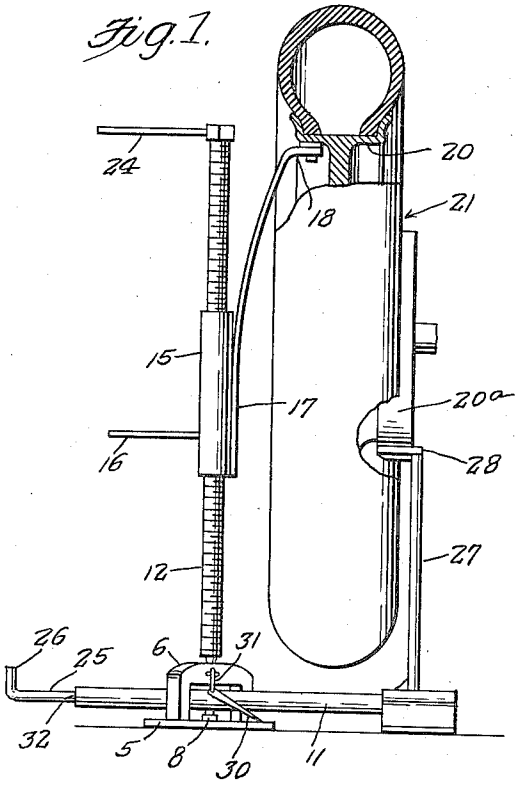
June 25, 1940. T. H. FOREHAND 2,205,719

AUTOMOBILE WHEEL JACK

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Fig. 1.



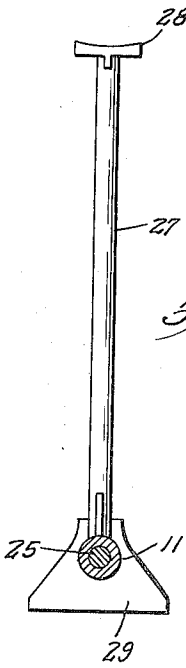


Fig. 4.

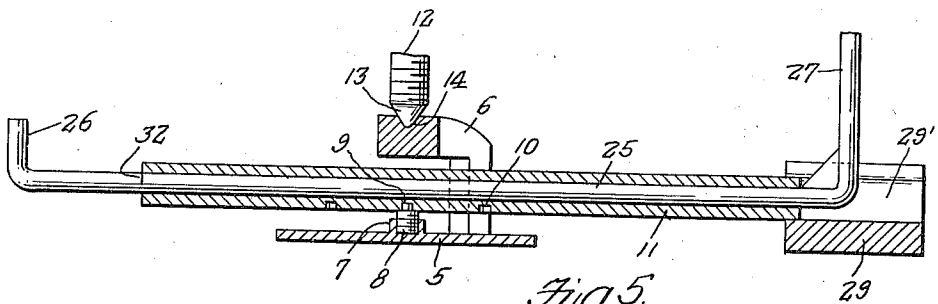


Fig. 5.

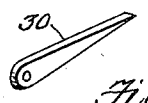


Fig. 3.

Inventor

Thomas Herbert Forehand.

By Clarence A. O'Brien and Hyman Berman

Attorneys

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AUTOMOBILE WHEEL JACK

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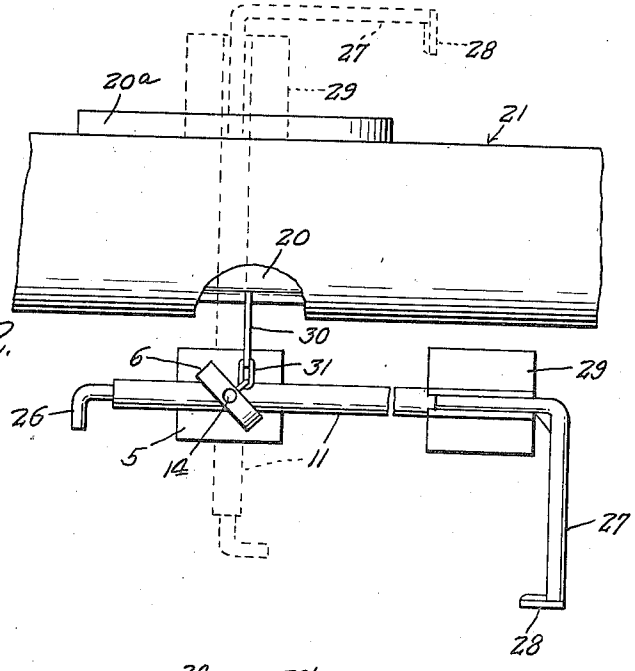


