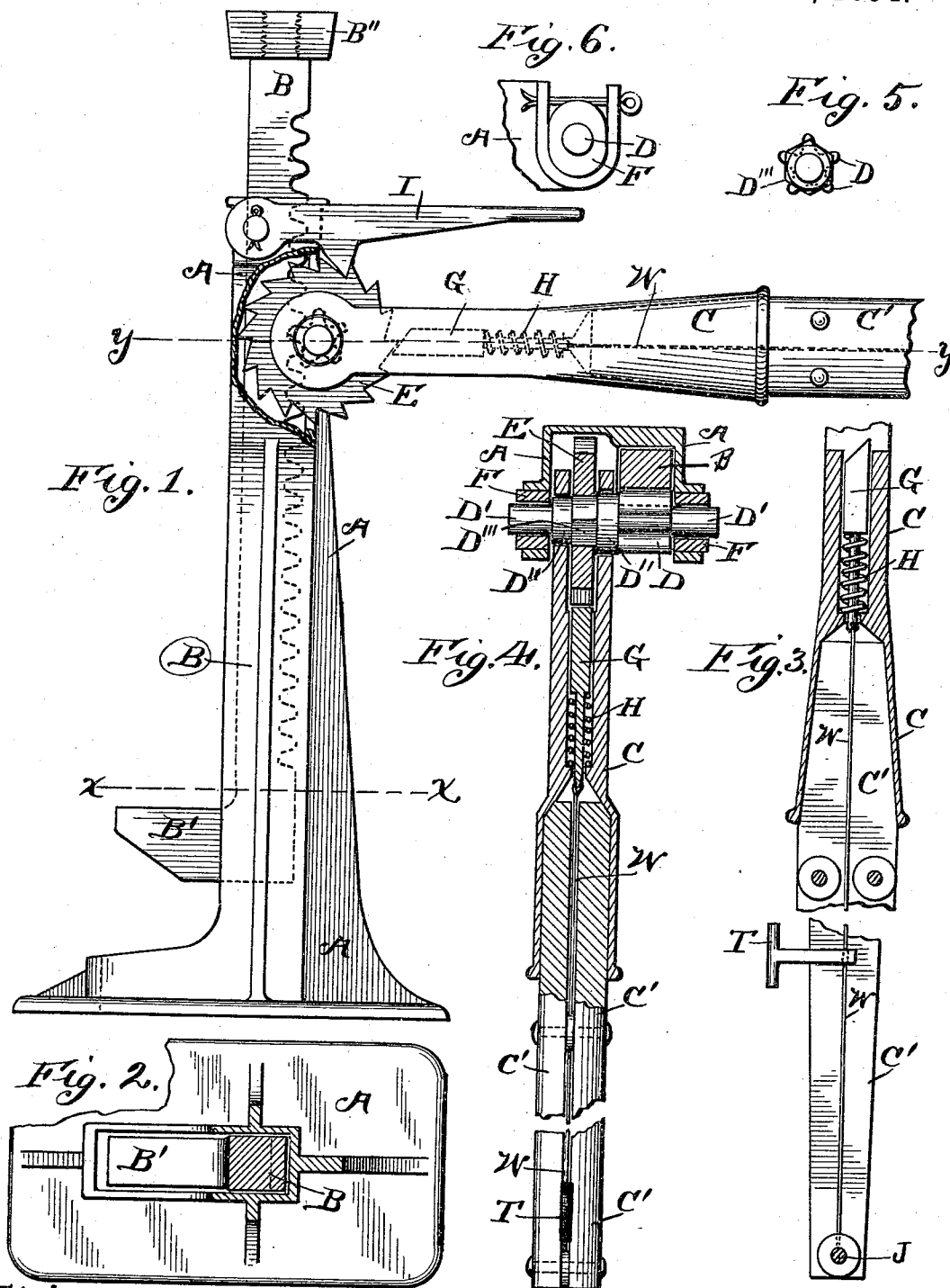


(No Model.)

A. L. STANFORD.  
LIFTING JACK.

No. 513,155.

Patented Jan. 23, 1894.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ARTHUR L. STANFORD, OF EVANSTON, ILLINOIS.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 513,155, dated January 23, 1894.

Application filed July 27, 1893. Serial No. 481,663. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR L. STANFORD, of Evanston, Cook county, Illinois, have invented a new and useful invention, being an Improvement in Lifting-Jacks, of which the following is a sufficient specification, reference being had to the accompanying drawings.

