Dec. 28, 1926. 1,612,446

N. G. LARSON

JACK HANDLE

Filed June 12, 1925

Fig. 1.

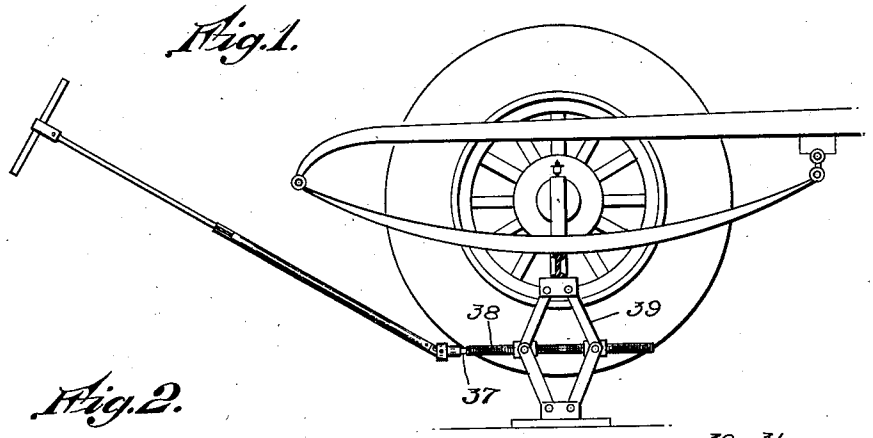


Fig. 2.

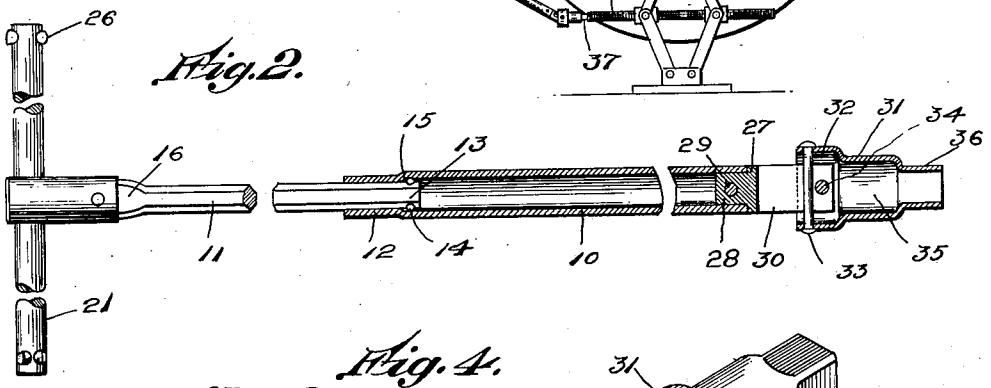


Fig. 4.

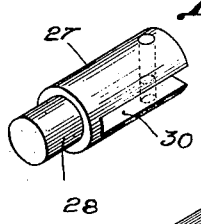


Fig. 3.

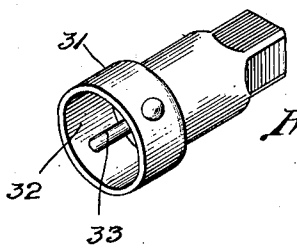


Fig. 6.

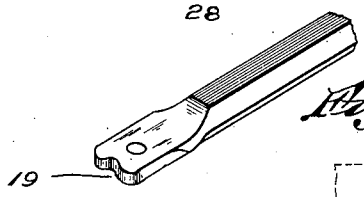


Fig. 5.

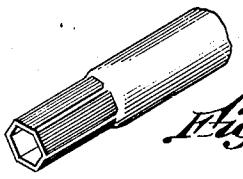


Fig. 7.

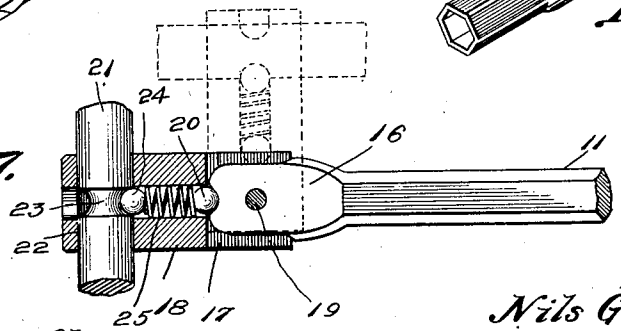
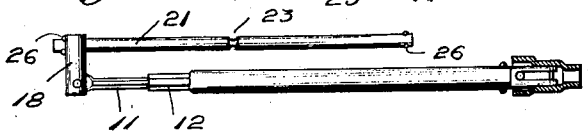


Fig. 8.



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UNITED STATES PATENT OFFICE.

NILS G. LARSON, OF ATTLEBORO, MASSACHUSETTS.

JACK HANDLE.

Application filed June 12, 1925. Serial No. 36,740.

This invention relates to an operating handle for operating lifting jacks or other devices, and the object of this invention is to provide an operating handle for a lifting jack more particularly of the screw-actuated type, the handle being formed with a universal joint intermediate its ends so that it may be set and operated at an angle to the axis of the jack screw, to extend into position to be readily engaged by the operator.

A further object of the invention is to provide means in the handle whereby the joint portion of the handle may be readily locked against universal movement.

A still further object of the invention is to provide a telescoping handle adapted to be lengthened to extend into operating position and also be contracted and folded into position to take up the minimum amout of space to facilitate shipping and storing.

With these and other objects in view, the invention consisits of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation illustrating a lifting jack as applied to the axle of a vehicle, and showing my improved form of operating handle as applied to the jack.

Figure 2 is a side elevation partly in section showing my improved operating handle with a socket member at one end thereof in extended position to receive a universal action.

