(No Model.)

N. WEILER.

COMPOUND LEVER LIFTING JACK.

No. 524,010. Patented Aug. 7, 1894.

Fig. 1.

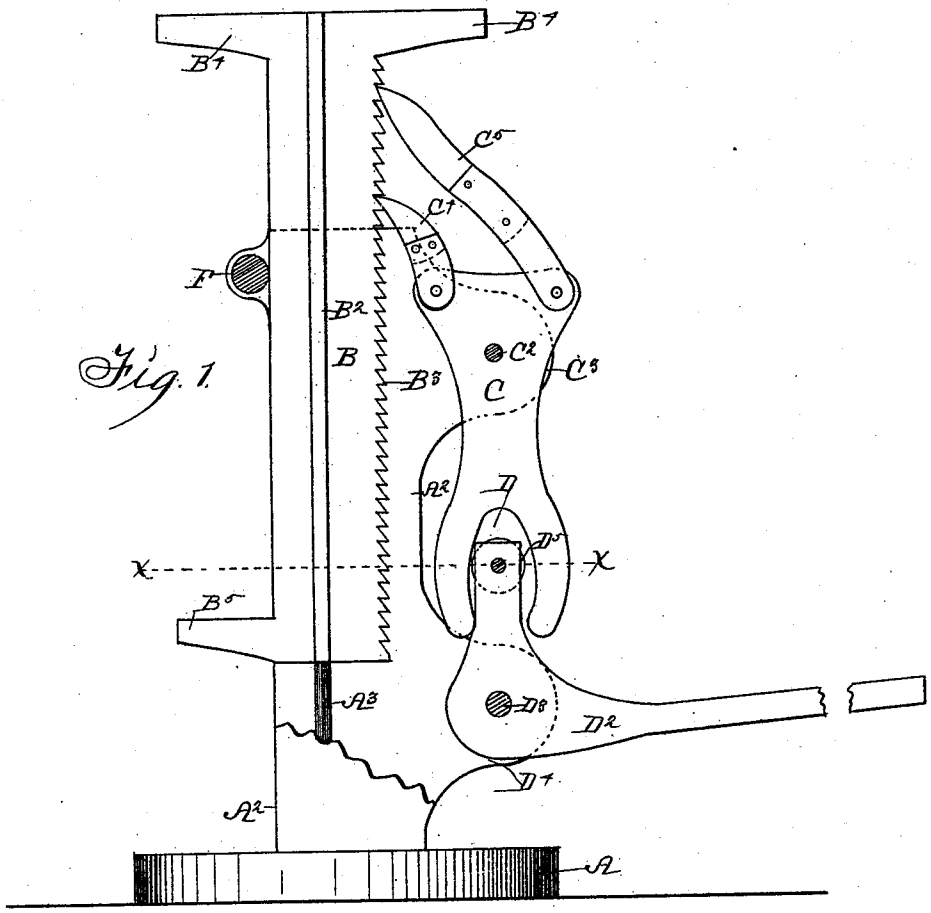
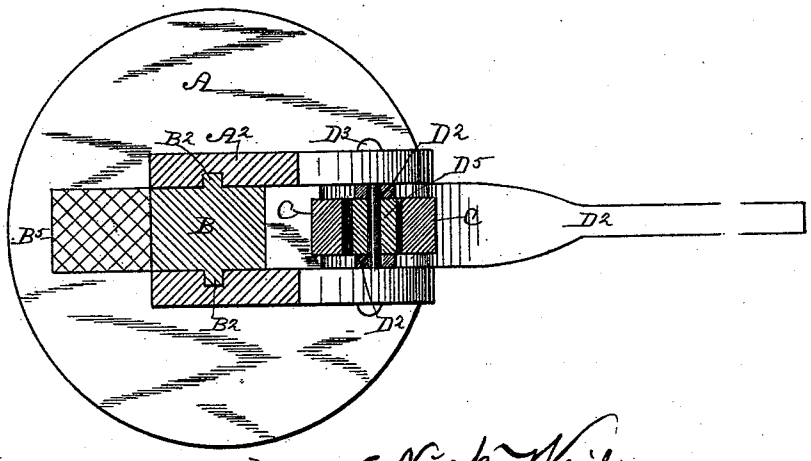


Fig. 2.



Witnesses:
J. Ralph Orwig.
R. E. Orwig.

Inventor: Nick Weiler
By Thomas G. Orwig, Attorney.

UNITED STATES PATENT OFFICE.

NICK WEILER, OF DES MOINES, IOWA.

COMPOUND-LEVER LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 524,010, dated August 7, 1894.

