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TRANSPORTING JACK

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Fig. 1.

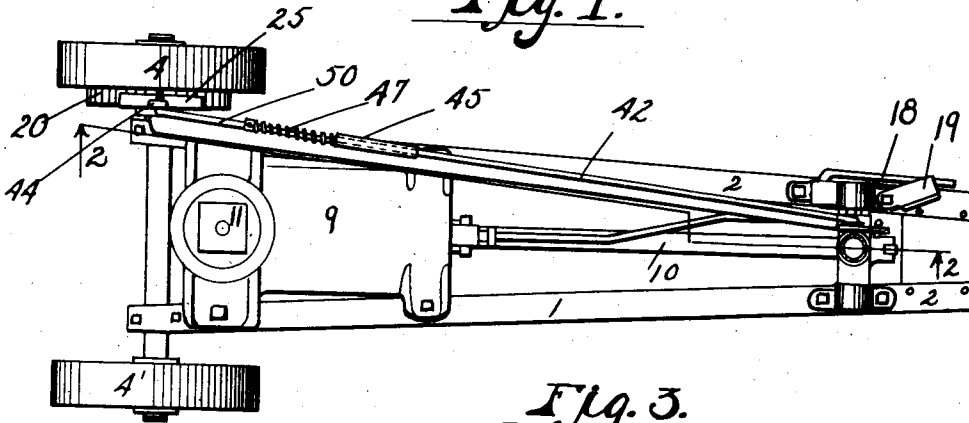


Fig. 3.

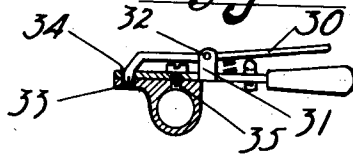


Fig. 4.

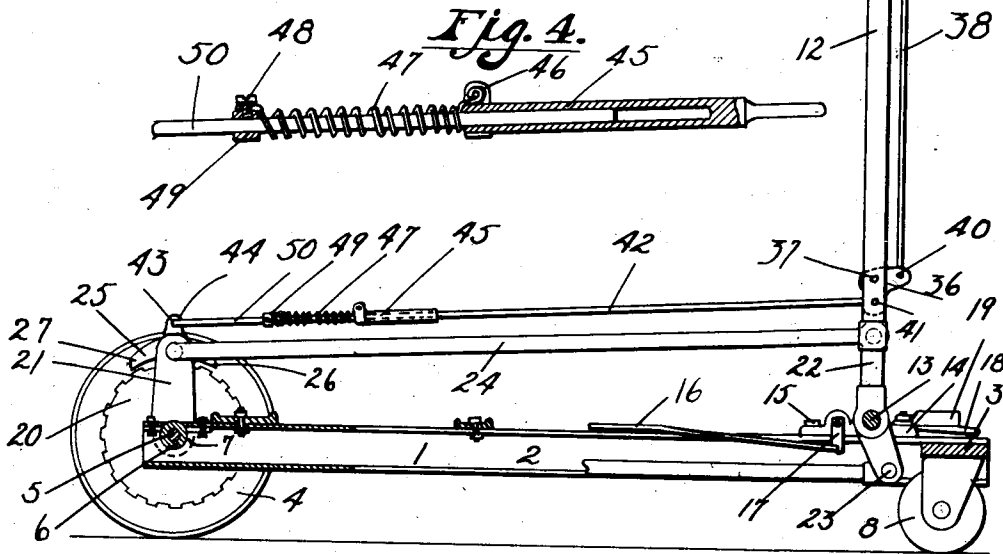


Fig. 2.

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TRANSPORTING JACK.

Application filed August 14, 1923. Serial No. 657,339.

My present invention being what is referred to as a "transporting jack", it is a primary object of this invention to provide a wheeled jack, which may be such a jack as is currently used in the lifting and shifting of automobiles, not only with usual or preferred means for elevating a load but also with means for effectively imparting motion directly to one or more of its ground wheels, in such manner as to move the jack backward or forward or in any desired direction.

It is a further object of this invention to equip a jack, such as a three-wheeled jack provided with a substantially horizontal frame and a handle adapted to serve alternatively as a tongue or as an operating lever for elevating a load, with means enabling such handle to serve additionally for imparting a slow but positive and powerful step-by-step motion to one or more of its ground wheels, thereby adapting the same to be used in the advancing or the backing or the turning of a load too heavy to be conveniently manipulated by a mere direct pulling or pushing upon the mentioned handle or tongue.

Other objects of my invention will appear from the following description of a preferred embodiment thereof, and from the appended claims, taken in connection with the accompanying drawings, in which

Fig. 1 is a plan view of one form of jack embodying my invention, this specific jack comprising hydraulic means for the elevation of a load.

Fig. 2 is a sectional elevation on line 2—2 of Fig. 1.

Fig. 3 is a detail view on the line 3—3 of Fig. 2.

Fig. 4 is a detail view of a resiliently extensible control link hereinafter referred to.

Referring in detail to that specific embodiment of my invention which I have chosen for illustration, 1 may be a frame, shown as comprising convergent I-bars 2 and a connecting plate 3, the rear end of the frame being provided with a pair of ground wheels 4, 4' whose axle 5 is shown as extending through a fixed sleeve 6, which may be secured by brackets 7, or the like, to the rear end of the respective I-bars, the forward end of the frame 1 being preferably supported by a caster 8, in such manner as

to facilitate the turning of the jack in any desired direction.

