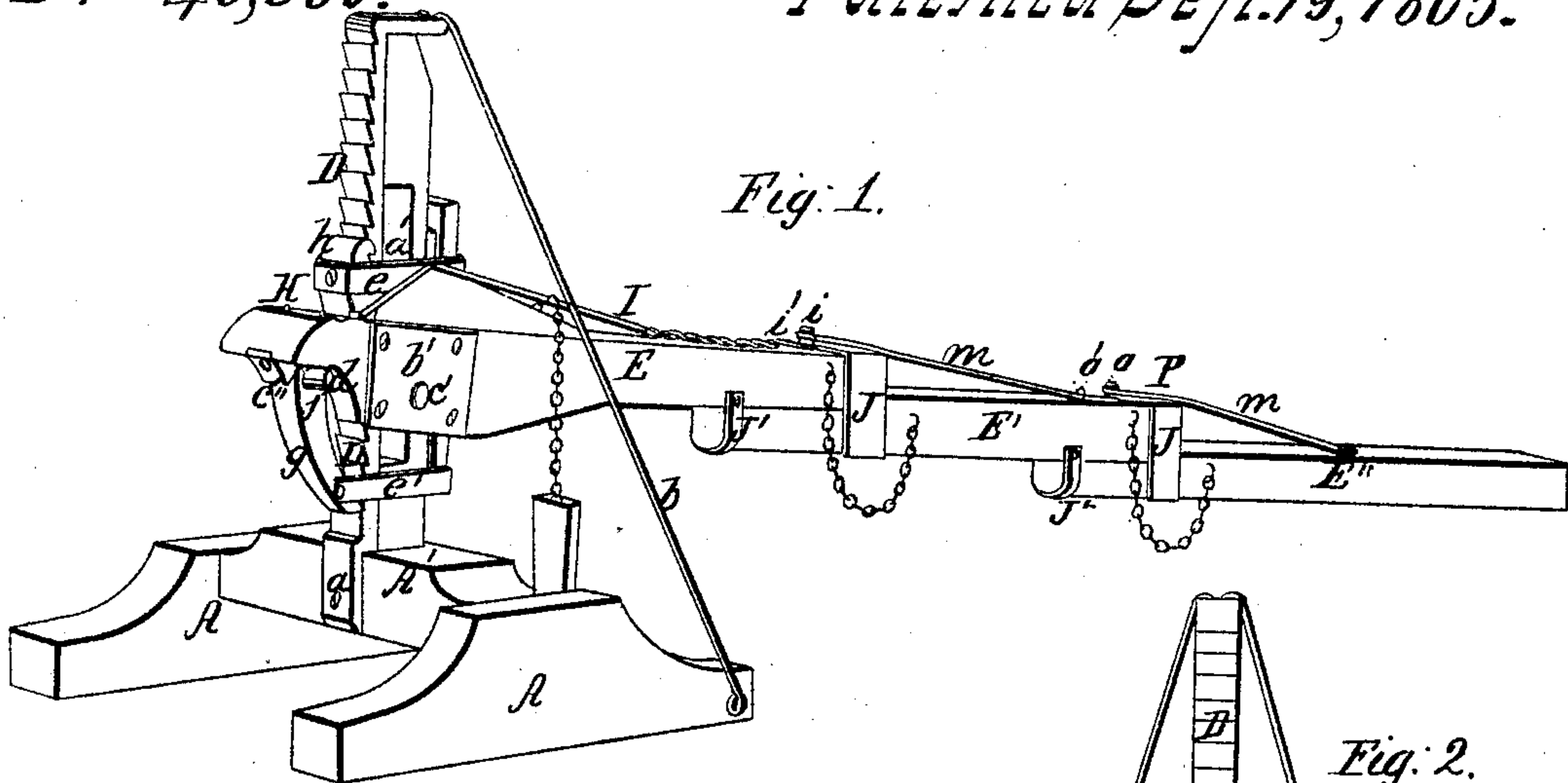


*W. H. Hartman,*

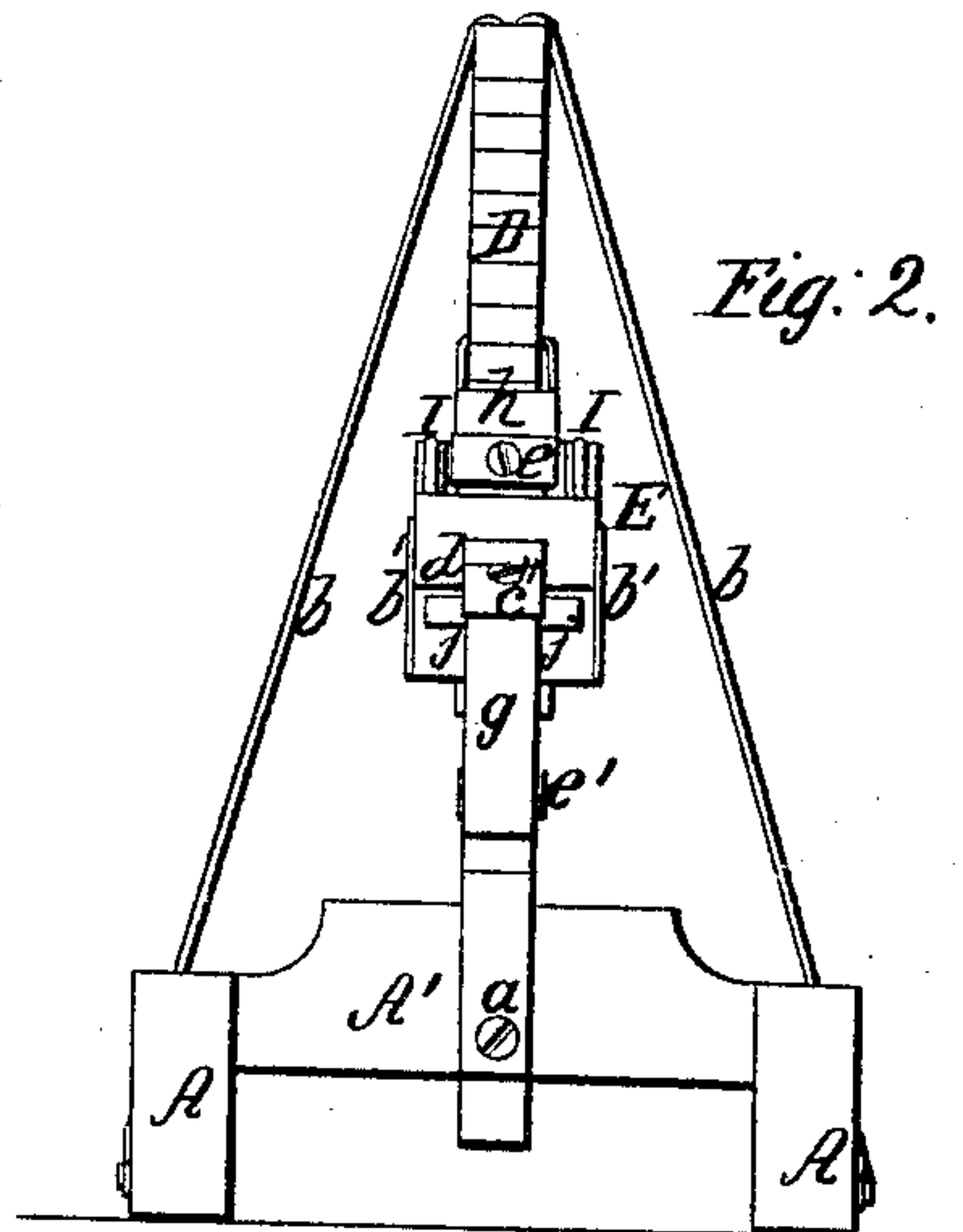
*Lifting Jack.*

*N<sup>o</sup> 49,999.*

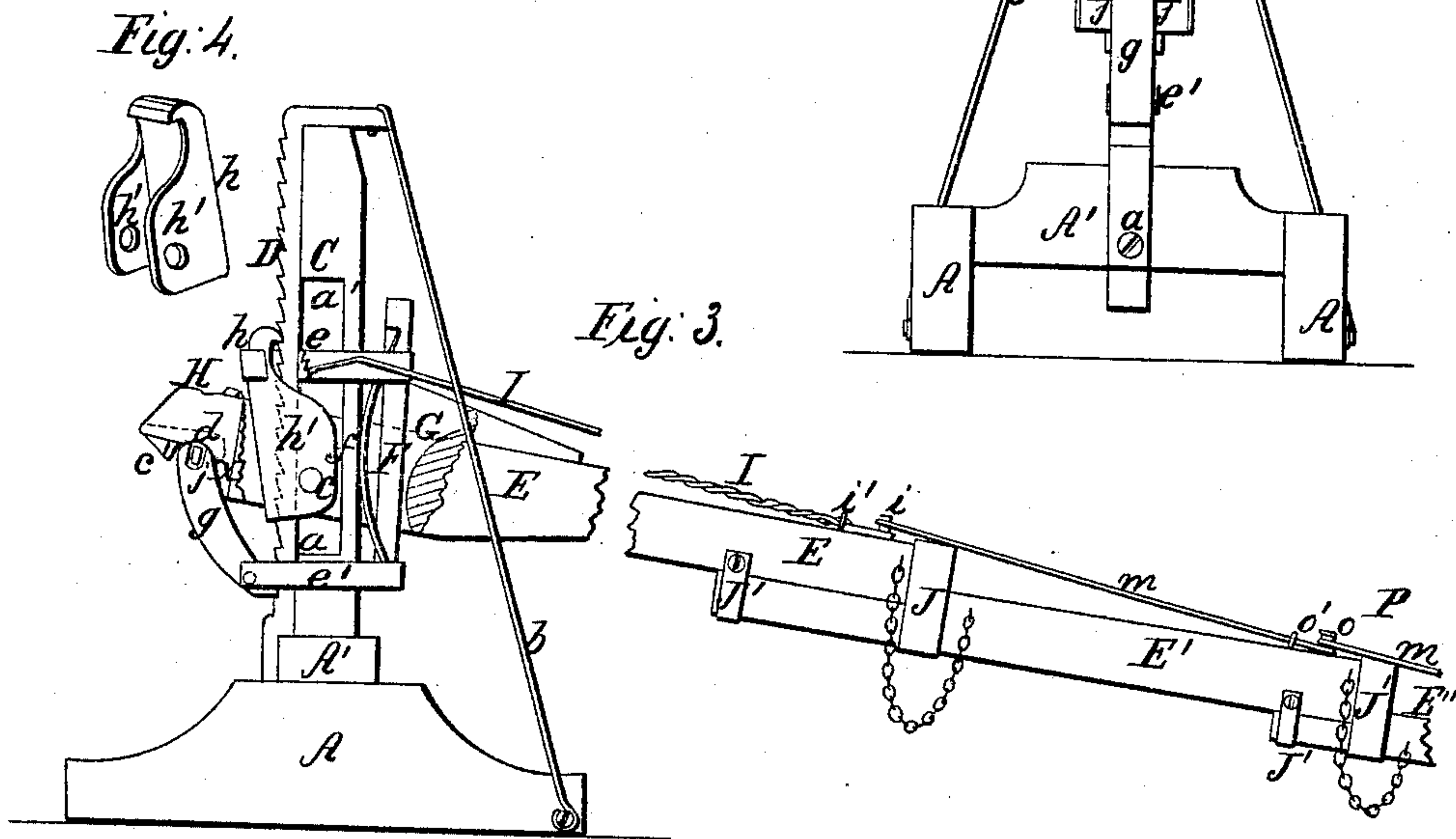
*Patented Sep. 19, 1865.*



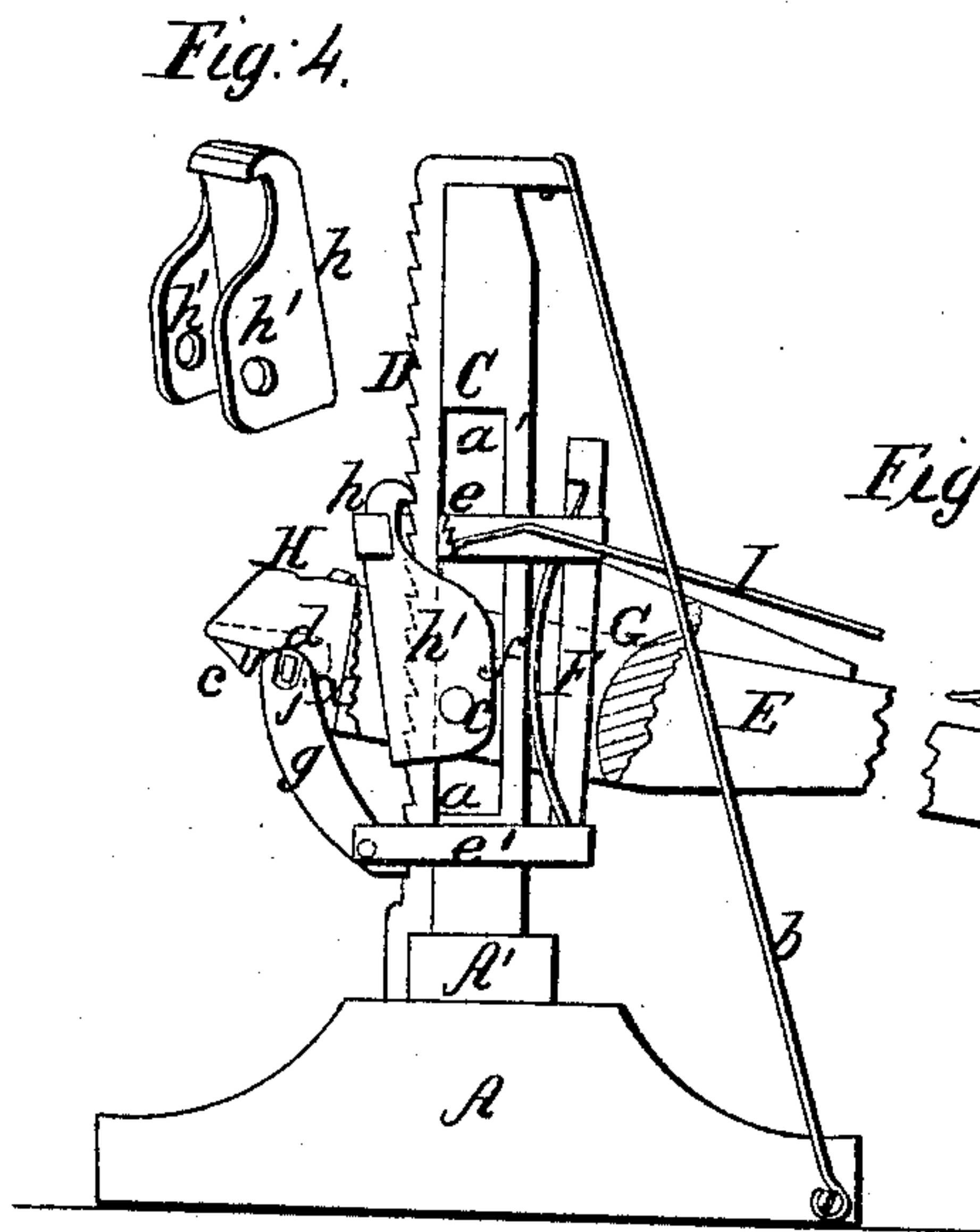
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

*Witnesses;*  
*W. D. Burridge*  
*A. W. McClelland*

*Inventor;*  
*W. H. Hartman*

# UNITED STATES PATENT OFFICE.

W. H. HARTMAN, OF FOSTORIA, OHIO.

## IMPROVED EXTENSION-LEVER JACK.

Specification forming part of Letters Patent No. 49,999, dated September 19, 1865.

*To all whom it may concern:*

Be it known that I, W. H. HARTMAN, of Fostoria, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in an Extension-Lever Jack; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine. Fig. 2 is an end view. Fig. 3 is a side view, a portion of which is broken away to show the inner parts. Fig. 4 is a section.

Like letters of reference denote like parts in the views.

My improvement relates to an extension-lever jack, as hereinafter described.

A A' is the frame or base of the machine, which can be of any suitable form.

C is a standard secured in the cross-piece A' of the base. On the front of the standard is a ratchet, D, secured by a screw, *a*, at the lower end, and the upper end turns back on the top of the standard, to which it is attached, also by a screw.

*b b* are braces extending from the base to the top of the standard or ratchet, as represented, to increase the strength.

