

No. 849,565.

PATENTED APR. 9, 1907.

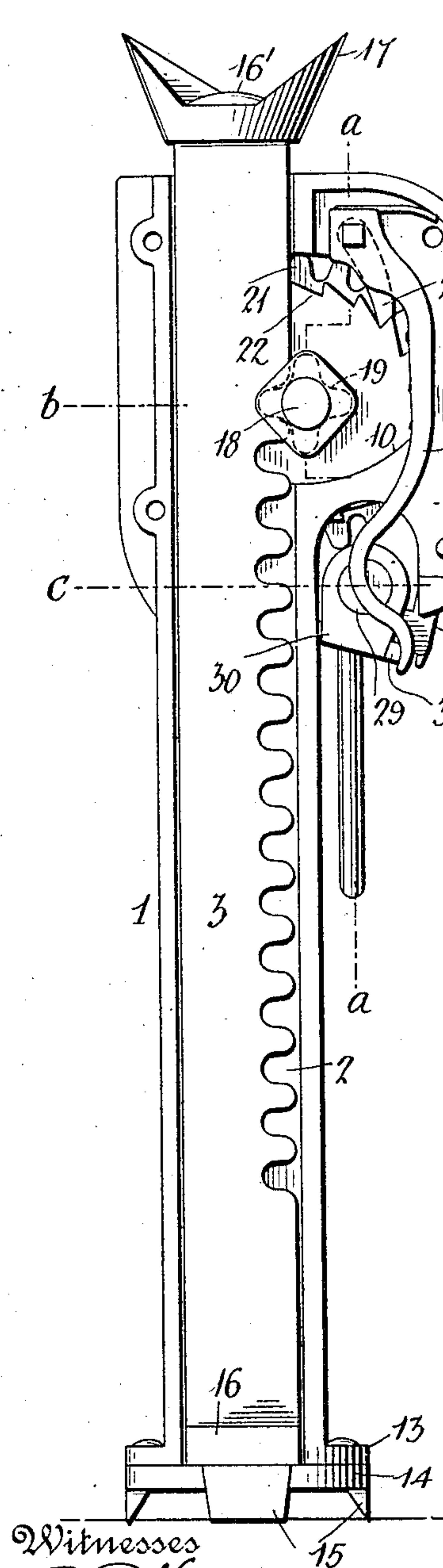
J. G. OWEN.
LIFTING JACK.

APPLICATION FILED JAN. 17, 1907.

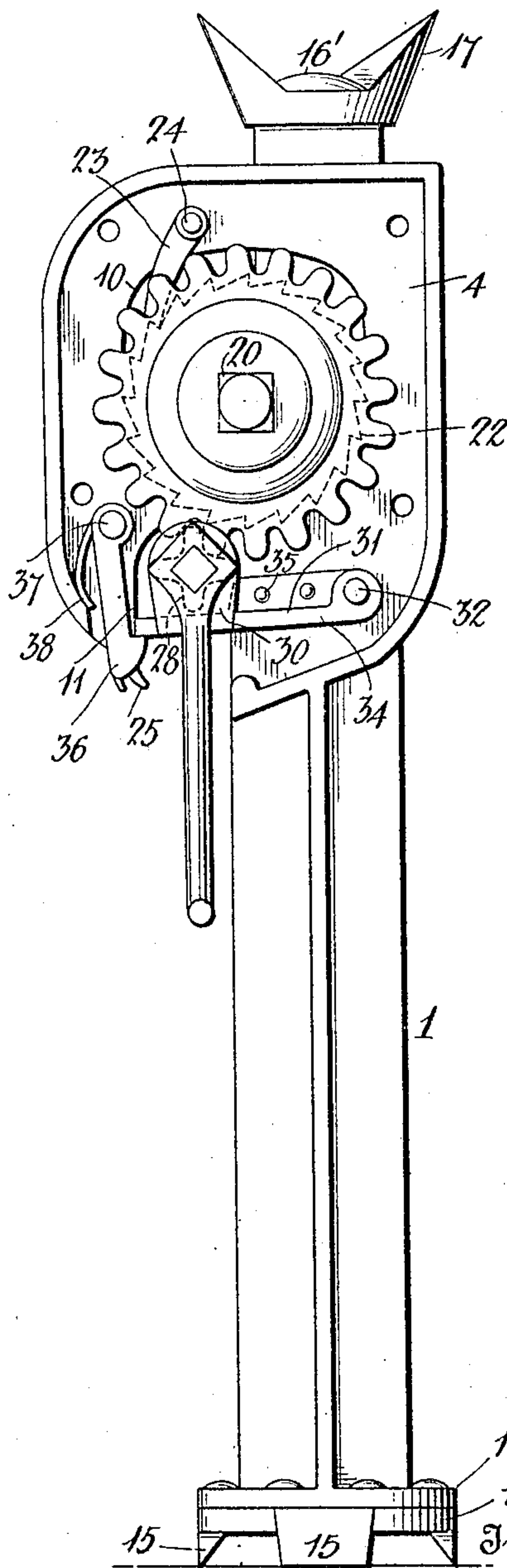
2 SHEETS—SHEET 1.