Fig. 2.

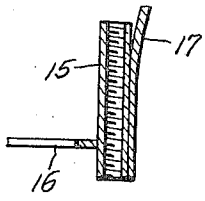


Fig. 10.

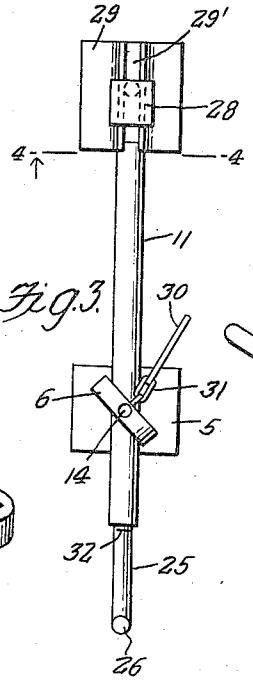


Fig. 3.

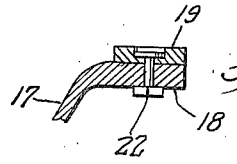


Fig. 7.

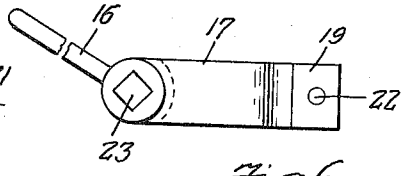


Fig. 6.

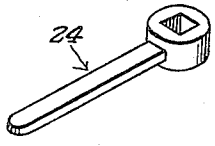


Fig. 8.

Inventor

Thomas Herbert Forehand.

By Clarence O'Brien and Hyman Berman

Attorneys

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UNITED STATES PATENT OFFICE

2,205,719

AUTOMOBILE WHEEL JACK

Thomas Herbert Forehand, Nashville, Tenn.

Application January 16, 1940, Serial No. 314,140

5 Claims. (Cl. 254—134)

This invention relates to automobile wheel jacks and an object of the invention is to provide a jack of this character which will obviate the need of placing oneself in danger, as results in positioning the body or a portion thereof under the automobile in order to properly fit the jack to the wheel or wheel axle, as is now generally required with jacks known or in use.

The invention, together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view illustrating the application of the jack.

Figure 2 is a top plan view further illustrating the invention.

Figure 3 is a plan view with the threaded jack standard removed.

Figure 4 is a detail sectional view taken substantially on the line 4—4 of Figure 3.

Figure 5 is a detail sectional elevational view taken at the base portion of the jack.

Figure 6 is a top plan view of the jack standard and associated parts.

Figure 7 is a fragmentary detail sectional view through the rim-engaging end of the lifting arm of the jack.

Figure 8 is a perspective view of an operating wrench.

Figure 9 is a perspective view of a position indicator, and

Figure 10 is a sectional view through the shiftable sleeve forming part of the jack assembly.

Referring more in detail to the drawings it will be seen that in the preferred embodiment of the invention the jack comprises a base 5 from which rises a short inverted U-shaped frame 6 that is disposed diagonally of the base.

At the center thereof the base 5 is provided with a threaded socket 7 which receives a threaded stud 8 having an integral pin 9 adapted to be engaged in a selected one of a longitudinal series of sockets 10 provided in a tubular guide rod 11 whereby said rod may be supported at the desired longitudinal position of adjustment relative to the base 5 and in a manner to rotate in either of two directions in a horizontal plane.

