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DERRICK ATTACHMENT FOR ROAD ROLLERS.

APPLICATION FILED OCT. 27, 1920.

1,423,724. Patented July 25, 1922.

Fig. 1

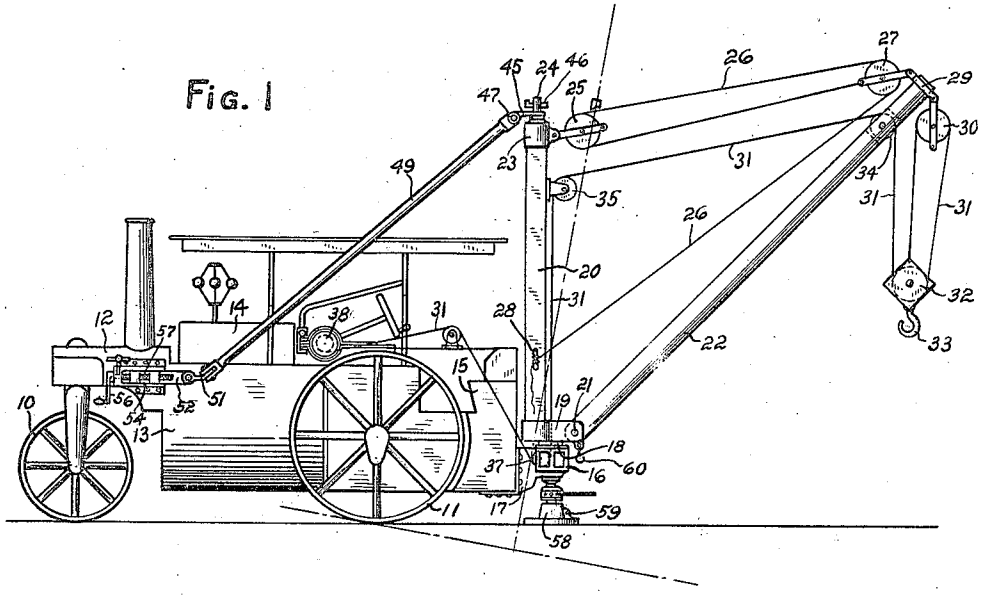


Fig. 2

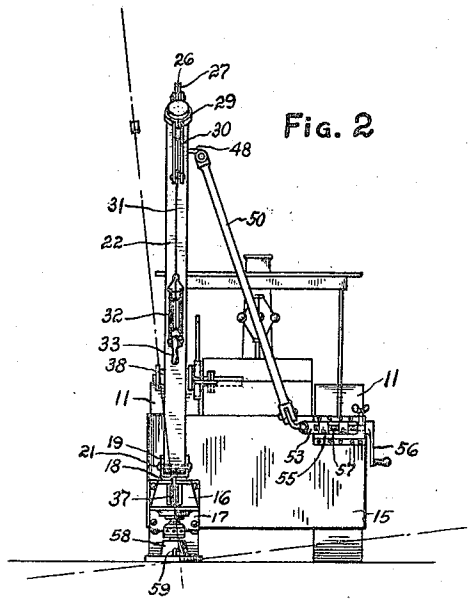
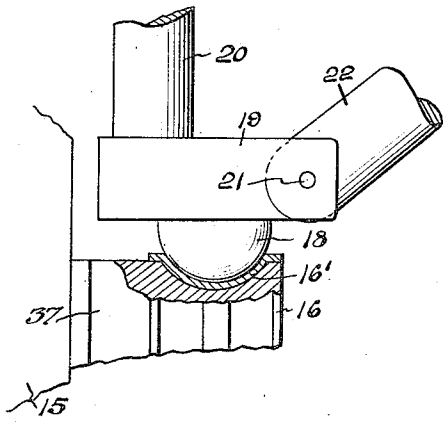


Fig. 3.



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JOSEPH MASCETTI, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO MASCETTI & HOLLEY, OF TORRINGTON, CONNECTICUT, A COPARTNERSHIP CONSISTING OF JOSEPH MASCETTI AND IRVING B. HOLLEY.

DERRICK ATTACHMENT FOR ROAD ROLLERS.

1,423,724. Specification of Letters Patent. Patented July 25, 1922.

Application filed October 27, 1920. Serial No. 419,860.

To all whom it may concern:

Be it known that I, JOSEPH MASCETTI, a citizen of the United States, residing at Torrington, county of Litchfield, State of Connecticut, have invented an Improvement in Derrick Attachments for Road Rollers, of which the following is a specification.

This invention relates to a derrick attachment capable of ready connection to a vehicle such as a road roller, tractor or truck having power capable or driving a hoisting drum.

An object of the invention is to provide a derrick which can be made as a unit and sold as such for the ready installation on and removal from vehicles of heavy construction.

Another object is to embody in the connections to the vehicle adjustment means capable of moving the mast of the derrick into a position where it shall be plumb regardless of the longitudinal or lateral angle at which the vehicle is standing.

