W. E. LEE.

CRANE FOR HANDLING MOTOR VEHICLE WHEELS.

APPLICATION FILED SEPT. 23, 1919.

1,399,351. Patented Dec. 6, 1921.

2 SHEETS—SHEET 1.

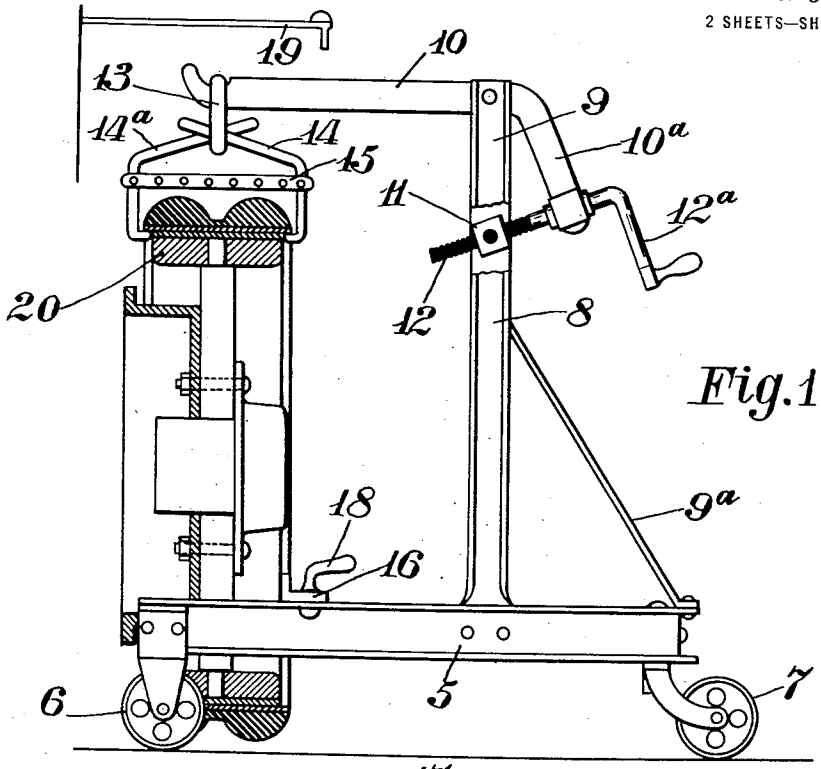


Fig. 1.

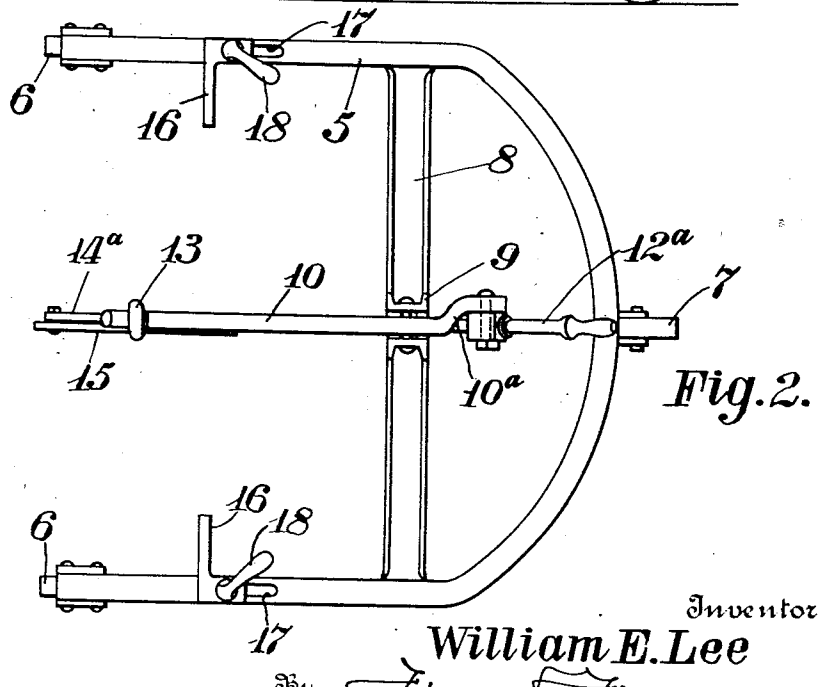


Fig. 2.

