LE ROY WILLOUR.

JACK.

APPLICATION FILED NOV. 28, 1910.

1,005,912. **Patented Oct. 17, 1911.**

2 SHEETS—SHEET 1.

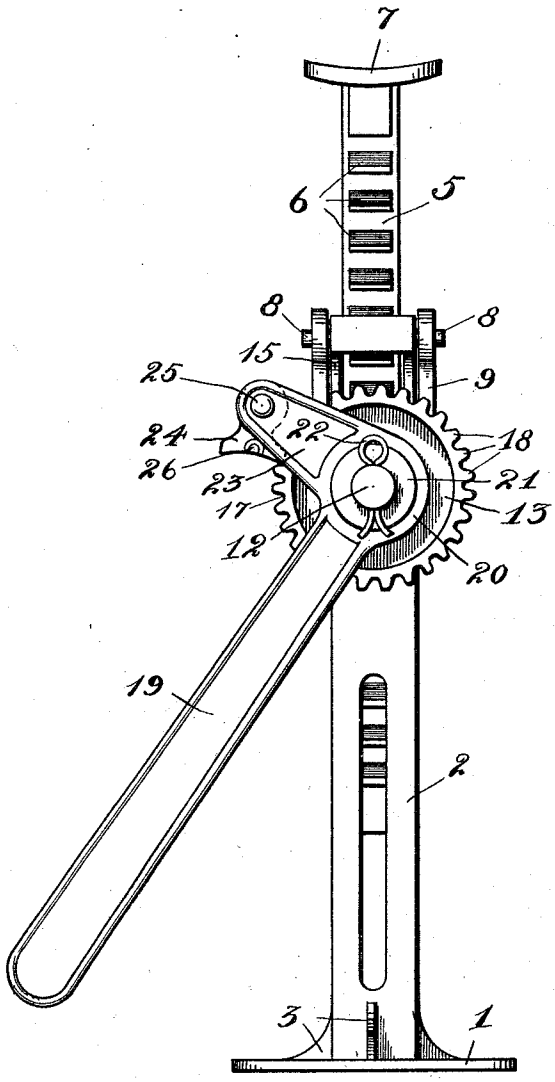

Fig. 1.

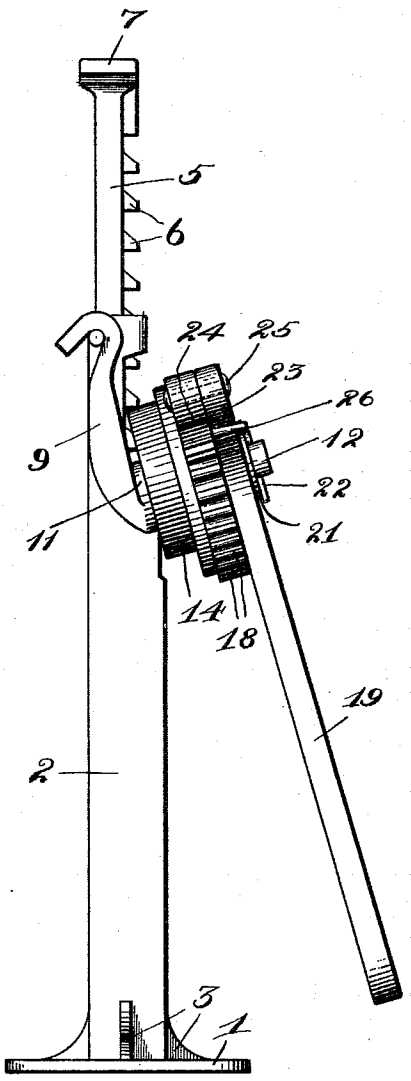

Fig. 2.

Witnesses

J. Milton Jester.

[illegible] Fishburne

Inventor

LeRoy Willour.

By C. L. Parker.

Attorney

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2 SHEETS—SHEET 2.

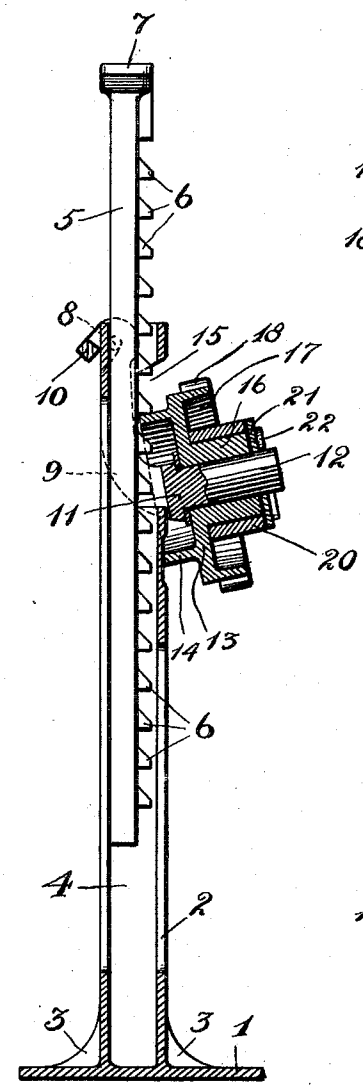

Fig. 3.

