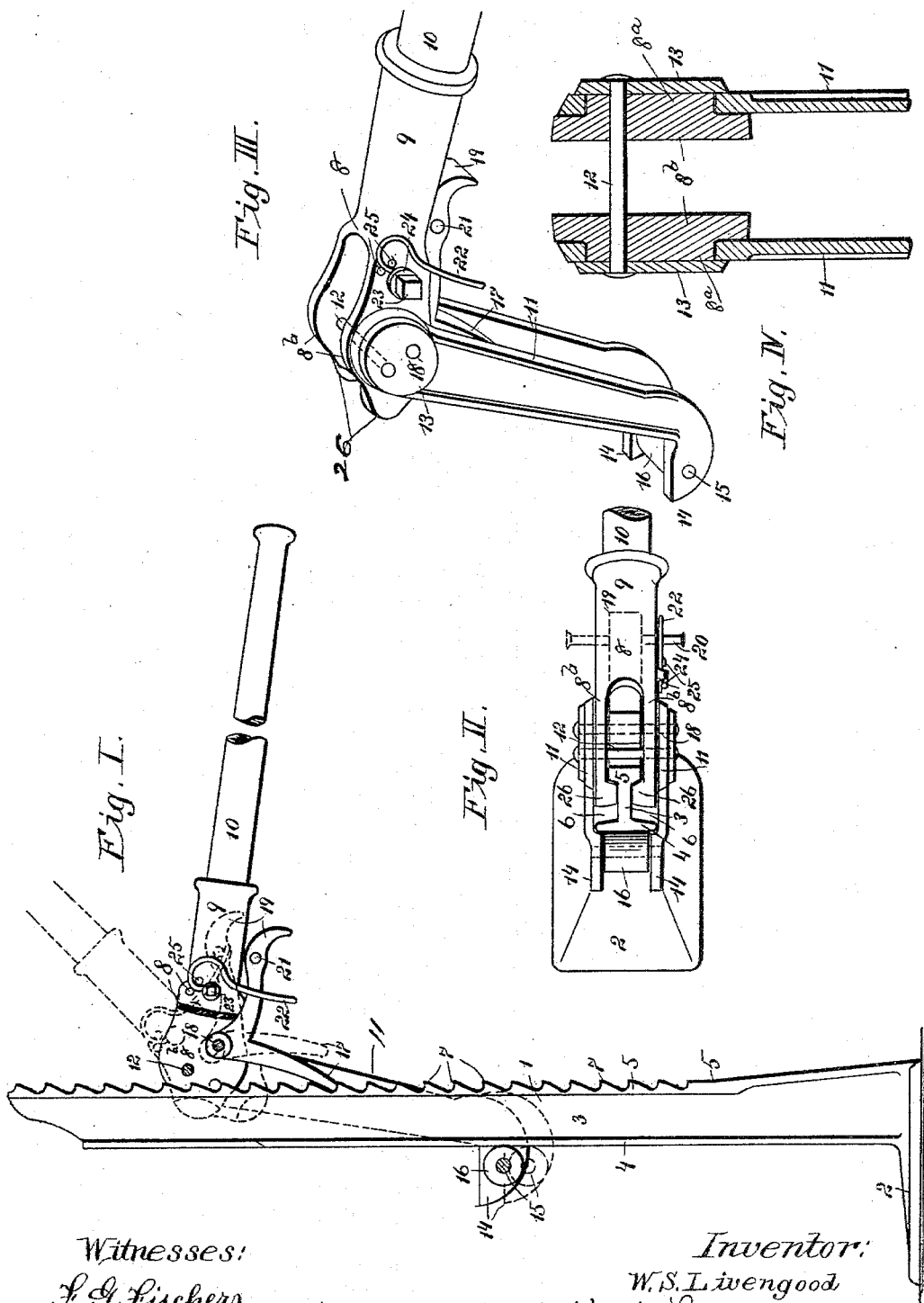


(No Model.)

W. S. LIVENGOOD.
LIFTING JACK.

No. 490,293.

Patented Jan. 24, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGODD, OF KANSAS CITY, MISSOURI, ASSIGNOR TO IRA H. DIBBLE, OF SAME PLACE.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 490,293, dated January 24, 1893.

Application filed September 29, 1891. Serial No. 407,207. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGODD, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in "lifting jacks," and my invention consists in features of novelty hereinafter described and pointed out in the "claims."

Figure I, represents a side elevation of my improved jack, partly in section. Fig. II, is a top view of the same. Fig. III, is an enlarged detail perspective of a portion of my device. Fig. IV, is an enlarged detail sectional view of the links on the lever head.

Referring to the drawings: 1, represents the standard of my improved jack having a base 2, for its support. The standard 1, is T shaped in cross section, (see Fig. II) being formed of the web 3, flange 4, and rib 5, leaving a space 6, on each side of the web 3.

7, represents a series of teeth on the rib 5, with which portions of the jack, to be described later on, engage in raising or lowering an object.

8, represents a movable head having a socket 9, into which a removable lever 10, may be placed in order to operate the jack.

