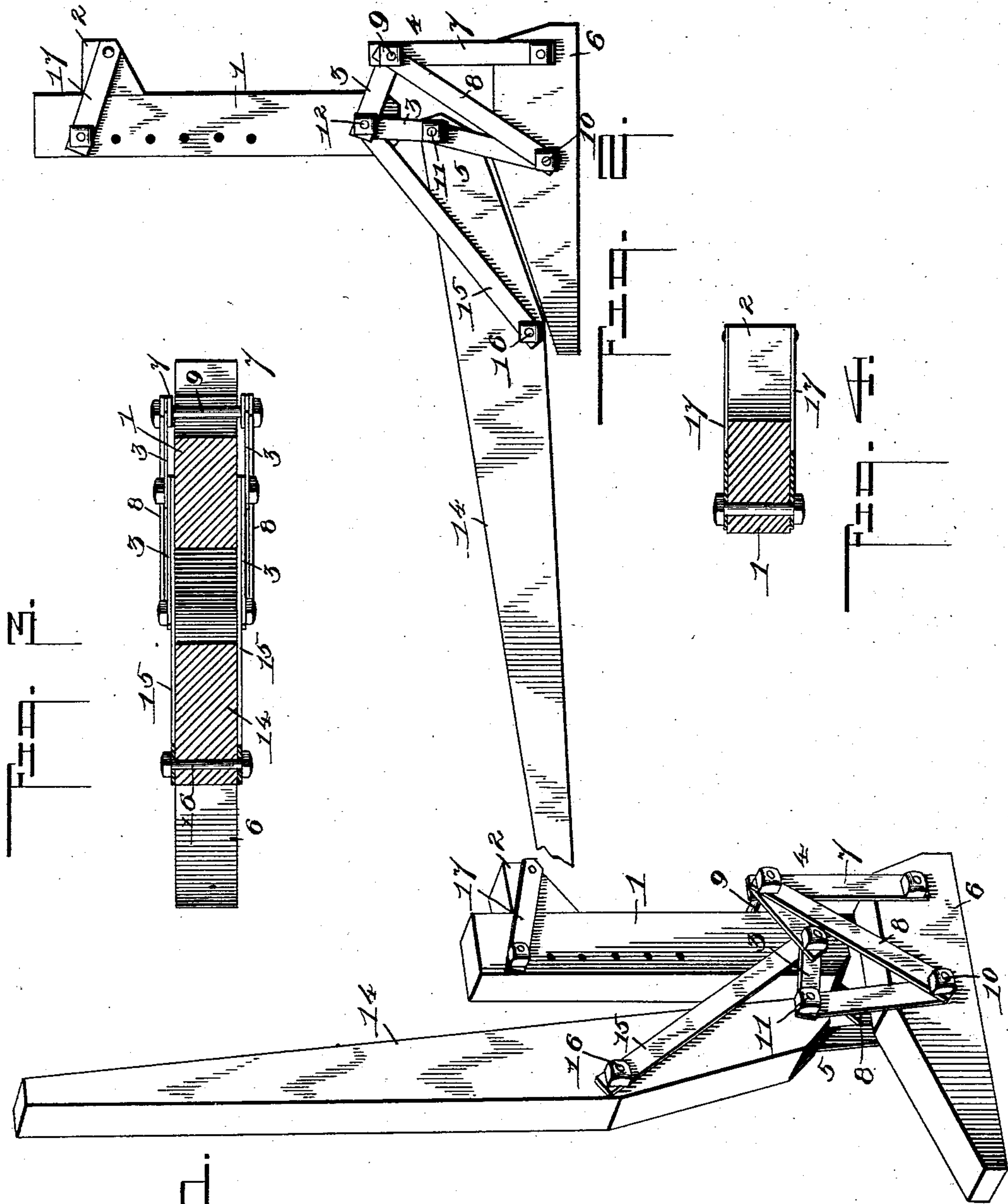


(No Model.)

W. L. HALL.  
LIFTING JACK.

No. 570,550.

Patented Nov. 3, 1896.



Inventor  
Willard L. Hall,

Witnesses

T. L. Mooker

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# UNITED STATES PATENT OFFICE.

WILLARD L. HALL, OF SPOKANE, WASHINGTON.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 570,550, dated November 3, 1896.

Application filed July 20, 1896. Serial No. 599,884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD L. HALL, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented a new and useful Lifting-Jack, of which the following is a specification.

The invention relates to improvements in lifting-jacks.

