July 8, 1924. 1,500,859

C. V. WRIGHT

LIFTING JACK

Filed Aug. 4, 1922

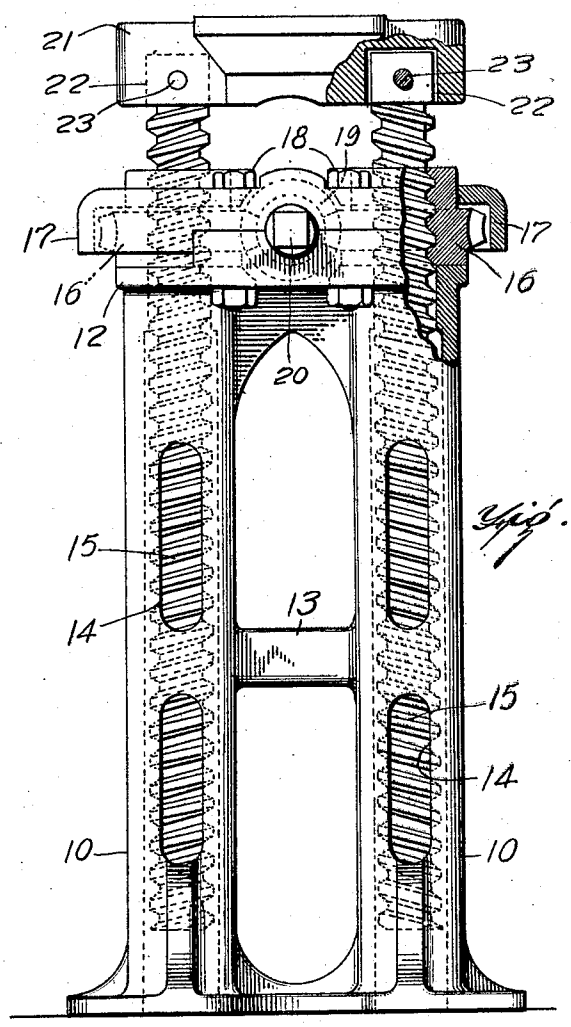


Fig. 2.

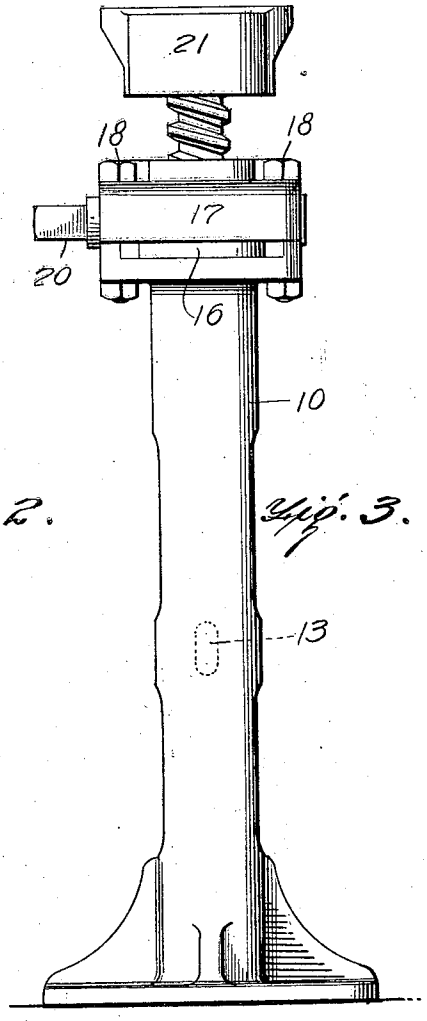


Fig. 3.

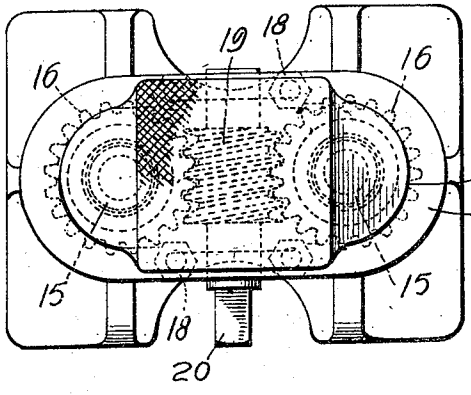


Fig. 1.

