Feb. 10, 1925. 1,526,155

J. R. KINNEY

LIFTING JACK

Filed March 5, 1924

Fig. 1.

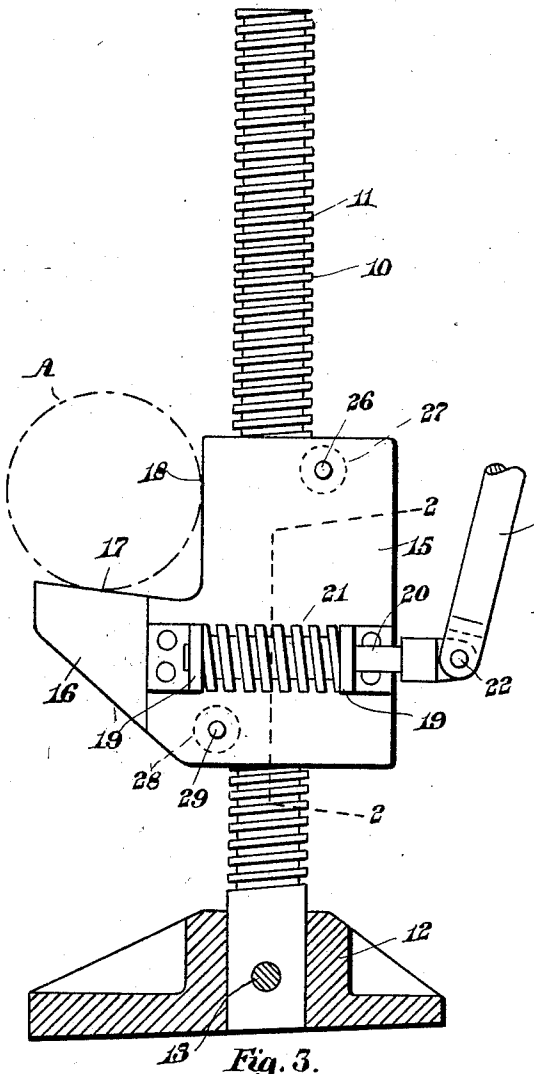


Fig. 2.

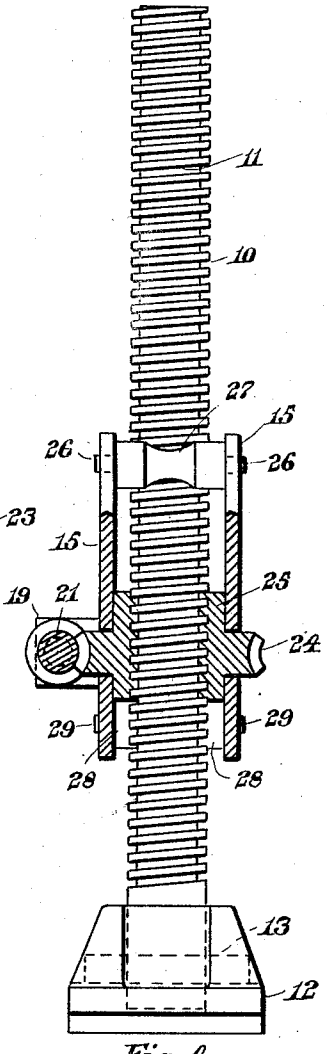


Fig. 3.

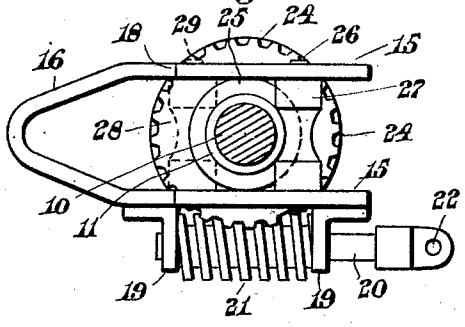
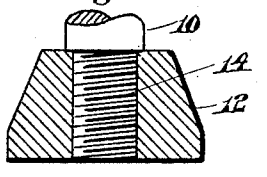


Fig. 4.



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Patented Feb. 10, 1925. 1,526,155

UNITED STATES PATENT OFFICE.

JUSTUS R. KINNEY, OF JAMAICA PLAIN, MASSACHUSETTS.

LIFTING JACK.

Application filed March 5, 1924. Serial No. 697,122.

To all whom it may concern:

Be it known that I, JUSTUS R. KINNEY, a citizen of the United States of America, and a resident of Jamaica Plain, in the county of Suffolk, in the State of Massachusetts, have invented certain new and useful Improvements in Lifting Jacks, of which the following is a specification.

This invention relates to lifting jacks and particularly to devices of this character which are adapted for use in connection with motor vehicles the wheels of which are provided with balloon tires.

The object of the invention is the production of an inexpensive lifting jack the supporting post of which may be placed at one side of the axle of the vehicle and which has a carriage movable endwise of said post with a laterally extending support adapted to coact with said axle.

The invention consists primarily of a base having extending upwardly therefrom a threaded post on which a carraige is adapted to reciprocate, said carriage having a nut thereon coacting with the threads of said post with means for rotating said nut and a laterally extending support to coact with a part of the vehicle to be lifted.

