

W. PAVLIK.
LIFTING JACK.

APPLICATION FILED AUG. 29, 1912.

Patented Feb. 25, 1913.

1,054,604.

FIG. 1.

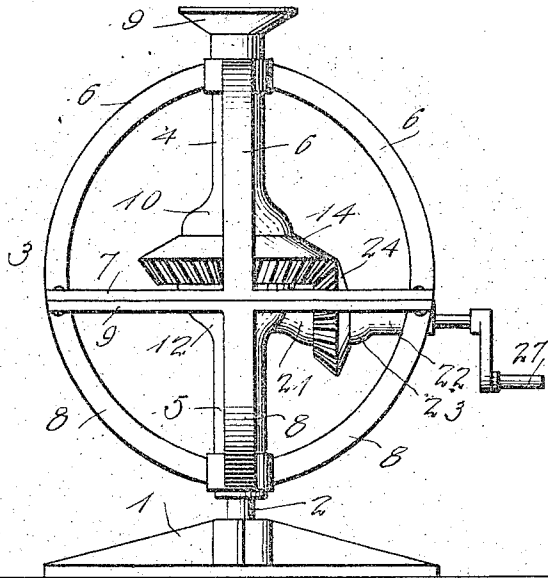


FIG. 2.

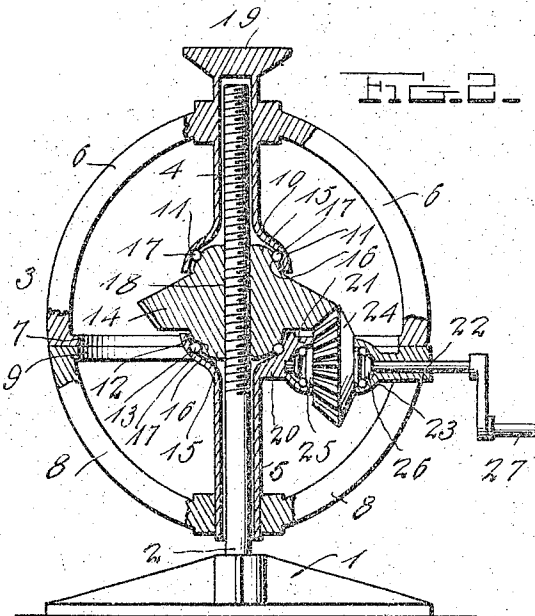
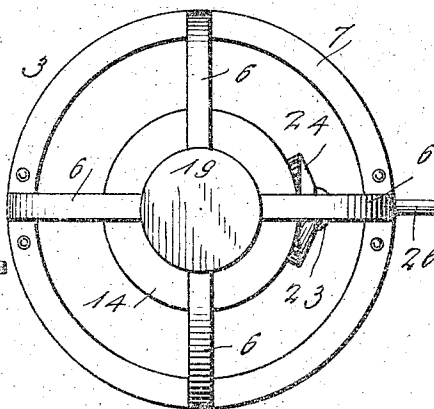


FIG. 3.



Inventor

William Pavlik

Witnesses

J. R. Pierce

C. E. Hunt

By A. B. Wilson & Co.

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM PAVLIK, OF BAYPORT, NEW YORK.

LIFTING-JACK.

1,054,604.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed August 29, 1912. Serial No. 717,800.

To all whom it may concern:

Be it known that I, WILLIAM PAVLIK, a citizen of the United States, residing at Bayport, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Lifting-Jacks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in lifting jacks and particularly to improvements in screw jacks.

One object of the invention is to provide a lifting jack having an improved construction and arrangement of operating mechanism whereby the lifting device of the jack may be quickly operated and whereby a maximum amount of power may be obtained with the least exertion on the part of the operator.

Another object is to provide a jack of this character which will be simple, strong, durable and inexpensive in construction, efficient, reliable and powerful in operation and which may be employed in any capacity where a jack of this character can be used.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a side view of my improved jack; Fig. 2 is a central vertical section thereof; Fig. 3 is a top plan view.

