

(No Model.)

H. W. ROBIE.
SCREW JACK.

No. 461,643.

Patented Oct. 20, 1891.

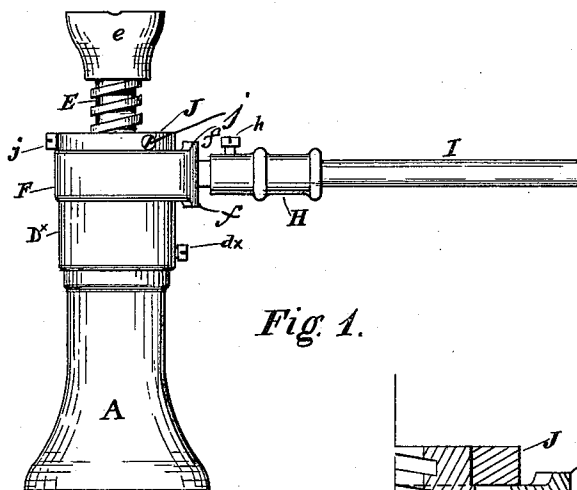


Fig. 1.

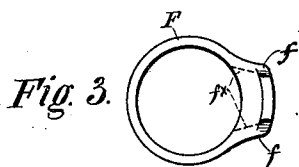


Fig. 3.

Fig. 4.

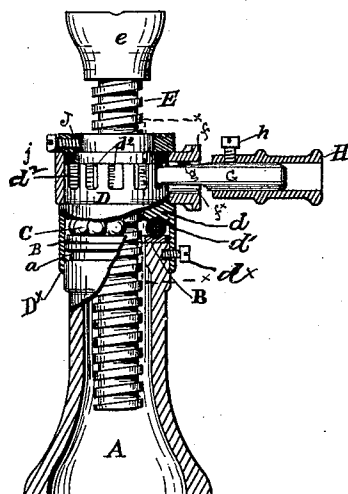
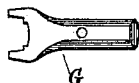


Fig. 2.

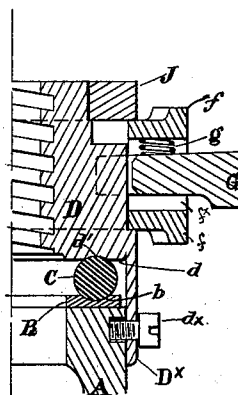


Fig. 5.

Witnesses.
Harry Bush
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Henry W. Robie
Inventor.
By his Attorney
John Polley Jr

UNITED STATES PATENT OFFICE.

HENRY W. ROBIE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOSEPH HAINES AND SAMUEL PRESTON JOHNS, BOTH OF SAME PLACE.

SCREW-JACK.

SPECIFICATION forming part of Letters Patent No. 461,643, dated October 20, 1891.

Application filed April 29, 1891. Serial No. 390,953. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. ROBIE, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Screw-Jacks, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

My invention relates to screw-jacks, the object of the invention being to provide a device of this character which shall be simple in its construction, easy of and effective in operation, strong and durable, and one by which a heavy weight may be raised with but a minimum expenditure of power, and relates particularly to that class of screw-jacks embodying a pedestal, a power-screw, and revolvable power-nut stationary against vertical movement for elevating and lowering said screw, and means for continuously rotating said nut; and it consists in the several novel features of construction and combinations of parts hereinafter fully described, and specifically set forth in the claims.

In the drawings, Figure 1 is a perspective view of a jack constructed in accordance with my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a view of the collar or yoke. Fig. 4 is a view of the double pawl; and Fig. 5 is an enlarged sectional view taken on the line xx of Fig. 2.

Corresponding parts in the several figures are denoted by the same letters of reference.

Referring to the drawings, A represents the pedestal, which is made hollow with a smooth bore and flaring at its lower end to form a wide base or support, and formed with a circumferential groove or channel a in its side below its upper end, for a purpose more fully set forth.

B is a metal ring or washer resting on the upper surface of the pedestal A, and is provided with a groove or channel b , to receive a series of anti-friction rollers or balls.

C represents a series of anti-friction rollers or balls seated in said groove b , for a purpose hereinafter set forth.

D represents a power-nut formed with a central opening, which is screw-threaded to receive the power-screw E, and is provided

with an inner shoulder d , having a circumferential groove or channel d' to receive the upper surfaces of the balls C. This nut is further provided with a downwardly-extending circumferential flange D^x , which incloses the balls C and the upper end of the pedestal. This nut is held against vertical movement by one or more screws d^x , which extend through the flange D^x and have their ends located in the groove or channel d in the side of the pedestal, whereby the nut may be easily rotated and at the same time is held against vertical movement. This power-nut D is further formed on its outer face with a circumferential series of teeth d^3 , which are located a slight distance from the upper end of the nut and adjacent to the flanged end thereof.

E represents the power-screw, which engages the threads of the power-nut and is provided at its upper end with a head or rest e , upon which the object to be raised rests.

F represents a collar or yoke, which fits upon the power-nut and incloses the teeth of the latter. This collar or yoke is formed with an extension f , having an opening f^x and adapted to receive a double pawl or detent G, preferably of the construction shown in Fig. 4, which engages the teeth of the power-nut and extends beyond the collar or yoke to the outside thereof.

g is a spiral spring or the like located between the upper surface of the pawl and the inner surface of the yoke or collar above it, and its object is to maintain the pawl in a horizontal position for engagement with the teeth of the power-nut.

Formed integral with or removably secured to the outer end of the pawl or detent is a socket-joint H, and when made separate from the pawl is preferably secured thereto by a screw h , which passes through the socket and into the pawl, and is adapted to receive a handle or lever I, by means of which the pawl or detent may be operated to revolve the nut. By this arrangement it will be seen that the nut may be revolved in either direction to raise or lower the power-screw, as desired, and that the necessity of removing the handle and replacing, as is necessary in other jacks, is avoided.

The collar or yoke F is held in place by

means of a ring J, which fits upon the upper end of the power-nut and is secured thereto by screws j, which extend through the ring and into said nut near the upper edge of the

5 same.

The ring or washer B may be dispensed with and a groove or channel formed in the upper surface of the pedestal to receive the series of anti-friction rollers or balls to the

10 same end.

I do not wish to be understood as confining myself to the exact construction of parts herein shown and described, as it is obvious that many details of construction may be

15 adopted without departing from the spirit of my invention.

Having thus described my invention, I claim—

1. In a screw-jack, the combination, with a
20 pedestal and power-screw, of a power-nut supported on the upper end of the pedestal, said nut having a downwardly-extending flange to hold it against lateral movement, and a screw extending through said flange and
25 working in a circumferential groove in the

pedestal to prevent vertical movement, a series of anti-friction rollers or balls between said pedestal and power-nut, a circumferential series of teeth on the face of said nut, a collar having an opening and inclosing said
30 teeth, a pawl or detent fitting said opening and adapted to engage said teeth, a spring between said pawl and collar, and a ring secured upon the upper end of the power-nut, as set forth.

2. In a screw-jack, the combination, with a
35 pedestal and power-screw, of a power-nut having a series of teeth on its outer face, a collar having an opening and inclosing said teeth, a pawl or detent fitting said opening and
40 adapted to engage said teeth, a spring between said pawl and collar, and a ring secured upon the upper end of the power-nut, as set forth.

In testimony whereof I have hereunto signed
45 my name this 29th day of April, A. D. 1889.

HENRY W. ROBIE.

In presence of—

JOHN JOLLEY, Jr.,
JOSEPH HAINES.