J. L. VAIL.

Lifting-Jack.

No. 168,811. Patented Oct. 11, 1875.

Fig. 1.

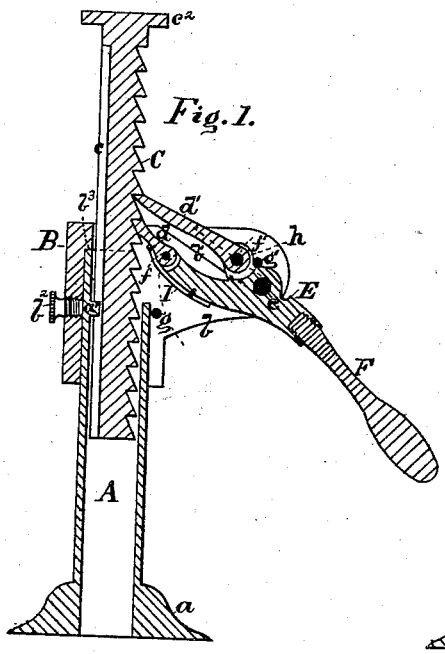


Fig. 2.

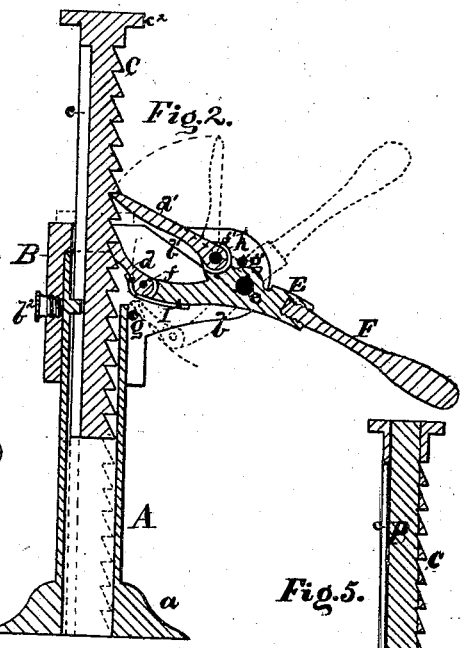


Fig. 3.

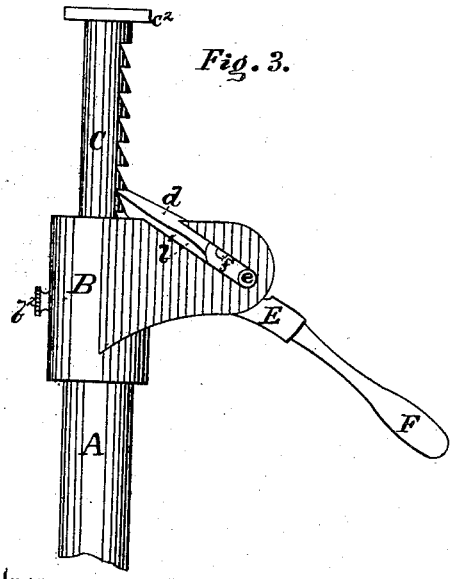


Fig. 4.

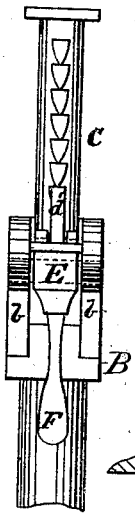
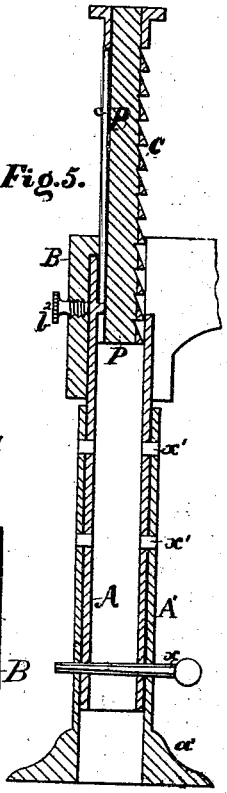


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JACOB L. VAIL, OF TOM'S RIVER, NEW JERSEY.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **168,811**, dated October 11, 1875; application filed July 20, 1875.

To all whom it may concern:

Be it known that I, JACOB L. VAIL, of Tom's River, in the county of Ocean and State of New Jersey, have invented certain new and useful Improvements in Lifting-Jacks; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figures 1 and 2 are vertical central sections of my invention. Fig. 3 is a side view, and Fig. 4 a back view. Fig. 5 is a vertical central section of a modification.

