March 10, 1931. E. L. WILSON 1,795,630

SCREW JACK

Filed April 24, 1928

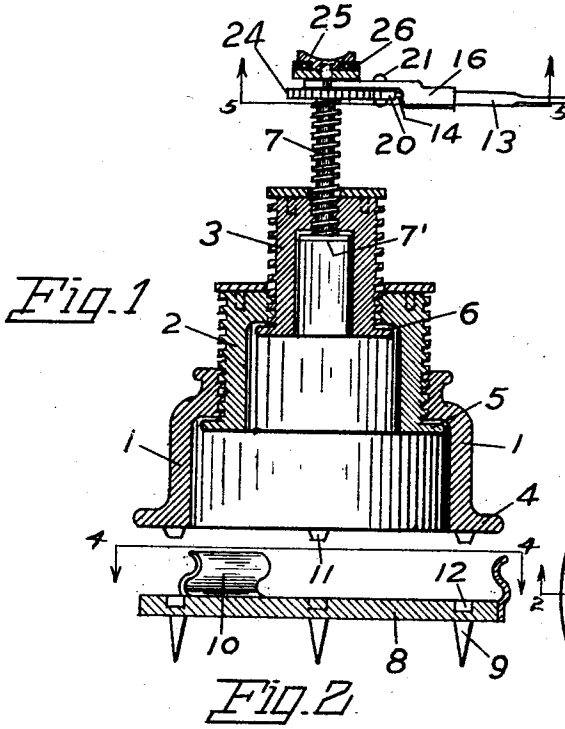

Fig. 1

Fig. 2

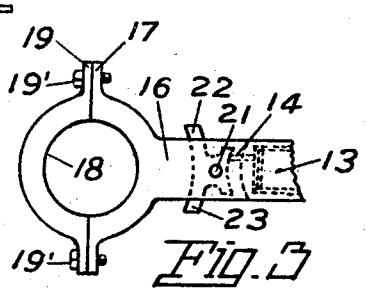

Fig. 3

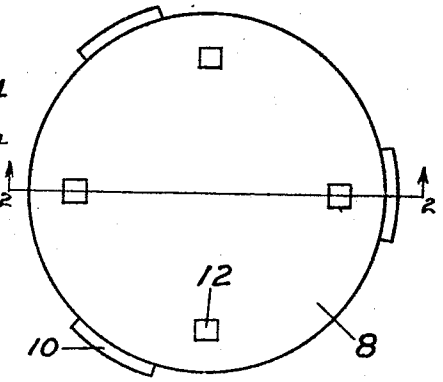

Fig. 4

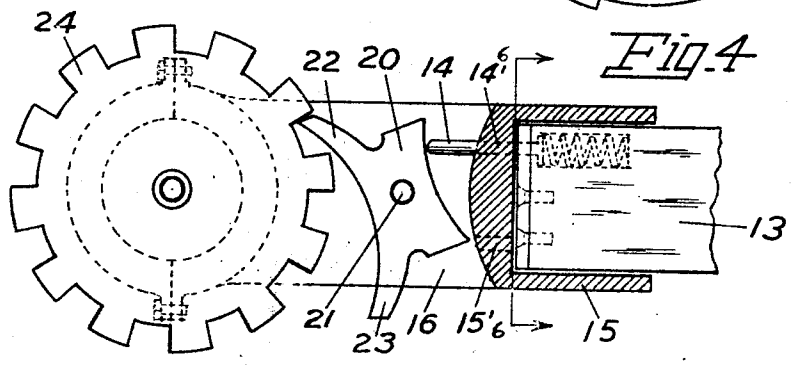

Fig. 5

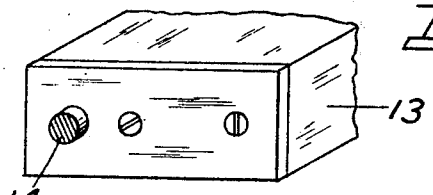

Fig 6

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Patented Mar. 10, 1931 1,795,630

UNITED STATES PATENT OFFICE

EARL L. WILSON, OF SPOKANE, WASHINGTON, ASSIGNOR OF ONE-FOURTH TO RAYMOND M. RAMSEY, OF SPOKANE, WASHINGTON, AND ONE-HALF TO LILLIAN D. LANG, OF KELLOGG, IDAHO.

SCREW JACK

Application filed April 24, 1928. Serial No. 272,401.

