

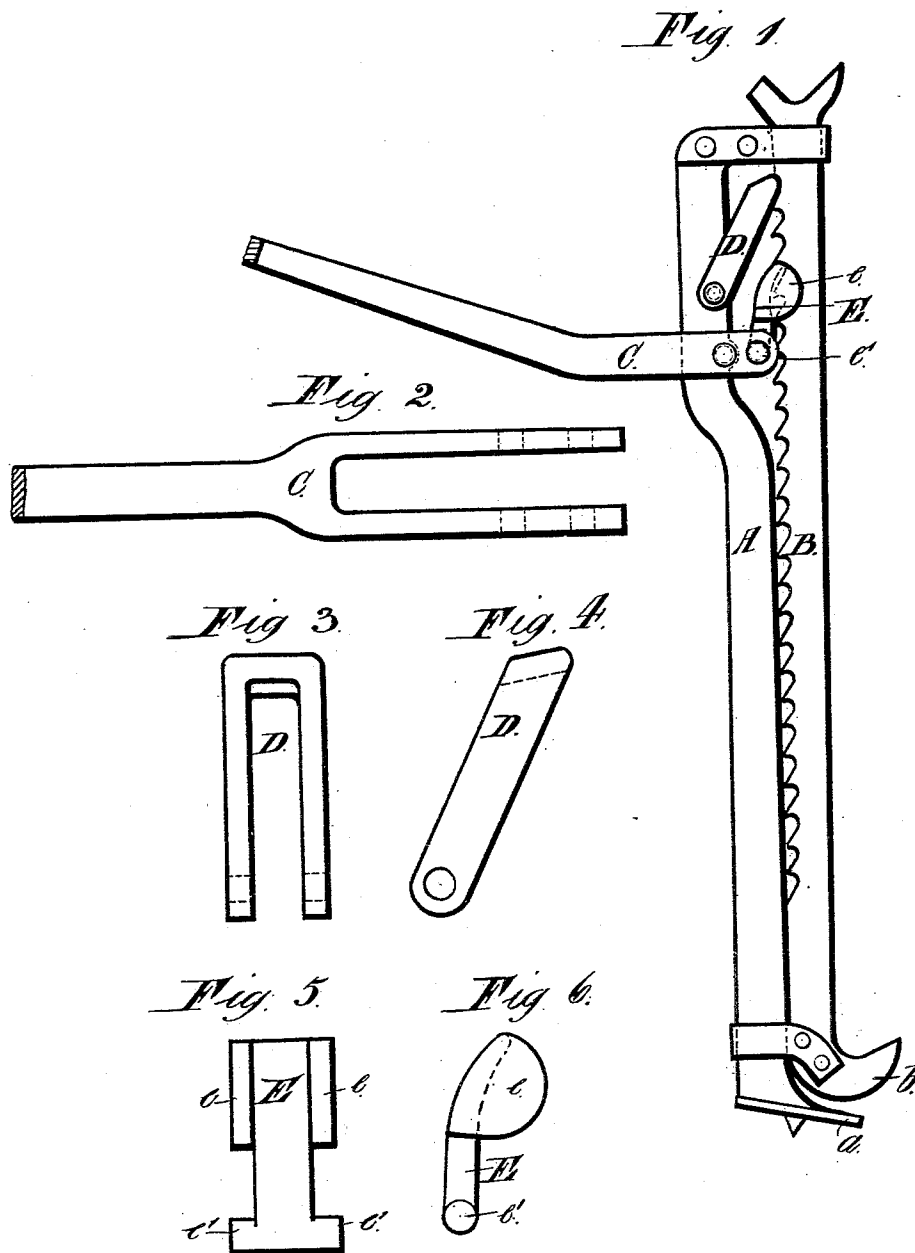
(No Model.)

2 Sheets—Sheet 1.

W. TREWHELLA.
LEVER JACK.

No. 476,702.

Patented June 7, 1892.



Witnesses:

H. G. Dieterich
O. W. Summers

Inventor:
William Trehwella.
By Henry M. H. Atty.

