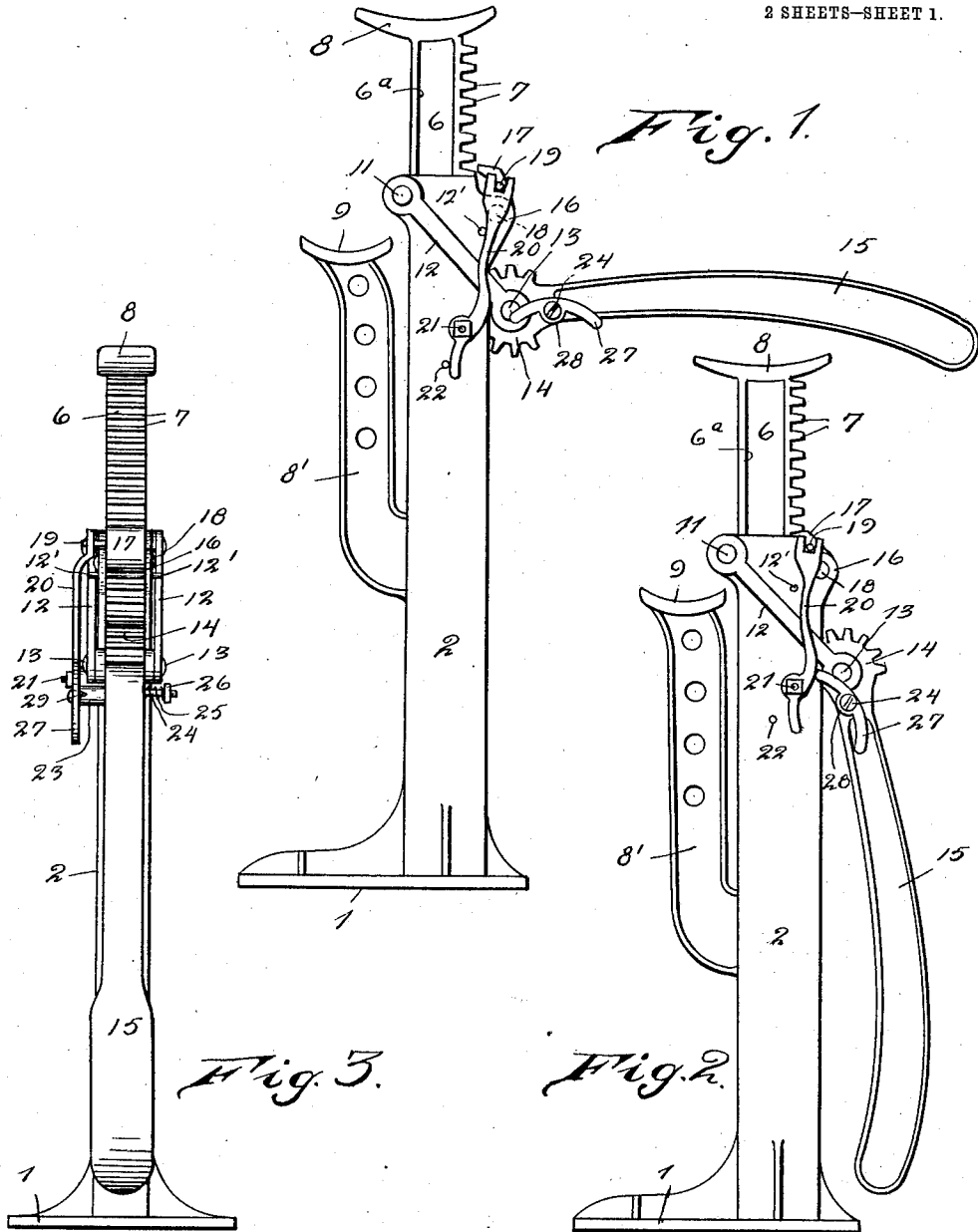


LE ROY WILLOUR.
 QUICK ACTION JACK.
 APPLICATION FILED JAN. 31, 1912.

1,042,861.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.



