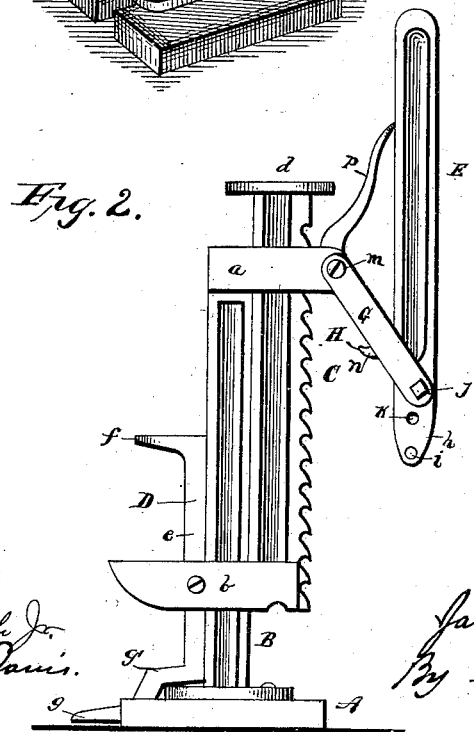
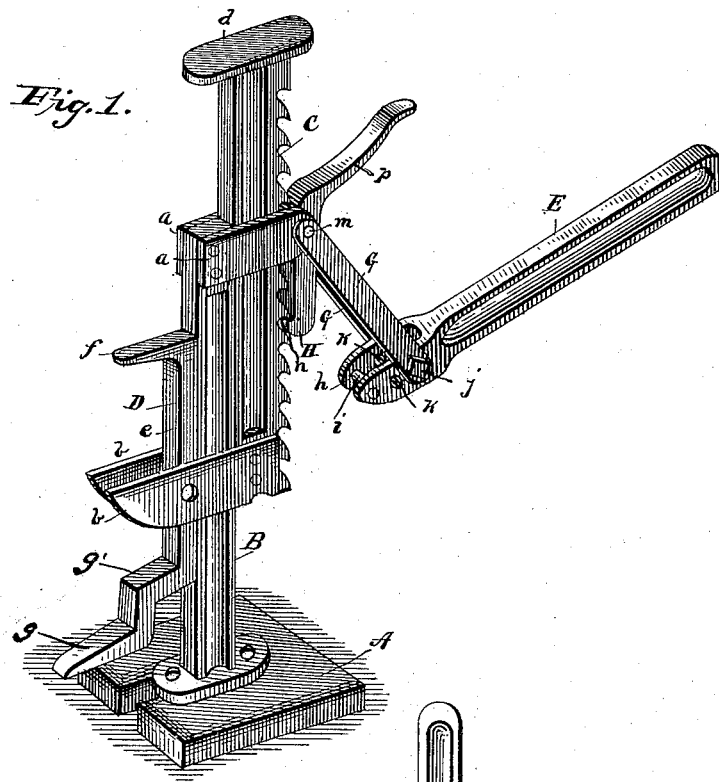


(No Model.)

J. WEATHERS.  
LIFTING JACK.

No. 383,029.

Patented May 15, 1888.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES WEATHERS, OF INDIANAPOLIS, INDIANA.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 383,029, dated May 15, 1888.

Application filed March 8, 1888. Serial No. 266,528. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WEATHERS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and valuable improvements in portable lifting-jacks, which will be fully understood from the following description and claims, taken in connection with the annexed drawings, in which—

Figure 1 represents a perspective view of my improved jack complete, and Fig. 2 a side elevation thereof.

Referring to the annexed drawings by letter, A designates the base or foot piece of the improved lifting-jack, and B a standard rising perpendicularly therefrom and rigidly secured thereto. To the upper end of this standard B, which is rectangular in cross-section, arms or guides *a a* are rigidly secured, which extend horizontally backward and receive between them a vertically-movable rack-bar, C, thereby affording the upper guides for this bar. To the lower end of the rack-bar C arms *b b* are rigidly secured, which project horizontally forward on opposite sides of the standard B and receive between them this standard, thereby affording the lower guides for the said rack-bar. The rack-bar C is thus arranged to move up and down in contact with the back side of the standard, the teeth of this bar being preferably slightly hooked and pitched downward, and the top of the bar being provided with a horizontal cap or lift, *d*, as clearly shown in the annexed drawings.

