

(No Model.)

H. WILSON.
LIFTING JACK.

No. 436,943.

Patented Sept. 23, 1890.

FIG. 1.

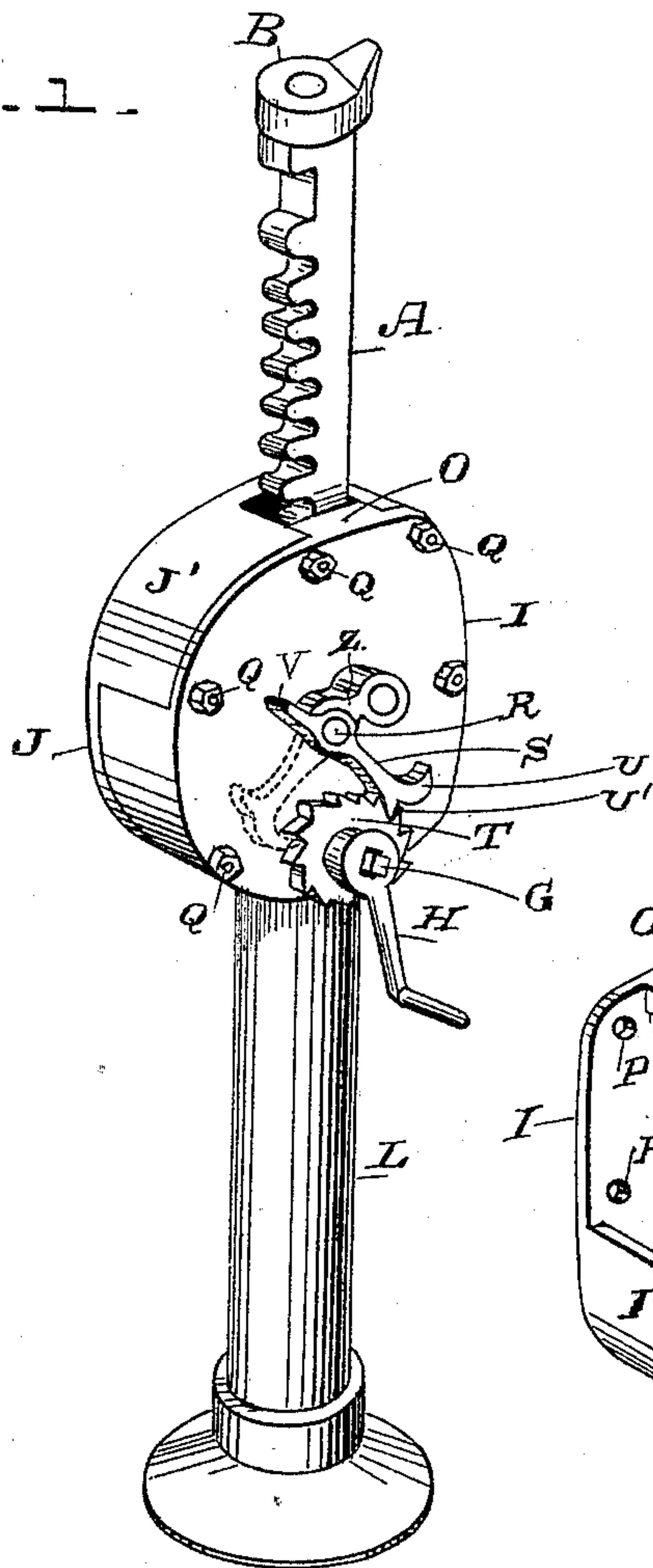
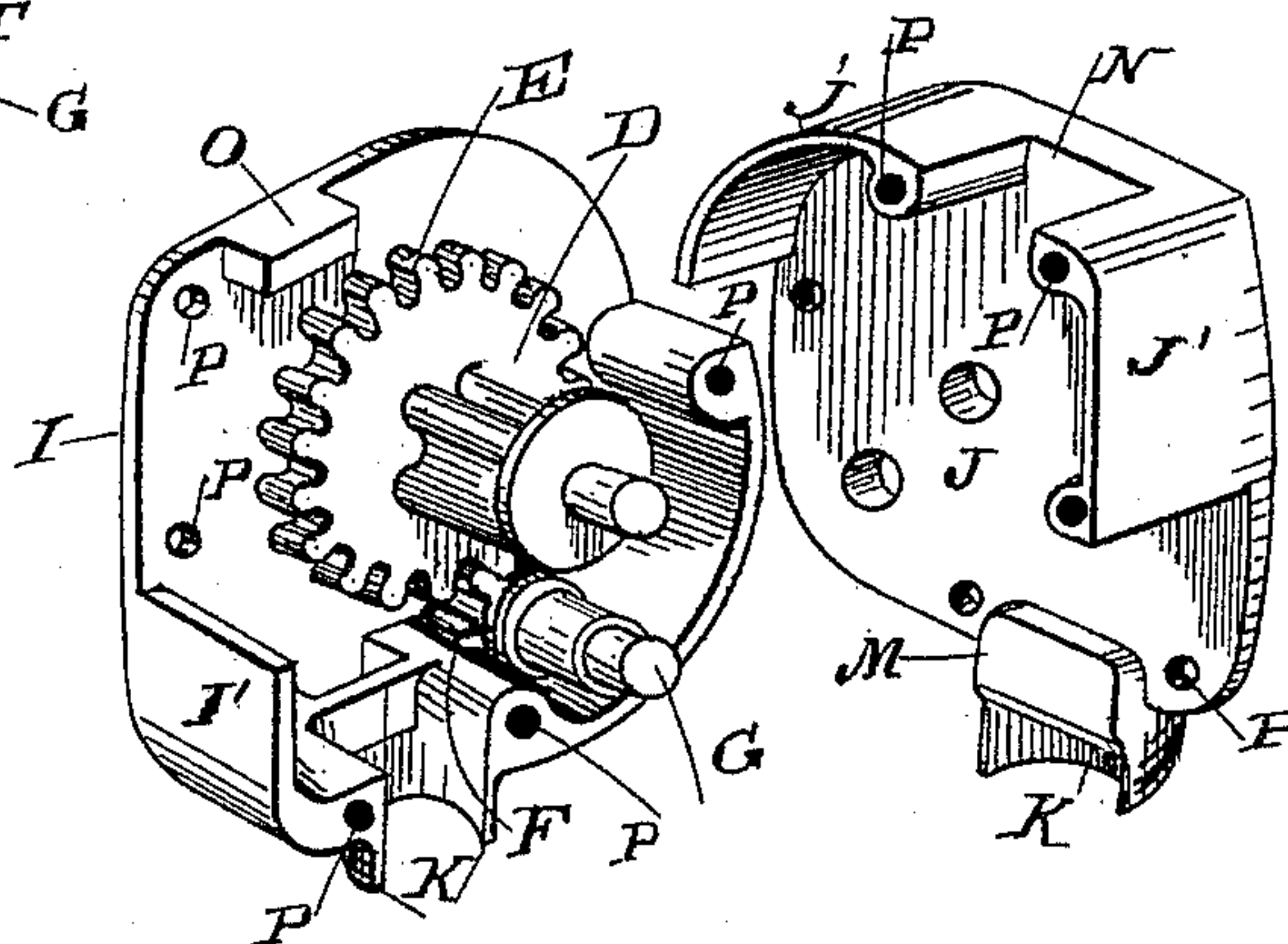


