May 23, 1967 P. L. WAGNER 3,321,181

VEHICLE TONGUE WITH AN IMPROVED, LEVER-OPERATED JACK

Filed March 30, 1966

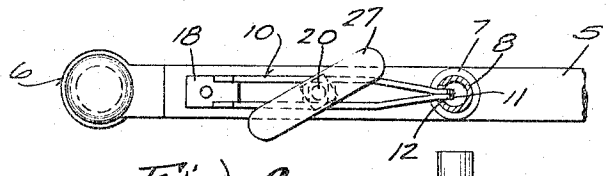


Fig. 2

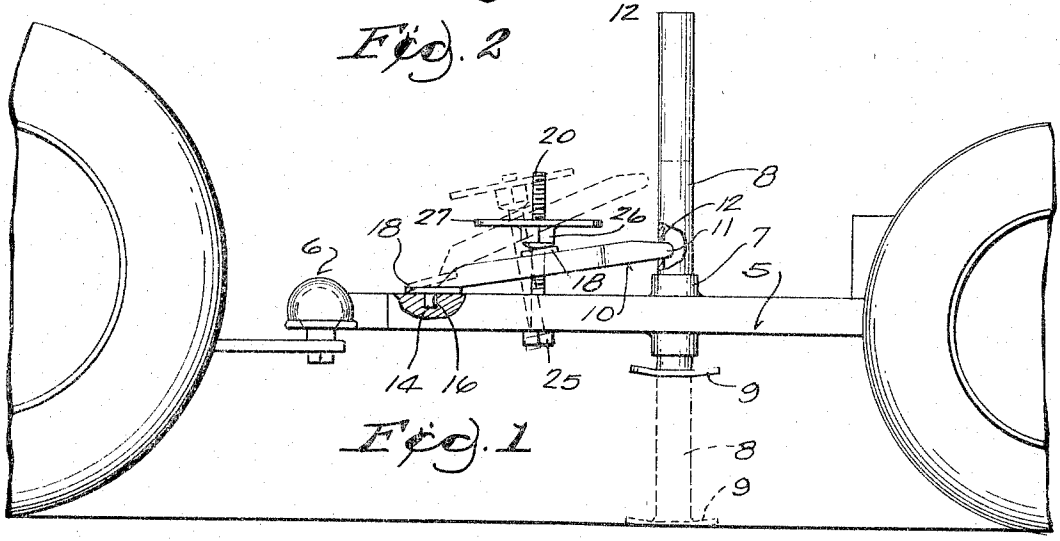


Fig. 1

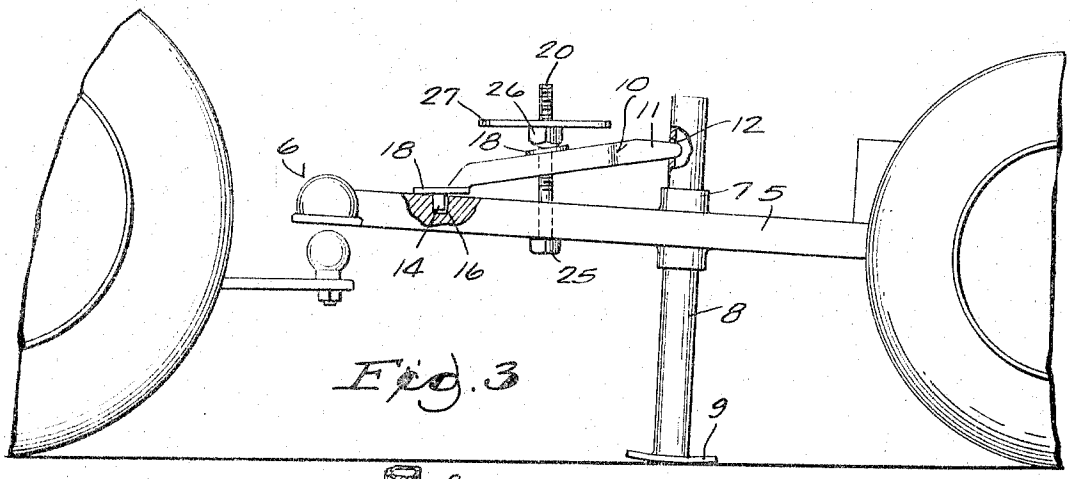


Fig. 3

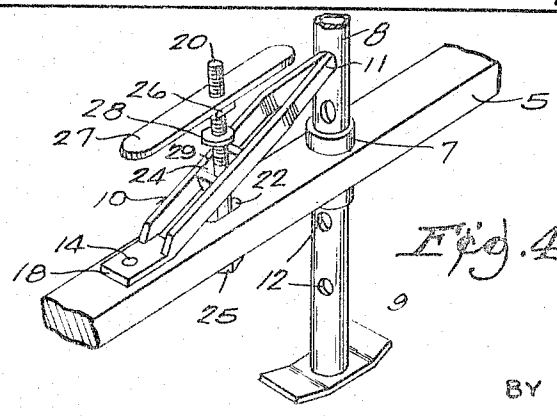


Fig. 4

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United States Patent Office 3,321,181
Patented May 23, 1967

3,321,181

VEHICLE TONGUE WITH AN IMPROVED, LEVER-OPERATED JACK

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Filed Mar. 30, 1966, Ser. No. 538,752
5 Claims. (Cl. 254—86)

The present invention relates generally to a vehicle tongue with an improved, lever-operated jack.

A jack post freely movable vertically through a bearing sleeve on an implement tongue is used to raise or lower the implement tongue to facilitate the coupling and uncoupling of the implement tongue with a tow vehicle. The jack post is also adapted to support the implement tongue in an elevated position when the implement is not in use. The jack post is actuated by a removable jack lever mounted on the tongue. The jack is retractable to a storage position in which it will not impede implement movement when the implement is being towed.

To operate the jack post easily in a structure which can be produced at minimum expense, a lever of the third class is pivoted to the tongue at a point remote from the said bearing sleeve and has a terminal finger selectively engageable in any one of a number of holes with which the post is provided. A bolt attached to the implement tongue is extended through a slot in the lever and equipped with a wing nut or the like operable against a seat provided on the upper surface of an intermediate part of the lever. The post may be ajusted manually to a level such that engagement of the finger in one of the post apertures will move the post through the limited range required to engage it with the ground. When the finger at the end of the lever is engaged with an aperture near the lower end of the post, the post will be held completely free of the ground so that it will not impede movement of the towed implement.

