

(No Model.)

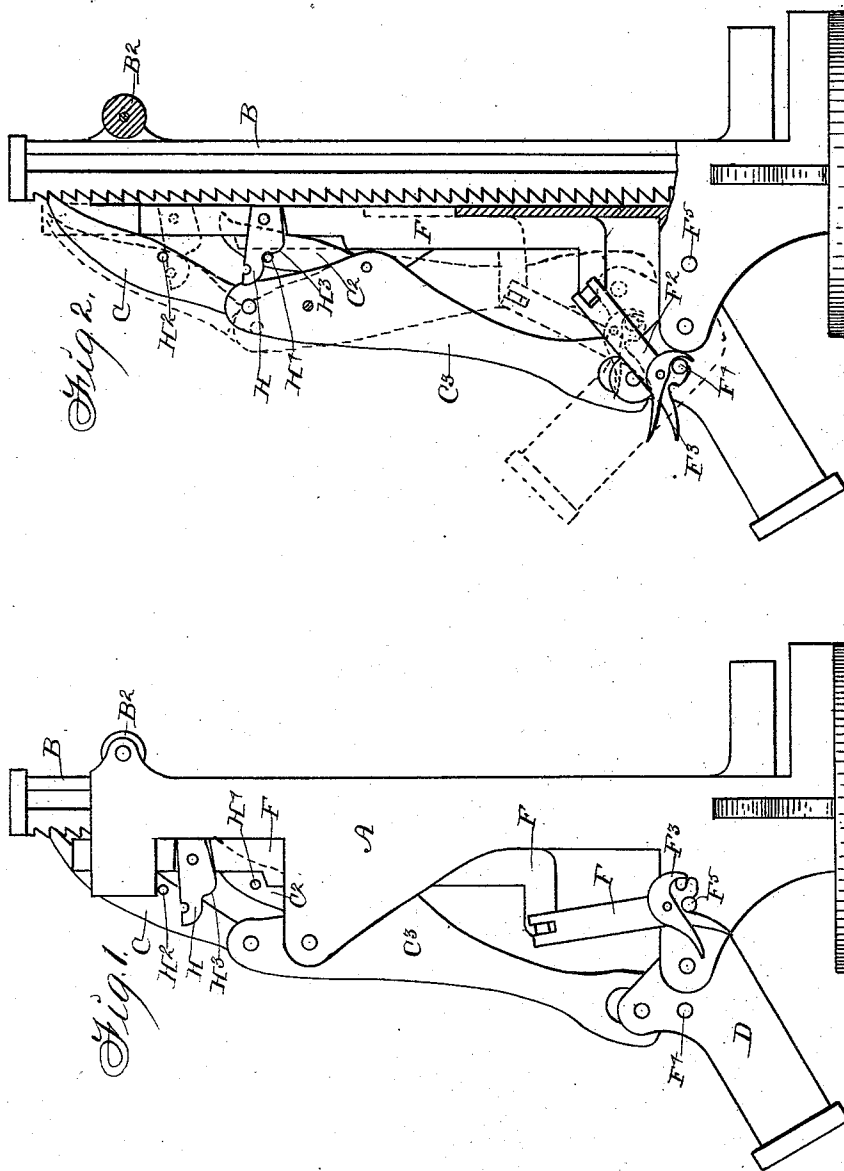
2 Sheets—Sheet 1.

N. WEILER & R. O. STUTSMAN.

LEVER LIFTING JACK.

No. 532,124.

Patented Jan. 8, 1895.



Witnesses:

R. H. Orwig
J. F. Wilcox.

Inventors:

Nick Weiler
and Reuben O. Stutsmann,
By Thomas C. and J. Ralph Orwig, Attys.