Fig. 1

Fig. 3



Witnesses
C. C. Hunt.
C. H. Griesbauer.



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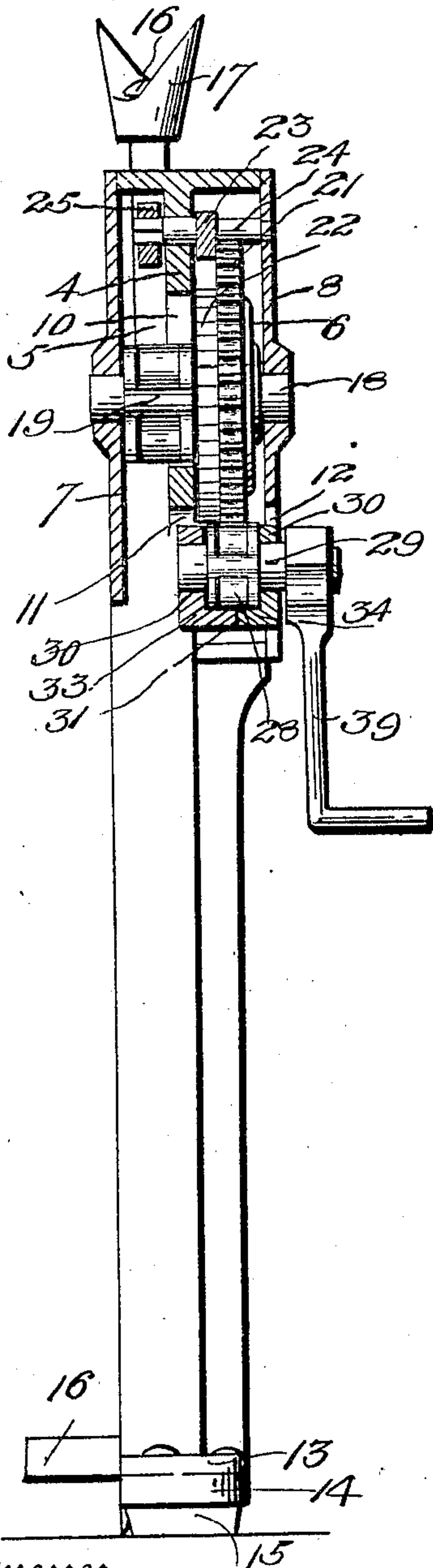
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2 SHEETS—SHEET 2.

Fig. 2.



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Fig. 4.