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UNITED STATES PATENT OFFICE.

CHARLES V. WRIGHT, OF TAMAQUA, PENNSYLVANIA.

LIFTING JACK.

Application filed August 4, 1922. Serial No. 579,712.

To all whom it may concern:

Be it known that I, CHARLES V. WRIGHT, residing at Tamaqua, Pennsylvania, a citizen of the United States, have invented certain new and useful Improvements in Lifting Jacks, of which the following is a specification.

My invention relates to jacks or devices for pushing and pulling, and my main object is to provide a powerful and strong jack which may be readily operated and another object is to provide such a jack that will have such form and compactness as to admit of its ready accommodation in tool kits or boxes when not in use.

In the annexed drawings;

Fig. 1 is a top plan view of a jack embodying my invention;

Fig. 2 is a side elevation thereof with parts broken away;

Fig. 3 is an end elevation.

Briefly described my jack is of the type which employs two parallel screws, for each of which there is a rotary nut by the turning of which through suitable gearing the screws are moved longitudinally to lift or push or to lower or pull.

Referring in detail to what is shown in the drawings the stationary member or frame comprises two tubular columns 10, spaced apart and connected at the bottom by a base, 11, and at the top by head, 12, and at about mid-height by a web 13, so that an open frame is provided which makes for lightness and economy of metal, and to the same end the column sides are provided with openings or slots, 14. In each column is situated a screw, 15, the threads of one screw being left-hand, the threads of the other right-hand each screw passing through a nut, 16, mounted on the frame head, 12, and the two nuts being covered and engaged on their upper sides by a single piece cap, 17, which is secured to the head, 12, by nuts and bolts, 18, so that while the nuts are free to turn they can not move axially and hence by their turning cause the screws to move longitudinally. Preferably some antifriction material is placed between the nuts, 16, and one or both bearings for the top and bottom thereof.

The peripheries of the nuts, 16, are worm wheels and both are engaged by a worm, 19, which extends horizontally between them and is journalled in opposite openings in the top of the head, 12, and the underside of the cap, 16, and one end of the worm shaft projects and has a square, 20, adapted for engagement by a crank or turning device to revolve the worm.

Upon the ends of the screws that project above or beyond the cap, 16, is mounted a cross-bar, 21, which constitutes the bearing member to engage the object to be moved by the jack and as the cross-bar connects the screws and is supported by both of them it will be seen that the load will be transmitted to and supported by both screws even though the object to be moved may not be centralized on said cross-bar. The connection between the cross-bar and the two screws is made by the insertion of the end of each screw into a slot, 22, in the underside of the crossbar and a transverse pin, 23, which passes through alining holes in cross-bar and inserted portion of the screw. This connection is not only very desirable from the standpoint of construction but it permits sufficient looseness of connection between cross-bar and screws as to allow or compensate for any differential movement of the screws due to unavoidable differences between them and their nuts and prevents likelihood of jamming which would exist with a rigid connection of cross-bar and screws.

Important advantages from the use of two separated screws in my jack are the wide bearing that is afforded and hence stability and strength and the narrow dimensions of the jack in one direction. As the screws remain at whatever position at which they may be moved by the nuts no holding detent or pawl is required and hence the mechanism is both simple or of few parts and of great supporting strength.

What I claim is:

A jack comprising two connected parallel tubular standards, screws situated in such standards, nuts for the respective screws swivelled to the standard each nut being a worm wheel, a worm lying between the wheels and a cross-bar extending between and connected with the screws that forms the bearing member for the object to be moved, a head connecting the two standards and a cap attached to such head and housing said wheels and worm and forming with the head bearings for the same.

In testimony whereof I hereunto affix my signature.

CHARLES V. WRIGHT.