FIG. 2.



Witnesses,
Geo. H. Strong
J. H. Houser

Inventor,
Hugh Wilson
By Dewey & Co.
attys

UNITED STATES PATENT OFFICE.

HUGH WILSON, OF DUNCAN'S MILLS, CALIFORNIA.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 436,943, dated September 23, 1890.

Application filed June 2, 1890. Serial No. 354,039. (No model.)

To all whom it may concern:

Be it known that I, HUGH WILSON, a citizen of the United States, residing at Duncan's Mills, Sonoma county, State of California, have invented an Improvement in Lifting-Jacks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of lifting-jacks used in the handling of heavy articles, and especially for the movement of heavy logs in the lumber business. This class of jacks employs a vertically-sliding lifting-bar operated by gearing contained within a case through which the lifting-bar slides.

My invention consists of an improved construction of this casing and of the ratchet-pawl, by which the movement of the gearing is arrested at any desired point, so as to hold the lifting-bar and its load wherever desired.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an exterior view of my lifting-jack, showing the holding-pawl engaging the ratchet-wheel in one position in full lines and in the other position in dotted lines. Fig. 2 is a view showing the two parts of the case separated and illustrating its construction.

A is the lifting-bar, made of steel and having a suitable swivel head or dog B upon its top to support the weight to be lifted. This bar has teeth upon one edge, which are engaged by the corresponding teeth of a pinion D, and this pinion is actuated by a gear-wheel E, which is cast or formed with it upon the same shaft.

F is a pinion upon the second shaft G, and this pinion engages with the gear-wheel E, and through a crank H upon the shaft G of this pinion sufficient power is produced to operate the lifting-bar and raise the weight to any desired position. The lifting-bar slides through a rectangular channel formed in the casing which incloses the gearing herein described, and the shafts of the gears are journaled in the sides of this casing.

As the weights to be raised by this class of jacks are very great in proportion to the size of the apparatus, it is necessary that all the parts should be made of steel and in the strongest manner.