My present invention relates to an improved screw jack of the type usually employed in connection with the lifting of automobiles, but it will be understood, of course, that the jack of my invention may be utilized for many different purposes and in various ways. In carrying out my invention I utilize a series of telescopic screw threaded sections that may be compactly arranged in the hollow base or housing of the jack when the jack is not in use, or when only a small space is available in which the jack is to be used. The telescopic screw threaded sections may be successively turned for the purpose of extending the height of the jack, and means are provided for operating the screw jack as will be described.

The invention consists in certain novel combinations and arrangements of parts as will hereinafter be more fully set forth and claimed.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged according to the best mode I have so far devised for the practical application of the principles of my invention.

Figure 1 is a vertical sectional view of the jack in extended position. Figure 2 is a transverse sectional view of a base plate for use with the jack as at line 2, 2, of Figure 4. Figure 3 is a top plan view of a part of the operating lever as at line 5, 5, of Figure 1. Figure 4 is a top plan view of the base plate as at line 4, 4. Figure 5 is an enlarged detail bottom plan view partly in section showing the ratchet mechanism. Figure 6 is a perspective view showing the end of the operating lever as at line 6, 6, of Figure 5.

In the preferred form of my invention as illustrated in the drawings, I use a hollow base or cylindrical housing 1, and an intermediate section 2, which is threaded into the housing 1 and fashioned with both external and internal threads, and a third section 3, which is provided with external threads, engaged with the intermediate section. The hollow base or housing 1 is fashioned with an external annular flange 4, the intermediate section has an external annular retaining flange 5 within the hollow base, and the screw section 3 has a retaining annular external flange 6 within the intermediate section 2 as indicated in Figure 1. A screw bar 7 is threaded in the upper end of the top section 3 and provided with a retaining head 7′. It will be apparent that the screw bar and the screw sections 3 and 2 may be compactly stored within the hollow base or housing 1 when these parts are properly turned to screw them home.

A base plate 8 in the form of a circular disk is provided for use with the housing 1 and this plate is fashioned with studs 9 that will penetrate soft earth or other soft material to anchor the plate as a support for the jack when such base plate is required. The base plate is readily detachable from the housing 1 and for this purpose it is fashioned with a number of spring clips or flanges 10 adapted to slip over the annular flange 4 of the housing 1 and retain the base plate in position. To prevent relative rotary movement between the housing 1 and the base plate, the housing is provided with a number of lugs 11 on its lower edge and these lugs are adapted to fit into sockets 12 in the upper face of the base plate. When the base plate is not used these lugs 11 on the housing provide anchoring means for the housing or base of the jack.

The several sections of the jack may be screwed one within the other by operation of the lever 13 that is arranged in horizontal position and provided at one end with a spring pressed pin 14 projecting therefrom. The lever is preferably angular in cross section and is detachably fitted into a socket 15 of the ratchet arm 16. The lever is adjustable so that the pin 14 may be fitted into either of the openings 14′ or 15′ in the base of the socket 15. The operating lever is fashioned with a sectional head to fit about the upper end of the screw bar 7 and this head includes flanges 17 on the ratchet arm, semi-circular section 18 having flanges 19 and the bolts 19′ in the flanges 17 and 19 for forming the parts into a rigid, open head that fits loosely around the upper end of the screw 7.

The ratchet arm carries a double ratchet

20 which is pivoted in the arm at 21 and this ratchet has opposed pawls 22 and 23 that are adapted for alternate use to co-act with the teeth of the ratchet wheel 24. The ratchet wheel 24 is secured to the screw 7 and rotates with the screw when the latter is actuated by the oscillating movement of the operating lever for raising or lowering the jack.

It will be apparent that one pawl 22 co-acts with the ratchet wheel 24 for lowering the jack, while the pawl 23 may be used with the ratchet 24 for raising the jack. When the movement of the jack is to be reversed, the lever 13 with its pin 14 is withdrawn from the socket 15, the ratchet 20 is turned on its pivot, and then the lever is turned through an angle of 180 degrees on its longitudinal axis and inserted in the socket so that the pin 14 will co-act with the ratchet 20 at a side opposite to the side previously engaged.

On the upper end of the screw bar a bearing head 25 is loosely arranged, and preferably ball bearings 26 are interposed between this bearing head and the ratchet head of the ratchet arm.

From the above description taken in connection with my drawings it will be apparent that I have provided a powerful, strong, and sturdy screw jack which may be manipulated with facility and which is capable of lifting heavy loads with expenditure of a minimum of power.

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

The combination with a telescopic extensible jack having a lower annular flange and anchoring lugs on its base, of a base plate having spring clips projecting above its lateral edge for engaging said flange and sockets in its upper face for co-acting with said lugs.

In testimony whereof I affix my signature.

EARL L. WILSON.