My invention consists in the construction of the various parts; and of the arrangement and combination thereof, as hereinafter fully described.

The object of my invention is to provide a lifting jack of simple construction well adapted to lifting railroad cars and for other railroad uses.

In the drawings Figure 1 is a side elevation of my improved lifting jack, a portion of the standard A being broken away to expose ratchet wheel E and other parts. Fig. 2 is a sectional view on the line *xx* of Fig. 1, showing also in outline the base of the jack. Fig. 3 is a sectional view of the lifting jack lever which I employ, and also shows in part my novel skeins for controlling the lifting pawl G. Fig. 4 is a sectional view on the line *yy* of Fig. 1, showing also a longitudinal section of Fig. 3.

A is the frame or standard. This is provided with a broad base, as appears in Fig. 2, to render the machine stable. The standard has a central slot in which the lifting bar B operates, and is enlarged at its upper portion to receive the operating mechanism. Lifting bar B within the slotted standard is provided with foot B' and cap B''; and said bar B has a series of cogs as appears in Fig. 1, which mesh with and are controlled by the pinion D. Integral with pinion D are the round bearings D'' D''' the hexagon portion D''' and the journals D' D'.

E is a ratchet wheel, and C is the socket for the actuating lever C' C'. Pinion D is provided with round extensions on which is mounted lever socket C; and ratchet wheel E is mounted upon the hexagon portion of the same extension from pinion D. The journals D' D' are preferably formed integral with the pinion D and its extended portion. Ratchet wheel E being rigidly mounted is controlled by the lifting pawl G, which is adapted to operate within the lever socket C

C; said lever socket having its arms journaled upon the round portion of the extension from the pinion D.

Retaining pawl G is forced to engage with ratchet-wheel E by spring H; and said pawl is disengaged from ratchet-wheel E by the wire W within the two halves of the lever C' C'. Wire W being attached to pawl H is also attached to rivet J, and passes through hand piece T as appears in Fig. 3. Hand piece T is movable nearly the entire length of lever C' C', and can anywhere be made available to disengage pawl H through the medium of wire W.

I is the retaining pawl pivoted to the standard and adapted to engage the ratchet-wheel E, and provided with an extension as shown. Lever socket C is located directly beneath the extended portion of pawl I, and by this construction the lever can be utilized to forcibly disengage the pawl I when jack is loaded; the pawl G having first been disengaged.

It is immaterial whether the openings in the sides of the enlarged portion of the standard A which receive and support the journal boxes F which contain the journals D', be merely circular openings, or whether these be made in the form of a yoke and open at the top as appears in Fig. 4; save that if the latter form be adopted the pinion D may be formed integral with the projecting journals D', whereas if the former construction be used the pinion D and journals D' must be formed separate to admit these parts to place in the machine.

The operation of the jack in lifting a load will be readily understood; downward motion of the actuating lever revolves ratchet-wheel E and pinion D through the medium of the pawl G, and thus the lifting bar B is raised. The loaded bar B is lowered slowly as follows: Support the loaded bar with the lever depressed, then release the retaining pawl and allow the bar to descend somewhat; then allow the pawl I to support the weight, disengage pawl G, and depress the lever, repeating the operation. To precipitate the loaded bar B disengage the pawl G with the hand piece T; then raise the lever C' and lever socket C until the lever socket comes in contact with the extended portion of pawl I when same may be forcibly disengaged and the lifting

bar B dropped and the load thus precipitated as is frequently desirable in railroad work.

Having thus described my invention, I claim as new and desire to secure by Letters

5 Patent—

1. A lifting jack comprising a standard, a ratchet-wheel, an actuating lever, and a retaining pawl pivoted to the standard above the actuating-lever in position to by gravity  
10 engage the ratchet-wheel and also to be disengaged by the lever in the upward movement of the latter.

2. In a lifting jack the combination of a standard, a lifting bar, a lever socket with an  
15 actuating lever, a pinion engaging said lifting bar, a ratchet-wheel, a lifting and a retaining pawl adapted to act upon said ratch-

et-wheel; said lever socket being bifurcated to receive the ratchet-wheel, hollow to contain the lifting pawl, and mounted upon the ex- 20 tended portion of said pinion, substantially as set forth.

3. A lifting jack comprising a standard, a rack-bar, a pinion, a ratchet-wheel, a hollow lever, a pawl in said lever, a spring operating 25 to throw the pawl into engagement with the ratchet-wheel, a wire attached to the outer end of the pawl, and a hand-piece slidable on the wire for operating it to retract the pawl.

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