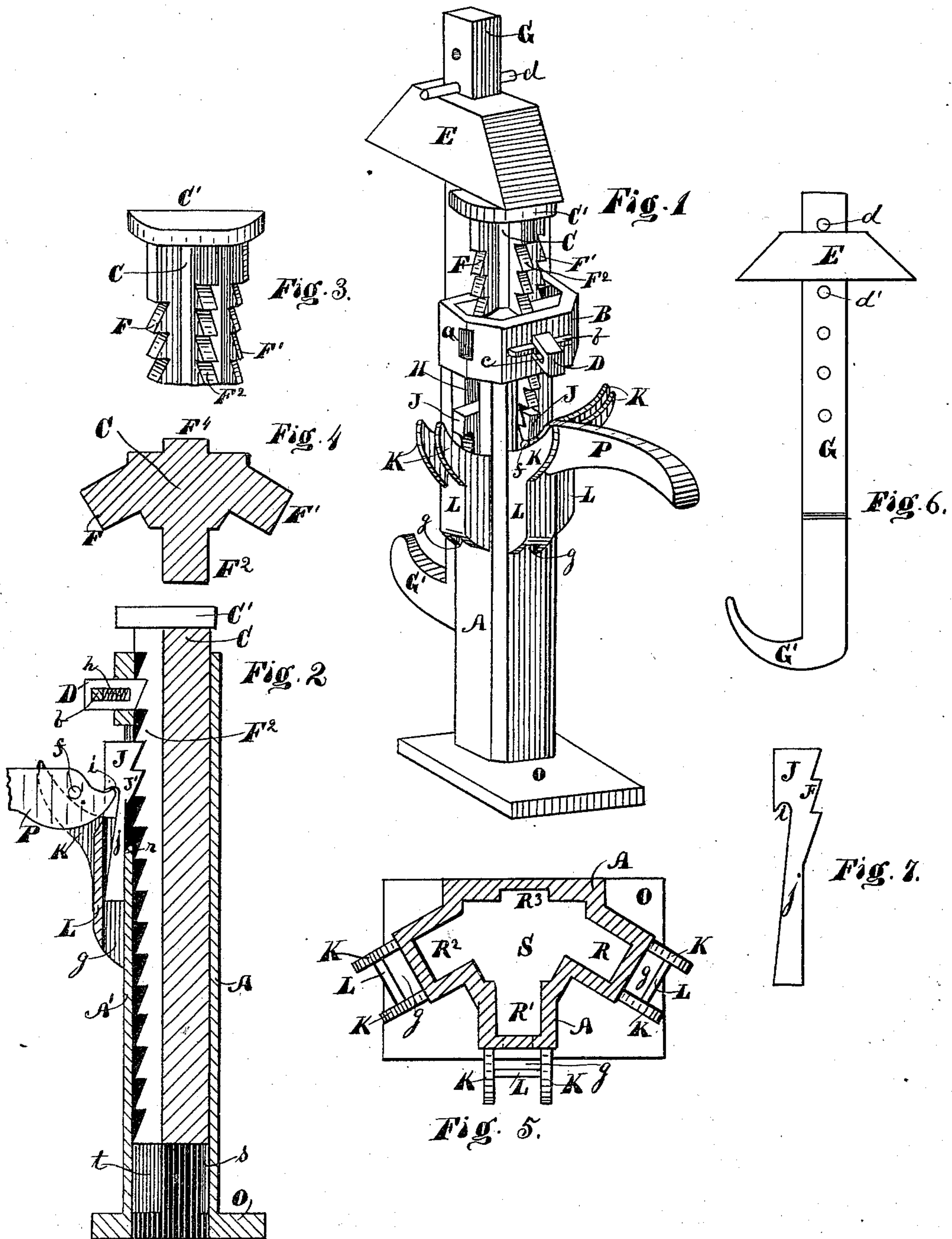


I. HOGELAND.  
Lifting-Jack.

No. 222,588.

Patented Dec. 16, 1879.



WITNESSES;

A. Simmons.  
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# UNITED STATES PATENT OFFICE.

ISRAEL HOGELAND, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO HIMSELF  
AND GEORGE P. ANDERSON, OF SAME PLACE.

## IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **222,588**, dated December 16, 1879; application filed  
March 28, 1879.

*To all whom it may concern:*

Be it known that I, ISRAEL HOGELAND, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Lifting-Jacks, of which the following is a description, reference being had to the accompanying drawings.

My invention relates to that class of machines used for raising heavy weights and removing stumps, &c.

The object of my invention is to provide a system of newly constructed and arranged devices, having new modes of operation, for raising heavy weights or extracting stumps from the ground.

My invention consists, mainly, in the new construction, arrangement, and application of devices; also, in the new combination of old elements, all of which, singly or combined, are deemed essential in my newly-organized lifting-jack, whereby new and useful results are produced, as will be hereinafter described and set forth.

In the accompanying drawings, in which like letters of reference in the different figures indicate like parts, Figure 1 represents a perspective view of a lifting-jack embodying my improvements. Fig. 2 is a sectional view of the same. Fig. 3 is a perspective view of the upper end of the ratchet-bar. Fig. 4 is a cross-section of the ratchet-bar. Fig. 5 is a top view of the case. Fig. 6 is a side elevation of the lifting-hook; and Fig. 7 is a side elevation of the notched lifting-pawl.

