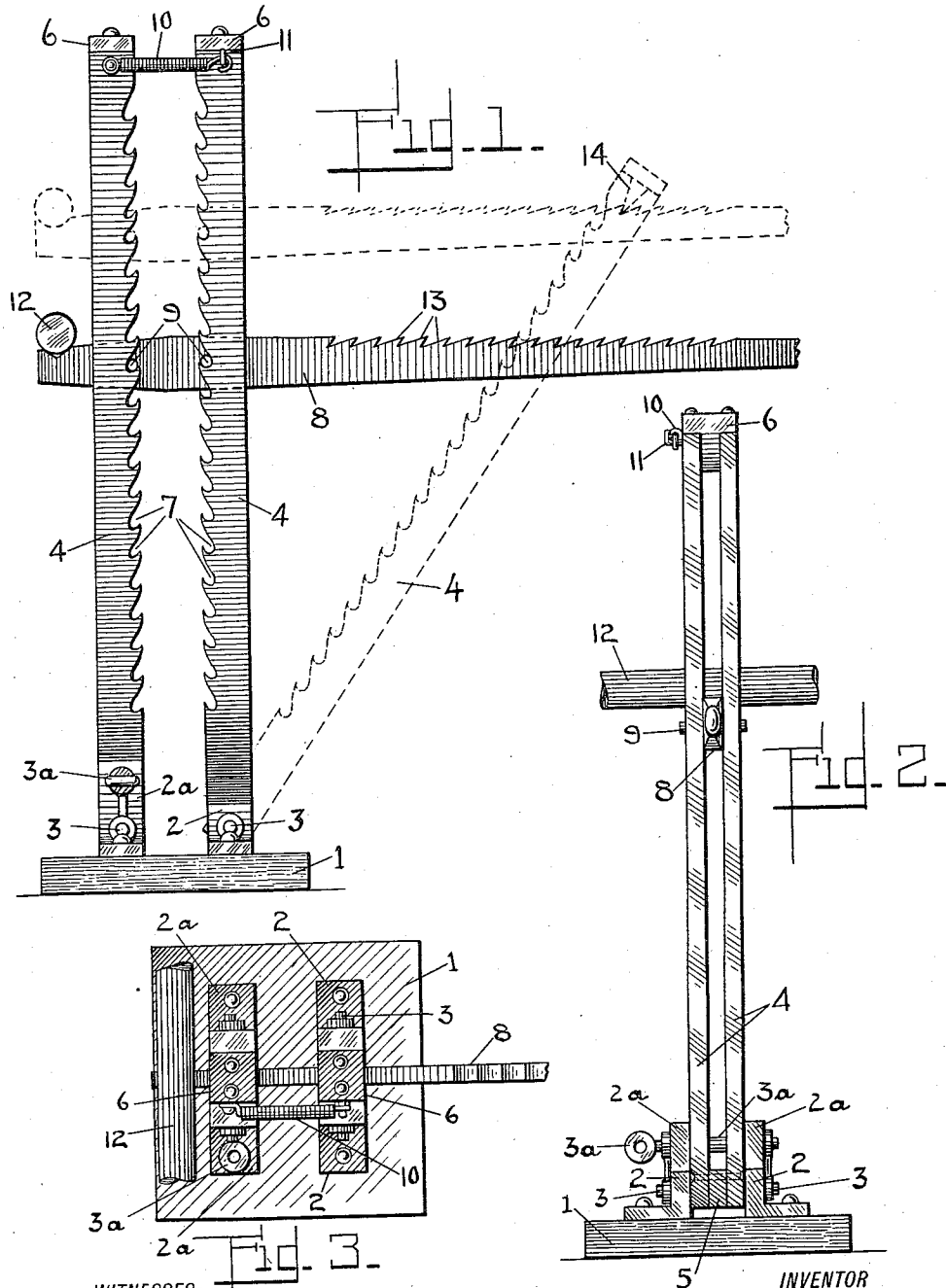


J. M. GRAVES.
LIFTING JACK.
APPLICATION FILED JUNE 28, 1912.

1,060,337.

Patented Apr. 29, 1913.



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JAMES M. GRAVES, OF BURLESON, TEXAS.

LIFTING-JACK.

1,060,337.

Specification of Letters Patent.

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Application filed June 28, 1912. Serial No. 706,325.

To all whom it may concern:

Be it known that I, JAMES M. GRAVES, citizen of the United States, residing at Burleson, in the county of Johnson and State of Texas, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification.

My invention relates to new and useful improvements in lifting jacks, and relates more particularly to lifting jacks of that class in which a vertical displacement of the load results from a corresponding vertical displacement of an operating lever, the lever being provided with vertical series of fulcrums upon which it is adjusted step by step.

The object of the invention is to provide a lifting jack of the class specified which will be provided with a novel means for holding the lever fixed in any position of vertical adjustment.

Other objects are to provide a lifting jack of maximum simplicity and efficiency, that will be strong and durable in construction, and comparatively inexpensive to manufacture.

With these and various other objects in view, my invention has relation to certain novel features of the construction and operation, an example of which is described in the following specification, and illustrated in the accompanying drawing, wherein:

Figure 1 is a view in side elevation of a lifting jack in which are embodied the novel features of the present invention, the relative positions of the parts, when a load is being either raised or lowered, being shown in full lines, and the positions occupied by the parts when the load is being held in a raised position, being shown in dotted lines. Fig. 2 is a front view of the lifting jack. Fig. 3 is a plan view of the same, the lever member being broken away.

