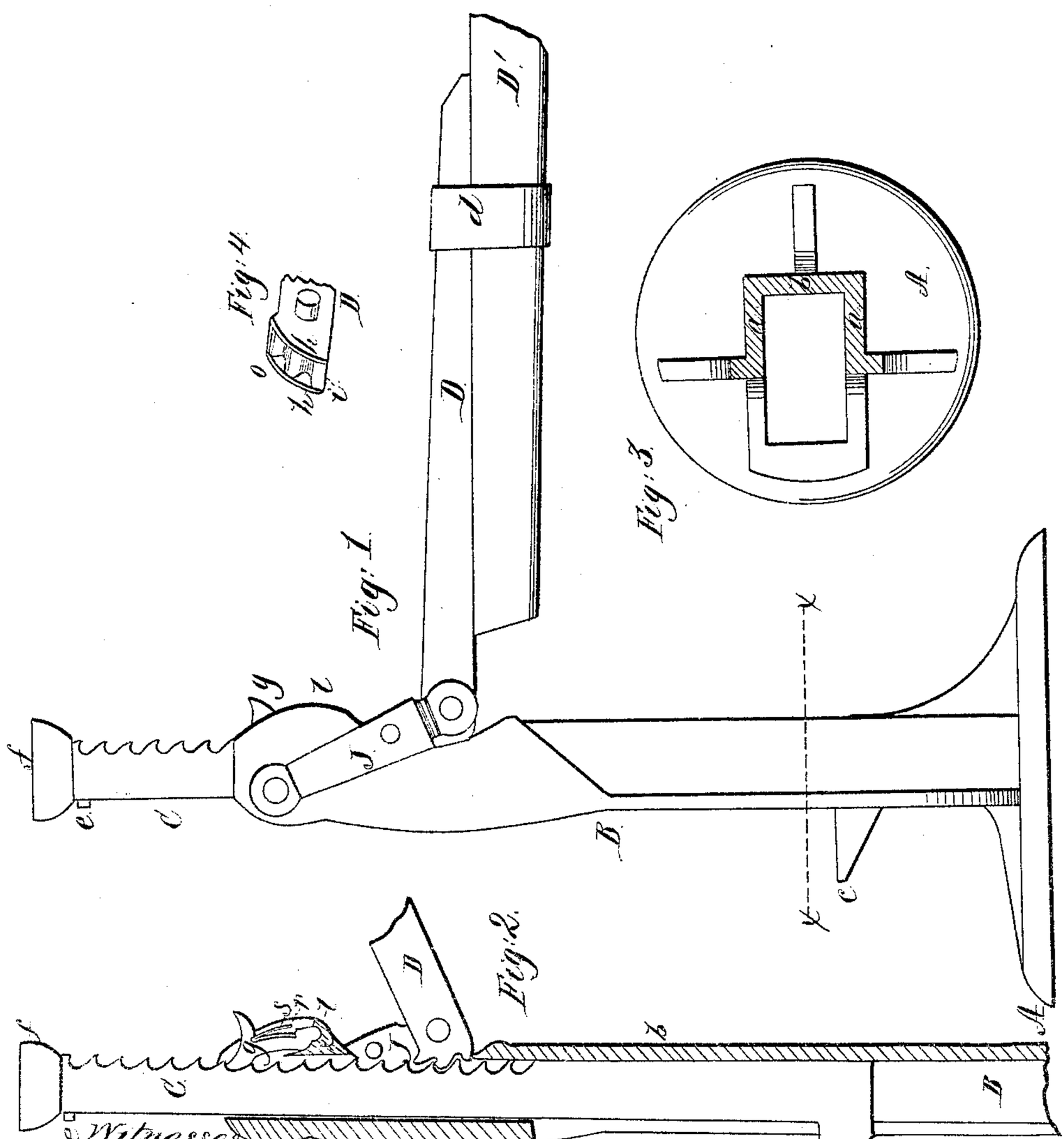
J. Leffel,

Lifting Jack,

No. 45,056, Patented Nov. 15, 1864.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

JAMES LEFFEL, OF SPRINGFIELD, OHIO.

IMPROVED LEVER-JACK.

Specification forming part of Letters Patent No. **45,056**, dated November 15, 1864.

To all whom it may concern:

Be it known that I, JAMES LEFFEL, of Springfield, county of Clarke, and State of Ohio, have invented certain new and useful Improvements in the Construction of Lever-Jacks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, a vertical section; Fig. 3, a transverse section taken in the line *x x*, Fig. 1, and Fig. 4 is a perspective view of the head of the lever used in operating the jack.