Still another object is to provide means for supporting the derrick mast and for relieving the pressure on the structure of the vehicle when the derrick is in use.

Other objects and advantages of the invention will become apparent in connection with the following description of the accompanying drawing, forming a part of this specification, in which:

Fig. 1, is an elevational view of a vehicle such as a road roller with the derrick attachment applied thereto;

Fig. 2 is an end elevational view of the same, and

Fig. 3 is a detailed partial sectional view of the pivoted support for the mast on an enlarged scale.

The vehicle illustrated is known as a steam road roller and has the usual wheels 10 and 11 carrying a body portion 12 carrying a boiler 13, engine 14 and coal bunker 15 with other parts of such machine.

A thrust bearing 16 comprising a bracket portion 17 is provided and may be bolted to the coal bunker 15 at the lower corner or corresponding portion of the vehicle. It being necessary to attach this bearing as low as possible and commonly below the shaft carrying the rear wheels 11. Upon the upper portion of 16 a spherical bearing 16′ is placed to receive the corresponding spherical thrust bearing of the short vertical shaft 18 formed integral with the base plate 19.

In the base plate the mast 20 is securely fastened while at the forward portion of the base plate a pivotal connection 21 is formed for uniting the boom 32 to the base plate.

At the head of the mast 20 a cap 23 is fastened securely and carries a central pivot 24. The cap has pivotally connected to it a pulley block 25 carrying the boom hoist rope 26 running through the pulley block 27 at the head of the boom. Rope 26 is fast to pulley 27 and after running through the blocks is fastened to the cleat 28 on the mast. The hoisting of the boom is manually performed but the rope may be carried around the drum later mentioned.

The pulley block 27 is carried by a clamp 29 at the head of the boom 22 which carries a pulley block or sheave 30 around which the hoisting cable 31 is carried. Cable 31 is fast at one end to sheave 32, with hook 33, and is carried over pulley 34 set in the boom end and from there to bracket pulley 35. The cable is then led to the foot of the mast where a pulley 36 is carried in the base plate 19 and then over the bracket pulley 37 to the drum 38 which is driven by the engine shaft. This drum in some cases may be attached to the engine fly wheel shaft and maintained there or it may replace temporarily the driving pulley commonly supplied on tractors. In cases where a clutch is not present one must be supplied in connection with the drum 38.

The stiff leg connecting plate 45 is carried by the pivot 24 at the head of the mast and is keyed to the pivot 24 or otherwise fastened thereto so as not to turn thereon. A cotter pin 46 is supplied for preventing removal of this plate. Extending from the connecting plate are two stiff leg connections 47 and 48 formed at their ends with a portion of a pivotal connection uniting the stiff legs thereto. The connections 47 and 48 are disposed at right angles to each other so as to aline with the stiff legs, this angle can of course be changed.

The stiff legs 49 and 50 are each formed at their upper end with a portion coacting with connections 47 and 48 so as to form a pivotal connection therewith which may be omitted, the pivot being in a horizontal

plane. The lower ends of the stiff legs are supplied with means to pivotally connect them through a universal joint 51, which may likewise be omitted, to crossheads 52 and 53 movable in crosshead slides 54 and 55. Cranks 56, and screws 57 passing through the castings carrying the crosshead slides serve as a means for positioning the crossheads, the stiff legs and the head of the mast. The casting for the crosshead slides is provided with flanges so that it may be bolted or riveted to the boiler 14 or elsewhere. The moving of the lower ends of the stiff legs 49 and 50 may be done in several ways that described being merely illustrative.

In order to stabilize the road roller and the derrick in handling the heaviest loads, a strut carried by a bearing support 58, having an enlarged foot portion, is provided with connecting means 59 which admits of hanging the support 58 on the hook 60 when not in use. The bearing support here shown is in the form of the well known jack-screw whose operation and application is well understood.

As described the derrick attachment is one which may be made and sold for use on a variety of vehicles and the connections and supports are such that material modification of the vehicle or derrick is unnecessary.

The manipulation of the stiff legs through the cranks 56 will be described. As a vehicle suitable to carry such a derrick is seldom rested exactly level with no lateral or lengthwise tilt it occurs that the mast will have a considerable and exaggerated displacement and that in hoisting this offset position of the head of the mast will be troublesome in handling heavy loads. The tipping incident to a mast out of plumb is avoided by moving the head of the mast until erectness is obtained. The spherical surfaces on the shaft 18 and on the bearing 16 permit of the swinging of the mast so as to bring it from an oblique position to an erect one.

As shown in the drawing the center lines represent the position of the mast when the vehicle is not level, assuming that the vehicle is on a surface denoted by the nearly horizontal centre line. With the mast tilted it is obvious that by manipulation of the screws 57 the head of the mast, being connected to the crossheads by the stiff legs, can be brought directly over the bearing at the foot of the mast. The crank on one side is cooperatively moved with the crank on the other side. Locking means 61 coacting with the screws 57 hold the parts in desired position. Any angle of tilt can then be avoided and when the mast is erect the support 58 or strut is placed under the mast bearing, and hoisting operation commenced.