The object of my invention is to provide an improved lifting-jack for raising cars, wagons, and heavy weights, where it can be conveniently and advantageously used; and it consists in the novel construction, arrangement, and combination of parts, as hereinafter described, and specifically set forth in the claims; second, by the provision of means in a lifting-jack whereby the ratchet can be readily disgaged from the pawls and lever when not in use, thereby causing it to assume a compact form, and making it less difficult to handle, and less cumbersome for transportation.

Referring to the accompanying drawing, A represents a tubular stand, with an enlarged base, *a*, for supporting the lifting apparatus and the superincumbent weight of the car or wagon. This tubular stand is provided with a thumb-screw, or equivalent device, b^2, passing through its walls, and entering a channel, *c*, in the back of the ratchet-bar C, so as to prevent said bar from turning in said stand A. B is a lever-rest, having two projections or ears, *b b*, in which are inclined slots b^1 b^1, which form supports or journals for the pivot *e* of the lever E. The said rest is fastened to the outside of the tubular stand A by means of set-screw b^2, which prevents it from turning on said stand. To prevent the rest from sliding down the stand A, the former is made with a projection or ledge, b^3, on its inner side, which ledge rests on the top of the stand A, as shown. C is a ratchet-bar, which slides loosely in the stand A, and is provided with a channel, *c*, and ratchet-teeth c^1, and a support, c^2, which is placed next to the car or weight to be raised. The said bar C can be made of a solid piece of metal, or of tubular metal filled in with wood, as shown at P in Fig. 5, or other equivalent material. E is a lever, to which is attached the pawls *d* and *d'*, hinged or pivoted at *f* and *f'*, the said lever working on the pivot G in the slots b^1 b^1 of the ears *b b* of the lever-rest B by means of the handle F. I is a rubber or other elastic spring, attached at one end to the lever E, and at the other to the pawl *d*, the elastic force of which is exerted on the said pawl *d*. *g* and *g'* are cross-pieces connected to the ears *b b*, *g* being the means by which the ratchet-bar C is disengaged from the pawls *d'* and *d'*, and *g'* a device for preventing the weighted car from forcing down the said pawls.

The operation is as follows: The jack is placed in position, with the top c^2 of the ratchet-bar just below the car or wagon, the lever E and pawls *d* and *d'* assuming the position as shown in Fig. 1. The lever E being now raised by the operator, the pawl *d* is thereby pushed down from the tooth with which it is engaged to the next tooth in the ratchet, the pawl *d'* meanwhile retaining its position and supporting the superincumbent weight, as shown in Fig. 2. The lever E is then lowered, whereupon the pawl *d* engages with the rack of the rack-bar C, raising the same, and supporting it and the car, while the pawl *d'* drops down one tooth, when the lever E is again raised, pushing down the pawl *d*, the pawl *d'* again supporting the weighted car.

This operation is continued until the required height is attained; then, if the operator is required to turn his attention to the car, he lets go of the handle F. The car or wagon holds the jack in position by means of the pawls *d* and *d'* being engaged with the teeth of the ratchet, and prevented from being forced downward by the stud or projection *h* of the lever E impinging against the cross-piece *g'*.

When the car is to be lowered, the pawl *d* is again made to raise the ratchet-bar, disengaging the pawl *d'*, which is then thrown out of position. The weight then being supported upon the pawl *d*, the lever is then raised, pushing down the pawl *d*, and the ratchet and car descend. When the pawl *d* strikes against

the cross-piece *g* it is then thrown off from the ratchet, leaving it free to descend until the projection c^2 meets the top edge of the lever-rest B, as shown in dotted lines of Fig. 2.

By dispensing with the pedestal *a* of the pipe A, and making it telescope with another tube, A′, with its corresponding pedestal *a′*, and boring a series of holes, *x′ x′ x′*, in both, for the insertion of the pin *x*, as shown in Fig. 5, I thereby obtain a double telescoping lifting-jack, having still greater facilities for varying its length, by raising it or lowering it up to one of the holes *x′*, and inserting the pin *x*, which holds it in position, thereby rendering the jack still more compact, and capable of raising a weight to a greater height.

What I claim as my invention is as follows:

1. The stops *g g′*, attached to the lever-rest B, in combination with the lever E, having the pawls *d d′*, said stops being located on opposite sides of the fulcrums *e*, substantially as described.

2. In a lifting-jack having the stand A, adjustable rack C, and pawl-lever E, the ears *b b*, having oblique slots b^1, open at one end, to allow the pivot *e* to be slid in and out, as shown and described.

In testimony that I claim the foregoing, I have hereunto set my hand this 3d day of July, 1875.

JACOB L. VAIL.

Witnesses:
THOS. TRUEX,
B. M. BADGER.