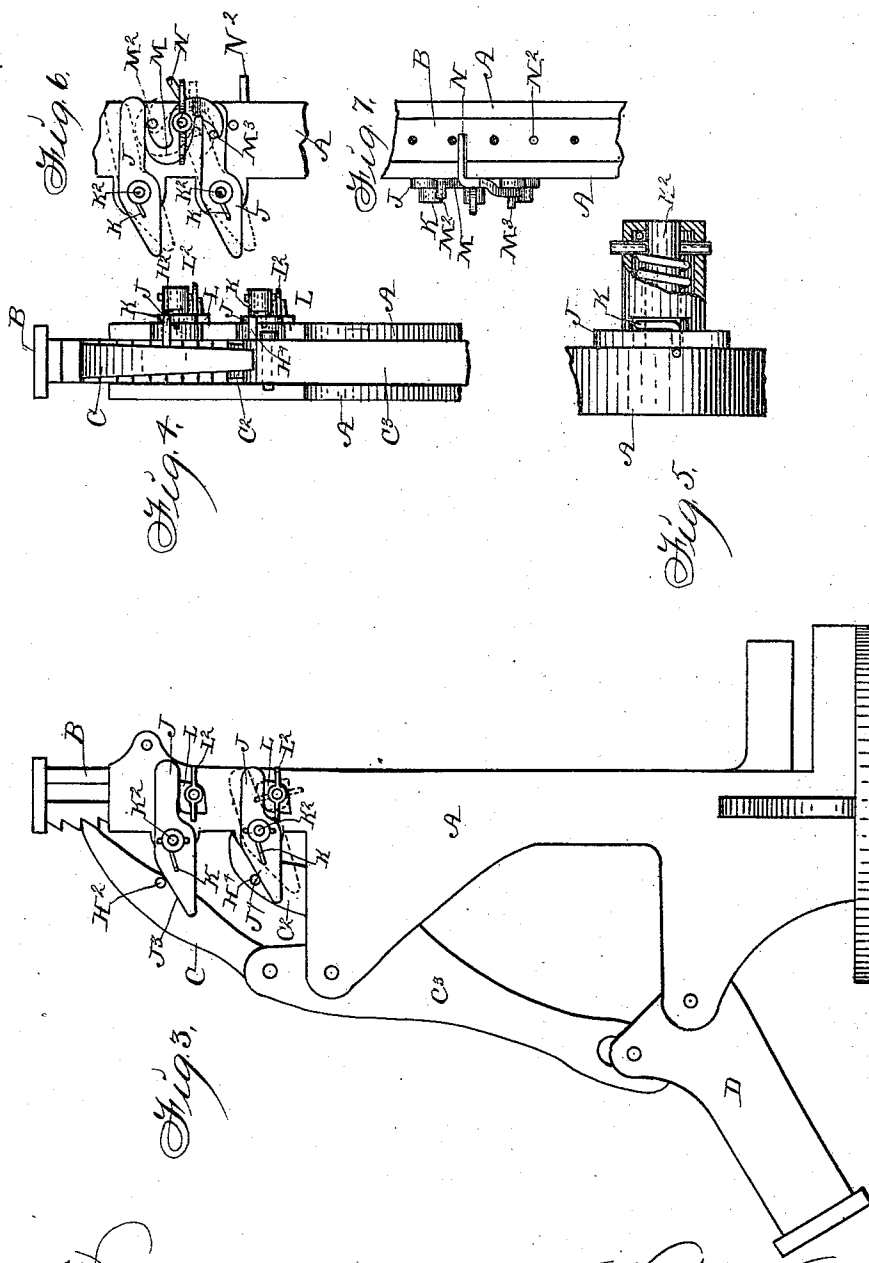
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Inventors: Nick Weiler,
and Reuben O. Stutsmann,
By Thomas G. and J. Ralph Orwig,
Attorneys.

UNITED STATES PATENT OFFICE.

NICK WEILER AND REUBEN O. STUTSMAN, OF DES MOINES, IOWA; SAID
STUTSMAN ASSIGNOR TO SAID WEILER.

LEVER LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 532,124, dated January 8, 1895.

Application filed July 31, 1894. Serial No. 519,133. (No model.)

To all whom it may concern:

Be it known that we, NICK WEILER and REUBEN O. STUTSMAN, citizens of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Lever Lifting-Jacks, of which the following is a specification.

The object of this invention is to provide improved means whereby a lever lifting jack may be reversed so that the movement of the handle of the jack in a vertical plane may be made to either elevate or lower the jack.

Our invention relates to a lever lifting jack for which application for Letters Patent, Serial No. 490,872, was made by Nick Weiler, and filed November 14, 1893, and consists in improvements upon the same, as hereinafter set forth, pointed out in our claims and illustrated in the accompanying drawings, in which—

Figure 1, is a side elevation of the complete jack. Fig. 2, is a like view showing one of the side pieces of the jack removed and the operation of the reversing mechanism illustrated by dotted lines. Fig. 3, is a side view of the complete device showing a modified form of the reversing mechanism. Fig. 4, is a front view of the top portion of the jack and the reversing mechanism, as shown in Fig. 3. Fig. 5 is an enlarged detail view of the mechanism for holding the dogs of the reversing device in proper position. Fig. 6, is a detail view showing a device for automatically throwing the reversing mechanism in and out of gear. Fig. 7 is an edge view of the parts shown in Fig. 6.

Referring to the accompanying drawings the reference letter A is used to designate the uprights or frame of the lifting jack.

B designates an upright having a rack formed on its front face and slidingly mounted between the side pieces of the frame. A roller B² is also mounted between the side pieces and engages the rear edge of the upright B to prevent friction between the parts A and B.

Two pawls, C and C² are pivotally connected with a lever C³ in such a manner that when a reciprocating movement is imparted to the outer end of said lever the pawls will be alternately operated to elevate the rack B, by engaging the teeth on its front face. The re-

ciprocating motion is imparted to the said lever C³, (which is pivoted between the sides of the frame A,) by means of a bell-crank lever D that is pivoted between the parts of the frame A and also pivotally and slidingly connected with the said lever C³. The aforesaid pawls C and C² are held in engagement with the rack on the upright B by force of gravity and it will readily be seen that upon the operation of the lever D in a vertical plane, said pawls will automatically engage and elevate the said rack in the upright B, but if the pawls are thrown outwardly at each stroke of the operating lever the upright B may be lowered instead of elevated by the same operation. We have provided the following means for operating these pawls to reverse the movement of the upright.