The casing consists of the two sides I and J.

The side I has the projecting edge or flange I' surrounding its lower portion, and within the lower part of this flange is formed the rectangular guiding channel or opening in this portion of the case, through which the lifting-bar slides. Surrounding this rectangular opening and extending a short distance below it is a portion K, which is formed cylindrically and has a screw-thread cut upon the outside, so that the standard L may be easily screwed upon or removed from the bottom of the case.

The side J of the casing has a projecting lug M at the bottom, which forms the remaining side of the rectangular guide-opening of the bottom of the case, and below this lug is the segmental extension K, which when the two parts of the case are put together completes the screw-threaded portion K, upon which the standard is screwed. Around the upper portion of the part J of this casing the flange J' extends and has the rectangular channel N formed in it, through which the lifting-bar is guided in the upper portion of the case and above the gearing. When the two parts of the case are put together, a lug O, formed upon a part I of the case, enters the space which is left open on one side of this channel N, and thus forms the remaining side of the upper guide-channel. The parts of the casing are preferably made of cast-steel, and the journal openings for the ends of the gear-shafts are cored out when these two sides are cast. Holes are also cored through the projecting flanges I' and J', as shown at P, for the reception of the bolts Q, by which the parts are held together. It will be seen from this construction that the flanges I' upon the portion I of the case interlock with the flanges J' of the side J of the case, and that the main portion of the lower part of the guide-opening for the lifting-bar is formed in the flange I', while similarly the main portion of the guide-opening at the upper part of the case is formed in the flange J'. The corresponding lugs M and O upon the opposite side plates fill, respectively, the remaining sides of these openings and form a case of sufficient strength for all strains which may be brought upon it.

When casting the two parts of the casing, projecting hubs or bosses Z are formed upon

the exterior of the sides, so as to give sufficient thickness for the bearings of the gear-shafts, and in one of these bosses a hole is cored to receive the fulcrum-pin R of the pawl

5 S. This pawl is adapted to engage the ratchet-wheel T and hold it at any desired point to which the lifting-bar may have been raised by turning the crank H. This pawl is made with two dogs or engaging-catches U and U',
10 one upon one side and the other upon the opposite side.

In Fig. 1 the pawl is shown in full lines as engaging the ratchet-wheel through one of these holding-dogs, and in dotted lines the
15 other is shown as in engagement. The pawl is fulcrumed with such relation to the ratchet-wheel that it will engage the teeth by gravitation whichever position it may occupy, and it is not necessary to hold it down by hand or
20 by a spring to insure its properly holding the parts in position to which they have been raised.

A projecting end or tail V, extending to the opposite side of the fulcrum-pin, makes it easy
25 to raise the pawl when it is desired to lower the lifting-bar and the load.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. In a lifting-jack, the case consisting of two sides having the projecting flanges, one upon the lower and the other upon the upper half of the side and adapted to interlock with each other, guide-channels for the lifting-bar
35 formed one in the lower part of one side and the other in the upper part of the opposite side, and corresponding lugs upon the opposing sides fitting into these guide-channels, the gear-wheel E, mounted between said sides
40 and having the pinion D, a second pinion for operating the gear-wheel, and the toothed lifting-bar, substantially as herein described.

2. In a lifting-jack, the containing-case for the gears, consisting of the two sides, one having the flange and guide-channel for the lift- 45 ing-bar formed around the lower portion and the other having a similar flange and guide-channel formed around its upper portion, corresponding lugs fitting into said guide-channels from the opposing sides, and an extension 50 or sleeve projecting around the lower guide-channel, substantially as herein described.

3. In a lifting-jack, the casing formed of the two sides having the interlocking projecting flanges, the guide-channels formed in the 55 top and bottom of the two parts of the case, and corresponding lugs forming the remaining sides of these guide-channels, a sleeve formed with and projecting from the lower end of the case, having screw-threads cut upon 60 it, in combination with the tubular standard adapted to screw upon said sleeve and forming a casing into which the lower part of the lifting-bar descends and within which it is protected, substantially as herein described. 65

4. In a lifting-jack, the casing containing the gearing, a toothed lifting-bar sliding through guide-openings in the top and bottom of said casing, so as to be operated by the gearing contained therein, and a crank-shaft 70 projecting through the side of the casing and carrying a ratchet-wheel, in combination with the pawl fulcrumed in line above said ratchet-wheel and having the dogs or projections U and U' upon opposite sides and adapted to en- 75 gage the ratchet-wheel, substantially as herein described.

In witness whereof I have hereunto set my hand.

HUGH WILSON.

Witnesses:

S. H. NOURSE,
H. C. LEE.