The object of the present invention is to improve the construction of lifting-jacks and to provide a simple and comparatively inexpensive one capable of ready adjustment to accommodate itself to the axles of vehicles and capable of exerting great power to enable a heavy load to be readily lifted if necessary.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a lifting-jack constructed in accordance with this invention, the parts being arranged preparatory to lifting. Fig. 2 is a side elevation of the same, the standard being elevated. Fig. 3 is a horizontal sectional view, the parts being arranged as illustrated in Fig. 1. Fig. 4 is a detail sectional view illustrating the manner of adjusting the axle-support of the standard.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a vertically-movable standard, provided near its top with an adjustable axle-supporting block 2, and connected at its bottom with the inner terminals of toggle-levers 3, which are disposed at opposite sides of the standard, and are connected at their outer ends with fixed supports 4 and movable supports 5 of a base 6. The fixed supports 4, which are disposed at opposite sides of the base 6, consist of a pair of substantially vertically-disposed bars 7, bolted at their lower ends to the base, and a pair of inclined bars 8, similarly secured at their lower terminals to the base and connected at their upper terminals with the upper ends of the bars 7 by a transverse fastening device 9, which

forms a pivot for the adjacent ends of the toggle-levers 3.

The movable support 5 consists of a pair of bars located at opposite sides of the base, and pivoted at their lower ends to the bolt 10, which secures the lower end of the inclined bars 8 to the base, and the upper terminals of the bars, which form the movable support, are connected by a transverse fastening device 11, which also forms the pivot for the adjacent ends of the toggle-levers 3.

The pivot 12, which connects the inner terminals of the toggle-levers, also passes through the lower end of the standard 1, and connects the latter with those levers.

An operating-lever 14 is fulcrumed at its lower end on the pivot or fastening device 11, and is connected with the centers of the toggle-levers by a pair of link-bars 15, located at opposite sides of the operating-lever and the standard, provided at their lower terminals with perforations for the reception of the pivot or fastening device 12, and pivoted at their upper terminals, at a point intermediate of the ends of the operating-lever, by a transverse fastening device 16. By fulcruming the operating-lever at its lower end, a short distance above the base of the jack, a lever of great length may be employed, and consequently a greater power is obtained than would be the case were it fulcrumed intermediate of its ends at the top of the lifting-jack. When the operating-lever is swung downward from the position illustrated in Fig. 1 of the accompanying drawings, the standard is moved vertically, and the bars which form the movable support 5 and the adjacent toggle-levers swing inward toward the fixed support to a position beneath the standard and operate to lock the latter in its vertical position, and when the standard is raised the operating-lever is locked in its lowered position against the ground by reason of the pivot 11 swinging inward beyond the line of the pivots 10 and 11.

The standard is provided with a vertical series of perforations, and an adjustable block is connected with the standard by a pair of arms or bars 17, which are perforated at opposite sides of the standards for the reception



of a fastening device adapted to be arranged in any one of the series of perforations to enable the adjustable block to be readily raised or lowered to accommodate the lifting-jack to the axles of the vehicle to be operated upon.

It will be seen that the lifting-jack is simple and comparatively inexpensive in construction, that the toggle-levers enable great power to be applied in lifting the standard, and that they also cooperate with the movable support to form a brace for locking the standard in its elevated position.

It will also be apparent that, as the connections between the base, the standard, and the operating-lever consist of bars, the parts of the lifting-jack may be readily assembled without employing a blacksmith or other skilled mechanic, as the bolts or fastening devices can be readily arranged in the perforations of the parts and the nuts can be easily applied, and the lifting-jack does not employ any cast-iron parts which easily break and which are expensive to repair. Furthermore, it will be seen that by fulcruming the operating-lever at its lower end adjacent to the base of the lifting-jack a lever of considerable length may be advantageously employed, thereby gaining an increased force over those levers which are fulcrumed near the top of the lifting-jack.

What I claim is—

1. In a lifting-jack, the combination of a base fixed supports at opposite sides thereof, toggle-levers located at opposite sides of the base, pivoted to the fixed supports, movable supports located at opposite sides of the base and pivotally connected with the adjacent ends of the toggle-levers, a vertically-movable standard located between the toggle-levers and connected at the inner terminals of the same, and an operating-lever fulcrumed at

its lower end on the movable supports between the adjacent ends of the toggle-levers, and connected at a point intermediate of its ends with the inner terminals of the toggle-levers, substantially as described.

2. In a lifting-jack, the combination of a base fixed and movable supports, a standard, toggle-levers connected with the fixed and movable supports and centrally connected with and carrying the standard, said movable support and the adjacent toggle-levers being arranged to swing beneath the standard to form a brace for supporting the standard in its elevated position, and an operating-lever connected with the centers of the toggle-levers, substantially as described.

3. In a lifting-jack, the combination of a base, fixed supports composed of bars located at opposite sides of the base, secured at their lower terminals to the same and connected at their upper terminals, movable supports located at opposite sides of the base and pivoted at their lower ends to the same, a vertically-movable standard, toggle-levers located at opposite sides of the base, centrally connected with the standard and pivoted to the fixed and movable supports, an operating-lever fulcrumed at its lower end at the upper terminals of the movable supports, and link-bars connected at their upper ends with the operating-lever, and at their lower terminals with the inner ends of the toggle-levers, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLARD L. HALL.

Witnesses:

D. K. McDONALD,  
E. A. WINCHESTER.