline the stronger will be the application of the brake, thus automatically adapting the brake to the work required. It will also be obvious that the heavier the load the stronger will be the application of the brake, and as the heavier the load the stronger will be the brake required. The device will thus automatically adapt itself to the load.

In running down slight inclines, where the horses will be required to hold back to a slighter extent, the force of the application of the brake will be correspondingly reduced, so that the mechanism automatically adapts itself completely to the grade over which the wagon is passing, and thus becomes a complete automatic brake.

The parts may be readily adapted to any of the various forms of farm or lumber wagons and may be modified and changed in minor particulars without affecting the principle of the invention or sacrificing any of its advantages, and I therefore reserve the right to make such alterations and modifications as may come within the scope of the claims.

Having thus described the invention, what is claimed is—

1. In an automatic vehicle-brake, the com-

bination with a rear axle and hound, of a front axle and hound, a pair of relatively longitudinally movable reaches situated one above the other and extending from the rear hound to the front axle, said reaches being provided beneath the front axle with perforations to receive the pivoting-bolt of the latter, the perforation in the movable reach being elongated, a longitudinally-movable tongue sustained by the front hound, links pivotally connecting the rear end of the tongue with the forward end of the movable reach, a brake-beam carried by the movable reach and provided with brake-shoes, and a locking member pivoted to a fixed part of the running-gear and having a finger for engaging normally registering perforations formed in the reaches to lock the same against relative movement.

2. In an automatic vehicle-brake, the combination with a rear axle and hound, of a front axle and hound, the latter having forwardly-extending portions provided with horizontal slots, a pair of relatively longitudinally movable reaches situated one above the other and extending from the rear hound to the front axle and provided beneath the same with perforations to receive the pivoting-bolt of the latter, the perforation in the movable reach being elongated, a longitudinally-movable tongue, a transverse rod carried by the latter and provided with anti-friction-rollers mounted in the horizontal slots of the front hound, a link pivotally connecting the rear end of the tongue with the forward end of the movable reach, a brake-beam carried by the movable reach and provided with brake-shoes, and a locking member pivoted to a fixed part of the running-gear and formed for engagement with normally registering projections formed in the reaches for locking the same against relative movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH A. MANOR.

Witnesses:
S. D. SMITH,
R. W. TUCKER.