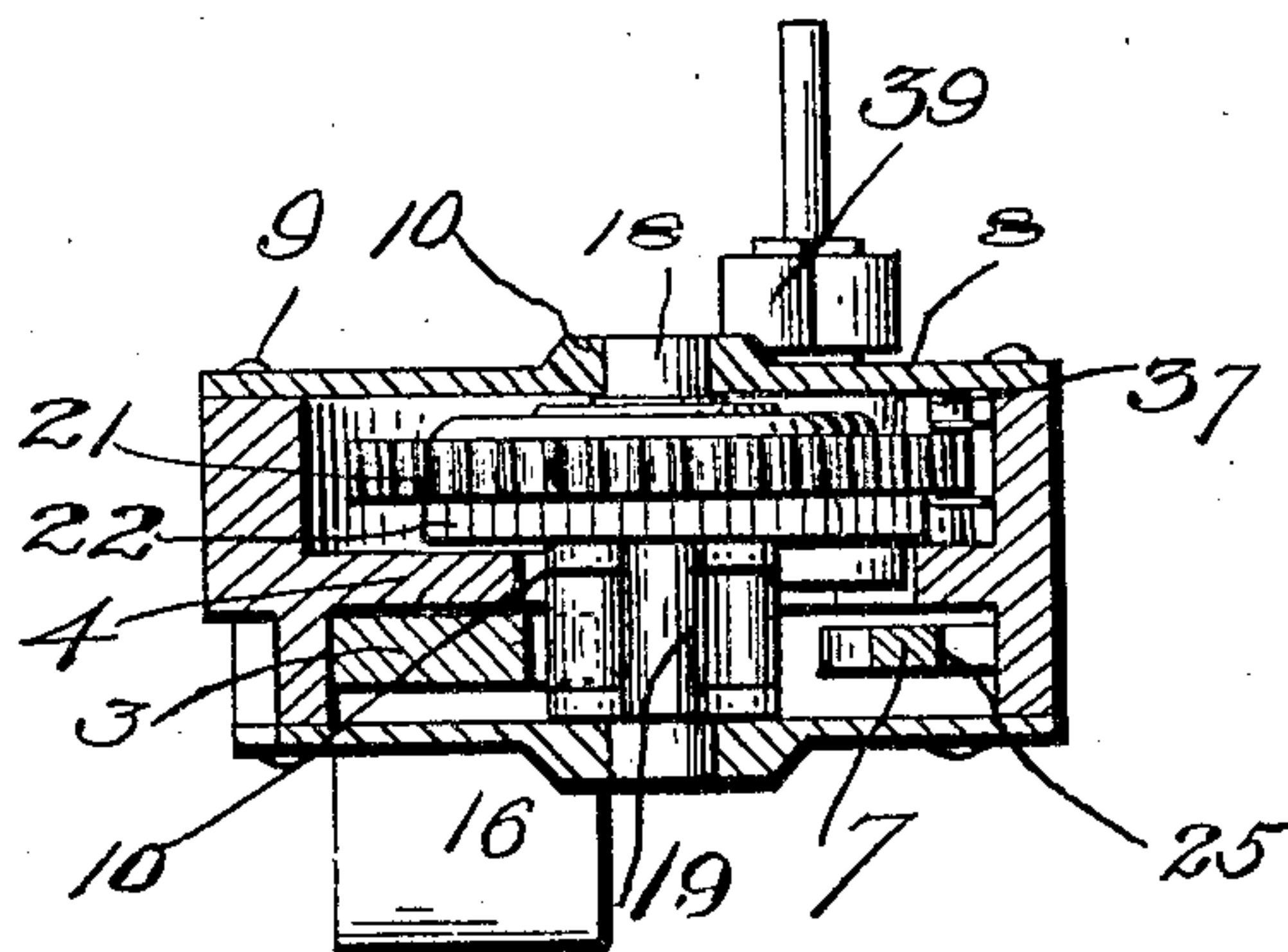
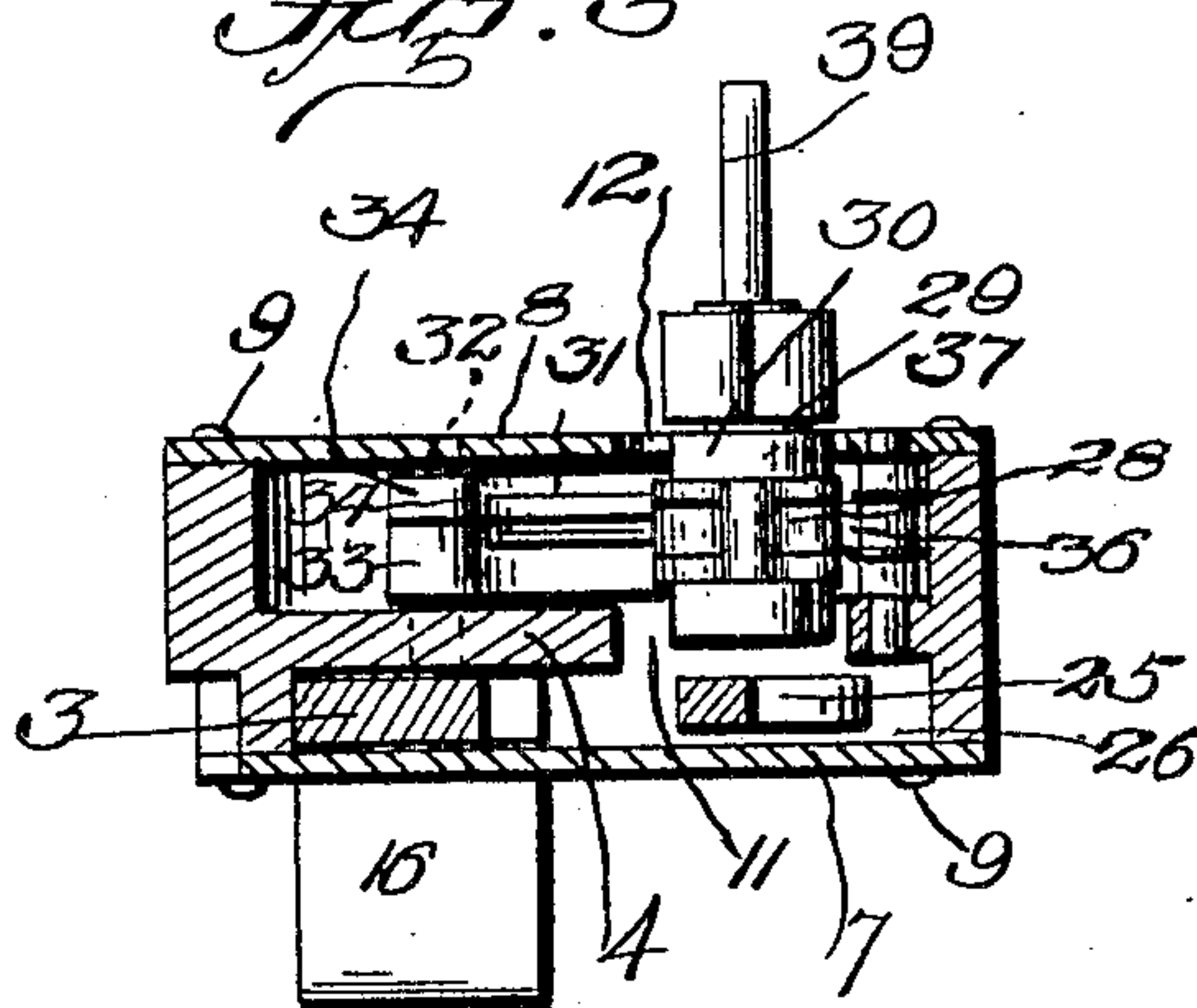