An object of the invention is to provide a jack post and jack lever easily adaptable for mounting on existing vehicle tongues.

Other objects and advantages of the invention will become known by reference to the following description and accompanying drawings in which—

FIG. 1 is a fragmentary side elevational view showing the vehicle tongue coupled to the tow bar of a towing vehicle and showing the jack post in a stored position.

FIG. 2 is a fragmentary plan view showing the mechanism of FIG. 1.

FIG. 3 is a fragmentary side elevational view showing the vehicle tongue uncoupled with the jack post in engagement with the ground.

FIG. 4 is a fragmentary perspective view of the vehicle tongue and jack post.

The tongue 5 of an implement is shown to be provided with a ball-coupler socket 6 in engagement with the ball connection of the tow bar on a tow vehicle. These parts conventionally represent any appropriate hitch.

Tongue 5 is provided with a bearing sleeve 7 in which jack post 8 is reciprocable. Sleeve 7 is preferably a pipe welded or otherwise mounted on tongue 5. The sleeve 7 is of a length sufficient to maintain the jack post upright. Jack post 8 may also comprise a length of pipe. It carries a ground-engaging foot plate 9 welded to its lower end. The foot plate should be of adequate size to support the tongue in loose ground with stability. Foot plate 9 can be of downwardly concave configuration so that the loading forces will be centered under the axis of the jack post rather than under the side edges of the foot plate. This gives increased stability on uneven ground.

Jack lever 10 is in detachable engagement both with tongue 5 and jack post 8. The free end of jack lever 10 has a terminal finger 11 which is selectively engageable

in any one of a number of apertures 12 with which the post 8 is provided. The other end of the jack lever 10 has a pin 14 loosely socketed in the tongue 5, and surrounded by a flange 18 bearing against the tongue, thereby creating a fulcrum about which the lever 10 is pivotable vertically. Its range of motion is sufficient to raise or lower the tongue 5 for coupling or uncoupling with a tow bar. The pin 14 may be a bolt inserted through a hole in jack lever 10 or a rod welded or otherwise rigidly secured to the jack lever.

