

(No Model.)

J. O. JOYCE.  
LEVER JACK.

No. 271,864.

Patented Feb. 6, 1883.

Fig. 2.

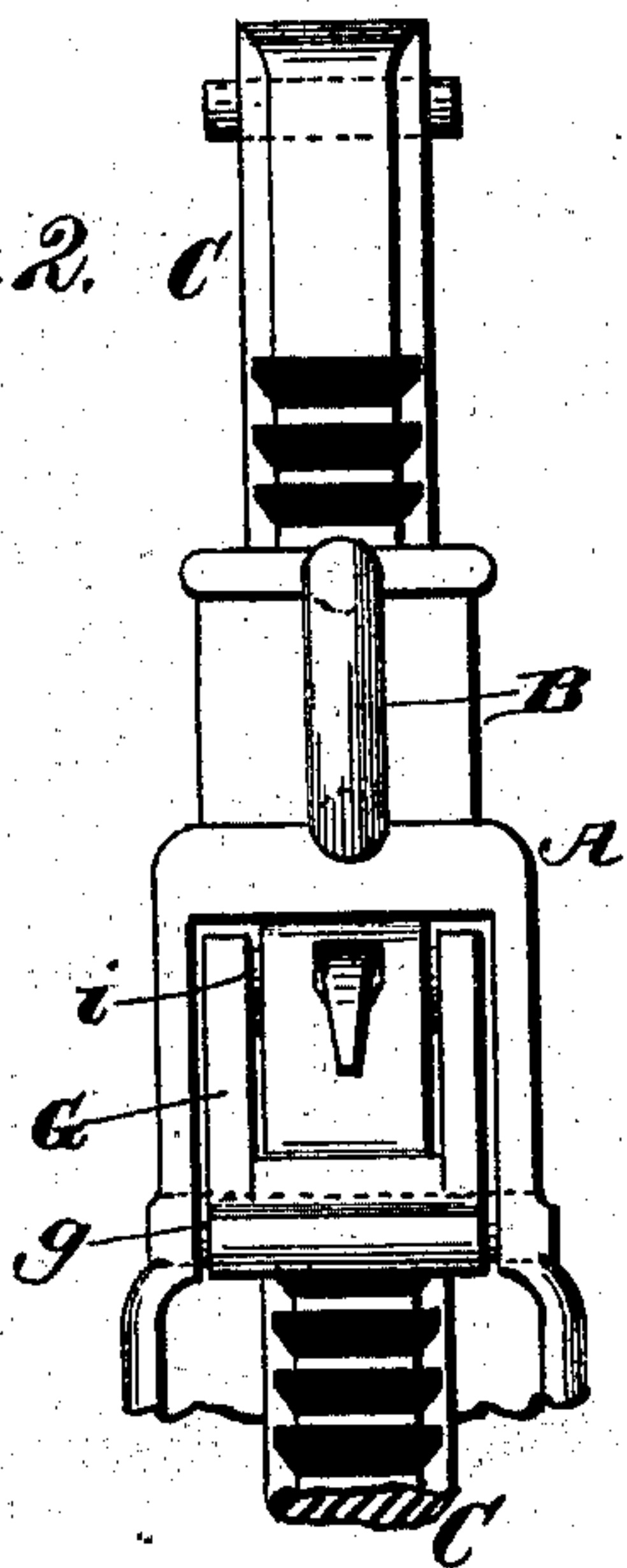


Fig. 1.

