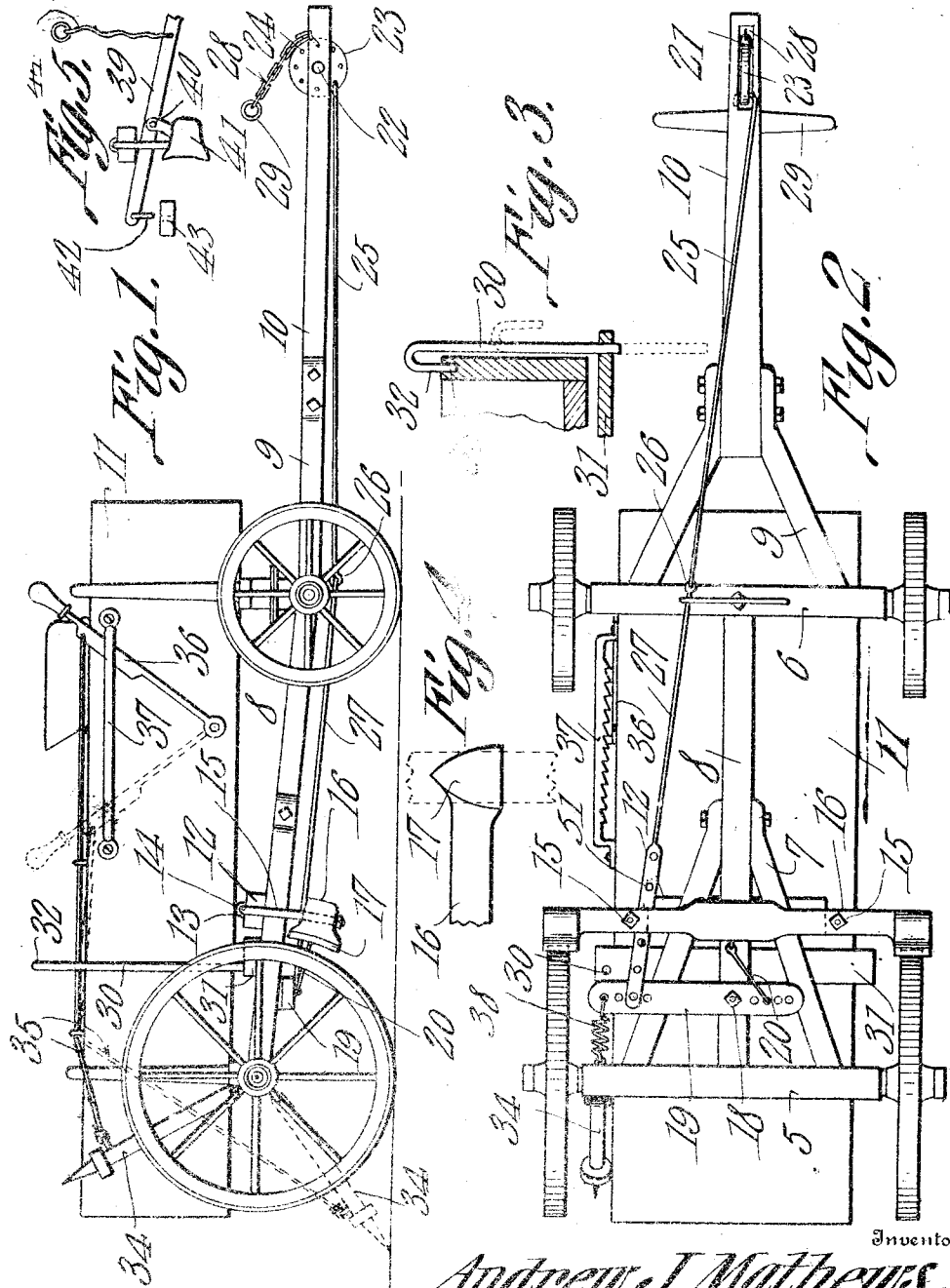


A. J. MATHEWS.
 AUTOMATIC WAGON BRAKE.
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1,051,506.

Patented Jan. 28, 1913.



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UNITED STATES PATENT OFFICE.

ANDREW J. MATHEWS, OF CLARINDA, IOWA.

AUTOMATIC WAGON-BRAKE.

1,051,506.

Specification of Letters Patent.

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Application filed October 25, 1911. Serial No. 656,572.

To all whom it may concern:

Be it known that I, ANDREW J. MATHEWS, a citizen of the United States, residing at Clarinda, in the county of Page and State of Iowa, have invented a new and useful Automatic Wagon-Brake, of which the following is a specification.

