G. W. HUNTER.

LIFTING-JACK.

No. 173,956. Patented Feb. 22, 1876.

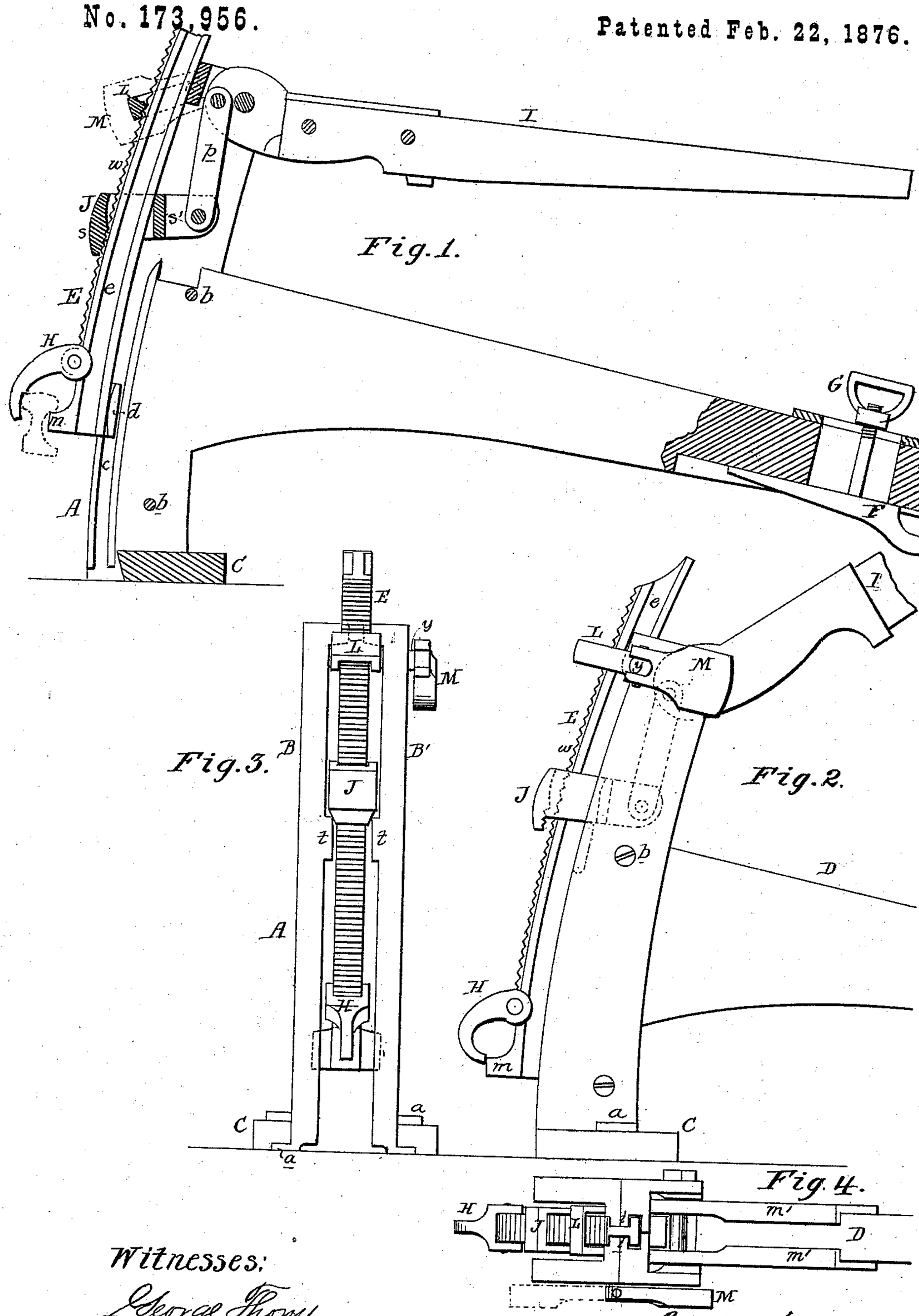

Fig. 1.

Fig. 3.

Fig. 2.

Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE W. HUNTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF PART OF HIS RIGHT TO HENRY M. BAKER, OF WASHINGTON, D. C.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **173,956**, dated February 22, 1876; application filed February 11, 1876.

To all whom it may concern:

Be it known that I, GEORGE W. HUNTER, of Philadelphia, Philadelphia county, State of Pennsylvania, have invented an Improved Lifting-Jack, of which the following is the specification:

My invention relates to certain improvements in lifting-jacks, having for their objects to facilitate the manufacture of the jacks, simplify their construction, and increase their capacity; and these objects I accomplish by the means illustrated in the accompanying drawing, in which—

Figure 1 is a sectional elevation of the tool; Fig. 2, an external elevation, showing part of the tool; Fig. 3, a front view; and Fig. 4 a plan view of Fig. 2.

