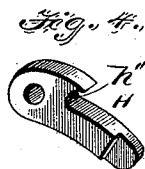
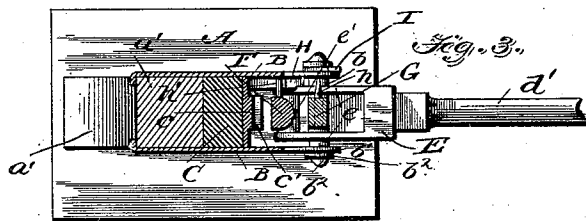
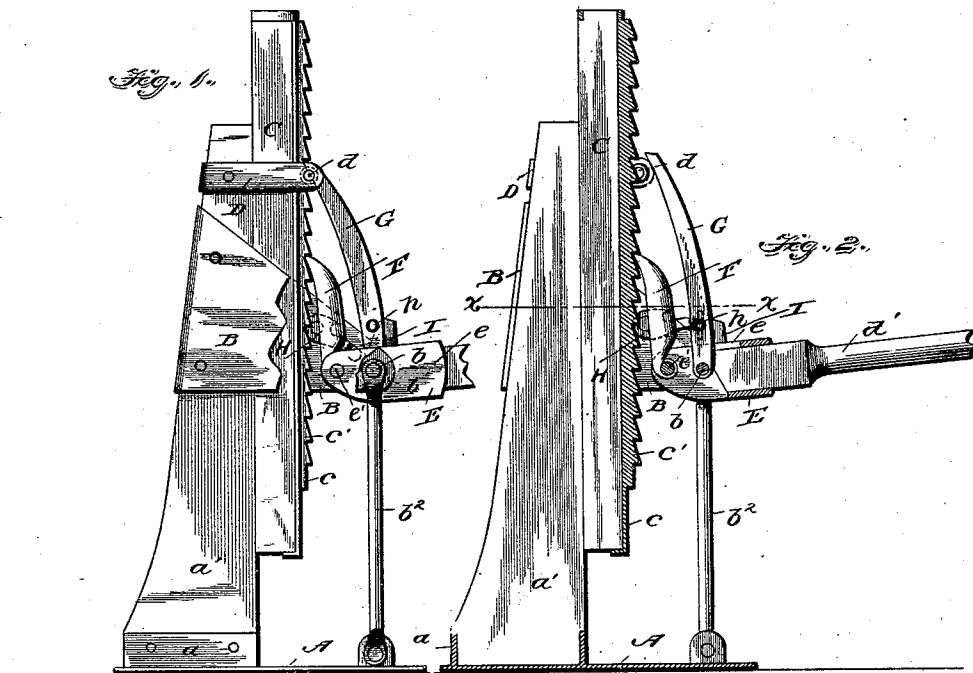


(No Model.)

C. F. HORNBECK.
LIFTING JACK.

No. 473,002.

Patented Apr. 19, 1892.



Witnesses

Witnesses
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William O. Belt.

Inventor _____

Cornelius F. Hornbeck

By *his* Attorneys

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UNITED STATES PATENT OFFICE.

CORNELIUS F. HORNBECK, OF OWEGO, NEW YORK, ASSIGNOR OF ONE-HALF
TO EDWARD D. COBURN, OF SAME PLACE.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 473,002, dated April 19, 1892.

Application filed December 28, 1891. Serial No. 416,352. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS F. HORNBECK, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, 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 appertains to make and use the same.

My invention relates to improvements in lifting-jacks; and its object is to provide a simple and effective construction and arrangement of parts whereby the lifting-bar may be elevated or lowered by simply varying the oscillation of the operating-lever.

With these ends in view my invention consists of a standard mounted in a suitable base, a lifting-bar guided within the standard, a lever-socket pivoted in bearing-plates on the standard and carrying the lifting and lowering pawls, and a dog pivotally secured on the bearing-plate and adapted to be operated by the lever-socket to adjust the pawls, so that the lifting-bar may be lowered.

My invention consists, further, of certain details of construction and arrangement of parts, as will be fully described and claimed hereinafter.

To enable others to more readily understand my invention I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a side elevation of the improved jack, partly broken away. Fig. 2 is a side view, partly in section, showing the jack in position when the lifting-bar is being lowered and the dog in engagement with the lug on the larger pawl. Fig. 3 is a transverse sectional view on the line *xx* of Fig. 2, and Fig. 4 is a detail view of the dog.

In the drawings like letters of reference denote corresponding parts in the several figures.

The frame consists, essentially, of a suitable base A, having the socket *a*, in which the standard *a'* is secured; but it is obvious that the standard may be supported in any other suitable manner and so arranged that the lifting-bar may operate horizontally, if desired. At or near the top of the standard are the plates B, which are fastened thereto in a

desirable manner, or they may be integral with the standard, and said plates project rearward to form bearings for the lever-shaft *b*. The rear ends *b'* of these plates or bearings are held rigidly in place by brace-rods *b²*, secured to the base. The lifting-bar C is arranged against the rear face of the standard, and it is adapted to be reciprocated up and down or back and forth by the lever and pawls. Said lifting-bar is guided in its movement between the bearing-plates and guide-plates D, having lugs or projections *d*, which may be provided with friction-rollers to bear against the rack-bar and hold the lifting-bar in a vertical position. On the rear face of the lifting-bar a plate *c* is secured, and this plate carries the rack-teeth *c'*, which are integral with said plate, the bar being separate from the plate and fastened in place in a suitable manner, or the bar and rack-teeth may be integral.

