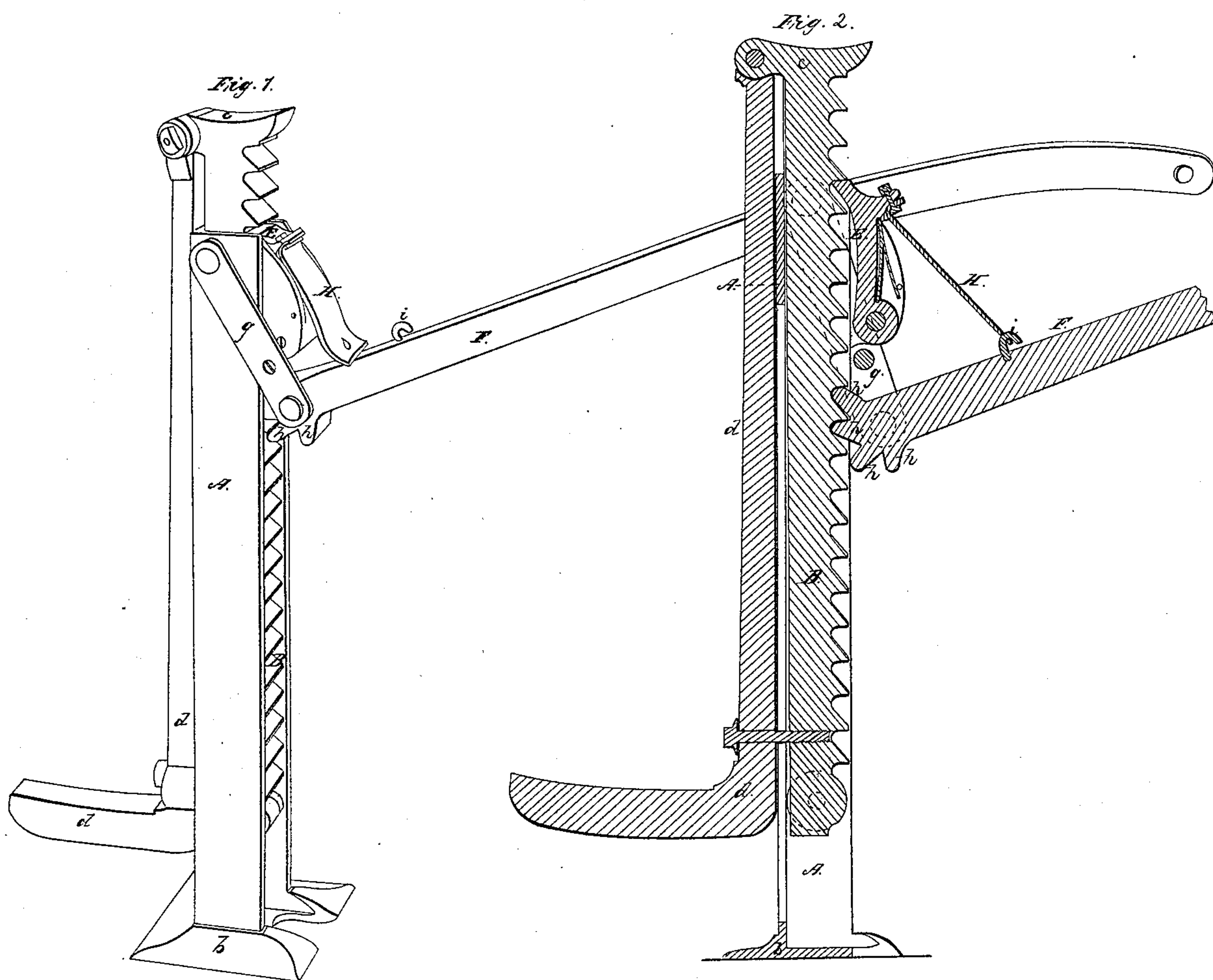


*J. Leffel,
Lifting Jack,*

Nº 7,820,

Patented Dec. 10, 1850.



UNITED STATES PATENT OFFICE.

JAMES LEFFEL, OF SPRINGFIELD, OHIO.

LEVER-JACK.

Specification of Letters Patent No. 7,820, dated December 10, 1850.