Application filed November 13, 1893. Serial No. 490,872. (No model.)

To all whom it may concern:

Be it known that I, NICK WEILER, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented an Improved Lever Lifting-Jack, of which the following is a specification.

The object of my invention is, to produce a jack, in which the movable member operates in a straight, vertical line, and in which an upward movement is imparted thereto by both the upward and downward stroke of the operating lever, thereby producing an easy, regular upward movement of the jack.

My invention consists in details of construction and the arrangement and combination of the various elements of the jack, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1, is a side elevation of the jack with a portion of one of the side uprights broken away. Fig. 2, is a horizontal sectional view through the line x—x of Fig. 1.

Referring to the accompanying drawings, the reference letter A indicates a base. A^2, A^2, indicate parallel uprights secured to said base and provided with parallel vertical grooves A^3 on their inner faces, adapted to receive mating tongues formed on the movable part of the jack. The said movable member B, is located between said uprights, and provided with the tongues B^2 for the purpose of guiding the movable member in a straight vertical line, by mating with the grooves A^3. It is also provided with a rack B^3, on its front face. Its top is broadened at B^4, to receive the weights to be elevated, and a flat topped projection B^5, is formed near its lower end to engage weights which are too low to be conveniently engaged by said top portion.

C indicates a lever fulcrumed upon the pin C^2, between the projections C^3, on the upper forward portion of the uprights A^2, A^2.

C^4, and C^5, are gravity pawls pivotally connected with the top portion of said lever, above and on opposite sides of its fulcrum in any suitable way. These pawls normally engage the rack on the movable member of the jack, and as the lower end of the lever C, is operated it will be obvious that said pawls will be alternately elevated and lowered so that said rack will be elevated by each backward or forward movement of said lever.

To provide for the convenient operation of this lever its lower end is bifurcated at D, and straddles a bell crank lever D^2, fulcrumed to a pin D^3, extended between the projections D^4, on the forward, lower edges of the uprights A^2.

The upper end of the lever D^2 is bifurcated and an anti-friction roller pivoted therein to engage the bifurcated end of the lever C.

F indicates a roller mounted in bearings formed on, or fixed to the rear top portion of the uprights A^2, and normally in engagement with the sliding member of the jack.

The power required to elevate the weight is applied from one side, and this roller is for the purpose of preventing undue lateral strain upon the tongues which hold said member in position, and also to reduce the friction between said tongues and grooves.

In practical operation it will be obvious that, upon each movement of the operating lever, a slight upward movement is given to the movable member of the jack, so that a comparatively great weight may be raised slowly and steadily without the disadvantage of a screw jack.

It is also obvious that the mechanism shown and described for imparting an upward motion to the movable member B having a ratchet face adapted to be engaged by the pawls C^4 and C^5 is also equally well adapted for imparting a forward motion to a movable member having a ratchet face when so placed and arranged relative to an object, that is to be moved in a horizontal plane, that force can be applied advantageously by means of my invention to press forwardly or laterally as well as vertically.

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

1. A compound lever lifting jack comprising a base having a frame-mounted thereon, a part arranged to slide vertically in said frame and having a rack formed thereon, a lever fulcrumed to a suitable support, two gravity pawls pivotally connected with the top of said lever on opposite sides of its fulcrum, said pawls being adapted to engage said

rack, and a second lever fulcrumed to a suitable support and adapted to engage the aforesaid lever for the purposes stated.

2. An improved lever lifting jack, comprising the base A, the uprights A^2, having the grooves A^3, formed therein, the part B, having the tongues B^2, adapted to enter the grooves, and a rack B^3, formed on its front edge, the lever C fulcrumed on the pin C^2, fixed between the projections C^3, the gravity pawls C^4, and C^5, pivoted to opposite sides of the fulcrum of said lever and adapted to engage the said rack, said lever having a bifurcated end D, a second lever D^2, fulcrumed between the projections D^4, and having an antifriction roller D^5, mounted in its top between the bifurcated ends of the lever C, and a roller F mounted in projections from the rear of the uprights A^2, to engage the rear face of the part B, all arranged and combined to operate in the manner set forth for the purposes stated.

3. In a machine for imparting an upward or forward movement to a movable member having a ratchet face, the combination of the following elements to wit; a lever fulcrumed to a suitable support, two pawls pivotally connected with the top of said lever on opposite sides of its fulcrum, said pawls being adapted to engage said rack, and a second lever fulcrumed to a suitable support and adapted to engage the aforesaid lever, for the purposes stated.

NICK WEILER.

Witnesses:
J. RALPH ORWIG,
THOMAS G. ORWIG.