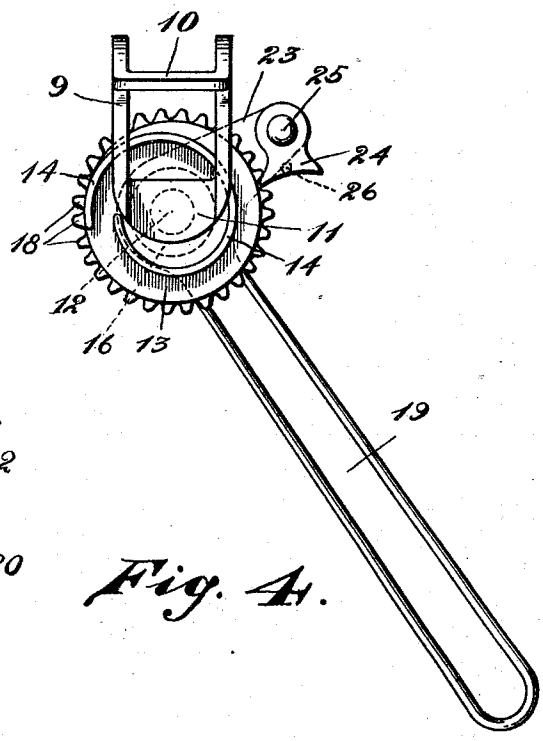

Fig. 4.

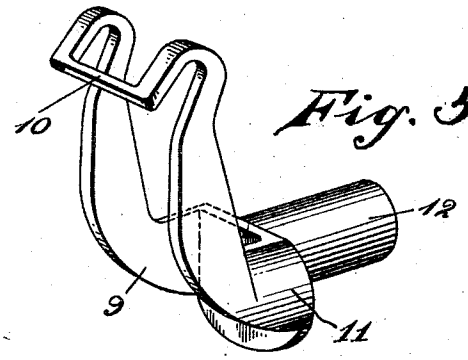

Fig. 5.

Witnesses

J. Milton Lester

B. B. Fishburne

Inventor

LeRoy Willour.

By C. L. Parker.

Attorney

UNITED STATES PATENT OFFICE

LE ROY WILLOUR, OF ASHLAND, OHIO, ASSIGNOR TO THE ASHLAND MANUFACTURING COMPANY, OF ASHLAND, OHIO, A CORPORATION OF OHIO.

JACK.

1,005,912. Specification of Letters Patent. Patented Oct. 17, 1911.

Application filed November 28, 1910. Serial No. 594,616.

To all whom it may concern:

Be it known that I, LE ROY WILLOUR, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Jacks, of which the following is a specification.

My invention relates to jacks and has particular reference to a jack adapted to be used in connection with automobiles or the like.

An important object of this invention is to provide a jack, composed of few and simple parts, which may be readily detached from each other, so that the jack may be packed in a small space.

A further object of this invention is to provide a jack so constructed that the lift-bar thereof may be easily disengaged from the means for operating the same, so that such lift-bar may be raised to engage the load, and then subsequently moved by the means to elevate the load.

A further object of this invention is to provide a jack comprising a pivotally mounted hanger or bracket for supporting a rotatable disk, which is employed to raise and lower the lift-bar, said hanger allowing the thread carried by the disk to be moved into and out of engagement with the teeth of the lift-bar, and said thread and teeth being normally held in engagement with each other by virtue of said hanger or bracket assuming a lowermost position.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a side view of the jack, Fig. 2 is an end view of the same taken at right angles to Fig. 1, Fig. 3 is a central vertical transverse section taken through the jack, Fig. 4 is a side view of the operating lever and associated members, and Fig. 5 is a perspective view of a hanger or bracket.

In the drawings wherein is illustrated a preferred embodiment of my invention, the numeral 1 designates a suitable base, upon which is formed a vertically disposed standard 2. This standard may preferably be cast integral with the base 1, as is the general custom in the manipulation of such devices. The standard 2 and base 1 may preferably be further connected by strips or webs 3, as shown. The standard 2 is provided with an axial opening 4 formed therethrough for receiving a longitudinally movable lift-bar 5, carrying teeth 6 upon one side thereof. This lift-bar 5 carries at its upper end a head 7, which is adapted to engage a load to be raised.