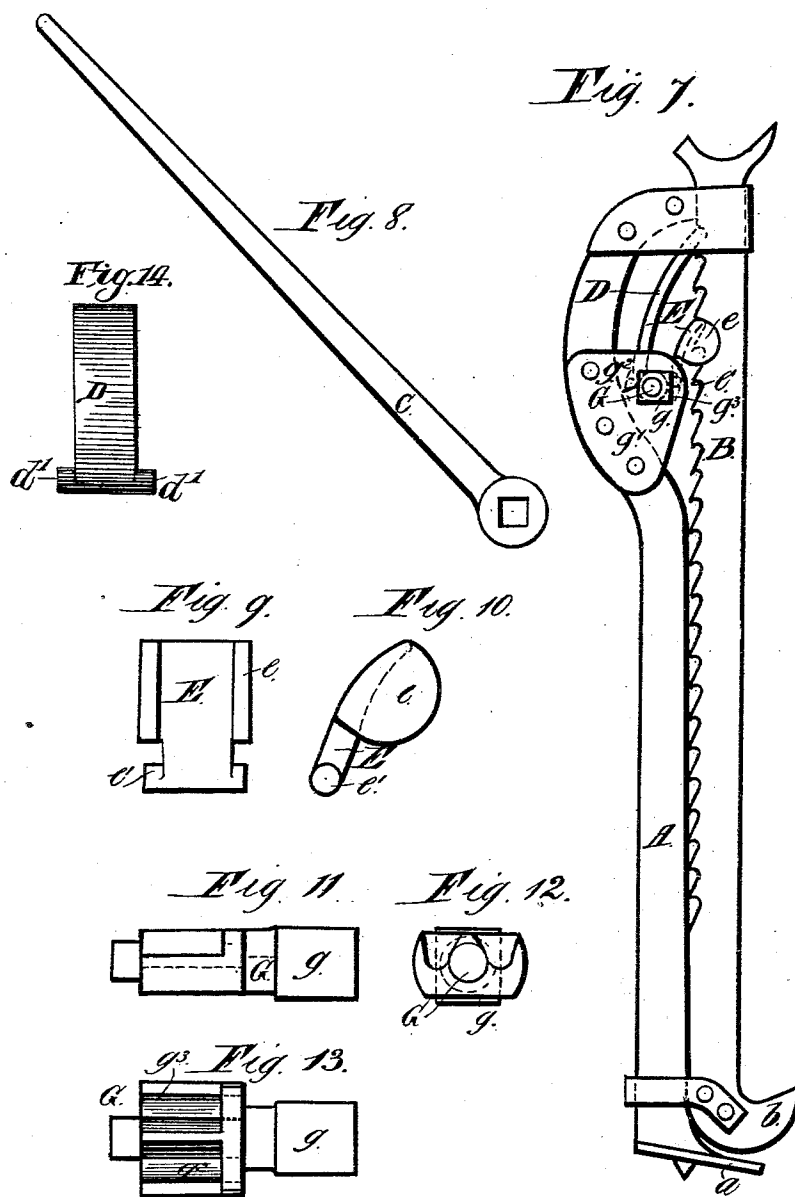
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UNITED STATES PATENT OFFICE.

WILLIAM TREWHELLA, OF BLACKWOOD, VICTORIA, ASSIGNOR OF ONE-HALF
TO BENJAMIN TREWHELLA, JR., OF SAME PLACE.

LEVER-JACK.

SPECIFICATION forming part of Letters Patent No. 476,702, dated June 7, 1892.

Application filed November 6, 1891. Serial No. 411,047. (No model.) Patented in Victoria June 4, 1889, No. 6,795, and in New South Wales July 10, 1890, No. 2,323.

To all whom it may concern:

Be it known that I, WILLIAM TREWHELLA, engineer, a subject of the Queen of Great Britain, residing at Blackwood, in the British Colony of Victoria, have invented Improvements in Lever-Jacks, (for which I have obtained a patent in the British Colony of Victoria, dated June 4, 1889, No. 6,795, and in the British Colony of New South Wales, dated July 10, 1890, No. 2,323,) of which the following is a specification.

This invention relates to that class of lever-jacks in which a vertically-sliding bar or "lifter" is adapted to slide up and down along side another vertical bar or "body," said lifter being provided with ratchet-teeth in one or other of its sides, with which a pair of lifting and retaining pawls can engage. The former of these pawls is mounted upon the end of an operating-lever, which is pivoted to the body of the jack, and is so arranged that it can be operated to raise the vertically-sliding bar or lifter, which is provided with a foot upon which the load can rest. I prefer to forge or weld a base-piece onto the lower end of the jack-body, and I prefer to set such base obliquely to said body, so that one of its edges will press deeply into the ground, and thus prevent it from slipping when raising the load, and for the same purpose the said base may, if desired, be made concave.

In order to throw the center of gravity of the lifting-pawl as far forward as possible, I form, according to my invention, forwardly-projecting ears or lugs thereon, so that they will project on either side of the vertically-sliding bar or lifter of the jack, thus throwing the center of gravity of the pawl farther forward, and thereby allowing it to be pivoted nearer to the lifter than would otherwise be possible, and, if desired, similar ears or lugs may be formed upon the retaining-pawl as well.

