R. FORTIER.

SCREW JACK.

APPLICATION FILED FEB. 10, 1913.

1,067,598.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

FIG. 1.

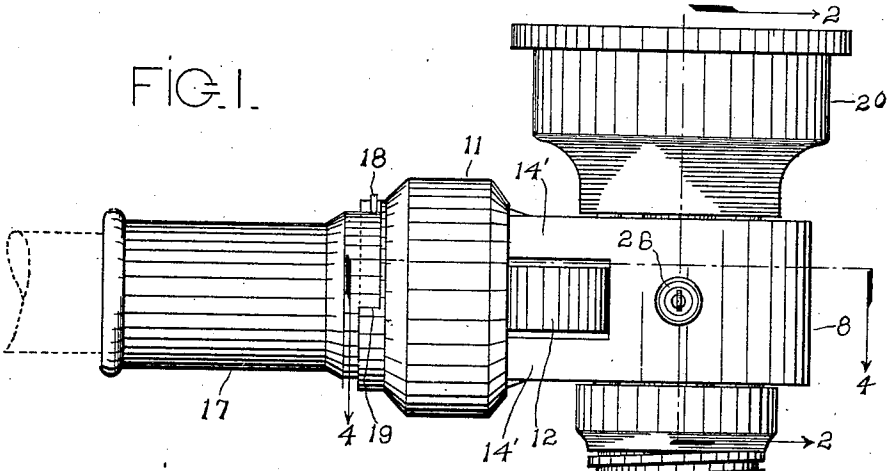


FIG. 2.

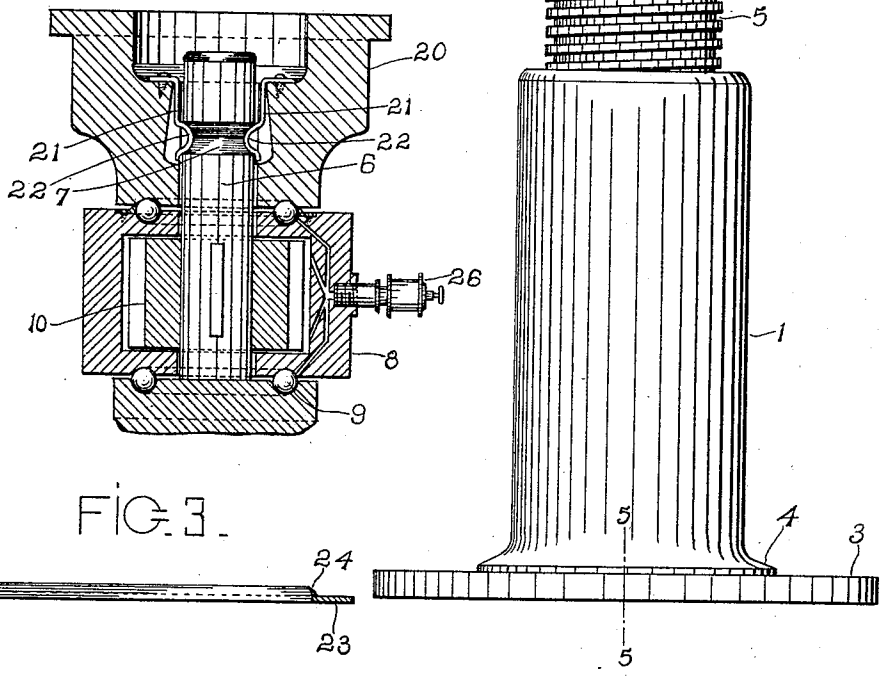


FIG. 3.

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2 SHEETS—SHEET 2.

FIG. 4.

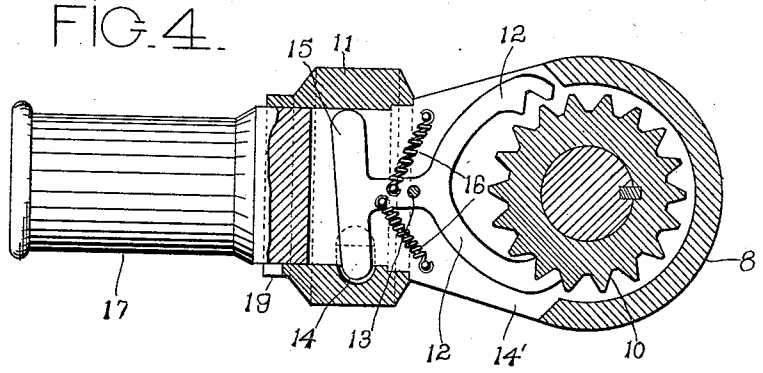


FIG. 5.

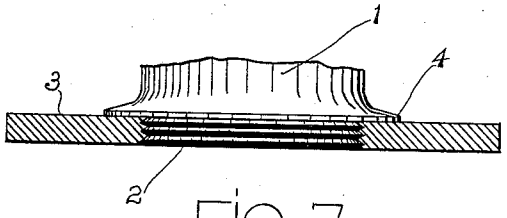


FIG. 6.

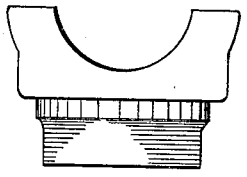


FIG. 7.

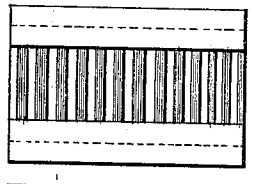


FIG. 9.

