W. L. DAY.

LIFTING JACK.

APPLICATION FILED AUG. 26, 1920.

1,399,693. Patented Dec. 6, 1921.

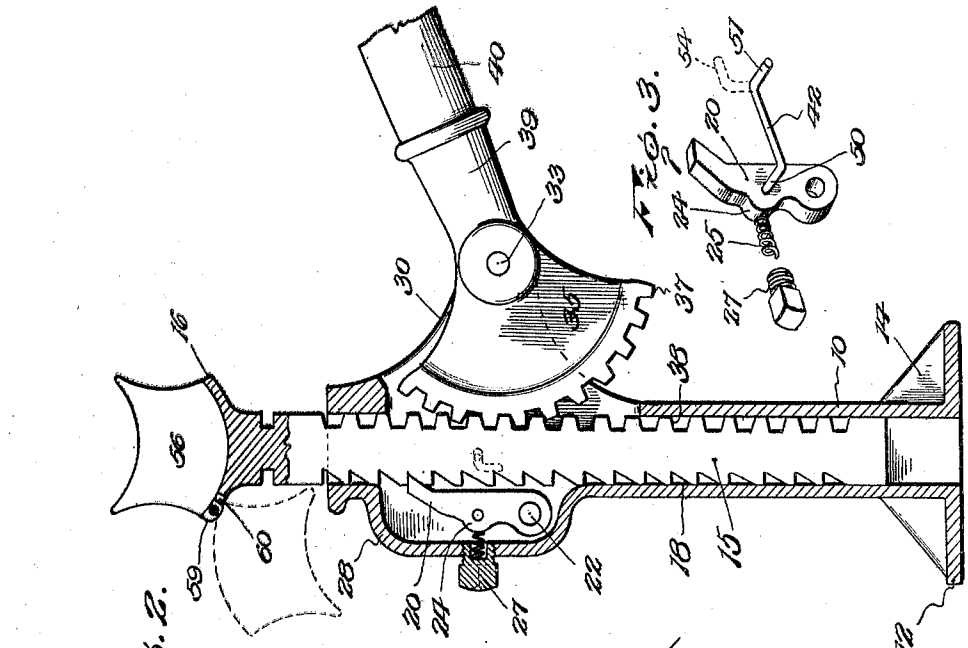


FIG. 2.

FIG. 3.

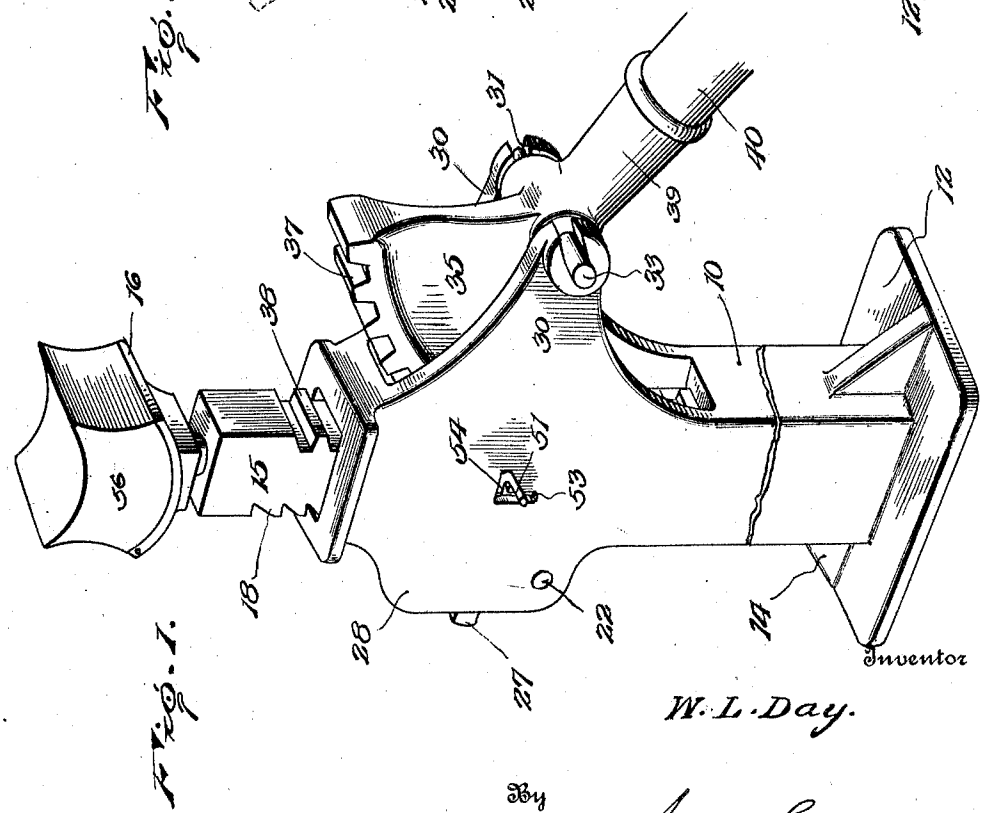


FIG. 1.

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LIFTING-JACK.

1,399,693. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed August 26, 1920. Serial No. 406,069.

To all whom it may concern:

Be it known that I, WILLIAM L. DAY, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification.

This invention relates to improvements in jacks especially adapted for use in connection with motor vehicles though obviously not restricted to such use.

An important object of this invention is to provide a jack having means whereby the tension of the pawl which secures the lifting bar in position may be conveniently adjusted without taking the jack apart.