Referring now more particularly to the drawing, wherein like reference characters designate similar parts in all the figures, the numeral 1 denotes a rectangular plate of wood or other suitable material, forming the base of the jack. Upon this base are mounted two pairs of bearings 2 and 2^a, the members of each pair being oppositely disposed, and adapted to support the extremities of a spindle 3. Upon each spindle 3 are pivotally supported the lower extremities of a pair of adjacent parallel bars 4, which normally occupy an upright position.

The bars 4 of each pair are slightly spaced and have their extremities rigidly connected, the connecting means of the lower ends of each pair being formed by a block 5 rigidly interposed between said ends, through which the correlated pin 3 is passed. A rigid connection is established at the top of said bars by a block 6 superimposed upon their upper ends. The pair of brackets 2^a are given a height somewhat greater than that of the brackets 2, adapting their upper portions to receive a removable pin 3^a, which will pass also through the correlated pair of bars 4 and hold the latter in a rigid relation to the brackets 2^a after the load has been raised to the desired height. The distance intervening between the two bars 4 will preferably be considerably greater than that existing between the bars which form each pair, as will be clearly seen by a comparison of Figs. 1 and 2. Each bar has one of its vertical edges serrated, the serrations being upwardly inclined so as to form a slight semi-cylindrical depression 7 between each pair of serrations. The serrations provided to one pair of the bars 4 are disposed oppositely to those which are provided to the other pair of bars, as is clearly shown in Fig. 1. Between the members of the two pairs of bars is projected one extremity of a normally horizontal lever 8 in which are transversely mounted two spaced pins 9, having their extremities projecting from the bar at each side a sufficient distance to permit their being received by the grooves 7. The upper extremities of the two pairs of bars are connected by a substantially horizontal coiled spring 10, tending to draw the extremities toward each other as far as permitted by the two spaced pins 9. The spacing of the pins 9 is such that the two pairs of bars are constantly held in a substantially parallel position.

The spring 10 is attached to one pair of the bars 4 by a hook and eye bolt connection indicated by the numeral 11, thus making it possible to readily disconnect the spring from said pair of bars. The object of this provision will presently be made clear. The extremity of the lever 8, which passes between the bars 4 of each pair, is inclining slightly toward the handle end of said lever. The block 6 which is superimposed upon the upper end of the pair of bars, having connection with the spring 10, as indicated at 11, has a wedge-shaped member 14 pro-

jecting downwardly between the pair of bars. When it is desired to hold the load in a certain position of adjustment, the pin 3^a is passed through the upper portion of the brackets 2^a, and through the correlated bars 4 thus preventing said bars from swinging about the correlated pivot pin 3, and holding them vertical in a fixed relation to the brackets 2^a. The hook and eye bolt, indicated at 11, are then disconnected, and the pair of bars carrying said connection, are swung to an inclined position, such that the wedge-shaped member 14 is engaged by one of the teeth of the series 13. Obviously after such an engagement has been produced, it is impossible for the lever 8 to swing about its pivotal support.

In the operation of the above described lifting jack, after the shorter projecting end portion of the lever has been disposed beneath the load 12, the handle extremity of the lever is alternately moved up and down, and during such motion, the pins 9 alternately act as pivotal supports for the lever. While one of said pins furnishes a pivotal support, the other pin is either raised or lowered the distance of one notch upon the correlated pair of bars, according as the lever is being manipulated up or down. As each pin 9 assumes a slightly higher position relative to the other pin, the two pairs of bars will be spread a slightly greater distance apart until that pin which is being raised reaches a notch just above the one which it previously occupied. The tension existing in the spring 10 will then serve to draw the upper ends of the pairs again slightly toward each other. The pairs of bars will thus oscillate slightly to and from each other as the lever 8 is subjected to a gradual vertical displacement. Owing to the fact that the load-supporting extremity of the lever 8 moves through a slight arc during its displacement, it is necessary that either the said extremity of the lever or the pin furnishing the pivotal support be shifted through a slight arc. Thus the load being either elevated or lowered, moves in a direct vertical line without being subjected to any lateral oscillation.

The invention is presented as including all such modifications and changes as properly come within the scope of the following claims.

What I claim is:

1. In a lifting jack, the combination with a pair of spaced upright bars, and a normally horizontal lever having one extremity contiguous with said bars, each bar being provided with a vertical series of fulcrums, each series being adapted to receive one of two pivotal supports carried by one end of the lever, a resilient connection between the upper ends of the bars, means pivotally supporting the lower end of one of said bars, a downwardly projecting member rigidly carried by the upper end of said bar, and a series of teeth carried by the upper edge of the lever, one of which may be engaged by said wedge member when the bar carrying the wedge member is subjected to an inclined position about its pivotal support.

2. A lifting jack comprising two spaced upright bars, having their opposite edges each provided with a series of transverse notches, a lever normally horizontal having one of its ends contiguous with the two bars, two pins carried by the lever, projecting transversely therefrom, and respectively received by the notches of the two bars, means establishing a resilient connection between the upper extremities of the two bars, means furnishing a pivotal support for the lower end of one of said bars, a downwardly projecting wedge member rigidly carried by the upper end of the last named bar, and a series of teeth carried by the upper edge of the lever adjacent to the handle extremity thereof, one of which teeth may be engaged by said wedge member when the bar carrying the wedge member is swung to an inclined position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES M. GRAVES.

Witnesses:

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