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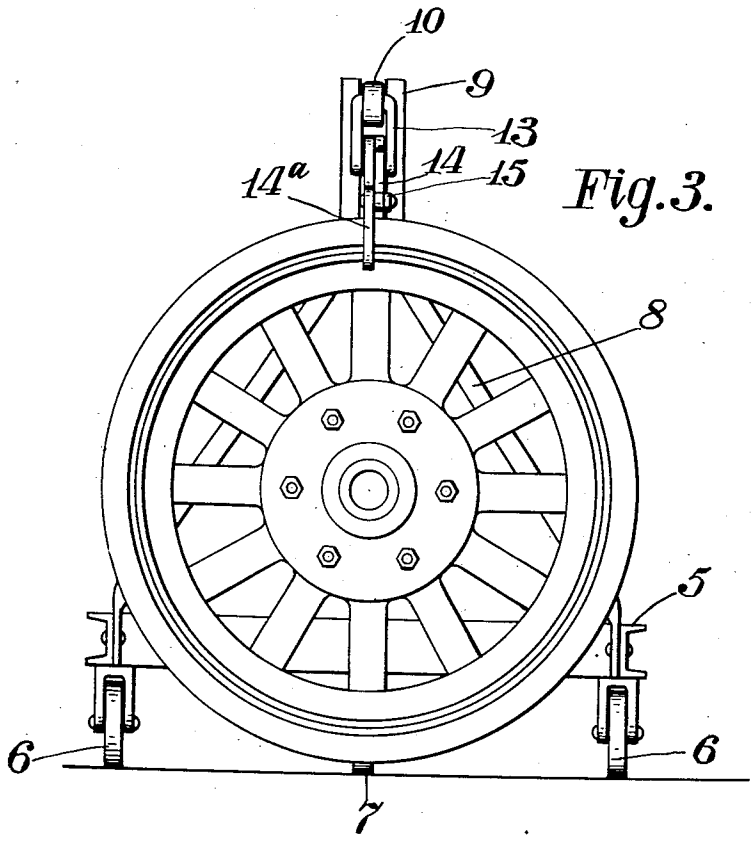


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM E. LEE, OF COLUMBUS, OHIO.

CRANE FOR HANDLING MOTOR-VEHICLE WHEELS.

1,399,351. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed September 23, 1919. Serial No. 325,628.

To all whom it may concern:

Be it known that I, WILLIAM E. LEE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Cranes for Handling Motor-Vehicle Wheels, of which the following is a specification.

The wheels of motor trucks are quite heavy; in some instances weighing as much as eighteen hundred pounds. The hubs and axles of such wheels require frequent removal for oiling and because of the weight of such wheels the job of removing and replacing them is difficult and time-consuming and therefore expensive. The object of the present invention is to provide an improved crane especially adapted for the removal and replacement of such wheels whereby the work referred to or other work requiring those operations can be quickly and economically performed.

The invention is embodied in the example herein shown and described, the features of novelty being finally claimed.

In the accompanying drawing—

Figure 1 is a view mainly in side elevation with parts in section showing the device sustaining the rear wheel of a truck.

Fig. 2 is a top plan view with the wheel absent.

Fig. 3 is a front elevation with the crane supporting a wheel.