The purpose of the guide tube 11 will be presently made more manifest.

Further in accordance with the present invention the jack embodies a threaded standard 12 having a tapered end 13 adapted to seat conformably in a socket 14 provided therefor in the top of the frame 6 as clearly shown in Figure 5. Threadedly engageable with the standard 12 is a sleeve 15 equipped with a laterally extending handle 16.

The sleeve 15 has secured longitudinally thereof one end of a lifting arm 17 that curves upwardly and away from the sleeve 15 to terminate in a lateral extension 18 on which is seated a pad 19 of leather or other suitable material for engaging the rim 20 of a vehicle wheel 21 as suggested in Figure 1.

The cushion member 19 is removably secured to the end 18 of the lifting arm 17 through the medium of a bolt 22 as best shown in Figure 7.

The upper end of the jack standard 12 is squared as at 23 to accommodate an operating wrench 24 through the medium of which the standard 12 is rotated for causing the sleeve 15 to thread longitudinally of the standard, upwardly or downwardly as desired.

The aforementioned guide tube 11 slidably and rotatably accommodates a rod 25 equipped at one end with a handle 26 and at a relatively opposite end with an integral wheel-supporting arm 27. The arm 27 is equipped at the upper end thereof with a brake drum-engaging head 28.

As best shown in Figure 5, one end of the tube 11 fits within one end of a channel 29' in a base block 29, the supporting arm 27 being accommodated in the slot or open side of the channel 29' to be held, when desired, in a vertical position, block 29 thus serving as a position-retainer block for the wheel-supporting arm 27.

Also in accordance with the present invention, and for use in properly positioning the base 5 with respect to the vehicle wheel 21, there is provided a position finder or indicator 30 that is loosely secured to the frame 6 laterally of the frame as indicated generally at 31.

Also to enable one to readily determine the proper position of the arm 27, rod 25 adjacent the handle-equipped end 26 thereof is provided with an index or other marker 32 which may be read against the end of the tube 11 farthest remote from the head 29 for indicating that the arm 27 has been properly positioned in the slot 29' of the block 29 for use in supporting a vehicle wheel as will also be best understood from the following description of operation of the jack.

The manner of using, and the operation of the jack may be briefly described as follows:

Normally the parts are in the position suggested by full lines in Figure 2, that is with the arm 27 out of engagement with the head 29 and in a horizontal position. With the parts positioned with respect to the wheel 21 as indicated

in full lines in Figure 2, the position-finder or indicator 30 is extended relative to the frame 6 to engage the outboard side of the wheel. When the point of the position-finder 30 so touches the wheel the user will know that the base member 5 is properly positioned with respect to the wheel.

After thus locating the relative position of the jack for best results, the end 13 of the jack standard 12 is positioned in the seat 14 provided therefor on the frame 6 and the operator by proper manipulation of the wrench 24 then rotates the jack rod or standard 12 holding the sleeve 15 against rotation relative to the rod or standard 12 by gripping, with one hand, the handle 16 of the sleeve 15. In this manner the sleeve 15 is caused to move upwardly on the rod 12 and with the pad-equipped end 18 of the arm 17 engaging under the rim 20 of the wheel 21 as shown in Figure 2 the vehicle wheel will be raised up out of contact with the ground.

After the wheel has been raised, for example, slightly higher than that suggested in Figure 2, the guide tube 11 and associated parts are then swung on the pivot 9 from the full line position shown in Figure 2 to the dotted line position shown in said figure. When this has been accomplished the operator, grasping the handle 26 pulls the rod 25 toward him, at the same time rotating the rod 25 to bring the arm 27 into a vertical position and into the slot 29' of the head member 29. The purpose of this operation is to bring the head 29 of the rod 27 into substantially vertical alignment with the brake drum 20*a* of the wheel. The operator, by reading the index 22 against the outer or near end of the tube 11 can readily see that the arm 27 has been properly positioned with respect to to the brake drum 20*a*. When this has been determined the operator then manipulates the wrench 24 in a manner to cause the sleeve 15 to move downwardly on the jack rod or standard 12 thus lowering the wheel until the brake drum 20*a* seats on the head 29 of the supporting arm 27. When this has been accomplished the standard or post 12 and associated parts may be removed and the operator is then free to remove the vehicle tire, or to perform any other needed or desired operation with respect to the wheel.

