F. L. GORMLEY.

OPERATING MECHANISM FOR LIFTING JACKS.

APPLICATION FILED DEC. 26, 1908.

934,806. Patented Sept. 21, 1909.

Fig. 1.

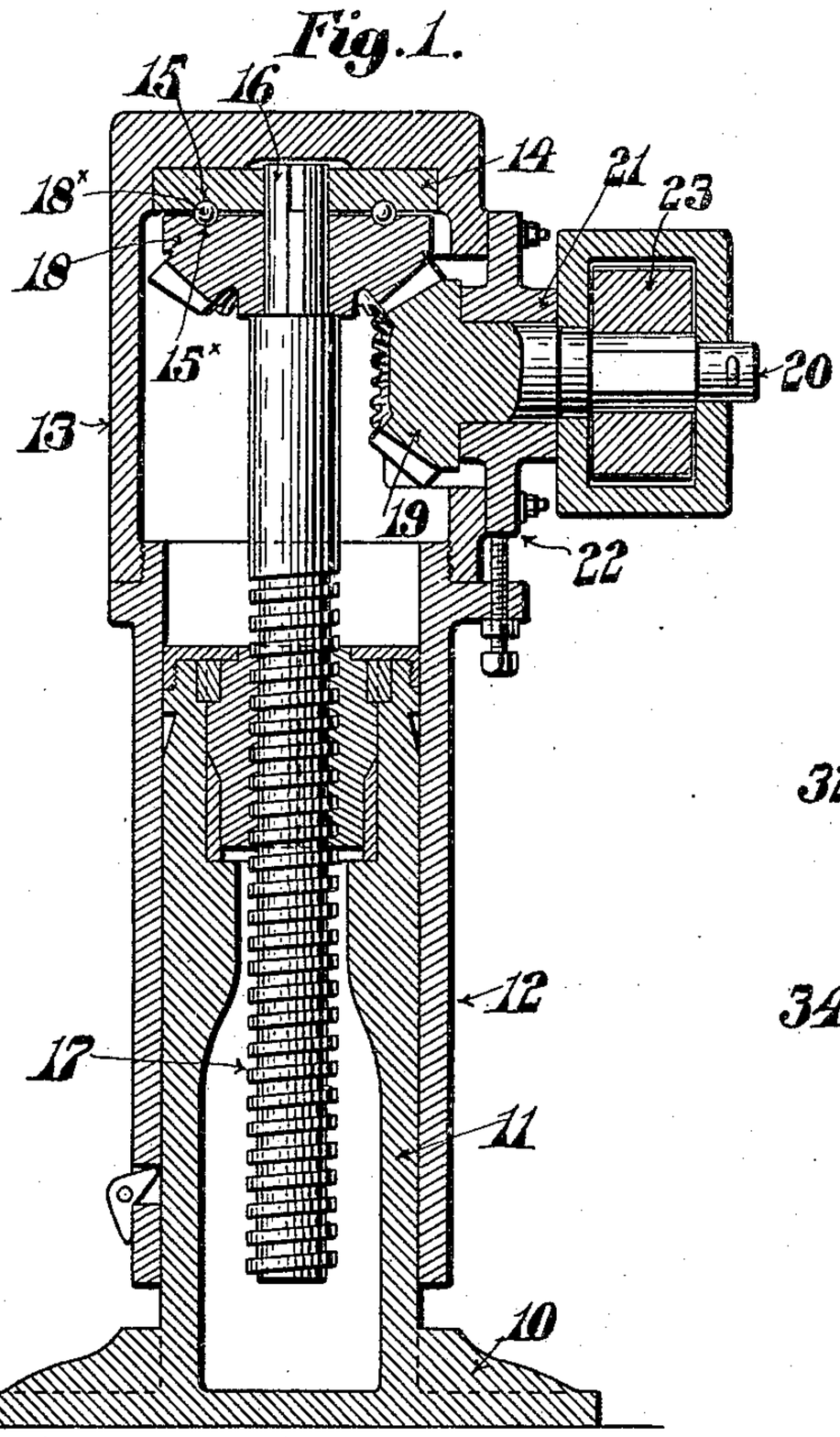


Fig. 5.

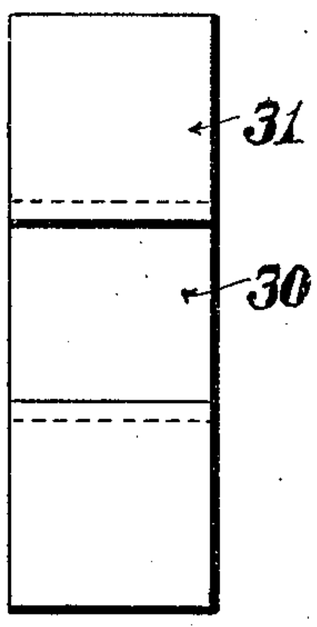


Fig. 4.