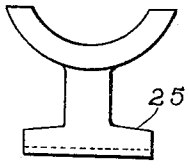
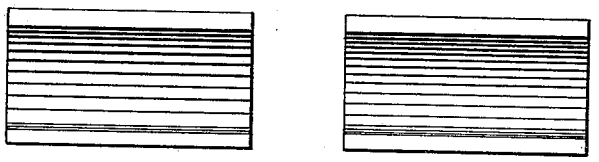


FIG. 8.



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UNITED STATES PATENT OFFICE.

ROSARIO FORTIER, OF MONTREAL, QUEBEC, CANADA.

SCREW-JACK.

1,067,598. Specification of Letters Patent. Patented July 15, 1913.

Application filed February 10, 1913. Serial No. 747,226.

To all whom it may concern:

Be it known that I, ROSARIO FORTIER, a subject of the King of Great Britain, residing at 396 Gatineau street, Côte des Neiges, Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Screw-Jacks; and I do hereby declare that the following is 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.

The invention to be hereinafter described relates to screw jacks.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a side elevation; Fig. 2 is a central, vertical, cross section on line 2—2 of Fig. 1; Fig. 3 is a central, vertical, cross section through the ball retainer; Fig. 4 is a horizontal cross section on line 4—4 of Fig. 1; Fig. 5 is a vertical cross section on line 5—5 of Fig. 1; Fig. 6 is a side elevation of a modified jack head; Fig. 7 is a top plan view of a second modification of jack head; Fig. 8 is a top plan view of a pair of supports adapted to be used with the jack head of Fig. 7; and Fig. 9 is an end view of one of the supports of Fig. 8.

The main objects of the invention are to provide a simple, efficient, economical, durable, and compact screw jack which may be operated in either direction without changing the direction of swing of the handle.

Referring to the drawings in detail, 1 indicates a hollow standard detachably connected by a reduced screw threaded extension 2 to a base plate 3, a flange 4 formed on the lower part of the standard, engaging the base plate and acting as a stop or limit. This standard is internally screw threaded to coöperate with the screw threads of a pedestal 5 which terminates in a reduced cylindrical post 6 having an annular groove 7, for a purpose to be later disclosed. A wide collar 8 is mounted to revolve freely about the post 6 and rests upon the shoulder formed by reducing the pedestal 5 to the diameter of the post 6. Suitable ball bearings 9 or like antifriction devices are interposed between the collar and shoulder, cooperating ball races being provided in these parts to receive the bearings. This collar is chambered out to receive a ratchet wheel 10 which is keyed to the post 6. One side of the collar is extended as parallel upper and lower horizontal plates 14′ on the outer ends of which is journaled a socket 11 adapted to receive a suitable handle. Pawl arms 12 of a double acting pawl which coöperates with the ratchet wheel 10 have free swing between these plates. The pawl is fulcrumed at 13. The inner wall of the socket 11 is provided with a semicircumferential groove 14 adapted to receive either of the branches of the T head 15 of the double acting pawl. The interior diameter of the socket 11, plus the depth of the groove 14, is slightly greater than the length of the T head, to permit free escapement of the operative arm 12 as the handle is swung back for the next hold. Oppositely acting coil springs 16 draw the head 15 into the groove 14. Consequently, in order to rock the pawl so as to disengage one arm 12 and engage the other, it is only necessary to rotate the socket 11 so that the groove 14 will receive that branch of the head 15 corresponding to the pawl arm desired to be engaged. For this purpose, the end of the handle 17 or the ferrule thereon is provided with a pin 18 adapted to engage either of two shoulders 19 on the outer end of the socket. Thus, a simple partial rotation of the handle will effect such a shifting of the pawl arms 12 as to free the engaged one and engage the freed one. Thus the jack may be operated in either direction without changing the direction of swing of the handle, all as will be evident on reference to Fig. 4.

To the top of the post 6 is removably attached a head 20 of any desired shape or construction, according to the use to which the jack is to be put. This head is provided with a vertical bore adapted to receive the post 6 and having its upper part enlarged to permit the free play of leaf springs 21 having offset curved portions 22 adapted to snap into the groove 7, and yieldingly hold the head on the post. The lower end of the head rests upon the upper face of the collar 8, ball bearings or other suitable anti-

friction devices being interposed and seated in coöperating ball races formed in these parts. A ball retainer in the form of a ring 23 with upwardly directed concave ball engaging flange 24 is provided to prevent the balls from slipping out of the lower race. Instead of the head shown in Fig. 1, either the head shown in Fig. 6 or Fig. 7 may be used. The connection to the post 6 is the same.

The head shown in Fig. 7 is formed as a channel with a serrated or toothed bottom adapted to receive the T-shaped base 25 of the support shown in Figs. 8 and 9. The base of the T is serrated to coöperate with the serrations of the head to hold it at various points. By such an arrangement, a single head (Fig. 7) of considerable length may receive several supports like those of Figs. 8 and 9, arranged at intervals, as indicated in Fig. 8. This, of course, gives a very extended bearing surface. For lubricating purposes, an oil cup 26 is connected to the collar 8 and communicates with suitable oil supply ducts therein, leading to the ball races and to the interior of the chamber containing the ratchet wheel 10. The connection between the head 20 and post 6 permits the post to rotate freely relatively to the head.

It is thought that the construction, operation, and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

In a device of the character described, a pedestal, a post formed in continuation thereof and provided with a groove, a head adapted to fit on said post, and springs carried by said head and adapted to snap into said groove.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ROSARIO FORTIER.

Witnesses:
T. MYNARD,
HENRY H. BABCOCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."