Flange 18 limits rolling or twisting of the jack lever resulting from the play of pin 14 in socket 16. The flange 18 also assists pin 14 in carrying the loading forces when the jack lever 10 is actuated.

When the jack lever 10 is not engaged with post 8, the post 8 is freely movable through sleeve 7 from a lowered position with the foot plate 9 in contact with the ground to an elevated position with foot plate 9 in contact with the under side of vehicle tongue 5.

For operation of lever 10 to control movement of post 8, I may use a bolt 20 inserted through an elongated slot 22 in tongue 5 and a slot 24 in jack lever 10 and loose enough in said slots to permit engagement or disengagement of the jack lever with the apertures 12 in the post 8. Bolt 20 has a head 25 in engagement with the under side of tongue 5. A standard nut 26 is threaded on bolt 20 and is equipped with a lever 27 to facilitate manipulation of nut 26 in the manner of a wing nut. A washer at 28 separates nut 26 from a seat 29 on jack lever 10.

In operation of the present invention:

Vehicle tongue 5 is raised from the coupled position shown in FIG. 1 to the uncoupled position of FIG. 3 by manually lowering jack post 8 through the sleeve 7 to a position near the ground as shown by dashed lines in FIG. 1. The terminal finger 11 of jack lever 10 is then selectively inserted in the nearest hole 12 of the jack post 8. Downward pressure on the jack lever 10 is accomplished by manually tightening nut 26 against seat 29, thereby thrusting jack post 8 downward until foot plate 9 engages the ground and raises tongue 5 and bearing sleeve 7 vertically, whereupon the towing vehicle may be driven away, leaving the implement and its tongue 5 supported in a position for later recoupling with the towing vehicle for further use.

To accomplish recoupling, the towing vehicle is parked in a position so that manual unthreading of nut 26 will lower tongue 5, thereby dropping the coupler socket 6 over the ball of the tow bar as shown in FIG. 1.

Further release of pressure on jack lever 10 by unthreading nut 26 will permit disengagement of the finger 11 of the jack lever from the post 8 as shown by dashed lines in FIG. 1. The jack post 8 can then be manually lifted to an elevated position of clearance over the ground as shown in FIG. 1. If desired, it can be stored in this position by engaging jack lever 10 in suitable opening 12 near the lower end of the jack post 8. The jack post 8 is then rigidly secured free of the ground by tightening nut 26.

Various of the features of the invention are set forth in the claims.

What is claimed is:

1. A jack comprising
a jack post bearing,
a jack post slideable in the bearing and having multiple lateral openings and a ground engageable foot,
a jack lever having one end adapted to be selectively engaged in a lateral opening of said jack post,
means pivotally positioning its other end,
and means acting on an intermediate portion of the lever for controlling movement of the post through said bearing.

2. A claim in accordance with claim 1, said last means comprising

a bolt extending through a slot with which said jack lever is provided,

means for positioning the bolt head, and

a nut threaded on said bolt and engaged with said lever above said slot.

3. The combination of a vertically swingable vehicle tongue with coupling means at one end, having an elongated slot intermediate the ends thereof and having a socket spaced on said vehicle tongue at a point spaced from the coupling end of said tongue,

an upright bearing sleeve mounted on said vehicle tongue at a point spaced from the socket,

a jack post telescopically reciprocable in said bearing sleeve and having multiple lateral openings and a ground engageable foot plate at its lower end,

a jack lever with an elongated slot intermediate the ends thereof, having one end engaged in a selected lateral opening of said jack post, and having its other end in detachable engagement in the socket in said vehicle tongue and pivotally movable in such engagement to raise or lower said vehicle tongue over said jack post through a sufficient vertical range of motion to permit coupling and uncoupling of said vehicle tongue,

means to actuate and move said jack lever and accordingly said vehicle tongue.

4. The combination of claim 3, in which said last means comprises

a bolt extending through the slots in said vehicle tongue and said jack lever, and having a head in engagement with the under side of said vehicle tongue and having a threaded portion at the upper end of said bolt,

a nut on said bolt and threadedly movable thereon from a position adjacent the upper end between a position permitting disengagement of the ends of said jack lever and another position remote from the end of said threaded portion in engagement with said jack lever to actuate said jack lever, thereby vertically moving said vehicle tongue.

5. A combination in accordance with claim 4 in which said nut is a wing nut equipped with a hand lever.

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