In the views 5 designates the base frame of the structure which in plan view is of U-form and provided with suitable wheels 6, 6 and 7 at three points so that it may be easily moved on the ground in any direction. Secured between the side members at the rear portion of the base is a stout cross bar 8 from the middle of which is erected a stout two-part post or standard 9 braced by rod 9^a. In the upper end of the post is pivoted the crane arm or lever 10 having a downwardly bent rear arm 10^a. Between the parts of the post 9 is journaled a block 11 having a threaded hole, and in the short rear arm 10^a is swiveled a screw 12 having a handled crank 12^a. The screw 12 engages the block 11 so that by turning in the proper direction the handled crank 12^a the forward or larger arm 10 of the lever can be raised or lowered. The forward end of the arm 10 is hooked to receive a link 13 supporting the arms of a pair of wheel grabbing tongs. The arms of the tongs, designated 14 and 14^a, are each pivoted in a bar 15 provided with a series of holes so that pins in said holes pivoting the arms can be changed in position to vary the reach of the hooks of the tongs and therefore adapt the tongs to wheel rims of different width. The tongs lie generally in the plane of the crank arm and the longer arms cross within the link.

The legs or side members of the base frame are each provided with a stop 16 clamped in a slot 17 by means of a suitable clamping member 18 so that the stops are adjustable. When an axle is jacked up to permit the removal of a heavy wheel it is important that the bore of the hub be kept upon the crane substantially as removed so that the crane can be moved up toward the axle spindle and the wheel replaced thereon without further adjustment of the wheel on the crane. The function of the stops 16 is to prevent the supported wheel from swinging on the crane and therefore to hold the bore in line to be placed upon the spindle by moving the crane. Such stops are especially useful when the rear wheel containing the brake drum, as shown in Fig. 2 is removed, such brake drum over weighting one side of the wheel and changing its center of gravity. The crane arm in my construction, it will be observed, is adapted to reach under the mud guards 19 of the truck and take the wheel 20, said guard usually occupying about the position shown.

In using my invention the axle containing the wheel to be removed is first jacked up and then the crane rolled up into position with the side members of the frame straddling the lower portion of the wheel transversely of its plane and permitting the application of the grabbing tongs to the upper part of the wheel rim as shown. The crane arm 10 is then raised by turning the screw 12 just enough to sustain the load of the wheel and the stop block set in position against the lower part of the wheel to prevent swinging of the wheel after withdrawal. The crane is then moved away carrying the wheel with it thereby exposing the bearing for treatment. Because the wheel on the crane and jacked-up axle retain their respective positions during an oiling operation the horizontal alinement is correct for re-

storing the wheel to the spindle when the crane is again properly positioned in front of the spindle.

The forms of the parts can be changed without departing from the gist of the invention as claimed.

What I claim is:

1. A crane for handling a motor car wheel comprising, in combination, a base, a post thereon, a crane arm fulcrumed in the post said arm having means for engaging and sustaining the wheel at its upper portion including a journaled threaded block, and a screw swiveled in the crane arm turning in said block.

2. A crane for handling motor car wheels comprising, in combination, a base frame, an adjustable wheel stop thereon, a post on said frame, a crane arm fulcrumed on the post, a pair of wheel grabbing tongs on the crane arm, and means for raising and lowering the arm.

3. A crane for handling motor car wheels comprising, in combination, a base frame having side bars to straddle the wheel transversely of the plane, a post on said frame, a crane arm fulcrumed on the post, a pair of wheel grabbing tongs on the crane arm, said tongs lying on the plane of the crane arm, and means for raising and lowering that arm.

4. A crane for handling motor car wheels comprising, in combination, a base frame, a post thereon, a crane arm fulcrumed in the post, a pair of wheel grabbing tongs on the crane arm, means for raising and lowering said crane arm consisting of a threaded block journaled in the post, and a screw swiveled in the crane arm engaging said block.

5. A device for removing and replacing a wheel comprising, in combination, a frame having side members adapted to straddle the lower portion of the wheel transversely with respect to its plane, and a vertically adjustable crane arm and means thereon in connection with said frame for engaging and sustaining the wheel by its upper portion.

6. A device for removing and replacing a wheel comprising, in combination, a frame having side members adapted to straddle the lower portion of the wheel transversely with respect to its plane, a vertically adjustable crane arm in connection with said frame for engaging and sustaining the wheel by its upper portion on said frame and an adjustable stop to prevent lateral movement of the lower portion of the wheel when so sustained.

WILLIAM E. LEE.