My improved jack comprises a base member 1 on which is an upwardly projecting screw or threaded standard 2. The standard 2 may be formed integral with the base 1 or rigidly secured thereto in any suitable manner. Adjustably mounted on the screw or threaded standard 2 is a guard supporting frame 3 which also forms the movable or lifting member of the jack. The frame 3 comprises an upper sleeve 4 and a lower sleeve 5 said sleeves being slidably engaged with the upper and lower portions of the screw or standard 2 and secured to or formed integral with the upper sleeve 4 is a series of outwardly curved downwardly extending arms 6 the lower ends of which are formed integral with or rigidly secured to a circular ring 7. Formed integral with or rigidly secured at their lower ends to the sleeve 5

are upwardly extending outwardly curved arms 8 the upper ends of which are formed integral with or rigidly secured to a lower ring 9 which is engaged with and is adapted to be bolted to the upper ring 7 as shown.

On the lower end of the upper sleeve 4 is formed a bearing cup 10 in which is arranged an annular ball race 11. On the upper end of the lower sleeve 5 is a bearing cup 12 in which is an annular ball race 13. Revolvably mounted in the bearing cups 10 and 12 of the sleeves 4 and 5 is a beveled gear 14 having on its upper and lower sides bearing cones 15 in which are arranged ball races 16 adapted to co-act with the ball races 11 and 13 in the cups 10 and 12 and to receive series of bearing balls 17 whereby an anti-frictional bearing is provided for the gear 14. The gear 14 is provided with a centrally disposed threaded bore 18 with which the screw or standard 2 has a threaded engagement so that when the gear 14 is revolved in one direction or the other said gear together with the frame 3 will be raised or lowered on the screw or standard 2. On the other end of the sleeve 4 is a head or rest 19 which is adapted to receive or to be engaged with the object to be lifted or moved by the jack.

Formed on or rigidly secured to and projecting laterally at right angles from the sleeve 5 near the upper end thereof is a bearing sleeve 20 having on its outer end a bearing cup 21. Formed on or rigidly secured to the lower ring 9 is a bearing sleeve 22 having on its inner end a bearing cup 23. Revolvably mounted between the bearing cups 21 and 23 is a beveled gear 24 which has an operative engagement with the beveled gear 14 on the screw or standard 2. On the inner side of the gear 24 is a bearing cone 25 which has a ball bearing engagement with the bearing cup 21. On the outer side of the gear 24 is a combined bearing cone and operating shaft 26 which are respectively engaged with the bearing cup 23 and sleeve 22 whereby the gear 24 is operatively supported in the frame 3 of the jack. The cone 25 has a ball bearing engagement with the cup 23 as shown. On the outer end of the shaft 26 is fixed a crank handle 27 whereby the gear 24 is revolved in one direction or the other. The gear 24 when thus operated will drive the gear 14 which having a threaded engagement with the screw or standard 2 will travel upwardly

or downwardly on said standard and by means of the ball bearing engagement between the gear 14 and the upper and lower sleeves 4 and 5 of the frame 3, will raise or lower said frame and the head or rest 9 on the upper end of the sleeve 4 thus lifting or moving the object with which the rest or head is engaged. While the gear 24 is herein shown as being engaged with the lower side of the gear 14 it is obvious that the arrangement or relative position of the gears may be changed or reversed if desired.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is:

1. In a jack of the character described, a supporting base, a screw or threaded standard fixed on said base, a frame comprising sleeves having a sliding engagement with said screw or standard, means whereby said sleeves are connected to form said frame, bearing cups on the inner end of said sleeves, a rest carried by said frame, a frame and rest operating gear having a threaded engagement with said screw and a revoluble engagement with the bearing cups on the

inner ends of said sleeves, bearings arranged on said frame, a driving gear revolubly mounted in said bearings and having an operative engagement with the frame shifting gear on said screw, and means whereby said driving gear is operated.

2. In a jack of the character described, a base, a screw fixedly mounted thereon, a gear supporting frame comprising upper and lower sleeves having a sliding engagement with said screw, bearing cups on the inner ends of said sleeves, upper and lower rings, upper and lower series of arms to connect said rings with said upper and lower sleeves, means to fasten said rings together to form said frame, a beveled gear having a threaded bore operatively engaged with said screw, bearing cones on said gear and having a ball bearing engagement with the cups on said sleeves, bearing cups arranged in said frame, a driving gear, bearing cones on the opposite side thereof and having a ball bearing engagement with the bearing cups on said frame, an operating shaft connected with one of the cones on said gear, and a crank handle fixed on said shaft whereby said driving gear is operated.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM PAVLIK.

Witness.

FRA A ROGERS,

WALTER L. SUYDON, Jr.