Obviously to lower the wheel the operation above described is substantially reversed; the jack standard 12, arm 17, and associated parts being first used to raise the wheel so that the drum 20*a* thereof will clear the head 29, after which the operator pushes inwardly on the rod 25 and then rotates the rod to place the supporting standard or post 27 in the horizontal position shown in broken lines in Figure 2. When in this position the tube 11 and associated parts are swung from the dotted line position shown in Figure 2 to the full line position shown in said figure, and further lowering of the wheel into ground-engaging position completes the lowering of the wheel to the just stated position.

It is thought that a clear understanding of the construction, operation, manner of use, the utility and advantages of a jack embodying the features of the present invention will be had without a more detailed description thereof.

Having thus described the invention what is claimed as new is:

1. In an automobile wheel jack of the character described, a base, a wheel-lifting jack supported by the base for raising and lowering the wheel, and a wheel-supporting device mounted on the base for horizontal swinging movement relative thereto into and out of engagement with a part of the raised wheel for supporting the latter in a raised position independent of said wheel-lifting jack.

2. In a jack of the character described, a base having a raised seat thereon, a threaded jack standard having an end engageable with said seat, a sleeve member threadedly engaged on said jack standard for longitudinal adjustment thereon, a wheel-engaging lifting arm carried by said sleeve, a horizontally disposed tubular member pivotally mounted on said base, a rod having a rotative and sliding fit in said tubular member and providing at one end with a wheel-supporting arm, said arm being adapted to engage the brake drum of a raised vehicle wheel for supporting the latter, and means at one end of said tube for engaging said rod and wheel-supporting arm for releasably retaining the latter in a vertical wheel-supporting position.

3. In an automobile wheel jack of the character described, a base, a wheel-lifting jack supported by the base for raising and lowering the wheel, and a wheel-supporting device mounted on the base for horizontal swinging movement relative thereto into and out of engagement with the brake drum of the raised wheel for supporting the latter in a raised position independent of said wheel-lifting jack, and a position-finder connected with said base for use in properly positioning the base with respect to a vehicle wheel or analogous work.

4. In a jack of the character described, a base having a raised seat thereon, a threaded jack post having an end engageable with said seat, a sleeve member threadedly engaged on said jack post for longitudinal adjustment thereon, a wheel-engaging lifting arm carried by said sleeve, a horizontally disposed tubular member pivotally mounted on said base, a rod having a rotative and sliding fit in said tubular member and provided at one end with a wheel-supporting arm, said arm being adapted to engage the brake drum of a raised vehicle wheel for supporting the latter, and means at one end of said tube for engaging said rod and wheel-supporting arm for releasably retaining the latter in a vertical wheel-supporting position, and an index on said rod adapted to be read against one end of said tubular member to facilitate proper positioning of said wheel-supporting arm.

5. In a jack of the character described, a base having a raised seat thereon, a threaded jack post having an end engageable with said seat, a sleeve member threadedly engaged on said jack post for longitudinal adjustment thereon, a work-engaging lifting arm carried by said sleeve, a horizontally disposed tubular member pivotally mounted on said base, a rod having a rotative and sliding fit in said tubular member and provided at one end with a work-supporting arm, means at one end of said tube for engaging said rod and work-supporting arm for releasably retaining the latter in a vertical work-supporting position, an index on said rod adapted to be read against one end of said tubular member to facilitate proper positioning of said work-supporting arm, and means associated with said base to facilitate proper positioning thereof with respect to the work.

THOMAS HERBERT FOREHAND.