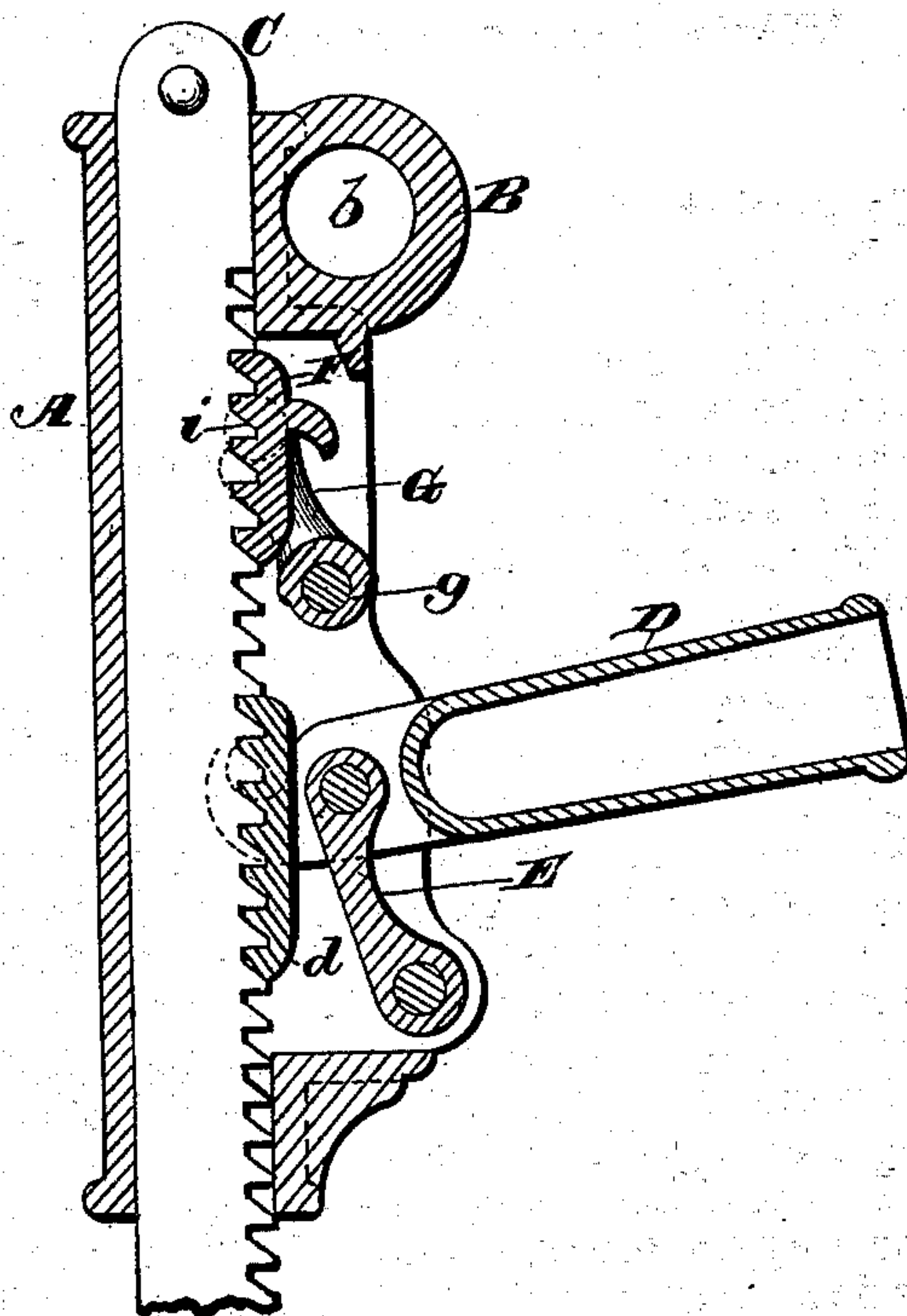


Fig. 3.