The lever-socket E is pivotally secured on the shaft *b*, and it is bifurcated to provide the forwardly-extending side pieces *e*. A transverse bar *e'* is secured in the ends of the side pieces *e*, and the smaller pawl F is pivoted thereon in a suitable manner. The larger pawl G is pivoted on the shaft *b*, and it acts as a holding-pawl, either in the operation of elevating or lowering the lifting-bar, while the smaller pawl F performs the function of elevating or lowering the lifting-bar, the pawl G simply holding said bar while the smaller pawl F is obtaining a new hold. The lever *d'* is inserted in the socket in the usual manner, and the operation of elevating the lifting-bar is very simple, the pawl G holding the lifting-bar steady while the lever is being elevated and the smaller pawl F lowered to take a new hold on the lifting-bar.

In the operation of elevating the lifting-bar it must be noted that the oscillation of the operating-lever is confined within the limits necessary to operate the smaller pawl F over one tooth of the rack-bar. As before stated, I can also lower the lifting-bar after it is elevated by operating the lever *d'*, simply giving it a wider range of oscillation. To accomplish this important feature I provide a dog H, which is pivotally secured on one of the bearing-plates, and extends rearwardly above one of the side pieces *e* of the socket

to impinge against a lug or projection *h* on the larger pawl *G*. By this construction and arrangement when the lever is lowered its full limit the side piece of the socket, being on the
 5 opposite side of the fulcrum, strikes against the dog *H* and raises it up until it impinges against the lug or projection *h* on the pawl *G*. As the dog is raised it disengages the pawl *G* from the rack and holds the same in
 10 this free position by frictional contact while the lever is being elevated and the smaller pawl *F* is lowering the rack-bar. To disengage the dog from the pawl *G*, I provide a projection *h'* on the smaller pawl *F*, which strikes
 15 said dog as the pawl descends and releases the pawl *G* so that it will fall back into engagement with the rack-bar again. The lever is now elevated to its highest limit and the smaller pawl *F* is released from its engage-
 20 ment with the rack-bar by the projection *h'*, which slides down over the segmental upper edge of the dog and into a slot or recess *h''* therein. The larger pawl *G* is now sustaining the rack-bar, and as the lever is lowered
 25 the projection *h'* in the recess *h''* assists in elevating the dog to its position in contact with the lug or projection *h* on the pawl *G* to release the latter from the rack-bar. To prevent the pawl *G* from becoming displaced, I
 30 provide a stop *I* on one of the bearing-plates adapted to engage with the lug or projection on said pawl.

It will be readily observed that the operation of the jack either in elevating or lowering
 35 the lifting-bar is extremely simple, and by varying the oscillation of the lever the load supported on the rack-bar may be elevated or lowered.

I am aware that changes in the form and
 40 proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention—as, for instance, the dog may be pivotally secured on either side of the bearing-
 45 plates or directly to the standard, or I may use two dogs instead of one.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. In a lifting-jack, the combination, with 50
 a base and a standard, of a lifting-bar, a lever fulcrumed in bearings on the standard, the pawls carried by said lever and adapted to engage with the lifting-bar one above the
 55 other, the dog *H*, pivoted on one bearing-plate and having a slot or recess *h''* and adapted to be elevated to engage with a lug on the larger pawl to hold it out of engagement with the lifting-bar, and the projection *h'* on the smaller pawl, arranged to fit in said slot or
 60 recess to elevate the dog when said pawl is raised and to disengage the dog when the pawl is lowered, substantially as described.

2. In a lifting-jack, the combination, with
 a base and a standard mounted thereon, of a 65
 lifting-bar, the bearing-plates on said standard, the lever fulcrumed in said bearing-plates, the pawls carried by the lever, and a dog pivoted on the bearing-plates and adapted to be raised by the lever to engage with a lug on
 70 one pawl when the lever is lowered to its limit, to lower the lifting-bar, substantially as described.

3. In a lifting-jack, the combination, with
 a base and a standard mounted thereon, of a 75
 lifting-bar having a rack, the bearing-plates on the standard and extending in rear thereof, a transverse shaft in the rear ends of said plates, the lever fulcrumed on said shaft and carrying a pawl on its front end, another pawl 80
 pivoted on the shaft and having a lug or projection on one side thereof, a dog pivoted on one bearing-plate and adapted to be raised by the lever to engage with the lug on said
 85 pawl, and another lug on the smaller pawl to disengage the dog as said pawl descends, substantially as described.

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

CORNELIUS F. HORNBECK.

Witnesses:

WILLIAM E. ISENBERRY,
 T. B. OAKLEY.