This invention relates to that class of wagon brakes which are operated automatically by the team holding back when going down a hill, and it is the object of the invention to provide a brake of this kind which is simple in construction, and reliable in operation, and also to provide improved means for preventing application of the brake when the team is backing the wagon.

Another object of the invention is to provide an improved form of brake shoe, designed to prevent mud from sticking thereon.

With these objects in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, reference being had to the accompanying drawing, in which.

Figure 1 is a side elevation of wagon equipped with my improved brake. Fig. 2 is a bottom plan view. Fig. 3 is a sectional detail showing the locking means for holding the brake in inoperative position. Fig. 4 is a face view of the brake shoe. Fig. 5 is a side elevation of a modified form of locking means.

Referring to the drawing, 5 denotes the hind axle of the wagon, 6 the front axle, 7 the hind hounds, 8 the reach, 9 the tongue hounds, and 10 the tongue. The wagon box is indicated at 11.

On top of the hind hounds 7 is mounted a cross bar 12 carrying bearings 13 in which is mounted for rocking movement a shaft 14 having downward bends 15 at its ends carrying the brake beam 16. The outer ends of the brake beam are fitted with brake shoes 17 suitably curved from their upper to their lower ends to properly fit the tire of the hind wheels when the brake is applied. The top of the brake shoe is pointed as clearly shown in Fig. 4 of the drawing, the object of this arrangement being to prevent mud from sticking on the shoe. Any mud which may be sticking to the tire is scraped off the same by the brake shoe when the brake is applied, and the pointed shape of the shoe throws the mud

sidewise, the point of the shoe engaging the middle portion of the tire.

To the bottom of the reach, behind the brake beam 16, is fulcrumed as indicated at 18, a lever 19 connected on one side of its fulcrum to the brake beam by means of a link 20. An adjustable connection is provided by having a number of openings in the lever to any one of which the link may be connected. The lever, on the other side of the fulcrum, is connected to the neck yoke in such a manner, that the lever will be swung in a direction to apply the brake beam when the team is holding back upon going down a hill.

In the front end of the tongue 10 is a vertical slot 21, in which slot is mounted a pin 22 extending horizontally through the slot, a disk 23, said disk being free to turn on the pin. The disk has, near its periphery, a plurality of perforations 24. The disk projects above and below the tongue, and in one of the perforations in that portion of the disk which is located below the tongue, is seated one end of a rod 25, the other end of which is loosely connected as indicated at 26 to one end of a rod 27 connected at its other end to the lever 19, on that end of said lever opposite the end which is connected to the brake beam. To one of the perforations 24 located in that portion of the disk 23 which is above the tongue, is connected a chain 28 carrying the neck yoke 29.

It will be evident from the foregoing that when the wagon is traveling down a hill, and the team is holding back, the pull on the chain 28 will turn the disk 23 on the pin 22, and this turning movement of the disk, through the rods 25 and 27, swings the lever 19 on its fulcrum 18, whereby the brake beam 16 is swung in a direction to bring the shoes 17 in contact with the rim of the hind wheels, thus applying the brake, and checking the descent of the wagon. When level ground is reached, and the team is no longer holding back, the chain 28 slackens, and the brake beam drops away from the wheels by gravity, and the brake is thus released.

In order to prevent application of the brake when the team is backing the wagon, there is provided a locking device comprising a rod 30 extending through an opening in a cross bar 31 carried by the hind hounds

7. This rod is adapted to be carried downwardly in front of the lever 19 so as to prevent the same from swinging in a direction to apply the brake. The upper end of the rod has a bend 32 which enters a recess 33 made in the top edge of the side wall of the wagon box as shown in Fig. 3. When this bend is within the recess, the rod is in elevated position, and its lower end is out of the path of the lever 19. To place the rod in operating position, it is lifted sufficiently to remove the bend 32 from the recess 33, and the rod is then turned until the bend clears the side wall of the wagon box, after which the rod may be pushed downwardly so as to extend into the path of the lever 19, and prevent the same from swinging in a direction to apply the brake as already described.