In combination with the above-described arrangement of the rack-bar and its guides, I employ an auxiliary guide, D, which consists of a long vertical bar, *e*, rigidly secured between the arms or lower guides, *b b*, so as to impinge against the front side of the standard B, both above and below the said arms. The upper end of the bar *e* is provided with a horizontal lifting-toe, *f*, and the lower end of this bar is provided with an inclined tapered lifting-toe, *g*, which is especially designed for entering beneath railroad-rails and cross ties

when it is desired to raise them. It will also be observed that between the toe *g* and the lower end of the straight portion of the bar *e*, I form an angular bend which affords a lifting-toe, *g'*, and it will also be observed that the extension of the arms or lower guides, *b b*, affords lifting-toes. I thus provide four lifting-toes on the front side of the standard, adapted to reach objects at different heights which it may be desired to lift.

E designates the actuating hand-lever, the bifurcated end *h* of which is provided with a transverse lifting-bar, *i*, adapted to engage with the teeth of the rack-bar C to afford a purchase in the act of lifting this bar. This lever E is pivoted between the lower ends of two links, G G, by means of a fulcrum-bolt, *j*, which passes through the bifurcated end *h* of the hand-lever E, which end is provided with supplemental bolt-holes *k*, for shortening the fulcrum of the said lever when required.

The upper ends of the links G G are pivoted by means of a transverse bolt, *m*, to the rear ends of the guides or arms *a a*, to which bolt is also pivoted between said arms an angular gravitating pawl, H. The lower or heaviest end of this pawl is provided with a hook, *n*, adapted to effect a self-engagement with the teeth of the rack-bar C during the act of raising this bar. Above the pivot-bolt *m* the pawl H has a curved handle, *p*, which extends upward and backward, and by its weight aids in causing an engagement of the hook *n* with the rack-teeth without the aid of a spring for the purpose.

In operation the rack-bar is lifted by vibrating the hand-lever E and causing the bar *i* to successively engage with the rack-teeth, the hooked end of the pawl H automatically engaging with these teeth and arresting the rack-bar from casual descent.

If it is desired to allow the rack-bar after being elevated to a given height to drop, this may be conveniently done by disengaging the bar *i* from the rack-teeth and by swinging the hand-lever upward with its links, causing this bar to trip the pawl H. If, however, it is desired to gradually lower the rack-bar B, with a load upon its upper end or upon either one of its lifting-toes, this may be done by alternately manipulating the hand-lever and the pawl.

It will be seen from the above description that I employ an auxiliary guide, D, in combination with the upper and lower primary guides, *a b*, whereby I maintain a positive steadiness of the rack-bar without undue friction; also, that I provide this guide D with supplemental lifting-toes, located at different distances apart, and also that in operation the swinging fulcrum *j* of the hand-lever is nearly in a vertical plane intersecting the bolt *m*, thereby obtaining great leverage with a comparatively short hand-lever.

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 of the standard, the rack-bar, the hand-lever swung by links, and its bar *i*, adapted to engage with the teeth of said rack-bar, a gravitating pawl, the upper and lower primary guides, and an auxiliary guide, D, secured to the arms of the lower primary guide, substantially as described.

2. The combination, with the auxiliary guide D, provided with lifting-toes, of the standard B, a rack-bar, C, guided vertically and connected to the said guide D, and an operating-lever, substantially as described.

3. The combination, with the rack-bar and standard of a lifting-jack, of an auxiliary guide-bar secured to the lower primary guide and provided with lifting-toes above and below this guide, substantially as described.

4. The combination, in a lifting-jack, of the base A, the standard rising perpendicularly therefrom, the vertically-movable rack-bar having hooked teeth, the upper and lower primary guides, the auxiliary guide provided with lifting-toes at and between its extremities and rigidly secured to the lower primary guide, the bifurcated hand-lever swung from the upper primary guide by links and provided with a transverse lifting-bar, *i*, adapted to engage with the teeth of the rack-bar, and a gravitating angular pawl pivoted to the upper primary guide and adapted to be tripped by the said lifting-bar on the bifurcated end of the hand-lever, all substantially as described.

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

JAMES WEATHERS.

Witnesses:

H. R. SPRINGSTEEN,  
MICHAEL CALLIHAN.