The invention consists further of certain novel features of construction and arrangement of parts which will be understood readily by reference to the description of the drawings and to the claims to be hereinafter given.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described except as required by the scope of the appended claims.

Of the drawings—

Figure 1 represents an elevation of a lifting jack embodying the principles of the present invention, a portion thereof being shown in section.

Figure 2 represents a side elevation of the same, a portion of the carriage, the nut and its actuating worm being shown in section on line 2, 2 on Fig. 1.

Figure 3 represents a horizontal section of same, and

Figure 4 represents a sectional detail of a modified form of means for securing the vertical post to the base.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings 10 is a non-revoluble post provided with a screw thread 11 throughout its length, the lower end of said post being secured to a base 12 the bottom of which is at an obtuse angle to the axis of said post.

Preferably the lower end of the post 10 is connected to the base 12 by a pin 13 so that when said base may rest upon the ground the post 10 will be slightly out of vertical all as shown in Fig. 1.

If desired, however, the base 12 may be fixedly secured to the post 10 by having the reduced threaded end 14 screwed into a socket in the base 12 as shown in Fig. 4.

Straddling the post 10 is a bent plate forming a carriage 15 adapted to move endwise of said post 10, said carriage 15 being provided with a lateral extension 16 of which the upper edge 17 is inclined downwardly toward the post 10 so that when the axle A of the vehicle is positioned thereon and resting against the vertical edges 18 of the carriage 15, said axle cannot be accidentally displaced therefrom.

To one wall of the carriage 15 are secured two ears 19 having alined bearings therein for a horizontal shaft 20 to which between the ears 19, 19 is secured a worm 21.

This shaft 20 has pivotally connected thereto at 22, an actuating rod 23 which may be of any well known construction.

The worm 21 meshes with the teeth of a worm gear 24 formed upon the periphery of a nut 25, the female thread of which coacts with the male thread 11 on the post 10.

The side walls of the carriage 15 have openings therein through which extend portions of the worm gear 24 as shown in Fig. 2.

Whenever the gear 24 is rotated by rotary movement being imparted to its coacting

worm 21 the nut 25 will be raised and lowered upon the post 10 moving the carriage 15 therewith.

Near the top of the carriage 15 and at its open end is disposed a pin 26 upon which the roller 27 is adapted to revolve.

The periphery of the roller 27 is preferably concaved as shown in Fig. 3 to conform to the periphery of the post 10 with which it is adapted to contact to prevent the tilting of the carriage 15 when a load rests upon the support 16.

Upon the opposite side of the post 10 it is preferred to have another roller 28 revoluble upon the pin 29 mounted in the carriage 15 near the lower end thereof as shown in Fig. 1.

When a load is on the support 16 there will be a tendency to tilt the carriage 15 causing it to bind upon the post 10 and prevent free movement of the carriage 15 endwise of said post.

By providing the rollers 27, 28 on the carriage 15 the tilting of the carriage is prevented and said carriage may be moved easily without any binding on the post 10.

The support 16 may be moved into a very low position so that it can be inserted easily beneath the axle A or some other part of a motor vehicle which it is desired to lift. The post 10 may be of any desired length.

By making the post 10 slightly inclined from the bottom of the base it is obvious that when the load is lifted it will gradually approach a point over the center of the base 12 thus making it possible to lift a heavy load without any danger of bending the post or permitting the entire jack to tilt under the load with base as a fulcrum.

This makes a very simple and inexpensive lifting jack which is particularly adapted for use in connection with motor vehicles equipped with balloon tires.

It is believed that the operation and many advantages of the invention will be apparent without further description.

Having thus described my invention, I claim—

1. The combination of a base; a non-revoluble screw, the lower end of which is secured to said base; a carriage consisting of a bent plate surrounding said screw and having its ends extending outwardly therefrom to form a support; a nut revoluble on said screw; and means carried by said carriage for rotating said nut.

2. The combination of a base; a non-revoluble screw secured at its lower end to said base; a carriage movable endwise of said screw and having oppositely disposed openings in the side walls thereof; a nut revoluble on said screw and extending through said openings with its periphery provided with gear teeth; and a rotatable member disposed on said carriage and adapted to rotate said nut.

3. The combination of a base; a non-revoluble screw secured at its lower end to said base; a carriage movable endwise of said screw and having oppositely disposed openings in the side walls thereof; a nut revoluble on said screw and extending through said openings with its periphery provided with gear teeth; and a rotatable worm disposed on said carriage and adapted to rotate said nut.

4. The combination of a base; a non-revoluble screw extending upwardly from said base; and load-supporting means movable lengthwise of said screw and adapted to move the load gradually toward a point over the center of said base.

5. The combination of a base having a socket therein inclined to the bottom thereof; a non-revoluble screw the lower end of which is secured immovable in said socket; and load-supporting means movable lengthwise of said screw.

Signed by me at 746 Old South Building, Boston, Massachusetts, this 4th day of March, 1924.

JUSTUS R. KINNEY.

Witnesses:
WALTER E. LOMBARD,
NATHAN C. LOMBARD.