To all whom it may concern:

Be it known that I, JAMES LEFFEL, of Springfield, in the county of Clark and State of Ohio, have invented a new and useful Improvement in Lever-Jacks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, in which—

Figure 1 represents a view in perspective of my improved lever jack, and Fig. 2 is a vertical section of the same with the strap engaged with the lever handle.

In my improved jack the power as applied to a lever which acts upon a toothed sliding bar; the latter when moved by the lever is prevented from returning by a spring click or pawl, which can be connected with or disconnected from the lever at will to enable the operator either to lower the weight, which is supported by sliding bar, tooth by tooth, or to raise it in like manner.

In the accompanying drawing A is the stock of the instrument; in the example here represented it is constructed of cast iron and is enlarged at its lower extremity to afford a wide base *b*. Between the sides of this stock is an open space or slot within which the toothed or rack bar B is constructed to slide. This rack bar extends beyond the top of the stock and is there fitted with a crutch *c* which is applied to the weight to be lifted. It is also fitted with a hook *d*, which is extremely useful in lifting or turning those articles which can be laid hold of only at a point lower than the top of the jack. The back of the sliding rack bar is furnished with a series of ratchet teeth whose inclined faces are uppermost and a spring click or pawl E is hinged to the upper part of the stock to engage with these teeth and prevent the toothed bar from sliding downward in the stock. The lever F to which the power is applied is pivoted to a pair of links *g, g*, which depend from pivots at the top of the stock, its shorter arm is fitted with a series of teeth *h* which engage with the teeth of the sliding bar. When the outer extremity of the lever is raised the links *g g* allow its inner end to swing outward and the teeth at its inner extremity pass over the inclined faces of the teeth of the sliding bar without engaging with them but when the raised lever is depressed the lever teeth engaging with the under or straight faces of the teeth of the sliding bar

will move the latter; as the bar is moved its teeth pass the click which being forced by its spring into the space beneath each tooth prevents the return of the sliding bar while the lever is raised to take a fresh hold upon its teeth. The click is furnished with an elastic strap H which can be connected with or disconnected from a hook *i* on the outer arm of the lever. When this strap is disconnected from the lever, the click prevents the return of the sliding bar as above stated, but when the strap is connected with the lever, the downward movement of the latter disengages the click from the tooth with which it is in contact while at the same time the teeth of the lever being in contact with those of the sliding bar prevent the latter from moving suddenly under the pressure of the weight and permit the operator, by allowing the lever to rise slowly, to lower the sliding bar until the click, which is allowed to move by the slacking of the strap H incident to the rise of the lever, engages with the next succeeding tooth and holds the sliding bar in its position until the lever can be withdrawn and lowered to take a fresh hold upon its teeth. The operator is thus enabled, by simply working the lever up and down, to lower the sliding bar and the weight upon it, one tooth at a time without jar; or he can, if he sees fit, by disengaging the lever teeth and the click, allow the bar to return instantaneously into the stock. I have found it expedient in practice to make the strap H of some elastic substance, india rubber for example. The jack thus constructed is equally applicable to the lifting of great or small weights, to the rolling over of stones timber, &c., and to other purposes. It may be made of any size and strength, care being taken to proportion it to the weight to be raised. It possesses an advantage over all lever jacks hitherto devised in allowing of the lowering of the sliding bar tooth by tooth without disengaging the click by hand as its lever when connected with the click as herein set forth effects the double purpose of lowering the bar and disengaging the click.

It is obvious that by connecting a cable or chain with the sliding rack bar this jack may be made available for raising the anchors of vessels or for extracting stumps, moving houses and other analogous purposes. It may also be used with advantage in grist mills as a cheap and efficient sub-

stitute for the screw usually employed for raising the mill stone.

I claim—

- 5 1. I claim the hanging of the lever by links which permit the lever teeth to disengage themselves from those of the rack bar with which they are engaged by simply raising th elever, and allow them to reen-
10 is depressed substantially as herein set forth.
2. I also claim the method of connecting

the pawl with the lever in such manner that by simply working the latter the rack bar with the weight resting thereon may be lowered tooth by tooth substantially as 15 herein set forth.

In testimony whereof I have hereunto subscribed my name.

JAMES LEFFEL.

Witnesses:

E. S. REMVICK,
P. H. WATSON.