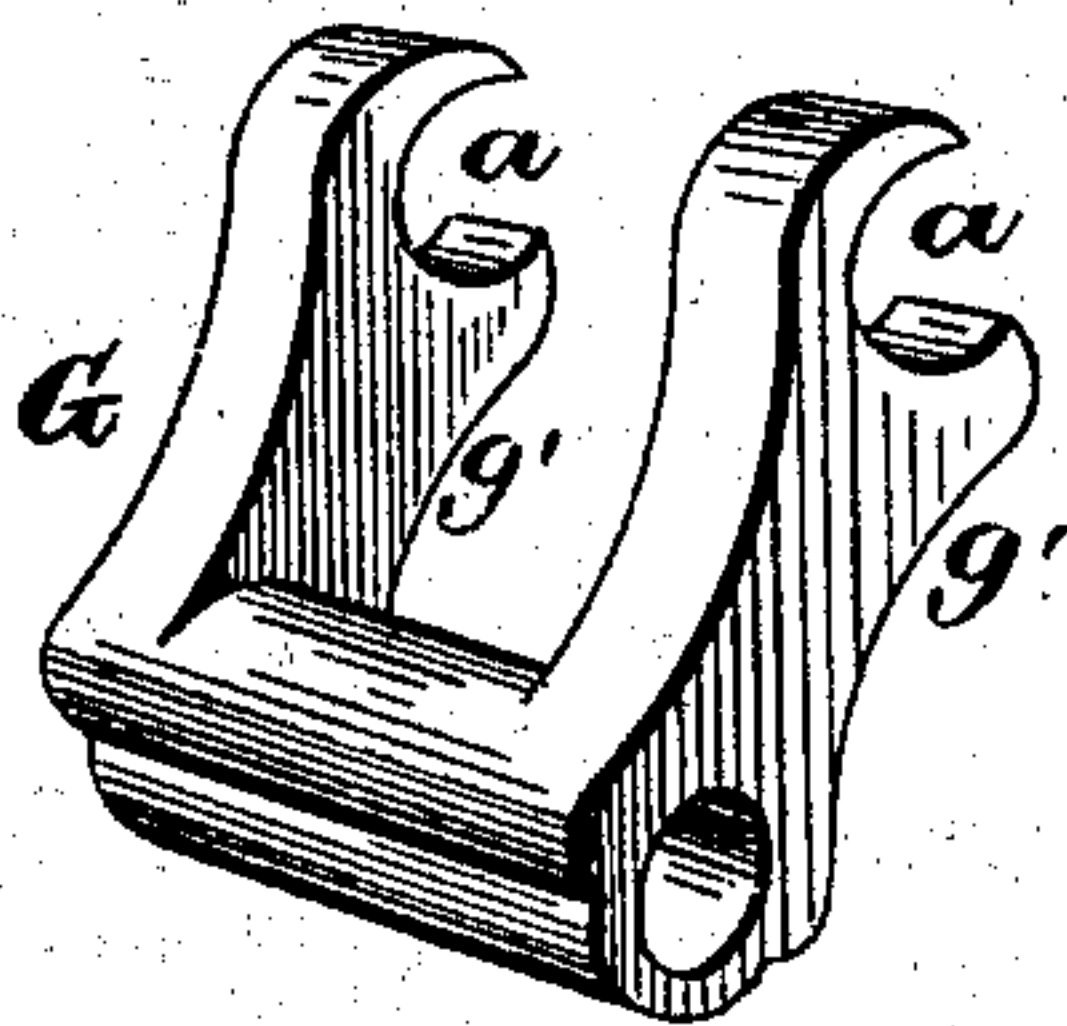
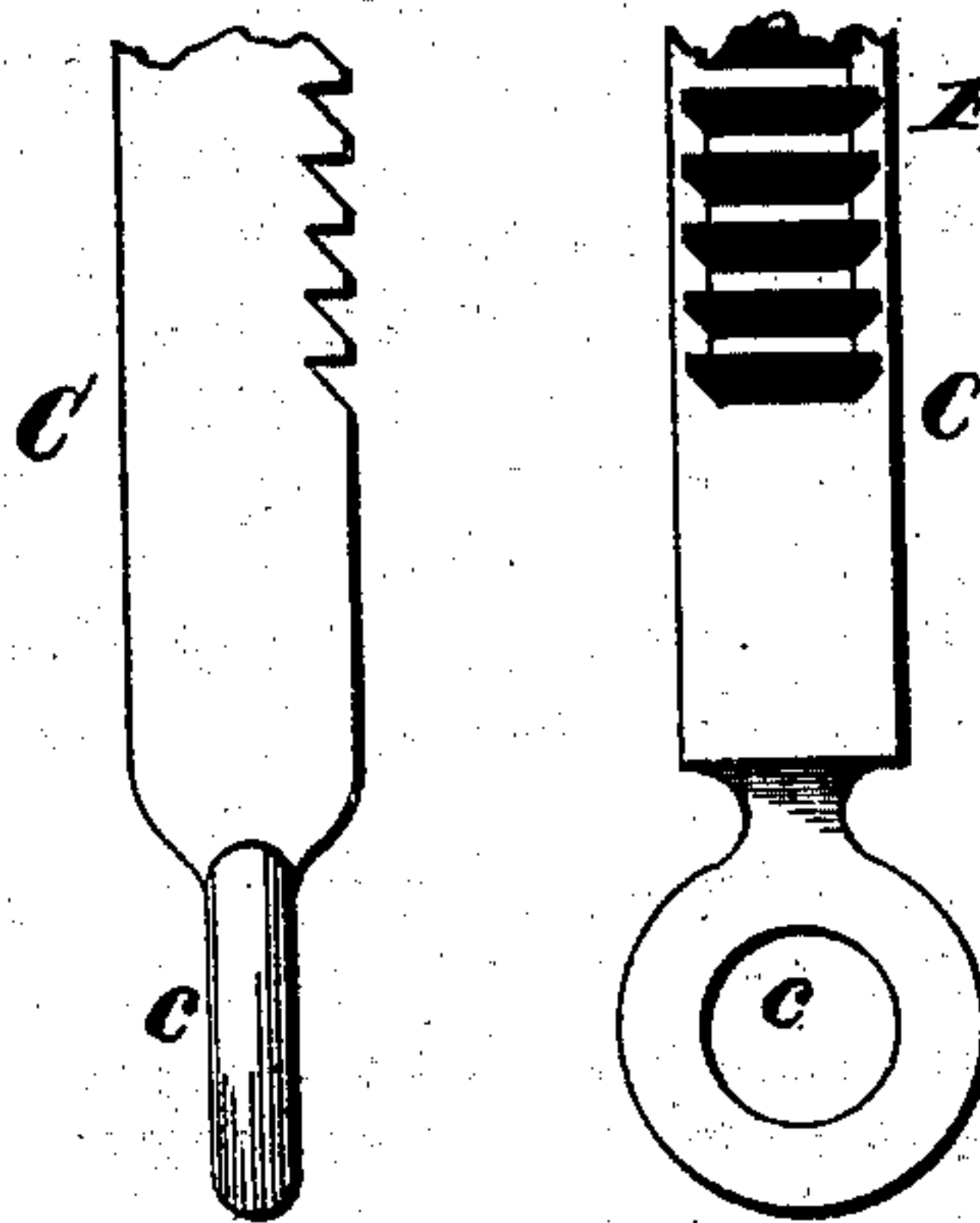