Witnesses
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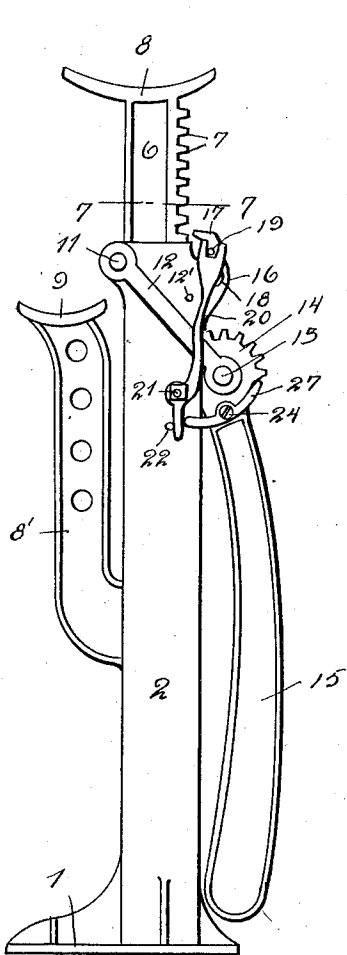


Fig. 4

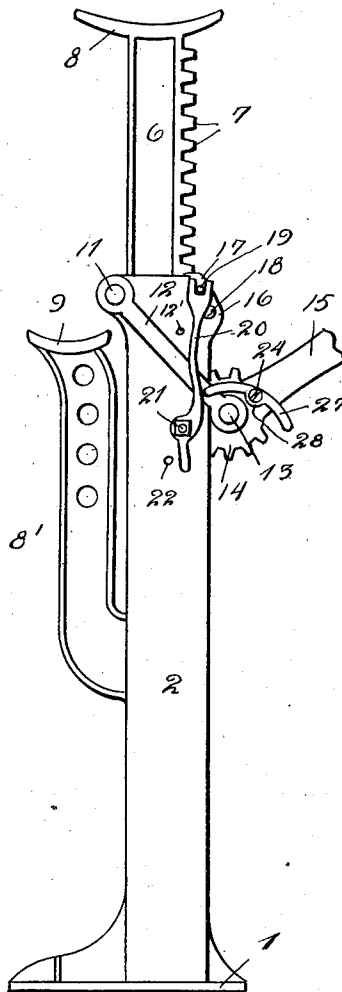


Fig. 5

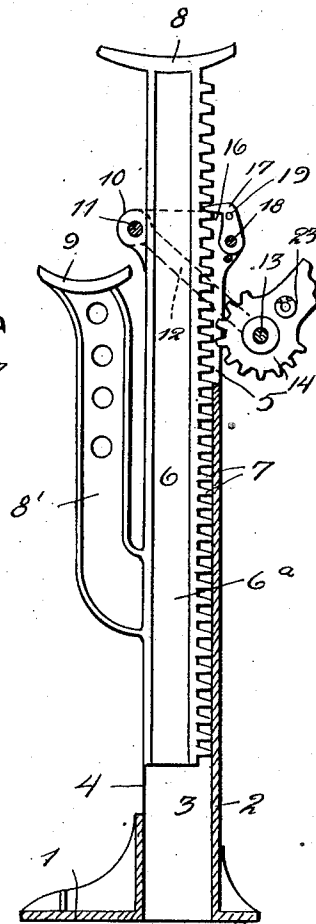


Fig. 6

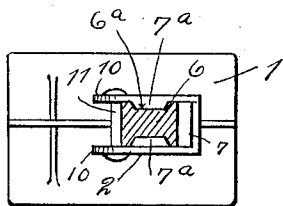


Fig. 7

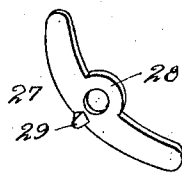


Fig. 8

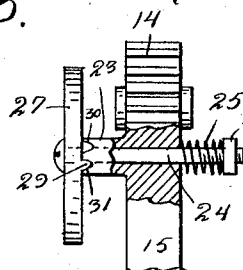


Fig. 9

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UNITED STATES PATENT OFFICE.

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QUICK-ACTION JACK.

1,042,861.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed January 31, 1912. Serial No. 674,472.

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 Quick-Action Jacks, of which the following is a specification.

The present invention relates to jacks and has particular reference to a device of this character, which may be easily operated to quickly raise and lower the load.

An important object of this invention is to provide novel means for operating the holding pawl.

A further object of the invention is to provide a jack which is simple in construction, very quick in operation, and cheap to manufacture.