A further object of the invention is to provide a hand operated jack having novel means whereby the hand lever and the lifting rack connected to the same may be returned to their initial positions when the lifting bar is only partly elevated so that the lever need not be swung to its fullest extent for completely elevating the lifting bar.

A further object of the invention is to provide a jack having a lifting bar provided with a detachable section which may be swung into position for increasing the effective length of the bar.

A further object of the invention is to provide a jack of the class described which is simple to operate, durable in use 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 application and in which like numerals are employed to designate like parts throughout the same.

Figure 1 is a perspective of the improved jack;

Fig. 2 is a central vertical sectional view through the same;

Fig. 3 is a perspective of a pawl and tensioning means for the same.

In the drawing wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 10 designates a standard which is mounted upon and formed integral with a laterally projecting base 12. The standard may be reinforced in its connection with the base by means of a pair of oppositely arranged reinforcing ribs 14. As illustrated in Fig. 2, the standard 10 is of hollow formation and slidably receives a lifting bar 15 having its upper end formed with a saddle 16 adapted for engagement with an object to be elevated. The lifting bar 15 may be provided along one longitudinal edge with a plurality of downwardly inclined teeth 18 adapted to be engaged by the free end portion of a pawl 20 so that the lifting bar may be held in a set position. The pawl 20 which is supported for pivotal movement by means of a transversely extending pin 22 has its intermediate portion enlarged as indicated at 24 and engaged by a coil spring 25. An adjusting bolt 27 is threaded into the housing 28 of the pawl and is provided with a socket which receives one end portion of the spring 25 so that the same is held in position. A suitable wrench may be engaged with the head of the adjusting bolt so that the same may be rotated for varying the tension of the coil spring.

The standard 10 is formed with a pair of spaced parallel laterally projecting ears 30 gradually tapered and provided with inclined slots 31 which open out through their ends for the reception of the oppositely arranged trunnions 33 of a segmental rack 35. As illustrated in Fig. 2 the standard is open between the ears so that the teeth 37 of the segmental rack may extend into the housing and engage the teeth 38 of a rack formed along one side of the lifting bar.

The segmental rack 35 is provided with a socket 39 which receives a handle or lever 40 adapted to be manually operated for raising or lowering the lifting bar. On the initial downward movement of the lever the segmental rack 35 is caused to rock with the result that the lifting bar is partially or wholly elevated. Should there be any obstructions which would prevent the free downward movement of the lever to its fullest extent the entire rack may be removed from engagement with the ears 30 to permit the lever to be returned to its original position. In other words, the lever may be returned to its upwardly inclined position so that a second upward movement may be imparted to the lifting bar. The pawl 20 which is yieldably held in engagement with the spring 25 holds the bar in position while the segmental rack is being changed in its position with relation to the lifting bar. Upon placing the segmental rack in position, the oppositely arranged trunnions 33 freely

enter the downwardly inclined slots 31 whereby the teeth 37 of the segmental rack are caused to engage with the teeth of the rack formed along one longitudinal edge of the lifting bar.

The pawl 20 may be released from engagement with the teeth 18 by means of a releasing device 42 formed from a single length of material having one end portion extended laterally to form a pawl engaging member 50. The pawl releasing device 42 is formed with a laterally projecing handle 51 slidably extended through an L-shaped slot in one side wall of the standard, which slot is provided with vertical and horizontal branches 53 and 54 respectively. When the handle 51 is arranged within the horizontal branch of the L-shaped slot, the pawl may partake of a free pivotal movement during the ascension of the lifting bar and when the arm 51 is manually forced within the vertical slot 53 the pawl is removed from engagement with the teeth 18. When the arm 51 is positioned within the vertical branch 53 the pawl will be released from engagement with the lifting bar so that the lifting bar may return to its lowermost position by force of gravity.

As illustrated in Figs. 1, 2 and 4, the lifting bar is provided with an auxiliary section 56 adapted to be swung into alinement with the lifting bar to increase the effective length of the latter. The auxiliary section 56 is provided with a pair of spaced apertured ears 59 at its lower end and which are pivoted within a slot 60 formed in the saddle 16. When in operative position, the auxiliary section 56 rests flatly upon the saddle. When the auxiliary section is swung to inoperative position, the same is entirely out of the way and does not interfere with the engagement of the saddle with the object to be elevated.

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

1. A lifting jack including a standard enlarged at a point between its ends to provide a housing projecting laterally at one side of the standard, the standard being formed opposite the housing with a pair of spaced ears projecting laterally from the opposite side of the housing, a lifting bar slidable in the standard, an elevating member pivoted between said ears to coact with the bar at one side thereof, a pawl mounted within said housing to coact with the bar at its opposite side for holding the bar elevated, an adjusting bolt threaded through the wall of the housing, and a spring bearing between the bolt and said wall, the bolt being provided at its inner end with a socket accommodating the spring whereby the spring is sustained by the bolt.

2. A lifting jack including a standard, a lifting bar slidable in the standard, means pivoted upon the standard to coact with the bar for elevating the bar, the standard being provided with a housing, a pawl pivoted within the housing to coact with the bar for holding the bar elevated, the wall of the housing being provided with a slot having angularly disposed portions, and a handle carried by the pawl and projecting through said slot, the handle being movable into one portion of the slot for shifting the pawl to engage the bar and being movable into another portion of the slot for holding the pawl out of engagement with the bar.

In testimony whereof I affix my signature.

WILLIAM L. DAY. [L. S.]