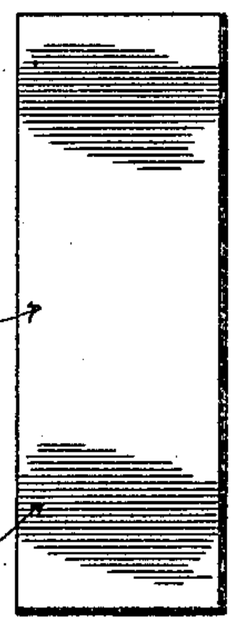


Fig. 2.

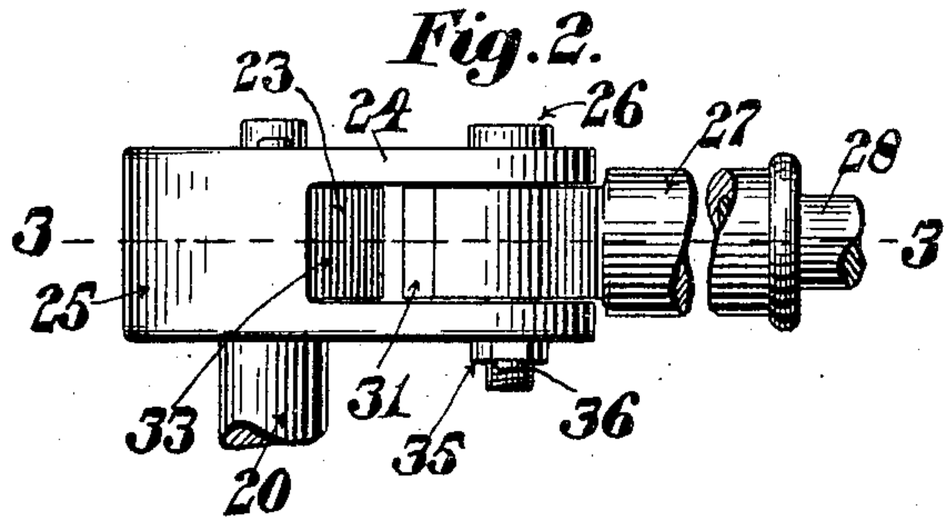
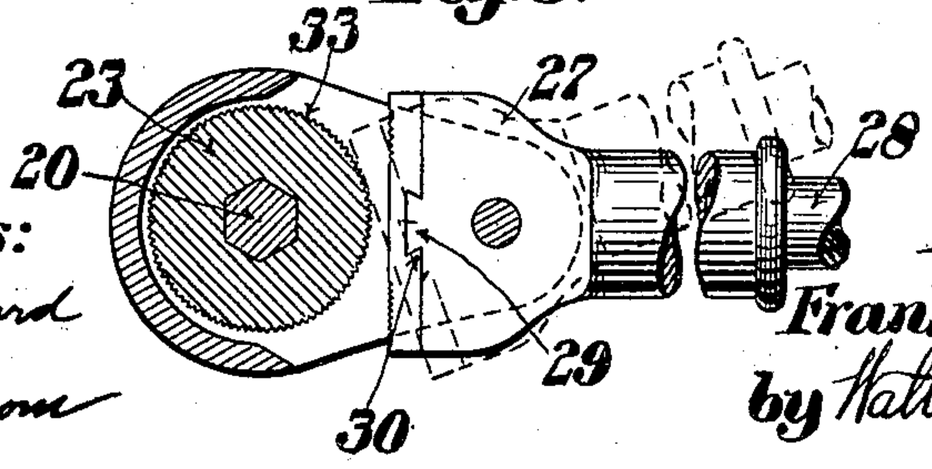


Fig. 3.



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UNITED STATES PATENT OFFICE.

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OPERATING MECHANISM FOR LIFTING-JACKS.

934,806. Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed December 26, 1908. Serial No. 469,476.

To all whom it may concern:

Be it known that I, FRANK L. GORMLEY, a citizen of the United States of America, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Operating Mechanisms for Lifting-Jacks, of which the following is a specification.

This invention relates to lifting jacks and has for its object the provision of a means for operating the lifting mechanism whereby the jack can be operated by a very slight movement of the operating lever, which it is obvious is highly desirable at times when the jack is being used in limited quarters.

The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims hereinafter given.

Of the drawings: Figure 1 represents a vertical section of a lifting jack embodying the features of this invention. Fig. 2 represents a plan of a portion of the operating lever and its connection with the stem of the lifting mechanism. Fig. 3 represents a section of the same, the cutting plane being on line 3—3 on Fig. 2. Fig. 4 represents an elevation of the removable plate of the operating lever, and Fig. 5 represents a rear view of the same showing the dovetail therein.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 represents a suitable base supporting a stationary standard 11 over the outer periphery of which is fitted a movable sleeve 12, to the upper end of which is threaded a head 13.