Other objects and advantages of the 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 my improved jack, showing the operating lever in its raised position, Fig. 2 is a similar view showing the operating lever in its lowered position, Fig. 3 is a rear edge view of the jack, Fig. 4 is a side view of the device similar to Fig. 2, except that the actuating finger is shown in the position to move the holding pawl outwardly, Fig. 5 is a similar view showing the operating lever elevated, Fig. 6 is a central longitudinal sectional view through the jack, Fig. 7 is a horizontal sectional view taken on line 7-7 of Fig. 4, parts being omitted, Fig. 8 is a perspective view of the actuating finger, and, Fig. 9 is a detail sectional view showing means for securing the actuating finger upon the operating lever.

In the drawings wherein is illustrated a preferred embodiment of my invention, the numeral 1 designates a base upon which is formed a hollow standard 2 provided with an axial opening 3. One side of this standard is formed open, as shown at 4 and the opposite side is shown open at its upper end, as shown at 5. Disposed to reciprocate within the axial opening 3 of the standard is a rack-bar 6 provided upon one longitudinal edge with teeth 7. This rack-bar is provided upon its opposite sides with longitudinally extending grooves 6^a, for receiving

guide ribs 7^a extending longitudinally of and formed upon the inner face of the side walls of the standard 2. This rack-bar is provided at its upper end with a head 8 and upon its side opposite the teeth 7 with a laterally upwardly extending arm or bracket 2', provided at its upper end with a head 9, as shown. The arm or bracket 8' operates within the opening 4.

The standard 2 is provided at its upper end and adjacent the opening 4 with spaced apertured ears 10, for receiving a transverse pin or bolt 11, upon which are freely pivoted hanger-arms 12, adapted upon being swung upwardly to engage stops 12'. These hanger-arms extend diagonally across and upon opposite sides of the standard 2 and are provided at their lower free ends with a transverse pin or bolt 13. This pin or bolt serves to pivotally connect a pinion 14 with the hanger-arms 12, such pinion being disposed between the hanger-arms, as shown, and formed upon one end of an operating lever 15. The pinion 14 is adapted to be moved into and out of engagement with the teeth 7 of the rack-bar 6. This pinion operates within the opening 5. The rack-bar 6 is provided above this pinion with laterally extending spaced ears 16, between which is disposed a holding pawl 17 adapted to engage and disengage the teeth 7. This pawl is pivotally connected with the ears 16 by a pin 18 or the like. The function of this pawl is to hold the rack-bar 6 against downward movement when the pinion 14 is swung away and out of engagement with such teeth. The holding pawl 17 is provided upon one side and near its upper end with a laterally extending pin 19 or the like, which fits within the upper forked end of a shifting lever 20. This shifting lever is spaced from the standard 2 and is disposed outwardly of the hanger-arm 12. The shifting lever 20 is pivotally connected intermediate its ends and near its lower end, with the standard 2, as shown at 21. This shifting lever may preferably have its upper arm shaped or curved, as shown. A stop 22 is formed upon the standard 2 and is disposed in the path of travel of the lower arm of the shifting lever 20. The operating lever 15 is provided near the pin 13 with a laterally extending sleeve or boss 23 (see Figs. 3 and 9).

The numeral 24 designates a longitudi-

nally movable bolt or pin extending through the sleeve 23 and an opening formed in the operating lever 15. This bolt is held in its inner position by a compressible coil spring 25, which engages a nut 26 or the like.

The numeral 27 designates a curved double-ended actuating finger, provided midway its ends with an apertured head 28, through which the bolt 24 passes. This actuating finger is provided adjacent the head 28 with an inwardly extending locking tooth or prong 29, adapted to fit in either of openings 30 and 31. These openings are formed upon the outer or free end of the sleeve 23, as shown. It is thus seen that means are provided whereby the actuating finger 27 may be angularly adjusted with relation to the operating lever 15 and securely held in its adjusted position.

The operation of the jack is as follows:— When it is desired to elevate the rack-bar 6, the actuating finger 27 is turned forwardly or angularly adjusted with relation to the arm 15 so that the tooth 29 will enter the upper opening 30. The operating lever 15 is now swung upwardly, the hanger-arms being freely pivoted to allow of the proper movement of the pinion 14 away from the teeth 7, whereby the teeth of the pinion may trip over the teeth 7. When the lever is in its elevated position it is allowed to move inwardly so that the teeth of the pinion 14 will properly engage the teeth 7. Upon the downward movement of the operating lever the rack-bar 6 is elevated and the holding pawl 16 swung outwardly by the teeth 7. When the operating lever is moved downwardly near the end of its travel, the upper end of the actuating finger as now adjusted, will engage the upper arm of the shifting lever 20, causing such upper arm to be swung inwardly and the holding pawl 17 returned to its operative engagement with the teeth 7. This is an important feature of the invention as it provides reliable means for returning the holding pawl to its operative position in the event that the pawl should stick or otherwise fail to gravitate to such position.