Similar letters, wherever they occur on the drawings, indicate corresponding parts.

This invention relates to improvements upon the jack patented to me on the 10th day of December, A. D. 1850; and consists, first, in a novel construction of the body of the jack, whereby it is greatly strengthened; second, in a novel method of securing the pawl in place without the use of a bolt; and, third, in the peculiar construction of the lever-head, whereby it is rendered far more strong and durable.

To enable others skilled in the art to construct and use my improvements, I will proceed to describe them.

A represents the base of a cast-iron jack-frame, from the center of which rises the body or standard B, the base and standard being united and strengthened by flanges in the usual manner. Inside of the standard B works the movable rock-bar C, which has a hook, *c*, projecting from its lower end, as shown in Figs. 1 and 2, and is provided with the stop-pin *e*, collar *f*, and teeth for operating it in the usual manner.

In my jack as previously constructed the body B was formed of the two sides *a a*, Fig. 3, separated from each other by a space or slot on the back side, which rendered it too weak, and caused it to break when applied to use. I now construct the body B in such a manner that at all points from top to bottom it shall have three solid sides, *a a*, and *b*, cast together in one piece. In Fig. 2 the back side, *b*, is shown extending from the base A up to the lever D, and as there must be an opening at that point to permit the lever to come in contact with the bar C, I form the front side, *b'*, solid or closed from that point to the top. By this construction of the body B, I get the required strength, provide an opening in the rear for the end of the lever to operate through, and an opening in the front side below *b'* for the hook *c* to slide up and down in.

In my former method of constructing them the pawl *g* was held in place by means of a bolt, which passed through its lower end, and also through the projecting portions *l* of the sides *a a* of the standard B, the opening or space between the sides *a a* extending from the lever D all the way to the top of B. I now construct it with a solid section, *x*, extending across from side to side, filling the space between the sides *a a* at the point *l*, so as to form there a very strong and solid bearing for the lower end of the pawl *g*, the latter being seated in a notch or recess in the upper portion thereof, as clearly shown in Fig. 2. The spring *s*, having its end confined by the pin *r*, presses the pawl *g* into the notches on bar C, and thus holds it in position. By thus constructing the bearing for pawl *g*, I not only save the trouble and expense of the bolt and the fitting of it in, but, what is far more important and the principal object of my improvement, I render it secure by giving to the parts sufficient strength to withstand the great pressure which is brought upon them. As formerly constructed it was impossible to prevent the sides *a a*, where the bolt that held the pawl passed through them at *l*, from being broken off by the great strain to which they were necessarily subjected, thus often producing serious accidents to the machinery or other object being raised, and also endangering the limbs and lives of the operatives. All danger from this source is now removed by my improvement in this respect.

The next feature of my improvements consists in the peculiar manner of constructing the end or head of the lever D. Formerly this head was provided with projecting points like ordinary cogs to fit into the notches or recesses on bar C, but these were found by experience not to possess the necessary strength, as each cog or projection *i* was in turn compelled to sustain alone the entire weight to be raised, as will be clearly seen by reference to Fig. 2. I now construct the head or end of lever D in the form of a solid piece, having recesses or notches *o* for the reception of the teeth on bar C formed therein, as shown in Fig. 4. By

this construction it will be seen that all the divisions *i* between the notches or recesses *o* are firmly united along both sides of D by the flanges *h*, which are a mere continuation of the sides thereof. When thus constructed, the strain, instead of all being thrown upon a single tooth, *i*, will be distributed upon all the teeth and the sides *h*, the whole being united in one solid piece, and it being impossible for any single tooth to give away without necessarily breaking away some portion of the sides or flanges *h*.

The stirrup or swinging support J, in which the lever D is fulcrumed, and also the remaining portions of the implement, are constructed in this as in my former case; and for a further description thereof reference is had to my original patent, hereinbefore mentioned.

By the improvements herein described I am enabled to construct a jack that is capable of lifting immense weights, and that is perfectly safe to use and capable of great endurance.

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

1. The body or standard B, when constructed and operating in the manner and for the purpose herein set forth.

2. Providing the solid support for the pawl *g* in the manner herein described.

3. Constructing the head of the lever D in the manner shown and described.

JAMES LEFFEL.

Witnesses:

JAS. A. ASHLEY,

W. C. DODGE.