11, represents links pivoted to each side of the head 8, by means of circular bosses 8^a and secured by means of a cross-bolt 12, extending through said head through said bosses and through washers 13, on each side of the same. The sides 8^b of the head form cheek plates which embrace the rib 5. The lower ends of the links 11, are extended, as shown at 14, at nearly right angles to the body of the same, said extensions being for the purpose of the article to rest upon which is to be raised or lowered. The extensions 14, are connected by a cross bolt 15, on which is loosely mounted an anti-friction roller 16, said roller 16, pressing against the flange 4, as the links move either up or down on the standard 1.

17, represents a dog pivoted to the head 8, as shown at 18, and provided with a rear-

wardly extending portion 19, by which means the dog may be raised either by the hand or by a suitable device connected with the lever or head.

20, represents a pin passing through an opening 21, in the extension 19, and 22, is a spring which engages with said pin when the same has been thrust through into the position shown in the full lines, Fig. II, for the purpose of throwing the dog 17, out of engagement with the rack 7, when the lever is raised. The spring 22, may have its end formed in a coil and passed over a bolt 23, secured to the head 8, to which it may be secured by a suitable nut on said bolt, as shown at 24.

25, represents lugs on the head 8, between which the spring passes in order to prevent the same from slipping in its fastening.

In operation, when it is desired to raise a load the standard of the jack is so placed that the extended portion 14 of the links 11 comes under the article to be raised; then by raising the lever 10, from the position shown in full lines, Fig. I, until the bolt 12 engages one of the teeth 7, at which time the dog 17 will be released from the tooth in which it is resting, and as the lever is still raised said dog will rise until it comes on a line with the next tooth above it at which time it engages with said tooth; then by pressing down on the lever, the forward portion of the head 8, is raised until the bolt 12 comes on a line and engages with the next tooth above it, the weight on the links 11, at all times making the head 8 travel close to the standard. Thus by a pump handle motion my improved jack may be used to raise a weight, no matter in what direction the lever may be forced, the same having two pivotal points which are changeable according to whether or not the dog 17 or the bolt 12 is supporting the load, said pivotal points being raised or remaining stationary according to whether they are engaged or free. The same motion is used for lowering a load as in raising it, the only change necessary being to push the bolt 20 from the position shown in the dotted lines, Fig. II, to the position shown in the full lines. Thus, when the load is supported by the bolt 12, and the lever 10, is raised, the spring 22

- will come in contact with the bolt 20, gradually raising the same until the dog 17 is thrown out of contact with the teeth on the standard, as shown in dotted lines Fig. I. Then as the lever is lowered the dog 17, will engage one of the teeth and will support the load for the time being while the bolt 12 is thrown out of engagement with its tooth, and descends as the lever is raised to the next tooth below; (see dotted lines Fig. I) the operation being repeated until the load has been lowered to the required degree, the load descending one notch each time the lever is lowered, and one notch each time it is raised.
- 15 The forward portions of the cheek plates of the head 8, are provided with lugs 26, which travel in the space 6, on the standard and thus serve as a guide, limiting the backward movement of the head 8.
- 20 I claim as my invention:
1. A lifting jack comprising a standard having a single row of teeth, a lever having a head provided with two bearing points engaging the teeth alternately, and links pivoted to the head having extensions for supporting an object on the inner side of the standard; substantially as described.
 2. A lifting jack comprising a standard having a single row of teeth, a lever having a head, provided with cheek plates, a cross-bolt secured to the cheek plates and forming one point of bearing for the head, a dog pivoted to the cheek-plates and forming another point of bearing for the head, and links pivoted to the head having extensions for supporting an object on the inner side of the standard; substantially as described.
 3. A lifting jack comprising a standard having a single row of teeth, a lever having a head provided with cheek plates formed with lugs and adapted to embrace the standard, two bearing-points for the head adapted to engage the teeth alternately, and links pivoted to the head having extensions adapted to support an object on the inner side of the standard; substantially as described.

4. In a lifting jack, the combination of a toothed standard; head 8; links 11 pivoted thereto, having extensions 14; a bolt 12; a bolt 18; a dog 17, pivoted to said bolt 18, and a rearwardly extending extension on said dog for throwing it out of engagement with said standard; substantially as and for the purpose set forth.

5. In a lifting jack, the combination of a toothed standard; head 8; links 11 pivoted thereto; bearing point 12; a dog 17; extension 19, on said dog; a movable bolt 20, connected with said dog, and a spring 22, connected with said head 8, for engaging said bolt and raising said dog; substantially as set forth and for the purpose described.

6. In a lifting jack, the combination of a toothed standard; being made T shaped in cross section; a head 8, having lugs 26 engaging said standard; means for rocking said head; links 11 having extensions 14, and anti-friction roller 16, journaled to said extension; substantially as described and for the purpose set forth.

7. In a lifting jack, the combination of a toothed standard; being made T shaped in cross section; head 8 engaging said standard; lever for rocking said head; bearing point 12, on said head; dog 17 pivoted to said head; rib 5, on said standard with which lugs 26, on the head 8, engage, and a flange 4, on said standard against which the anti-friction roller 16, secured to the links 11, travels in raising or lowering an object; substantially as described and for the purpose set forth.

8. A lifting jack comprising a standard having a web, a flange, and a rib formed with a single row of teeth, a lever having a head formed with cheek plates provided with circular bosses, cross-bolt, pivoted dog, and links, hinged to the bosses, having extensions; substantially as described.

WINFIELD S. LIVENGOOD.

Witnesses:

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