When it is desired to lower the rack-bar 6, the actuating finger 27 is swung downwardly or angularly adjusted with relation to the operating lever 15 so that the tooth 29 will fit within the lower opening 31. It being assumed that the operating lever is in its elevated position, it is moved away from the standard 2 to effect a disengagement of the teeth of the pinion 14 and the teeth 7, subsequently to which this operating lever is swung downwardly and then released so that the pinion 14 will again engage the teeth 7. The holding pawl 17 now engages the teeth 7 to prevent the accidental downward movement of the rack-bar. The operating lever 65 is now moved further downwardly, whereby

the lower end of the actuating finger 27 engages the lower arm of the shifting lever 20. This causes the upper forked end of the shifting lever to be swung for bringing the holding pawl 17 out of engagement with the teeth 7. The operator now allows the operating lever 15 to gradually swing upwardly which causes the rack-bar to descend. Before the operating lever 15 has reached the end of its upward travel the upper end of the actuating finger 27 engages the upper arm of the shifting lever 20, swinging the same to bring the holding pawl 18 into operative engagement with the teeth 7. This operation is then repeated.

It is to be 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 the 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 rack-bar having slidable engagement therewith, a swinging holding pawl engaging the teeth of the rack-bar, a shifting lever pivoted between its ends with said standard and having suitable connection with the holding pawl, a pinion to engage the rack-bar and movable into and out of engagement therewith, a hand lever connected with the pinion to turn the same, and an actuating finger connected with the hand lever and adapted to engage the shifting lever above its pivot point to swing the same so that the holding pawl will be moved into engagement with the rack-bar.

2. In a jack of the character described, a standard, a rack-bar slidably engaging the same, a holding pawl engaging the teeth of the rack-bar, a shifting lever pivotally connected between its ends with said standard, suitable connecting means between the shifting lever and holding pawl, a pinion disposed near the rack-bar to be moved into and out of engagement with the teeth of said rack-bar, a hand lever connected with the pinion to turn the same, and an actuating finger adjustably connected with the hand lever to be moved to one position so that it will engage the shifting lever below its pivot point upon the downward movement of the hand lever and to another position so that it will engage said shifting lever above its pivot point when said hand lever is moved upwardly.

3. In a jack of the character described, a standard, a rack-bar slidably engaging the same, a holding element to engage the teeth of the rack-bar, a relatively non-resilient movable shifting element having suitable connection with the holding element, a

pinion disposed near the rack-bar, means whereby said pinion may be moved into and out of engagement with the teeth of the rack-bar, a handle connected with the pinion to turn the same, and an actuating element adjustably connected with the handle to be moved to one position so that it will engage the shifting element to move the same in one direction upon the downward movement of the handle and to another position so that it will engage a different portion of the shifting element to move the same in a reverse direction upon the upward movement of said handle.

4. In a jack of the character described, a standard, a rack-bar slidably engaging the same, a holding element movable into and out of engagement with the teeth of the rack-bar, a pivoted shifting lever having connection with the holding element, a pinion tooth or teeth disposed near the rack-bar, means whereby said pinion tooth or teeth may be moved into and out of engagement with teeth of the rack-bar, means to move the pinion tooth or teeth, and an adjustable actuating element movable with the pinion tooth or teeth and adapted to assume a position to engage the shifting lever below its pivot point upon the movement of said pinion tooth or teeth in one direction and

to be adjusted to assume another position so that it will engage the shifting lever above its pivot point upon the movement of the pinion tooth or teeth in a reverse direction.

5. In a jack of the character described, a standard, a rack-bar slidably engaging the same, a holding pawl to engage the teeth of the rack-bar, a swinging shifting lever having suitable connection with the holding pawl, a hand lever provided near one end with a pinion like member to cooperate with the rack-bar, a movable support for said pinion-like member whereby said pinion-like member may be moved into and out of engagement with the teeth of the rack-bar, and a double ended actuating finger adjustably connected between its ends with the hand lever so that one end of said actuating finger may be brought into engagement with the shifting lever below its pivot point and the opposite end of the same into engagement with the shifting lever above its pivot point.

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

LE ROY WILLOUR.

Witnesses:

ARTHUR L. VANOSDALL,
J. F. WELTY.