In constructing a double-acting lever-jack according to my invention I mount a rocking support or spindle in suitable bearings in the body of the jack, and I fit the lower ends of the two pawls in a pair of grooves formed in said support or spindle, whose end is squared or otherwise sided to fit the end of an operating-lever, whereby it may be rocked so as to

alternately raise said pawls, and thereby continuously raise the lifter, as will be well understood from the following description, reference being had to my drawings, and to the letters marked thereon, which indicate similar parts wherever they occur.

Figure 1 is a side elevation of a single-acting lever-jack embodying my improvements. Fig. 2 is a plan of the inner end of the operating-lever. Figs. 3 and 4 are respectively a front and a side elevation of the retaining-pawl thereof, and Figs. 5 and 6 are respectively a front and a side elevation of the lifting-pawl of my lever-jack, while Fig. 7 is a side elevation of a double-acting lever-jack constructed according to my invention; and Figs. 8 to 14 are different views illustrating the construction of various parts of my improved lifting-jack as indicated by the letters marked thereon. Of these Figs. 2 to 6 and 9 to 13 are drawn to a somewhat larger scale than Figs. 1, 7, and 8, the better to illustrate their construction.

A represents the main stationary portion or standard of my lifting-jack, and B the vertically-sliding rack-bar or "lifter-bar" thereof, while C represents the operating-lever, D the retaining-pawl, and E the lifting-pawl.

I prefer, as hereinbefore mentioned, to forge or weld the base-piece *a* onto the lower end of the body A and to set such base obliquely to said body, as illustrated in Figs. 1 and 7, in order that it may be prevented from slipping while the load is being raised.

According to my invention I form the lifting-pawl E with a pair of forwardly-projecting ears or lugs *e e*, arranged to project on either side of the lifter B, as illustrated in Figs. 1, 5, 6, 7, 9, and 10, in order to throw the center of gravity of said pawl as far forward as possible, thus enabling it to be pivoted nearer to the teeth of the lifter than would otherwise be possible, because with said lugs it will more readily drop into position to engage with said teeth than it would if constructed as ordinarily. This lifting-pawl is constructed, as shown in Figs. 1, 5, and 6, with projecting pins or trunnions *e'*, made solid or integral with it, instead of forming an eye in the end of said pawl and then

passing a pin through it. By this construction I am able to bring the fulcrum of the lever C nearer to said pawl than would otherwise be possible.

5 The retaining-pawl D may be formed as illustrated in Figs. 1, 3, and 4. It is pivoted to the body A of the jack and is adapted to engage with the teeth of the lifter B to retain same in its raised position while the lifting-pawl E is being lowered for a fresh lift. The lower end of the lifter B is of course provided with a hook *b* or other support for the goods or articles, which will be raised intermittently with the arrangement illustrated in Fig. 1—
10 that is, at each downward movement of the operating-lever.

The double-acting lever-jack shown in Fig. 7 is operated by means of a lever C, Fig. 8, fitted upon the squared or otherwise-sided end *g* of a rocking support or spindle G, mounted in bearings in two plates *g'*, bolted one on either side of the body A. This rocking support or spindle G is provided with two grooves or recesses *g² g³*, into which the correspondingly-shaped ends *d'* and *e'* of the pawls D and E may be fitted, as illustrated, and in which recesses they will be retained by said plates *g'*.

It will be obvious that if the end of the lever C is worked up and down it will rock the support or spindle G and will raise first one pawl and then the other, and will therefore raise the lifter B at each upward as well as each downward movement of the operating-

lever, thereby giving a continuous upward movement to the lifter B. 35

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is— 40

1. In a lever-jack, the combination, with the rack or lifter bar, the fixed standard along which said bar has motion, and a spindle pivotally connected with the standard, said spindle having an enlarged portion in which are formed two bearings or recesses parallel with its longitudinal axis, of the pawls D and E, provided with journals loosely seated in said bearings, said pawls engaging the rack-bar at a point above their axes of oscillation, substantially as and for the purpose set forth. 45 50

2. In a lever-jack, the combination, with the rack or lifter bar B, the standard A, along which the bar has motion, the retaining-plates *g'*, secured to said standard, and the spindle G, journaled in said plates, said spindle having one of its journals squared at one end and having an enlarged portion, on which are formed two bearings *g² g³*, of the pawls D and E, provided with journals *d'* and *e'*, respectively, seated loosely in said bearings, said pawls engaging the rack-bar at points above their journal-bearings, for the purpose set forth. 55 60

WILLIAM TREWHELLA.

Witnesses:

WALTER CHARLES HART,
EDWIN WILSON.