Referring to the drawings, A represents the outer case, made from metal, having a form in cross-section similar to that shown in Fig. 5—i. e., the hole S is cored through from end to end, with a recess, R', in front, and recesses R R' R' at the sides at about an angle of thirty degrees, and the recess R' at the rear side adapted to receive the ratchet-bar C F F' F' F'. The upper end of the case A is enlarged, as shown at B, and provided with the holes a, which open into the recesses R R' R', as shown. Below the head B the recesses R R' R' are cut through the case, forming slots H, extending from the head B to the upper edges of the curved fulcrums K, for the ratchet-lifters J to operate in, as shown in Figs. 1 and 2.

The curved fulcrums K K are arranged in pairs, and are attached to, or form part of, the casing L, and said casing L may be cast solid with the case A, or attached thereto, with a slot or recess, g, for the lower part of the pawl or ratchet-lifter J to operate in, as shown in Figs. 1, 2, and 3.

The ratchet-bar C is provided with a ratchet, F', at the front side, and ratchets F F', arranged at an angle of about thirty degrees, at the sides, and a rib, F', at the rear, all of which are adapted to operate in the hole S and recesses R R' R' R' of the case A. The pawls D are inserted in the holes a of the enlarged head B, and may be held in position by the bar b, passing through a slot, c, and also held in contact with the ratchets F F' F' of the bar C by a spring, h, which presses against the inner edge of the bar b and inner end of the slot C, as shown in Fig. 2. Thus, when the ratchet-bar C is raised, the ratchets F F' F' force the pawls D away until a tooth of the ratchet is forced above the pawl; then the spring h forces the pawl into the notch below, and prevents the bar C from falling until released by pulling the pawl D out of contact therewith.

The ratchet-lifter J is constructed similar to that shown in Fig. 7—i. e., with a notch, i, in the front side, forming a recess for the end of the lever P to operate in. The side opposite from the notch i is provided with ratchet-teeth J', corresponding with the ratchets F F' F' of the bar C. The lower end, j, of the ratchet-lifter is made tapering—that is, thicker at the bottom than at the base of the ratchet J'—so as to allow the lifter to tilt forward while lifting the bar C, as shown in Fig. 2, or to tilt back and disengage the ratchets, when the pawl is dropped, and the lower beveled edge of the pawl J' comes in contact with the edge r of the slot H, also shown in Fig. 2. The lever P is provided at the end with a curved point to operate in the notch i of the pawl J, and is also provided with fulcrum-pins f projecting from each side of the lever. Said fulcrum-pin f operates on the upper curved edges of the fulcrum-horns K K, thus causing the ends of the levers to remain in contact with the pawl J, and when operated to raise the bar C



forces the ratchet  $J'$  of the pawl  $J$  in close contact with the ratchets  $F F' F^2$  of the bar, and prevents them from slipping.

It frequently happens that additional power is required on a single jack; hence the arrangement of three sets of ratchets,  $F F' F^2$ , on the bar  $C$ , and by arranging the side ratchets and operating-levers at an angle of about thirty degrees the jack is adapted to operate in various places, and three or more persons are provided with room to operate the levers without interfering with each other.

The hook  $G G'$  is constructed similar to that shown in Fig. 6, with a series of holes,  $d'$ , for the pin  $d$  to fit in, and an adjustable head,  $E$ .

This device is extremely useful, especially when stumps have to be extracted from the ground, as the hook  $G'$  can be adjusted under a root, the head  $E$  adjusted to the proper height, and resting on the head  $C'$  of the ratchet-bar  $C$ , as shown in Fig. 1.

The operation of my improved device is as follows, to wit: The jack being adjusted with the levers  $P$  in position, and the fulcrum-pins  $f$  on the curved fulcrum-horns  $K K$ , when the levers are lifted the pawls  $J$  fall and tilt backward in the recess  $g$ . As the levers are forced down, the pawls  $J$  are forced in contact with the ratchets  $F F' F^2$ , and the ful-

crum-pins  $f$  hold them there during the act of raising the bar  $C$ , the pawls  $D$  catching under the ratchets  $F$ , and holding the bar  $C$  while the levers are being readjusted for another lift. When it becomes necessary to lower the bar  $C$  the pawls  $D$  are withdrawn from contact therewith, and the bar allowed to drop.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lifting-jack, the case  $A$ , having a chamber,  $S$ , provided with radial recesses  $R R' R^2 R^3$ , holes  $a$  in the head  $B$ , slots  $H$ , and curved fulcrum-horns  $K K$ , as and for the purpose specified.

2. In a lifting-jack, the case  $A$ , having a chamber,  $S$ , with radial recesses  $R R' R^2 R^3$ , and curved fulcrum-horns  $K K$ , combined with the ratchet-bar  $C C'$ , having radial ratchets  $F F' F^2$ , the pawls  $J$  and  $D$ , and lever  $P$ , provided with fulcrum-pin  $f$ , as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ISRAEL HOGELAND.

Witnesses:

E. O. FRINK,

G. H. RENNETT.