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES G. OWEN, OF PORTLAND, OREGON.

LIFTING-JACK.

No. 849,565.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed January 17, 1907. Serial No. 352,763.

To all whom it may concern:

Be it known that I, JAMES G. OWEN, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Lifting-Jacks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improved lifting-jack adapted for use in handling logs and other heavy material without danger to the operator; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a lifting-jack embodying my improvements, a portion of one side of the casing being removed to show the interior mechanism. Fig. 2 is a vertical transverse sectional view of the same, taken on the plane indicated by the line *a a* of Fig. 1. Fig. 3 is an elevation of the reverse side of the lifting-jack, with a portion of one side of the casing removed to show the interior mechanism. Fig. 4 is a horizontal sectional view taken on the plane indicated by the line *b b* of Fig. 1, and Fig. 5 is a similar view taken on the plane indicated by the line *c c* of Fig. 1.

A standard 1 is formed with a vertical guideway 2 in one side of sufficient depth and width to receive the vertically-movable rack-bar 3 and is broadened at its upper end and formed with a web 4 and a casing having chambers 5 6 in opposite sides, the sides of the said casing being formed by plates 7 8, detachably secured by means of bolts 9. The web 4 at a point near the upper end of the standard is formed with an opening 10. The upper end of the laterally-projecting portion of the web at one side of the standard is formed with a downwardly-opening recess or slot 11. The plate 8 is formed with a similar recess or slot 12. At the lower end of the standard are oppositely-extending flanges 13. A foot 14 is bolted to the said flanges and is provided at its sides and ends with downwardly-extending teeth 15. The rack-bar 3 has a laterally-extending arm 16 at its lower end and is provided at its upper end with a cylindrical projection 16', on which is mounted a revoluble horn 17.