The attachment is shown connected to the road roller at one corner, while this is the most convenient place for various reasons, the attachment may be connected elsewhere.

While but a single form of this invention has been described, others are contemplated and no limitation is to be placed upon the invention by the foregoing description which is intended to refer directly to all possible embodiments of the invention.

Having thus described my invention, I claim:

1. In a vehicle-derrick the combination of a mast, a mast bearing connected to the vehicle, stiff legs connected to said mast and extending therefrom to said vehicle at points spaced apart, connections at the vehicle end of the stiff legs, and means for independently adjusting and holding the ends in adjusted position.

2. In a vehicle-derrick the combination of a mast, a base plate for said mast, a spherical bearing for said mast, stiff legs extending from the vehicle to the mast, means for moving said ends and means for holding the ends at different distances from the mast.

3. In a vehicle-derrick the combination of a mast, a lower bearing for said mast, a connection member at the head of the mast, stiff legs extending between the connection member and the vehicle, and means for independently adjusting said legs toward and away from said mast at their body ends.

4. In a vehicle-derrick the combination of a mast, a lower bearing for said mast on which it is mounted to turn, a base plate therefor, a support therefor, and means for varying the height at which said support may be applied.

5. In a vehicle-derrick the combination of a mast, a bearing for the mast on which it is mounted to turn, a base plate therefor, and a supporting member for said base plate adjustable in a vertical direction.

6. In a vehicle derrick the combination of a motor, a drum connected thereto, a mast, a boom, hoisting gear on the boom and mast operated from the drum, a bearing for the mast and boom, a base plate therefor, a supporting member for said base plate adjustable in a vertical direction, and a set of stiff legs connected to the vehicle and adjustable individually and maintaining the mast vertical in all positions of the vehicle.

7. In a vehicle-derrick the combination of a mast, a boom, hoisting gear on said boom and mast, a drum, actuating means therefor, said hoisting gear being connected to said drum, a bearing for said mast and boom, stiff legs connected to the mast and separately adjustable by co-related movement from points on the vehicle distant from each other and maintaining the mast in a vertical position, and means for separately adjusting said legs.

8. In a vehicle-derrick the combination of a derrick mast carried by a bearing attached

to the vehicle, stiff legs carried by said vehicle having their lower ends spaced apart, positively acting means for positioning said ends by co-related movement and controlling the position of the mast thereby.

9. In an attachment for motor vehicles the combination of a mast, a bearing for said mast, a base plate for said bearing attachable to a motor vehicle, stiff legs connected to the mast near its top and controlling the position thereof in all directions, connecting means attached to the other ends of the stiff legs for fastening the stiff legs to a motor vehicle, said connecting means also including means for adjusting said ends.

10. In an attachable derrick for motor vehicles in combination, a mast, a bearing therefor, a bearing support, stiff legs, a connecting member near the head of the mast at the upper ends of the stiff legs, attaching means at the other ends of the stiff legs whereby the derrick may be readily connected to a motor vehicle, and positively acting means for positioning the ends of said legs.

11. In an attachable derrick for motor vehicles in combination, a mast, a bearing therefor, a bearing support, an adjustable strut for the bearing support, attachment means for connecting the bearing support to the motor vehicle, stiff legs extending from the head of the mast to the vehicle, connecting means thereon, and position adjusting means on said connection.

12. In an attachable derrick for motor vehicles in combination, a mast, a bearing therefor, a support for said bearing, means for attaching said support to a motor vehicle, a pivot member at the head of the mast, a stiff leg connecting member thereon, stiff legs extending therefrom, means for attaching the ends of the stiff legs to parts of a motor vehicle, and position adjusting means thereon for varying the distance from the mast pivot to the attaching means.

13. In an attachable derrick for motor vehicles in combination, a mast, a mast bearing, a support and attaching means for said bearing, a pivot at the head of the mast, stiff leg connecting means attached thereto, a longitudinally adjusting stiff leg, and a transversely adjusting stiff leg, means for connecting the ends of the stiff legs to a vehicle, and position adjusting means for the ends of the stiff legs, said position adjusting means forcing the upper ends of the stiff legs by co-operative movement to a position dependent upon the motion of both stiff legs and thereby maintaining the mast in a position incident thereto.

14. In an attachable derrick for motor vehicles in combination, a mast, a mast bearing, a bearing support with attachment means thereon, a pivot at the head of the mast, connecting means thereon, stiff legs attached thereto, connection means at the other end of the stiff legs, and means thereon for giving the head of the mast a forward and backward movement and a sidewise movement resulting in maintaining the mast in vertical position.

In testimony whereof I affix my signature.

JOSEPH MASCETTI.