20 The wagon is also provided with an auxiliary brake designed for preventing the wagon from backing down a hill. This auxiliary brake comprises a stem 34 pivotally connected in any suitable manner to the hind axle 5, and pointed at its free end, so that when it is swung down into contact with the ground, said pointed end will enter the same. The rod is held in elevated position by means of a line 35 connected thereto near its free end, said line being also connected to a lever 36 pivoted to the side of the wagon body adjacent to the driver's seat to be within easy reach of the driver. The lever is provided with a suitable guide and locking device 37. Upon swinging the lever rearwardly as shown by dotted lines in Fig. 1, the stem is permitted to lower so as to come in contact with the ground, and in this position it serves as a prop to prevent the wagon from traveling rearwardly, which is useful when ascending a hill, as the wagon may be stopped to allow the team to rest. Upon swinging the lever 36 forwardly, the stem is swung upwardly into inoperative position.

The loose connection between the rods 25 and 26 is provided in order that the tongue 10 may swing around with the front axle 6 when the wagon is making a turn. The disk 23 is provided with a plurality of perforations 24, in order to provide for the adjustment of the connection between said disk and the rod 25 as well as the chain 28. An adjustable connection between the rod 27 and the lever 19 is also had by providing the latter with a plurality of openings as shown in Fig. 2, with any one of which openings the rod may be connected.

A spring 38 is interposed between and connected to the axle 5 and one end of the lever 19 and serves to hold all of the parts normally in a predetermined position.

Instead of utilizing the locking means shown in Figs. 1 and 3, a lever 39 may be pivotally mounted, as at 40, upon the brake

beam 41 under certain conditions, said lever having a bolt 42 connected to one end thereof and adapted to enter an opening within a beam 43 similar to the beam 31 hereinbefore described. This bolt is connected to the short arm of said lever while the long arm of said lever has a chain 44 or the like extending upwardly therefrom whereby the lever can be swung upon its fulcrum so as to force the bolt 42 into the opening in the beam 43. When the bolt is thus positioned, the brake beam 41 is held against movement relative to the beam 43 and the vehicle can be backed without the application of the brake.

It is to be understood that openings may be formed within the rod 27 at regular intervals, as indicated at 51 so as to permit said rod to be connected to the lever 19 no matter what the distance may be between said lever and the element 23.

What is claimed is:

1. The combination with a vehicle body and running gear, and a neck yoke, of a swinging brake beam carried by said gear, a lever pivoted to the gear, a connection between one end of the lever and the brake beam, a movable member carried by the tongue at its outer end, a connection between said member and the other end of the lever, a connection between the movable member and the neck yoke, a cross bar carried by the running gear between the brake beam and the lever, said cross bar having an opening, a rod mounted in said opening and adjustable to extend at its lower end in front of the last mentioned end of the lever, the upper end of the rod having a downward return bend extending into a recess in the top edge of the side wall of the vehicle body.

2. The combination with the running gear of a vehicle, and a neck yoke, of a brake beam mounted to swing and suspended from the running gear, a lever on the running gear, an adjustable pivot connection between one arm of the lever and the brake beam, a disk mounted for rotation on the tongue of the running gear and having a plurality of openings adjacent the periphery thereof, a connection between the disk and the other arm of the lever, this connection being adapted to be seated in any one of the openings, said openings being equidistant from the center of the disk, and a flexible connection between said disk and the neck yoke, said connection being adapted to rotate the disk and apply the brake beam when the running gear moves forward relative to the draft animals.

3. The combination with the running gear of a vehicle, and a neck yoke, of a brake beam mounted to swing and suspended from the running gear, a lever on the running gear, an adjustable pivot connection between one arm of the lever and the brake beam,

a disk mounted for rotation on the tongue of the running gear and having a plurality of openings adjacent the periphery thereof and equidistant from the center of the disk, a connection between the disks and the other arm of the lever and adapted to be seated in any one of the openings, a flexible connection between said disk and the neck yoke, said connection being adapted to rotate the disk and apply the brake beam when the running gear moves forward relative to the draft animals, and means for automatically taking up slack in said connection and moving the brake beam out of active position.

4. The combination with the running gear of a vehicle, and a neck yoke, of a brake beam mounted to swing and suspended from the running gear, a lever on the running gear, an adjustable pivot connection between one arm of the lever and the brake beam,

a disk mounted for rotation on the tongue of the running gear and having a plurality of openings adjacent the periphery thereof and equidistant from the center of the disk, a connection between the disks and the other arm of the lever and adapted to be seated in any one of the openings, a flexible connection between said disk and the neck yoke, said connection being adapted to rotate the disk and apply the brake beam when the running gear moves forward relative to the draft animals, and means for locking the beam against movement.

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

ANDREW J. MATHEWS.

Witnesses:

ELMER BEVINGTON,
H. L. MOORE.