In bearing-openings formed in the plates 7 8 are journaled the reduced ends of a shaft 18, which is here shown as formed with a pinion 19 and with an angular shouldered portion 20. On the said angular portion of the shaft is secured a spur gear-wheel 21, on the inner side of which is a ratchet-wheel 22, which revolves therewith and with said shaft and pinion. Said pinion engages the teeth of the rack-bar. The said ratchet-wheel extends into the opening 6 in the web 4 of the standard. A pawl 23 engages the ratchet-wheel and has its shaft 24 journaled in bearings in the plate 7 and in the web 4. The said shaft has an angular portion, to which is attached a depending trip-lever, which is located in the chamber 5 and the lower end of which projects below the laterally-projecting portion of the standard and operates in an opening 26, formed in the flange of the casing. By means of the said trip-lever the pawl may be readily disengaged from the spur-gear, as will be understood, to enable said spur-gear to be revolved by the coaction of the rack-bar and pinion, and hence enable the said rack-bar to descend by its own weight.

A peculiar feature of my invention is an operating-pinion revolved by a crank and which is movable into and out of engagement with the spur-gear to enable the latter to be driven or released at will. The said pinion 28 has its shaft 29 journaled in bearings 30, near the free end of a shifting-bar 31, which is provided with journals 32, that have their bearings in openings in the web 4 and cover-plate 8 of the casing. The said shifting-bar is here shown as composed of two longitudinally-separable sections 33 34, riveted together, as at 35. It may be of any suitable construction. When the shifting-bar has its free end raised, the pinion 28 is brought into engagement with the spur-gear 21 and the free end of the shifting-bar becomes engaged by a detent 36, which is provided at its upper end with trunnions 37, that have their bearings in openings in the web 4 and plate 8. The said detent is provided with a spring 38 to cause it to engage the free end of the shifting-bar, so that said detent will support said shifting-bar in its elevated position. When the detent is disengaged by the operator from the shifting-bar, the latter drops so as to release the driving-pinion 28 from engagement with the spur-gear 21.

One end of the shaft of the pinion 28 is squared to receive the hand-crank 39, by means of which the jack may be operated.

It will be understood that when the shifting-bar is in its normal position, with the pinion 28 engaged with the spur-gear 21 and the hand-crank is turned in the proper direction, motion will be communicated from said pinion 28 to the spur-gear 21; and hence to the pinion 19, and the latter will cause the rack-bar to rise and to elevate the load. The pawl 23 while coacting with the ratchet-wheel to permit the rotation of the pinion 19 and spur-gear 21 in the required direction will prevent rotation thereof in the reverse direction. When it is desired to lower the rack-bar by means of the cranks and gears, the trip-lever 26 must be operated to disengage the pawl 23 from the spur-gear 21. If it is desired to permit the rack-bar to descend by its own weight when the jack is not loaded, this may be accomplished by disengaging the detent 36 from the shifting-bar 31 and enabling the latter to drop so as to disengage the pinion 28 from the spur-gear 21. It will be understood that the descent of the rack-bar under these conditions will be almost instantaneous, so that the time which would be required to cause the latter to descend by means of the hand-crank will be saved.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion,

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined by the appended claims.

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

1. In a lifting-jack, the combination of a standard, a rack-bar movable thereon, a pinion engaging said rack-bar, a spur-gear revoluble with said pinion, fixed bearings for the shaft of said gear and pinion, an operating-shaft, a movable element having bearings therefor, and an operating-pinion on said operating-shaft, movable into and out of engagement with the said spur-gear, substantially as described.

2. In a lifting-jack, the combination of a standard, a rack-bar movable thereon, a shaft journaled in fixed bearings and having a pinion engaging the rack-bar and also provided with a spur-wheel and with a ratchet-wheel, a dog to engage the ratchet-wheel, a pivoted element having bearings, an operating-shaft journaled in said bearings and having a crank and a pinion, the latter movable into and out of engagement with the spur-gear, and means to lock and release said pivoted element, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES G. OWEN.

Witnesses:

B. S. PAGUE,
J. B. RYAN