Draftsman.

No. 861,373. PATENTED JULY 30, 1907.

G. E. LEWIS.

LIFTING JACK.

APPLICATION FILED DEC. 11, 1906.

Fig. 1.

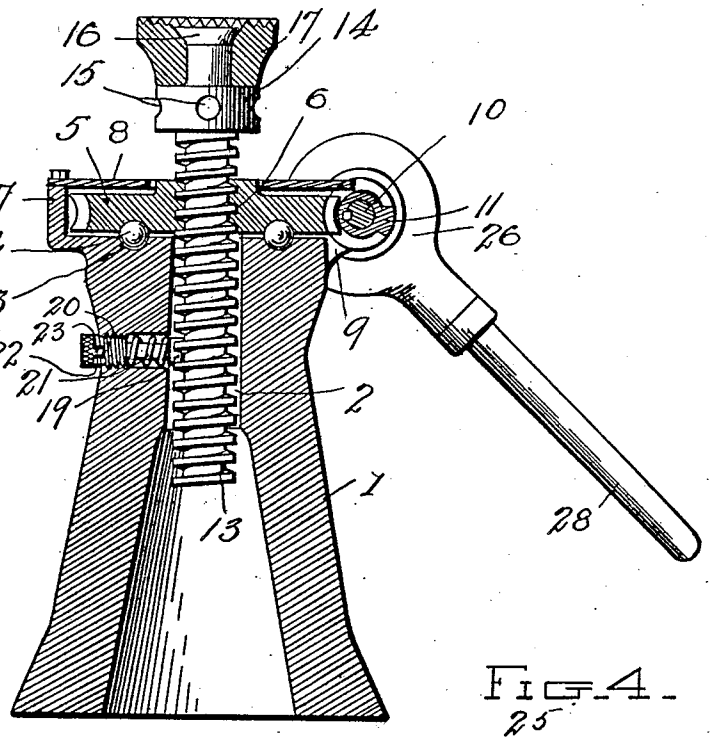


Fig. 4.

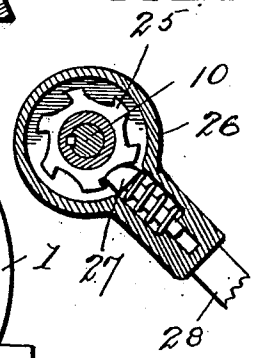


Fig. 2.

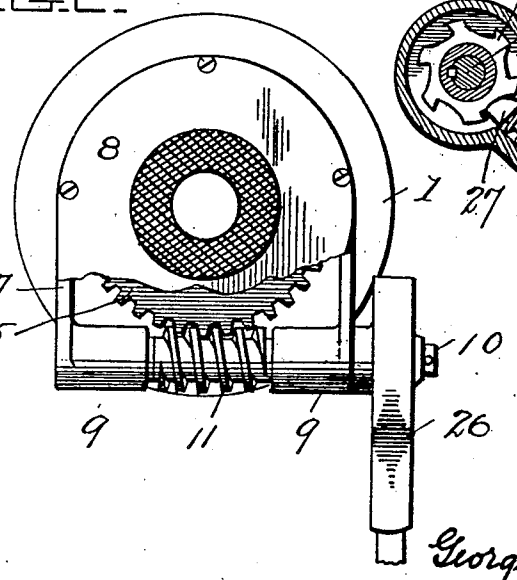
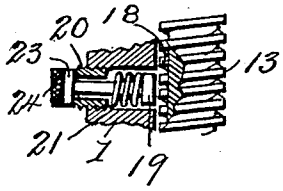


Fig. 3.



Witnesses

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GEORGE E. LEWIS, OF PLYMOUTH, PENNSYLVANIA.

LIFTING-JACK.

No. 861,373. Specification of Letters Patent. Patented July 30, 1907.

Application filed December 11, 1906. Serial No. 347,301.

To all whom it may concern:

Be it known that I, GEORGE E. LEWIS, a citizen of the United States, residing at Plymouth, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification.

This invention relates to lifting jacks, its object being to simplify and improve the construction of devices of this character, render them of great lifting power, and enable them to be easily operated manually.

With these and other objects in view, the invention consists of certain novel details of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings Figure 1 is a central vertical section through the jack; Fig. 2 is a top plan view, certain parts being broken away; Fig. 3 is a detail view of the locking pin and its head; and Fig. 4 is a view, partly in section, of the ratchet mechanism which may be used.

Referring to the figures by characters of reference 1 is a pedestal, preferably of heavy metal and hollow, there being a central passage 2 for receiving the hoisting screw hereinafter referred to. A circular race 3 is formed in the top of the pedestal to receive balls 4 on which bears a worm-wheel 5 having a central screw-threaded passage 6 therein. This wheel 5 is inclosed in a casing 7 having a removable face-plate 8, and tubular extensions 9 are formed at one side of the casing and constitute bearings for a shaft 10. This shaft carries a worm 11 which meshes with wheel 5.

A hoisting screw 13 is slidably mounted in the passage 2 in the pedestal and extends through and engages the threads within the opening 6 in wheel 5. This screw has a head 14 formed with openings 15 to receive a suitable actuating lever, and a reduced extension 15 extends from the head and has a cap 17 swiveled thereon. A longitudinally extending groove 18 is formed in screw 13 and intersects the threads thereon, said groove being adapted to receive a holding pin 19 to lock it against rotation. This holding pin is slidably mounted in a tubular extension 20 on one side of the pedestal, and a spring 21 serves to hold it normally projected into the groove 18. Notches 22 are formed in the end of extension 20 and normally receive ribs 23 formed on the head 24 of pin 19. By withdrawing these ribs from the notches the pin 19 is withdrawn from groove 18, and by partly rotating head 24 the ribs will bear against the end of extension 20 and hold the pin out of engagement with screw 13.

It is thought that the operation of the jack will be fully understood from the foregoing description. When the jack screw 13 is to be quickly raised to a desired point the bar of the screw is released from pin 19 and rotated within the wheel 5 by means of a lever, or in any other preferred manner. When the jack is properly adjusted and a heavy weight is to be lifted the screw 13 is locked by means of the pin 19 and worm 11 rotated. The wheel 5 will revolve on the screw 13 and slowly force it longitudinally, and as a result of the mechanism employed very heavy weights can be lifted. The head 14 bears on wheel 5, and as this wheel is supported by balls 4, friction is reduced to the minimum. Instead of using a crank for rotating shaft 10 suitable ratchet mechanism may be employed, and such mechanism may also be utilized instead of a lever for rotating the head of the screw. In either instance a wheel 25 is secured to the element to be rotated, and this wheel is inclosed in a casing 26 carrying a spring-pressed pawl 27. A lever 28 extends from the casing 26, and by oscillating it the desired rotation of the wheel 25 and the element to which it is secured will result.

What is claimed is:—

1. In a jack, the combination with a pedestal, a worm-wheel, and friction-reducing devices interposed between the wheel and pedestal, of a screw bearing upon and extending through and engaging the wheel, means for rotating the wheel, a spring-pressed holding pin slidably engaging the screw to hold it against rotation, and rotatable means for locking the pin out of engagement with the screw.

2. In a jack, the combination with a pedestal, a worm-wheel, and friction-reducing devices interposed between the wheel and pedestal; of a longitudinally-grooved screw bearing upon and engaging and extending through the wheel, a drive-worm engaging the worm-wheel, means for rotating said worm, and spring-pressed means for normally holding the screw against rotation.

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

GEORGE E. LEWIS.

Witnesses:

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W. ALFRED VALENTINE.