H. A. CURTIS.

LIFTING-JACK.

No. 181,251. Patented Aug. 22, 1876.

Fig. 1.

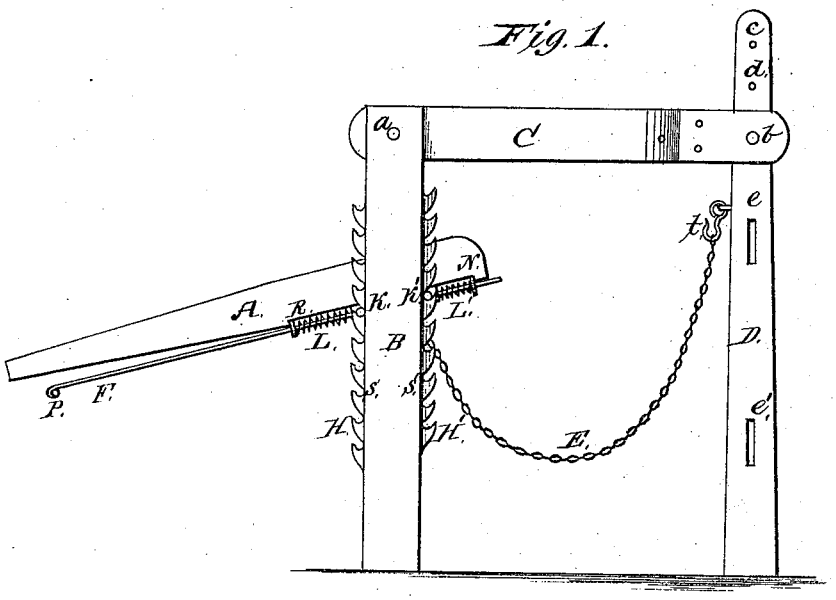


Fig. 2.

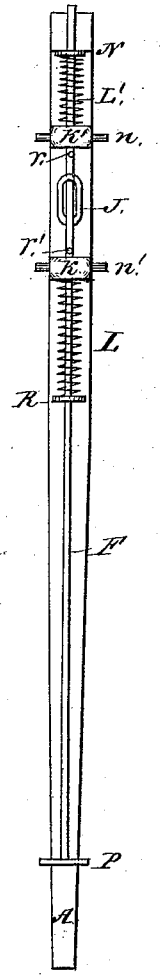
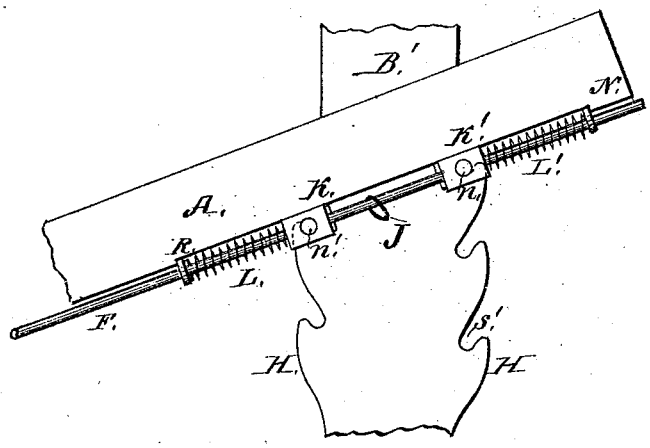


Fig. 3.



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UNITED STATES PATENT OFFICE.

HIRAM A. CURTIS, OF FREETOWN, NEW YORK.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **181,251**, dated August 22, 1876; application filed July 6, 1876.

To all whom it may concern:

Be it known that I, HIRAM ALLEN CURTIS, of the town of Freetown, Cortland county, and State of New York, have invented a new and useful Improvement in Lifting-Jacks, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which corresponding letters on different figures indicate similar parts, and which drawings are hereby made a part of this specification.

The object of my invention is to furnish an apparatus or machine to lift or raise weights, consisting of logs, stones, bars of iron, and cannons, &c., easily and readily.

In the accompanying drawings, Figure 1 represents and shows a side elevation of my said apparatus, in which B shows an upright beam or post of suitable strength to withstand the strain to which it will be subjected. I also make another post or beam, a portion of it being shown at B′, Fig. 3. These two posts are placed side by side in an upright position, with a space between them suitable for the insertion of the lever A, which will be more fully explained hereafter. They are then fastened together at the bottom. On the inner side of each of these posts is fastened a plate of iron or other suitable material, and wide enough to project past each side of said posts or beams, as is shown in the drawing. In the four parts thus projecting are formed serrated teeth extending the whole length of the said plates, as shown at H and H′, Figs. 1 and 3, with the notches shown at S and S′, which are for the support of the lever A, thus furnishing fulcra, as will hereafter appear. At the top of and between these posts is placed a projecting bar, C. Jointed at *a*, at the farther end of *c*, is placed an upright bar, D, working in a recess or mortise in C on the pin *b*. This bar D has holes in the top at *c* and *d*, for the purpose of adjusting the apparatus to uneven ground, which will be seen more fully hereafter. *t* shows a hook, on which the chain E is fastened. *e* and *e′* show rectangular holes, for the purpose of fastening said chain E or its equivalent, the chain E being for the purpose of binding and retaining the weight while it is being raised by the lever A, an end of this chain being fastened to a link, (shown at J, Fig. 3, which figure shows and represents a portion of the inside of the post B′ and lever A.) Fig. 2 shows the under side of the said lever A, which is constructed as follows: It is made of suitable length to supply the requisite power, and of such dimensions to work easily between the said two upright posts, as shown in Fig. 1. On the under side is placed a rod, F, secured by the clasps R and N. This rod also passes through two pieces of metal, or other suitable material, (shown at K and K′,) which pieces can move on said rod. The upper side of each of these pieces is made flat, so as to rest against the wood-work, as shown in Fig. 3, thus preventing said pieces from turning around on said rod F. The distance between these pieces is regulated by the width of the posts B and B′. On each of the sides of these pieces are bearings, two being shown at N and *n′*. These bearings project over the wood-work of the lever, their size being made to fit into the notches S and S′. Between the clasps N and R and said two pieces are placed two spiral springs, L and L′, the rod F passing through them. These springs continually exert their pressure against the pieces K and K′, keeping said pieces against the pins passing through the rod F, and shown at *r* and *r′*. By means of the handle P on the rod F the pieces K and K′ can be moved and made to accommodate the notches S and S′.

Having thus described the construction of my apparatus, I will now describe the manner of operating the same.

The weight to be raised is secured by the chain E, the joints in the frame-work (shown at *a* and *b*) permitting the apparatus to adjust itself to the position in which it is placed, the lever A being between the two posts B and B′, as shown in Fig. 1. By alternately raising and lowering the longer arm of the lever A the bearings of the pieces K and K′ successively adjust themselves in the notches projecting from the inside of said posts, as described; and thus the lever A, by the continual change of the fulcra, ascends or climbs, by successive steps, the said notches, and, consequently, the weight E has to rise, and thus the fulcrum is changed at each move of the said lever-arm, so that alternately a lever

of the kind known as the first and second classes is produced, thus securing the advantages of both of these classes of levers. A weight can also be lowered by means of this lever. By alternately pulling and pushing on the rod F the bearings on the lever A adjust themselves into lower notches, and thus the lever, with the weight attached, gradually descends.

I therefore claim as my invention—

The combination and arrangement of the posts B and B′, serrated teeth H and H′, with the notches S and S′ therein, and other similar teeth forming the racks, as described, lever A, chain E, and frame-work C and D, all made and operated substantially in the manner and for the purpose as herein described and shown.

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Witnesses:

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