The standard A consists of two cast-metal cheek-plates, B B′, having flanges *a* for bolting them to a base-plate, C, and clamped by transverse bolts *b* to opposite sides of a wooden arm, D, at one end of the latter. The standard is curved to coincide with an arc of which the arm D is the radius. At the inner face of each cheek-plate is a groove, *c*, to which is adapted a cross-plate, *d*, at the lower end of a curved bar, E, and into grooves *e e*, at opposite sides of the latter, extend lips *i i*, Fig. 4, from the inner faces of the cheek-plates, near the top. A sliding hook, F, adapted to a groove at the under side of the arm D, near its outer end, is provided with a set-screw, G, that it may be adjusted and secured after adjustment, and at the lower end of the bar E is a stud, *m*, above which a curved hook, H, is hung to the bar. Between the cheek-plates, near the upper end of the standard, is hung a lever, I, consisting of metal face-plates *m′ m′*, bolted to and clamping between them a wooden bar, which constitutes the main shaft of the lever, and to the inner end of the lever is connected a link, *p*, attached to the inner end of a dog, J. The bar E extends between the sides and front and back cross-pieces *s s′* of the dog, said cross-pieces being so arranged that when the dog rests in a horizontal position upon lugs *t t* (extending from the cheek-pieces B B′, as shown in Fig. 2) the bar can move freely without contact with the dog, but will be griped by the latter when it is tilted, as shown in Fig. 1. At the inner side of the cross-piece *s* are serrations corresponding to similar serrations *w* on the outer face of the bar E. Between the cheek-plates is hung a U-shaped pawl, L, serrated at the inner side, which is adjacent to the serrated face of the bar E, and to the shaft *y* of the pawl, which extends through one of the cheek-plates, is pivoted a weighted arm, M, which may be turned to either of the positions shown in Figs. 1 and 2.

In using the tool the bar E is lowered with its lug *m* beneath a projecting portion of the rail or other object to be raised, the hook H grasping the opposite edge, and the hook F is adjusted to a position beneath the flange of the opposite rail or any other fixed object. The weighted arm M is then turned to the position shown in Fig. 1, to bring the pawl in contact with the serrated face of the bar E, and a reciprocating motion is imparted to the lever I. As the long arm of the lever is raised the dog J will descend, its serrated face sliding over that of the bar; but as the motion of the lever is reversed the dog will be tilted to the position shown in Fig. 1, will bite the bar firmly between its cross-bars *s s′*, and will carry the latter upward. On again reversing the motion of the lever the dog will descend, the pawl L, by its gripe upon the serrated face of the bar, retaining the latter in its place. As these motions are repeated the bar and the object to which it is attached will be gradually raised.

It will be seen that however limited the motion of the lever I may be the dog will always, on the lever being depressed, take a secure hold upon the bar, whatever may be its position on the latter, and that the bite will become firmer as the load and power applied increase.

It will also be seen that, without increasing the size of the dog to an inconvenient extent, it may be made strong enough to sustain any weight it may be called upon to bear; and that by arranging the bars *s s′* closer together, and adjusting the connecting-pins of the link *p*, the leverage may be varied so that a great power may be applied by the use of a lever, I, of comparatively limited length.

When it is desired to lower the bar the weighted arm M is turned to the position shown in Fig. 2, throwing the pawl L away from the bar E, and the lever I is elevated until the dog J strikes the lugs *t t*, when it will assume a horizontal position with the bars *s s'* free from contact with the bar E, Fig. 2, when the latter will be released and descend by its weight.

By constructing the standard A of separate cheek-pieces B B', bolted to the arm D, great facility is attained in the manufacture of the tool, as each piece may be cast separately, with its guides for the bar E, without a core. The construction of the bar E, with its serrations, grooves, and cross-plate, permits it to be cast with like facility, and also enables it to be guided in the standard with little friction. The means for readily releasing the bar E render the tool peculiarly serviceable in raising the tracks of railways, when it is often necessary to quickly remove the tool. It will be apparent, however, that it is applicable to general purpose, and that it may be modified without departing from the chief features of the invention. For instance, the arm D may be arranged at a different angle, or dispensed with, and the bar E may be plain instead of serrated.

I claim—

1. The combination, in a lifting-jack, of a standard, A, sliding bar E, lever I, link *p*, and dog J, griping the bar when tilted, and operated by the lever, substantially as set forth.

2. The combination, with the lever, dog, and bar, of stops *t t*, arranged to limit the downward movement of the dog, for the purpose specified.

3. The standard A, with its grooves *c c* and lips *i i*, in combination with the bar E, its grooves *e*, and cross-plate *d*, substantially as set forth.

4. The combination of the sliding serrated bar, the pawl L, and adjustable weighted arm M, for the purpose described.

5. The standard, consisting of metal cheek-pieces B B' bolted together and to the arm D, substantially as and for the purpose set forth.

6. The hook F, combined with and adjustable on the arm D, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. W. HUNTER.

Witnesses:

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