

W^m L. Rayment's Impt. in Lifting Jacks.

No. 121,002.

Patented Nov. 14, 1871.

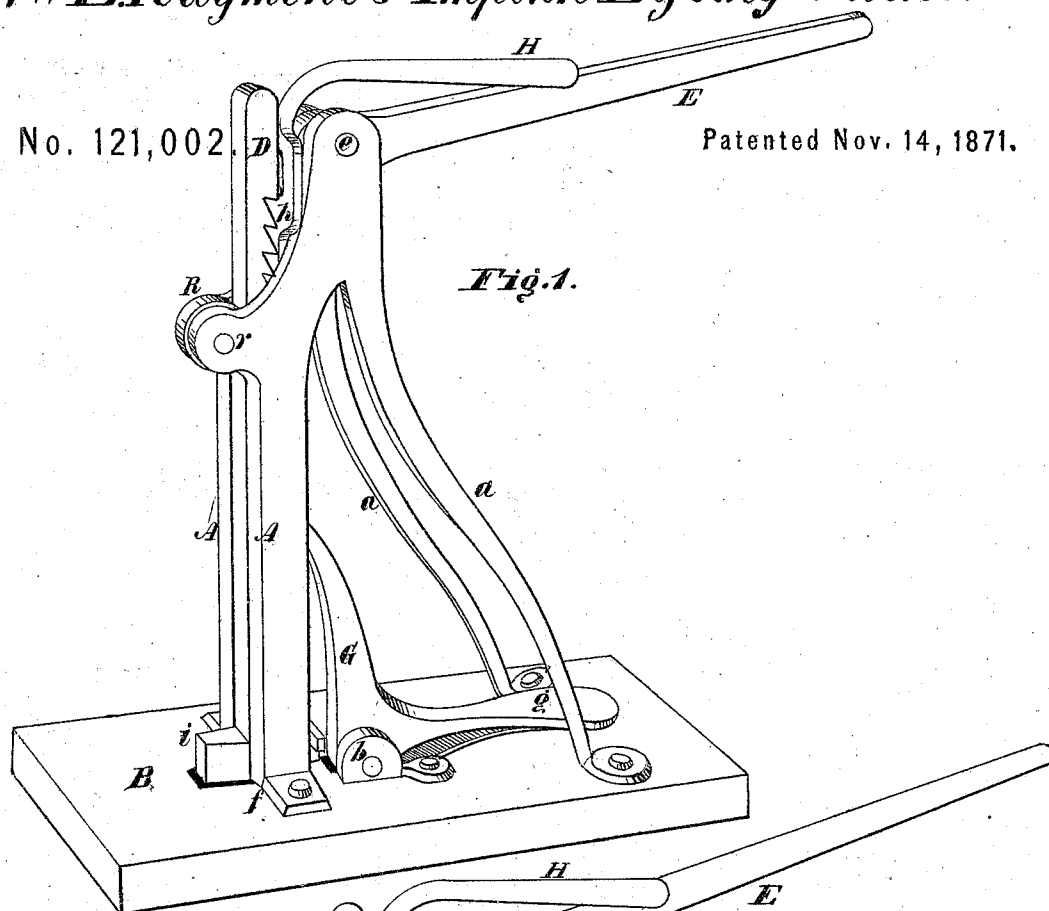


Fig. 1.

