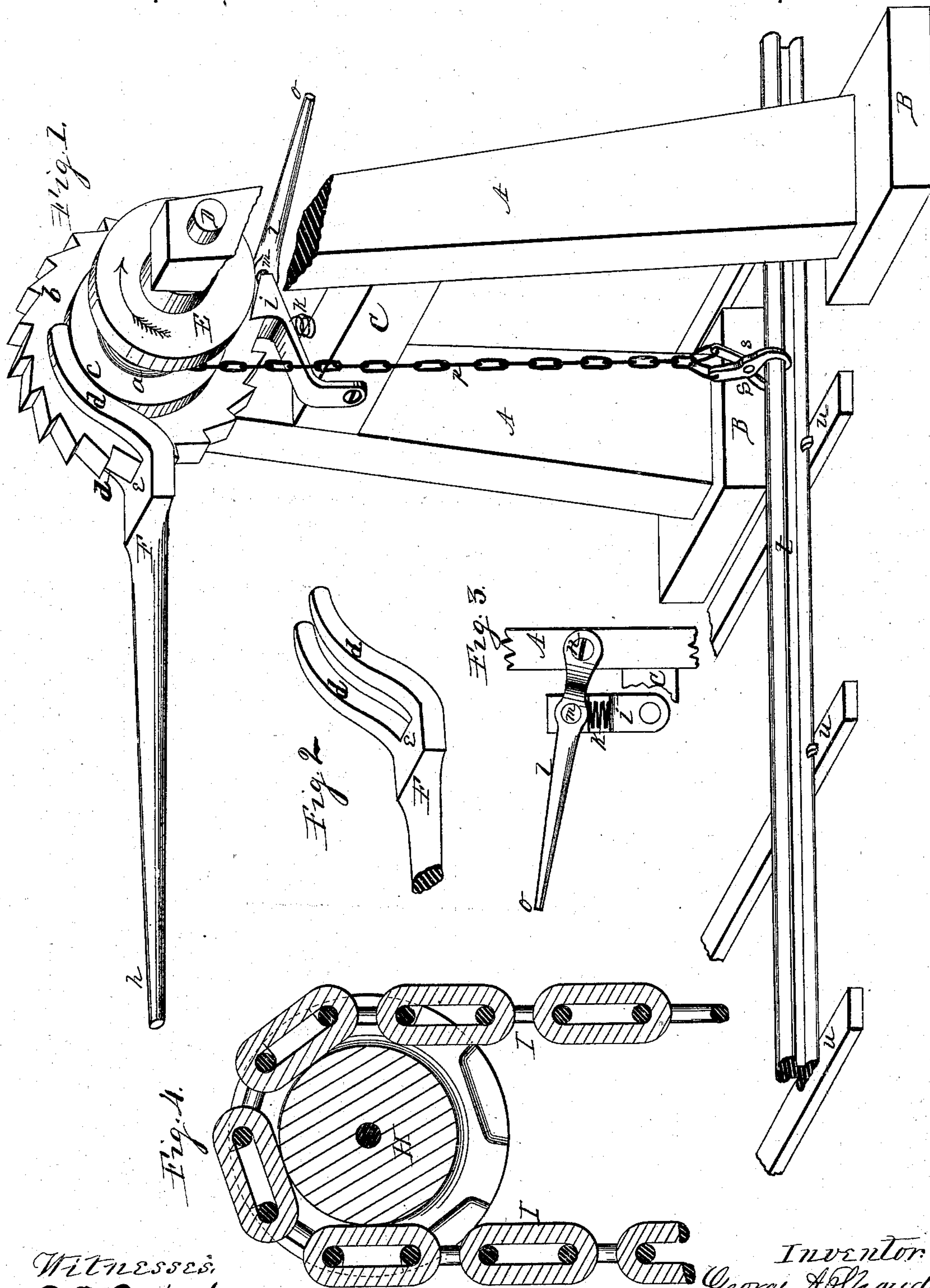


(No Model.)

G. A. SHOUDY.
LIFTING MECHANISM.

No. 274,834.

Patented Mar. 27, 1883.



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GEORGE A. SHOUDY, OF ROCKFORD, ILLINOIS.

LIFTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 274,834, dated March 27, 1883.

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To all whom it may concern:

Be it known that I, GEORGE A. SHOUDY, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented new and useful Improvements in Lifting-Jacks, of which the following is a specification.

This invention relates to lifting jacks or engines employed in lifting heavy articles; and the object of this invention is to produce at a small cost an efficient portable lifting-jack capable of use as a lifting-engine, but especially adapted to railroad purposes for leveling the track.

In the accompanying drawings, Figure 1 is an isometrical representation of a lifting-jack embodying my invention. Fig. 2 is an isometrical representation of a portion of the operating-lever. Fig. 3 represents the connection of the disengaging-lever with the spring-actuated detent. Fig. 4 is the representation of a cable-chain and chain-pulley capable of use in my improved jack.