E is the lever, formed, as shown in the drawings, with an opening, G, through the center, for the standard, ratchet, &c., that extends up through. In front is a dog, *h*, that catches into the ratchet-teeth. This dog is formed as represented in Fig. 4, the upper end fitting into the teeth of the ratchet, and extends down the sides *h'*, projecting onto the ratchet and standard, clasping onto the front and sides. Through the lower part of the sides is a pin, *c*, that extends through an opening, *d'*, in the standard, and on the outer ends of this pin is hung or pivoted the lever E, as shown at *c'*. This forms the principal fulcrum of the lever.

*b' b'* are plates on the outside of the lever, where the fulcrum or pin passes through, to add to its strength. Underneath the front end, H, of the lever is a pin or fulcrum, *d*, that is connected to the lever by staples *j*, passing around the pin and secured in the lever. On this pin is hung a dog, *g*, that catches into the teeth or notches of the ratchet at the lower end. Se-

cured to the lever above the dog *g* is a head, *c''*, that is cored out on the under side, as indicated by the dotted lines *x* in Fig. 3, to receive the upper end of the dog, and in which it works. To the lower end of the dog *g* is attached a stirrup, *e'*, that passes around the ratchet and standard, as represented, and is fastened to the lower end of the back piece, F. The band *e* is attached to the dog *h*, and extends round on the sides of the ratchet and standard and the piece F at the upper end.

Between the piece F and standard is a spring, *f*, (seen in Fig. 3,) the back part of which is against the standard, and the ends curve into and are secured in notches in the piece *f*. Now, by means of this spring, stirrup *e'*, and band *e*, the dogs are allowed to work in and out of the ratchet-teeth, and the dogs can be held entirely out of the ratchet, so that the lever can be moved down on the standard, as will be referred to again.

On the top of the lever E are braces I, which are attached near the front of the lever, that extend up and back of the standard, and are placed at the rear end on a pin, *i*, being kept down in place by a staple, *i'*. These braces add much to the strength of the lever.

The lever E can be extended any desired length by means of sections E' and E''. The section E' is connected to lever E by putting one end through a band, J, being cut out for that purpose, and a bail, J', the band and bail being secured to the end of the lever E. This forms a firm connection, when a brace, *m*, placed at one end on a pin, *o*, and secured by a staple, *o'*, to the section E', is adjusted at the other end on the pin *i* of the lever E. The section E'' is connected to the section E' in the same manner, as shown at P. In this way is formed the extension-lever, which can be lengthened more or less by adding one or more sections, like E' or E''.

The lever E is so arranged in relation to the dogs and ratchet that as it is raised and lowered the fulcrum is changed, for in elevating the lever the dog *g* catches into the ratchet, so that the lever must turn on the fulcrum *d*, moving up the dog *h* until it catches into one or two notches above. This does not elevate the front end of the lever much, as the fulcrum is so near the end. In lowering the lever the dog



*h* catches into the ratchet, and the lever must move on the fulcrum *c*, which raises the dog *g* up one or two notches, elevating the front end, *H*, of the lever much more than before, the fulcrum being so much farther from the end *H*. In this way the fulcrum is changed from *d* to *c* in the upward and downward movement of the lever.

In the practical use of this lever-jack the lever is moved down on the ratchet till the front end, *H*, can be adjusted under the weight to be elevated. Then, by raising up the rear end of the lever, the dog *h* catches into a notch above, the lever turning on the fulcrum *d*, when, by lowering the lever, its motion is changed to the fulcrum *c*, as before stated, and as the end *H* of the lever is farther from this fulcrum than the fulcrum *c*, it will be elevated much more, and the dog *g* catches into the ratchet, retaining the weight at the point to which it is elevated, when, by raising the lever again, the dog *h* takes another bite on the ratchet and, lowering it, elevates the weight still more, and so on.

When the lever is raised to the top of the ratchet, or it is desired to lower it, by pressing the piece *F* up against the standard by means of the spring the dogs are both disengaged from the ratchet, when the lever can be slid down to the lower end of the standard.

This jack, as constructed, is adapted to many purposes where lifting is required. It can be used for prying out stumps, for elevating weights, for moving railroad-cars over onto the track, &c.

What I claim as my improvement, and desire to secure by Letters Patent, is—

The dogs *h* and *g*, spring *f*, band *e*, stirrup *e'*, in combination with the lever *E* and standard *C*, when constructed, arranged, and operating as and for the purpose substantially as set forth.

W. H. HARTMAN.

Witnesses:

W. H. BURRIDGE,

A. W. McCLELLAND.