In the upper end of the head 13 is mounted a plate 14 provided with an annular groove 15 and a central bearing for the reduced shank 16 of the revoluble threaded member or screw 17. Keyed to the reduced shank 16 of the screw 17 is a gear 18 meshing with a gear 19 having formed thereon or secured thereto a lateral stem 20 which stem is mounted in a bearing 21 formed upon the plate 22 secured to the head 13. The gear 18 is provided with annular groove 15* corresponding to the groove 15 and in these groves 15 and 15* are placed a plurality of balls 18* to reduce the friction.

On the reduced end of the stem 20 is keyed or otherwise secured thereto a disk 23 preferably mounted between the two arms 24 of a bifurcated member 25. This bifurcated member 25 is revolubly mounted upon the stem 20 and in the outer end of the arms 24 is a pin 26 passing through a head 27 of the operating lever 28 interposed between the two arms 24. The head 27 is provided with a tenon 29 fitting into the dovetailed groove 30 of a plate 31 of soft metal. This plate 31 normally is provided with a flat face 32 but when in the operation of the lever 28 the face 32 is brought into contact with the serrations or indentations 33 on the periphery of the disk 23 which is of hardened steel and force is applied to the operating lever 28 to operate the lifting mechanism, the serrated periphery of the disk 33 will cut into the face 32 and form a series of indentations therein as shown at 34, thus insuring a firm grip by which the lever 28 may operate the lifting mechanism of the jack when in close quarters.

Whenever the face 32 of the operating lever 28 is moved into contact with the serrated periphery of the disk 33 new indentations are cut into the face 32, thereby immediately making a connection between the head and the disk to permit an immediate turning of the stem 20 and obviating any lost motion which will occur when a pawl and ratchets are used. The plate 31 will be gradually cut into by this operation and worn down so that it will be replaced by a new plate, several of these soft metal plates being provided with each jack. The tenon 29 fitting into the dovetailed groove 30 prevents any movement of the plate endwise and the arms 24 between which the plate is interposed prevents a lateral movement but as soon as the pin 26 has been removed from the arms 24 and the head 27 is then removed from between the arms 24, it is obvious that the plate 30 may be quickly replaced by another and the head 27 then returned to its normal position upon the pin 26 which is again inserted into the arms 24 and locked therein by means of the nut 35 and cotter pin 36.

It is obvious that the disk 23 might be made of soft metal and the plate 31 of hardened steel with a serrated face without altering the principles of this invention. This makes a very effective connection between the

operating lever and the lifting mechanism of a jack providing a means whereby a very slight movement of the lifting mechanism may be given even when the jack is in very limited quarters.

It is believed that the operation of the invention and its many advantages will be thoroughly apparent without any further description.

Having thus described my invention, I claim:

1. In a lifting jack, the combination with the lifting mechanism, including a lateral revoluble stem; of a disk secured thereto and provided with a serrated periphery; a bifurcated member mounted on said stem and freely movable about the axis thereof between the arms of which said serrated disk is interposed; and an operating lever pivotally mounted between said arms having a flat face of soft metal removably secured thereto adapted to engage said serrated disk when said lever is moved about its pivot.

2. In a lifting jack, the combination with the lifting mechanism, including a lateral revoluble stem; of a disk secured thereto and provided with a serrated periphery; a bifurcated member mounted on said stem and freely movable about the axis thereof between the arms of which said serrated disk is interposed; an operating lever pivotally mounted between said arms and provided with a tenon; and a dovetailed metal plate secured to said lever by said tenon.

3. In a lifting jack, the combination with the lifting mechanism, including a lateral revoluble stem; of a disk secured thereto and provided with a serrated periphery; a bifurcated member mounted on said stem and freely movable about the axis thereof between the arms of which said serrated disk is interposed; an operating member pivotally mounted between said arms; and a plate member secured thereto by a projection on one member extending into a groove formed upon the other.

4. In a lifting jack, the combination with the lifting mechanism, including a lateral revoluble stem; of a disk secured thereto and provided with a serrated periphery; a bifurcated member mounted on said stem and freely movable about the axis thereof between the arms of which said serrated disk is interposed; an operating member pivotally mounted between said arms; and a plate member secured thereto by a transverse projection on one member extending into a groove formed upon the other.

Signed by me at 4 Post Office Sq., Boston, Mass., this 21st day of December, 1908.

FRANK L. GORMLEY.

Witnesses:

EDNA C. CLEVELAND,

NATHAN C. LOMBARD.