In the figures, A represents tapering posts, in this instance produced of wood in suitable dimensions. The lower ends of these posts are framed into suitable foot-supports, B, produced of wood in this instance, rectangular in plan, and of any suitable dimensions. The posts A of this frame incline toward each other, being closer to each other at their upper ends than at their connection with their foot-supports.

At C is represented a transverse beam of suitable dimensions, framed into the inclined posts toward their upper ends, producing a frame of pyramidal form.

At E is represented a windlass, cylindrical in section, having its periphery at *a* of suitable conformation to receive a chain to be wound thereon. This windlass, near one of its ends, is provided with an annular rim, *b*, projecting from its periphery in such a manner that a portion, *c*, of the windlass extends on each side thereof, forming like cylindrical rims or shoulders on each side of the annular rim *b*. The periphery of this annular rim *b* is produced in saw-tooth-ratchet form. This windlass is mounted to revolve on a transverse shaft, D, supported in the upper end portions of the posts A of the frame.

At F is represented an operating-lever having its end portion produced in bifurcated form, the arms *d* of which are suitably separated to freely receive the saw-toothed annular rim *b*, and are curved to engage the cylindrical rims *c*, to rest on their upper surfaces as a fulcrum. The portion *e* of the lever, between the arms *d* at their junction, is produced in suitable pawl form to engage the ratchet-teeth of the annular rim *b*, the arrangement and construction of these parts being such that a downward movement of the free end *h* of the lever will cause it to pass over the teeth of the ratchet, and an upward movement thereof will cause the windlass to rotate in the direction indicated by the arrow thereon.

At *i* is represented a pawl, having a free pivotal connection with the frame in such relative position with the ratchet-rim that its free end, fitted in proper pawl form, will engage the ratchet-teeth to prevent a backward movement of the windlass.

At *k* is represented a spring, placed in connection with the pivoted pawl in such a manner that its spring action will tend to hold the free end of the pivoted pawl in contact with the ratchet.

At *l* is represented a hand-lever, having a pivotal connection at *m* with the free end of the pawl and a fulcrum pivotal connection at *n* with the main frame in such a manner that the pawl may be disengaged from the ratchet by depressing the free end *o* of the lever.

At *p* is represented a cable-chain having one of its ends suitably connected with the winding portion *a* of the windlass, and its free end provided with suitable grappling hooks or jaws, *s*,—in this instance of a form adapted to engage the track-rail *t* of a railroad—which are fixed to the ties *u* in the usual manner.

In the use of my improved lifting-jack for raising the track on railroads, as represented in the drawings, the frame is set between the ties, straddling the rail in such position that the grappling hooks or jaws will engage the rails, and then, by means of a vertical oscillatory movement of the operating-levers F, the windlass is made to rotate in the direction of the arrow, which movement will wind the chain on the windlass and lift the track to any

height within the limits of the machine, and when it is desired to release the windlass the operating-lever is removed and a depression of the free end *o* of the hand-lever *l* will disengage the spring-actuated pawl *i*, and permit the windlass to rotate backward freely and permit the track to drop.

In the foregoing I have represented my improvement in use on a railroad-track, to which purpose it is well adapted; but it is capable of use in lifting heavy articles, and as a grub, stump, and post puller will be found a useful and efficient machine.

Instead of the windlass on which to wind the cable-chain, as described, the device shown in Fig. 4 may be employed. In this figure, *H* represents a chain-pulley of the usual construction, having its periphery grooved in a suitable manner to receive the links of an ordinary cable-chain, which is represented at *I* with its links in place thereon.

I claim as my invention—

1. The herein-described windlass, consisting essentially of a winding portion adapted to receive a cable-chain to be wound thereon, an annular ratchet-rim having cylindrical rims projecting from its opposite sides, producing fulcrum-supports, substantially as and for the purpose set forth.

2. The combination, with the herein-described windlass having a winding portion, an annular ratchet-rim with cylindrical fulcrum projecting from its sides, of a bifurcated operating-lever adapted to engage the cylindrical fulcrums and the teeth of the annular ratchet-

rim, substantially as and for the purpose set forth.

3. The combination, with the herein-described windlass, mounted in a supporting-frame to revolve on a suitable journal-bearing, and with the bifurcated operating-lever, of a chain or its equivalent and grapples, said chain having a suitable connection with the winding portion of the windlass, substantially as and for the purpose set forth.

4. The combination, with the herein-described windlass and with the bifurcated operating-lever, of a spring-actuated pawl to engage the ratchet-teeth of the windlass, substantially as and for the purpose set forth.

5. The combination, with the annular ratchet-rim of the windlass and with the pivoted spring-actuated pawl, of a lever having a pivotal connection with the pawl and with the supporting-frame, substantially as and for the purpose set forth.

6. The combination of the herein-described windlass, mounted to revolve on a suitable bearing in the bifurcated pyramidal frame, a cable-chain connected to the windlass and provided with suitable grapples, a spring-actuated pawl having a disengaging-lever pivoted thereto, and a bifurcated operating-lever to engage the ratchet-teeth of the windlass, these parts constructed, arranged, and operating substantially as and for the purpose set forth.

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