A jack provided with a frame and ground wheels of the character referred to, or a jack of any equivalent construction, may be provided with elevating means of any desired or suitable type, such as a hydraulic elevating means comprising a cylinder 9, within which may be operated a piston secured to one end of a piston rod 10, the mentioned cylinder being provided with valves of any known or preferred construction and with a lifting plate 11, to which motion may be imparted in a known way, whenever the rod 10 is suitably reciprocated, as by means of a handle or lever 12, shown as pivoted on a transverse shaft 13, secured in any suitable way, as by brackets 14, shown as bolted at 15 to the respective I-bars 2, it being understood that the cylinder 9 is provided with suitable valves and suitable control means, which latter may comprise the bent rod 16, extending from said cylinder to a crank 17 having an operating handle 18, this handle being preferably adjustable to two or more positions and provided with locking means such as the clip 19, adapted to be swung into the position best shown in Fig. 1 and thereby lock the parts in such relative positions as to retain a load in its elevated position while permitting the handle or reciprocable lever 12 to be freely swung into a horizontal or any other desired position.

It is to be understood that the valves provided in the cylinder 9 and operated by the bent rod 16 enable the piston within the hydraulic jack to be idly reciprocated, so that when the handle 12 is swung forwardly, the piston is driven or pushed by the rod 10 to its rearmost position within the cylinder 9, enabling the handle 12 to be swung to a position approaching the horizontal so that it may be used as a tongue for withdrawing the complete device.

Coming now to the strictly novel features of my lifting and transporting jack, I provide upon one or more of the ground wheels 4, 4', or suitably connected therewith, a toothed wheel 20, this toothed wheel being hereinafter referred to as a ratchet wheel, and I associate therewith any suitable and powerful means for imparting motion, such as a step-by-step motion, thereto, my pre-

ferred means for this purpose being a parallel link motion comprising an upstanding link 21, shown as pivoted concentrically with the rear axle, and a link 22 shown as constituting a part of the handle 12, this handle being pivoted at 23 to the main frame 1, and the links 21 and 22 being secured together by means such as the connecting rod 24. In order that the reciprocation of the handle 12 may be effective to impart a step-by-step movement to the ratchet wheel 20, and thereby to the ground wheel 4, which may be integral with said ratchet wheel, I may employ any suitable means for transmitting motion from the connecting rod 24 to the said ratchet wheel, and my preferred means for this purpose comprises a double or reversible pawl 25 shown as pivoted to the link 21 by means of a wrist pin which may be integral with said connecting rod, the pawl 25 being adapted to assume either the intermediate or neutral position best shown in Fig. 2, or to contact at its end 26 in such manner as to advance a jack of the character described, or to contact at 27 in such manner as to cause said jack to move backward.

In order to control the pawl 25, any suitable means may be provided, and I have suggested the employment, for this purpose, of a small hand lever 28, pivoted at 29 to the handle 12 and provided with a releasing or setting means comprising a subsidiary lever 30, pivoted thereon by means of a bracket 31 and a pin 32, the inner end 33 of the said subsidiary lever being adapted to engage any one of three apertures 34, in a plate upon which the lever 28 is mounted by means such as a pivot screw 35, a bell crank lever 36 being shown as fulcrumed at 37, on the handle 12 and as connected to the mentioned hand lever by means of a rod 38 pivotally connected at 39 to the mentioned hand lever and pivotally connected at 40 to one arm of the bell crank lever 36, the other arm of this bell crank lever being shown as pivoted at 41 to a resiliently extensible control link 42, the remote end of which is in turn pivotally connected at 43 to an upstanding lug or arm 44, which may be integral with the reversible pawl 25; and in order to bring one or the other of the ends of this mentioned pawl into suitable resilient contact with the ratchet wheel 20, the hand lever 28 being suitably positioned to effect the desired movement as above described, I provide, in the extensible link 42, a resilient connection preferably in the form of a sleeve 45 carrying a lug 46 to which is secured a spring 47, whose remote end may be retained by means such as the set screw 48, shown as extending through and determining the position of a collar 49, the rod 50 being adapted to extend through said spring and slide within the mentioned sleeve 45, in such manner as to permit of a

rotative movement of the ratchet wheel 20 in a desired direction relatively to the pawl 25.

Although I have herein mentioned, for purposes of illustration, an hydraulic jack, whose specific operative and control mechanism are known and immaterial to my present invention, it should be understood that other known or preferred types of jack may be used in connection with the described novel features, or their equivalent, to constitute alternative embodiments of my invention. Similarly, although I have described in detail one specific means of imparting motion to one ground wheel, it being ordinarily unnecessary to provide positive means for imparting motion to more than one of these wheels, and although I have described only one specific means for changing the direction of rotation of a ground wheel, it should be understood not only that various features of my invention might be independently employed but also that various modifications might be made without departure from the spirit and scope of my invention, as the same is indicated above and in the following claims, such details, as, for example, the level at which my control means are positioned relatively to the handle 12, and the specific character of the resilient means permitting movement of the pawl 25, being comparatively immaterial.

What I claim is:

1. A jack comprising a frame mounted upon ground wheels, a lifting element mounted upon said frame, a handle pivoted upon said frame, a rod connecting said handle to said lifting element whereby said lifting element may be operated by said handle, a ratchet wheel mounted upon one of said ground wheels, a link pivoted adjacent said ratchet wheel, a connecting rod connecting said link to said handle whereby said link may be oscillated by said handle, and a pawl carried by said link engageable upon said ratchet wheel.

2. A jack comprising a frame mounted upon ground wheels, a lifting element mounted upon said frame, a handle pivoted upon said frame, a rod connecting said handle to said lifting element whereby said lifting element may be operated by said handle, a ratchet wheel mounted upon one of said ground wheels, a link pivoted adjacent said ratchet wheel, a connecting rod connecting said link to said handle whereby said link may be oscillated by said handle, a pawl carried by said link engageable upon said ratchet wheel, and means for holding said pawl in disengaged position with respect to said ratchet wheel.

In testimony whereof I have signed my name to this specification.

THOROLD C. ROWELL.