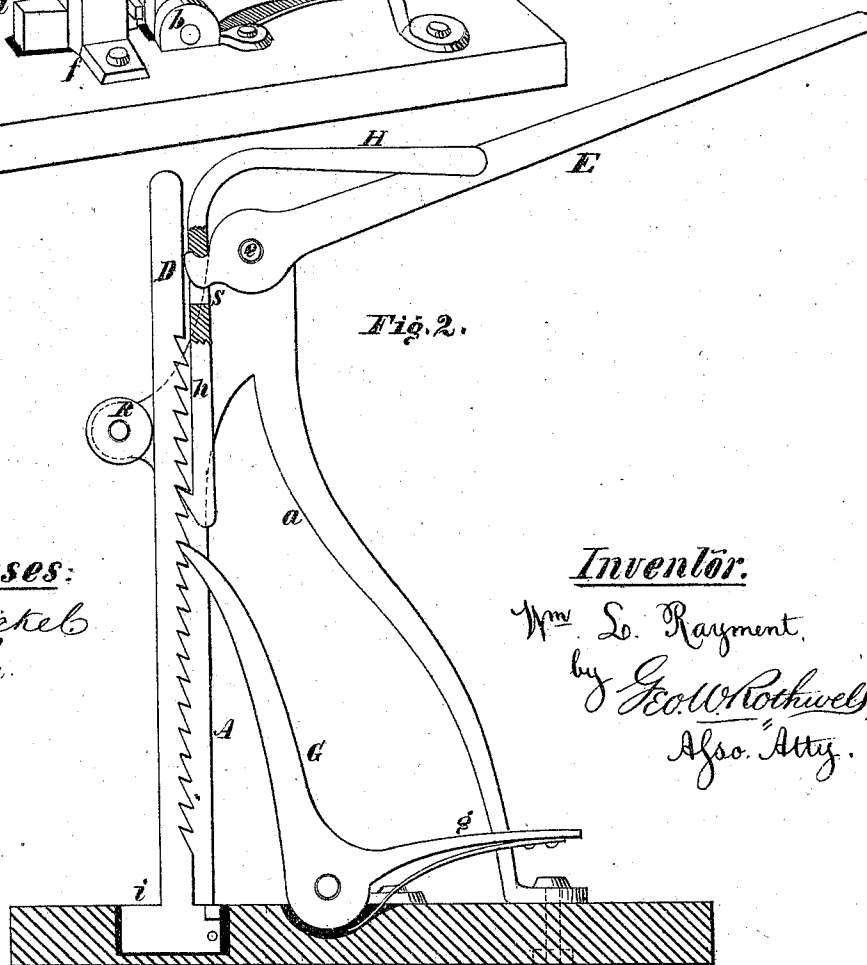


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM L. RAYMENT, OF UNION CITY, MICHIGAN, ASSIGNOR TO HIMSELF AND
RALPH A. DAY, OF SAME PLACE.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. 121,002, dated November 14, 1871.

To all whom it may concern:

Be it known that I, WILLIAM L. RAYMENT, of Union City, in the county of Branch and State of Michigan, have invented certain Improvements in Lifting Jacks for Raising Railway Tracks, &c., of which the following is a specification:

My invention relates to the combination with a ratcheted lifting-bar of a pendulous self-engaging lifting-pawl, hand-lever, and retaining spring-pawl, to be disengaged by foot-pressure; the object being to combine, in a cheap, ready, and effective manner, simple and few means to produce the following results: With a short lever a great development of power, applied at a point almost directly over the load; easy application for the main purpose designed, of lifting railway track; and easy and quick manipulation by the operator without fatiguing stooping.

My invention is embodied in the accompanying drawing, in which—

Figure 1 is a perspective view. Fig. 2 is a vertical longitudinal section.

A A are two standards, constituting, with the wooden platform B, a frame to which the operating parts are mainly attached, and in which they are guided. These standards may be made of wrought, cast, or malleable cast-iron; and to strengthen them and maintain stability it is best to provide them with flaring leg-braces *a*, so as to form, with the foot-flanges at *f*, four bearing-points, at which they may be bolted to the wooden platform B. D is the lifting-bar, working freely up and down between the standards, one edge of said bar having ratchet-teeth formed on it; and the lower end is provided with a projecting foot, *i*, to insert under the rails or other thing to be lifted. E is the hand-lever, having its fulcrum-pivot at *e*, through the heads of the standards, between which it vibrates, and having just sufficient projection beyond to hook into a slot in the lifting-pawl bar, which I will now proceed to describe. F is the pendulous lifting-pawl, consisting of a flat vertical portion, *h*, provided with a slot, *s*, as aforesaid, to receive the lever-head, and having a stout spur projection at its lower end to engage with the ratchet-

teeth of the lifting-bar D. This pawl-bar is bent above the notch to form a handle, H, as shown, by which the pawl may be thrown out of gear, and also to serve as an overbalance to keep the spur closely pressed against the ratchet. The handle portion should have a side offset, so as not to interfere with the working of the lever; and it is best to round the upper edge of the slot properly to correspond with a hollow indentation in the lever-head, so as to make a joint contact to suit the vibration. The lever might be pivoted to the pawl-bar; but as that mode would necessarily occupy more space between the standards and lifting-bar, it would not, for obvious reasons, be so desirable as when the bare thickness of the pawl alone intervened, with necessary freedom for vibration added. G is the retaining foot-pawl, to hold up the load, pivoted at the angle of the bend to bearings *b* secured to the platform B, and provided with a spring, *n*, under the foot-extension *g*, to keep the point firmly engaged with the ratchet. The lifting-bar D is stayed above against the lifting-pawl by a roller, R, pivoted between ears *r* on the standards, or, if desired, by a simple cross-bar, and it is guided at its foot by shoulders acting against the edges of the standards on one side and by a check-pin on the other side, or in any other suitable way; and for lifting track a socket should be made in the platform to receive the foot *i* of the lifting-bar.

The operation for track-lifting is as follows: The lifting-bar being dropped down, the projecting part of the platform at B is inserted under the rail until the foot of the lifting-bar overlaps it. The operator then, by alternately elevating and depressing the lever E, thus causing the pawls to engage successively with the ratchet-teeth of the lifting-bar, (in a manner too well known to need further description,) raises the track up to grade; and when it is secured he disengages the lifting-pawl by raising its handle H, then pressing his foot on the treadle-arm *g* he disengages the retaining-pawl, and the lifting bar drops to the bottom of the platform-socket, ready for use in a new place.

My arrangement of the parts renders the ma-

chine strong, with simple and cheap construction, transmits great power at the most favorable point, and is manipulated readily.

I claim as my invention—

The ratchet lifting-bar *D*, in combination with the pendulous lifting-pawl bar *p* *H*, retaining-foot operating spring-pawl *G* *g*, and hand-lever *E*, the whole secured to operate properly be-

tween suitable standards *A a* and on a proper platform, *B*, upon which said standards and connected operating devices are mounted, substantially as and for the purposes set forth.

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Witnesses:

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