Fig. 4.



Witnesses.

Robert Everett.

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Attys.



# UNITED STATES PATENT OFFICE.

JACOB O. JOYCE, OF DAYTON, OHIO.

## LEVER-JACK.

SPECIFICATION forming part of Letters Patent No. 271,864, dated February 6, 1883.

Application filed October 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB O. JOYCE, a citizen of the United States, and a resident of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Lever-Jacks, of which the following is a specification.

My invention relates to improvements in lever-jacks.

The first part of my invention relates to pulling-jacks for lifting or suspending weights. The object of this part of the invention is to provide a cheap, convenient tool which will take the place of the differential pulley in lifting and moving weights in manufactories, distilleries, warehouses, &c. The second feature of my invention relates to a many-toothed pawl for holding the load, all of which will be fully set forth in the description of the accompanying drawings, in which—

Figure 1 is a longitudinal central section, showing my improvement. Fig. 2 is a front elevation. Fig. 3 is a detailed view of the link for holding the pawl, and Fig. 4 an elevation of the lower end of the lifting-bar.

A is the frame of the jack. It is provided with a loop or ear, B, at its upper end, through which is pierced an eye-hole, *b*, through which a hook or rope is passed to suspend the jack. The lower end of frame A, instead of being provided with an ordinary base, is cut off a short distance below the lifting-lever, to allow the rack-bar C to project a sufficient distance below the frame to allow weights to be attached thereto.

C represents the lifting or rack bar, the lower end of which is provided with an eye, *c*, to receive a hook or other fastening device.

In lieu of the eye-holes *b* and *c*, hooks or other devices may be substituted.

D represents a lifting-lever; *d*, a lifting-pawl, and E a link for connecting the lever to the frame.

F represents the holding-pawl, and G a link for connecting the pawl to the frame A of the jack. In my patent of September 15, 1874, No. 154,989, I show a pawl of many teeth and working in an inclined seat formed in the frame of the jack. In order to make the pawl sensitive and move at a low angle, I have designed the link form of support here shown.

*g* represents a pivot at the lower end of the link G, which hinges the link to the frame A, the lower end of which link should be sufficiently far from the bar C so that the pawl will by gravity readily swing toward the bar C. A spring may be employed, if desired, to assist in the movement of the link; but it will not be found necessary. Link G is attached to the pawl preferably by short stud-pins *i i*, cast in the edges of pawl F, which journal in the eyes *a a*, made in the angle of the arms *g'*. The link thus made straddles and supports the pawl on either side, and allows the many-toothed pawl to move out and in to engage with the teeth of bar C, or to be released therefrom, it being essential in the operation of a many-toothed pawl to have its face vertical and to work automatically by the raising of the bar. This method of employing a many-toothed holding-pawl is a feature of my invention herein, and it may be applied to any other form of lifting-jacks.

In operation, the frame A is suspended over the weight to be lifted, and the weight attached to the eye *c* in the rack-bar C. The lever D is operated to raise the bar and weight. The frame of the jack may be suspended upon a traveling truck running on a sill above the floor of the warehouse, so that the jack and weight may be moved from place to place while the weight is suspended; or the jack may be attached to a permanent overhanging support of any kind, as desired.

I claim—

1. A pulling-jack consisting of the frame A and suspension-ear B, rack-bar C, projecting below the frame A, and having a connecting-eye, *c*, or its described equivalents, and lifting-lever and holding-pawl, substantially as herein set forth.

2. In combination with the frame and rack-bar of a lever-jack, the many-toothed pawl pivoted to the frame by means of the link G and engaging with the rack-bar, substantially as herein set forth.

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

JACOB O. JOYCE.

Witnesses:

JOHN L. H. FRANK,  
C. S. BARMANN.