The standard 2 is provided upon its upper end with a pair of pins 8, upon which is pivotally mounted a hanger or bracket 9. This hanger or bracket straddles the standard 2 and is limited in its upward movement by engagement of an upper transverse portion 10 thereof with the standard 2. Attention is called to the fact that this hanger or bracket, after the lift-bar has been moved, is readily removable, and will normally remain in its lowermost position and be disposed adjacent the lift-bar 5. The hanger or bracket 9 includes a lower transverse portion 11, upon which is formed a stud shaft 12, as shown. Rotatably mounted upon this stud shaft is a disk 13, provided upon its face adjacent the lift-bar 5, with an involute thread 14, which is adapted to engage the teeth 6. The standard 2 is provided near its upper end, with a cut-out portion 15, through which the involute thread passes for engagement with the teeth 6, as clearly illustrated in Fig. 3. When the hanger or bracket 9 is in its lowermost position, the lower transverse portion 11 thereof engages the standard 2, whereby the disk 13 is held in a slightly tilted position, as shown. The disk 13 carries a hub portion 16, and an outwardly extending annular flange 17, which is provided upon its outer periphery with teeth 18.

Pivotally mounted upon the hub portion 16 of the disk 13, is an operating lever 19 provided at its inner end with an annular head 20, which is adapted to fit upon the hub portion 16, as clearly shown in Fig. 3. The operating lever 19 is connected with the annular head 20, near the outer end thereof so that such operating lever will clear the annular flange 17. The accidental displacement of the operating lever is prevented by a washer 21, which in turn is held in place by a cotter-pin 22 passing through a transverse opening formed through the stud shaft 12. The annular head 20 carries an arm 23, which is preferably disposed at substantially

right angles to the operating lever 19. The operating lever 19, head 20 and arm 23 may preferably be cast integral and form in effect a bell crank lever. The arm 23 extends beyond the periphery of the disk 13, and has pivotally connected thereto a double-toothed pawl 24, as shown at 25. This pawl may preferably be provided with a finger 26, whereby the pawl may be oscillated to engage the teeth 18 upon the opposite sides of the arm 23.

In the operation of my jack, the same is positioned below a load to be elevated, and the hanger or bracket 9 oscillated upwardly to permit of the disengagement of the thread 14 and teeth 6, whereby the lift-bar 5 may be quickly raised so that its head 17 will engage the load. Outward movement of the hanger or bracket 9 is limited by the engagement of the upper transverse strip 10 with the standard 2, as herein above described. The hanger or bracket is then swung downwardly so that the involute thread 14 will mesh with the teeth 6. The engagement of the thread 14 and the teeth 6 is maintained by the hanger or bracket being held in its normal lowermost position by gravitation. The disk 13 and the operating lever 19 and its associated members which are supported by the hanger or bracket, all aid in holding such hanger or bracket in its lowermost position. When the pawl 24 is disposed to engage the teeth 18 upon one side of the arm 23, as shown in Fig. 1, by oscillating the operating lever 19 such disk may be rotated, and the lift-bar 5 accordingly raised. When the pawl 24 is moved to engage the teeth 18 upon the opposite side of the arm 23, an oscillation of the operating lever 19 will cause the lift-bar to travel downwardly. By swinging the hanger or bracket 9 upwardly when the lift-bar is in its raised position, so that the disengagement of the involute thread 14 and the teeth 6 is effected, the lift-bar will at once fall to its lowermost position.

I wish it understood that the form of my invention herewith shown and described, is to be taken as a preferred example of the same, and that certain changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In a jack of the character described, a standard, a lift-bar having slidable engagement therewith, a hanger pivotally and detachably connected with said standard, said hanger having an upper transverse portion adapted to engage the standard to limit the upward movement of the hanger, a disk rotatably mounted upon the hanger and capable of effecting the movement of the lift-bar when the hanger is in its lowermost position, and means to rotate said disk.

2. In a jack of the character described, a standard, a lift-bar having slidable engagement therewith, a hanger pivotally connected with said standard, having an upper transverse portion thereof adapted to engage said standard to limit the upward movement of the hanger, a disk rotatably mounted upon said hanger to effect the movement of the lift-bar when said hanger is in its lowermost position, and means to rotate said disk.

In testimony whereof I affix my signature in presence of two witnesses.

LE ROY WILLOUR.

Witnesses:
J. B. DAUCER,
J. S. SHEARER.