F designates a sliding bar on the interior of one of the side pieces A, which may be made to move in a vertical plane in unison with the movement of the operating lever D by means of an arm F² and clamp F³. The arm F² is pivotally connected with the lower end of the bar F and the clamp F³ is attached to its lower end.

F⁴ is a pin projecting laterally from the bell-crank lever D, in position where it may be engaged by the clamp F³, so that when said clamp is in engagement with said pin, a vertical reciprocating movement will be imparted to the bar F. Attached to the upper end portion of this sliding bar F is a hook H adapted to engage a laterally projecting pin H² that is secured to the pawl C and the pawl C² is operated by having the inclined face H³ of the hook H, so disposed as to engage a pin H⁴ projecting laterally from the said lower pawl and force the pawl outwardly upon the descent of the bar F. It will now be seen that upon the elevation of the bar F, the pawl C will be elevated and thrown out of engagement with the rack B and when the said bar F is lowered the inclined face H³ will engage the pin H⁴ as required to throw the lower pawl C² out of engagement with the rack B. In order to hold this reversing mechanism inoperative the clamp F³ may be attached to a pin F⁵ fixed to the upright A, as shown in Fig. 1.

The modified form of reversing mechanism illustrated in Figs. 3, 4, 5, 6, and 7 comprises two dogs J and J² that are pivoted to the side

of one of the uprights A and have the inclined faces J³ and J⁴ on their forward edges to engage the pins H² and H⁴ and throw the pawls out of engagement with the rack. These dogs are provided with springs K connected therewith in such a manner as to normally hold the forward ends of said dogs upwardly but which will allow a slight movement of the same in a downward direction. Our preferred form of applying these springs to the dogs is by placing a pin K² in the upright A, extending the same through the said dog and winding the spring thereupon, with its one end securely fixed to said pin, and its other fixed to the dog. In order to hold the dogs inoperative, we have provided a cam L adapted to be pivoted to the side of the upright A and provided with a thumb-nut I², and so arranged that when the said thumb nut is turned, the lower end of the dog will be elevated so as not to engage the pins H² and H⁴ of the said pawls. A like device is applied to each of the dogs.

In Fig. 6 is shown a device whereby both of the dogs J and J² may be automatically thrown, in an operative position, when the part B has reached a certain predetermined height and consists of a cam-shaped device M, so arranged that when turned, its one edge will pass between a pin M² (that is secured to the frame A) and the rear end of the dog J to elevate said rear end and the other end of said cam will pass under a pin M³ that is secured to the lower dog to elevate it. N designates an arm projecting rearwardly and then inwardly from the rear edge of the cam M. N² is a pin adapted to be adjustably connected with the rear face of the upright B and so arranged that when the upright B is elevated sufficiently to bring the said pin N² and the arm N in contact the cam will be operated to elevate the rear end of both of said dogs.

We do not desire to be understood as limiting ourselves to the particular form of the reversing mechanism shown and described nor to the application of springs to both of the dogs J and J².

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. The combination with a lever lifting jack having a frame, a vertically movable rack in said frame, a lever fulcrumed in the frame, two pawls pivoted to opposite sides of the fulcrum of the lever and adapted, when the lever is operated, to alternately engage and

elevate the rack, of means for lowering the said rack at each movement of the lever comprising two dogs pivotally mounted on the side of the frame and having beveled forward edges, yielding pressure devices for normally holding the forward ends of said dogs upwardly, pins projecting laterally from said pawls to engage the said beveled faces as set forth, means for restricting the downward movement of the rear ends of the dogs and a device adapted to hold the rear ends of said dogs upwardly or be held out of engagement therewith for the purposes stated.

2. The combination with a lever lifting jack, having a frame, an upright slidably mounted in said frame and having a rack formed on its front face, and two pawls, normally held in contact with the said rack by gravity, adapted to be alternately operated to elevate said rack, of two pins H² and H⁴ projecting laterally from said pawls, two dogs J and J² pivoted to the side of said frame and having their front ends normally held upwardly, yielding pressure devices to hold said pawls upwardly, a cam M pivotally mounted on the side of the frame between the said dogs, a pin M² secured to said side piece for the purposes stated, a pin M³ secured to the pawl J², an arm N extending rearwardly and inwardly from the cam M to a pin N² adjustably connected with the sliding rack, arranged and combined substantially as and for the purposes stated.

3. An improved lever lifting jack, comprising the following elements in combination, to-wit: a frame A, an upright B slidably connected therewith, a roller B² mounted in the side of said frame to engage the rack B, two pawls C and C² adapted to engage said rack, a lever C³ fulcrumed between the sides of the frame A and having said pawls pivotally connected therewith, a lever D pivotally connected between the sides of the frame A and pivoted to the end of the lever C³ to operate as set forth and the dogs J and J² pivoted to the sides of the frame, yielding pressure devices applied to said dogs as set forth, the cam M so arranged as to be capable of elevating the rear ends of said dogs J and J² when turned, the arm N connected with said cam, and a pin N² adjustably connected with the upright B, all arranged and combined to operate in the manner set forth.

NICK WEILER.

REUBEN O. STUTSMAN.

Witnesses:

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THOMAS G. ORWIG.