Figure 3 is a perspective view showing the socket or jack-engaging member of my improved handle.

Figure 4 is a detail perspective view illustrating the slotted end member of the operating handle which is adapted to be pivotally connected to the socket member to obtain a universal rocking movement therein.

Figure 5 is a perspective view showing the contracted end of the outer tubular body member of the telescoping handle.

Figure 6 is a perspective view showing a portion of the inner body member of the telescoping handle, and illustrating its outer end with the pivot hole therein through which the operating handle block is connected.

Figure 7 shows the portion of the telescoping body as pivotally mounted to a folding end-piece in section and the operating cross-bar as held in the end-piece by a ball detent.

Figure 8 shows the members of the handle in folded and contracted position.

It is found in the practical operation of screw-actuated jacks of advantage to provide an operating handle which is adapted to be extended into position to be readily engaged by the operator; also to provide a universal joint in the handle at a point near its work-engaging end and to provide simple and effective means in this universal joint construction whereby a simple movement of the joint socket member back upon the body of the handle, locks these members against a rocking movement so that the screw-engaging member of the handle may be held stiff and advanced into engagement with the jack-screw and then by a subsequent outward endways movement of the handle body restore the universal joint action between the end socket and the body of the handle so as to permit free action of the screw while the handle is being operated at an angle to the axis of the jack-screw.

It is also found of advantage to provide an actuating cross-bar at the outer end of the handle and to provide means whereby this bar may be slid endways in its end-block swung on its pivot pin to dispose the cross-bar along the side of the body of the handle; and the following is a detailed description of the present embodiment of my invention showing one means by which these advantageous results may be accomplished:—

With reference to the drawings, 10 designates the tubular outer casing member of the telescoping body portion of the handle in which is slidably mounted the inner telescoping rod member 11 of the body which is shown as being formed hexagonally or polygonally in cross section, and the tubular member 10 is preferably reduced at its end 12 to fit the rod 11 and permit it to slide therein but to hold it against relative rotation, the end 13 of this rod being preferably enlarged by providing protuberances as at 14 to engage the inner shoulder 15 of the tube and so limit the outward or extending motion between these members. The outer end of this rod 11 is preferably flattened as at 16 to fit into the slot 17 in the end block 18, this flattened end 16 being pivoted by pin 19 in said slot.

The extremity of this rod 11 is recessed as at 19 to receive a spring-pressed ball 20 which serves as a detent to hold the block in extended position.

An operating handle bar 21 is mounted to slide endways through the transverse bore 22 in this block, the middle portion of this bar being recessed as at 23 to receive the detent ball 24 which is also pressed by a spring 25 so that this bar 21 may be releasably retained in middle position therein. This bar may be slid endways in the block until it brings up against the enlargements 26 at its ends, then this block may be folded over to an angle of 90°, as best illustrated in Figure 8, in which case the handle bar 21 is caused to extend longitudinally along the body portion thereof.

At the opposite end of this body portion of this handle an end-piece 27 is provided having a shouldered extension portion 28 projecting into the end of the tubing and is fastened therein by a pin 29. The opposite end of this block is preferably bifurcated or provided with an elongated slot as at 30, and the outer portion of this socket member is provided with a relatively large bore 32 into which this slotted end-piece projects and loosely fits, a pin 33 extends transversely through the walls of this socket and through this slot 30 in the end piece and a slot-closing pin 34 is passed transversely through this end-piece to close the end thereof, whereby this socket member 31 is permitted a universal rocking motion relatively to the body of the handle, the limit of the rocking or working angle being the relative size of the bore of the socket at the point where it is pivoted to the end-piece.

This socket member is also provided with a body bore 35 of a smaller diameter than the end bore 32, which smaller bore is of a diameter to closely fit the end-piece so that when it is desired to lock this socket against a relative universal movement on the body of the handle, it is only necessary to push the socket further onto the handle so that the extremity will extend into the smaller bore, as best illustrated in Figure 8, whereby the screw engaging end 36 of this socket is held practically rigid on the end of the body of the handle and is permitted to be passed forward onto the square receiving end 37 of the screw 28 which operates the jack 39 and after this socket has been forced onto the tightly fitting end 37 of the screw then the body portion may be moved endways outwardly into the relative position illustrated in Figure 2, which at once restores the universal joint action and permits a full rocking motion of the handle relative to the socket, the angularity of operation being limited only by the relative sizes of the bore 32 of the socket and relative diameter of the end-piece projecting thereinto.

My improved handle for screw-actuated lifting jacks is found to be very practical and effective in its operation and its universal joint action may be readily converted into a rigid connection for the purpose of permitting the handle to be connected to the end of the jack screw even while the jack is in position beneath the car, and that without being obliged to get under the car to make this connection and then the relative universal movement of the handle and socket is readily restored, all from the outer or operating end of the handle, which arrangement is found in practice to be of great advantage to the operator.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A handle for a screw-operated lifting jack, comprising a member shaped to operatively engage the jack screw, a body member having a portion adapted to be manually engaged for turning the same, means connecting said members to allow a universal joint movement between them, and means for readily making said universal joint rigid when desired.

2. An extension handle for lifting jack, comprising telescoping body members, a jack-engaging member connected to the outer end of one of said body members, a handle block pivoted to the opposite end of said body members, and a handle bar slidable in said block.

3. An extension handle for lifting jack, comprising telescoping body members having an operating handle bar at one end, a jack-engaging member, a universal joint through which the opposite end of the body is connected to said jack-engaging member, and means whereby said universal joint may be readily made rigid when desired.

4. An extension handle for lifting jack, comprising telescoping body members having an operating handle bar at one end, a jack engaging socket member pivotally and slidably attached to the opposite end of the body member to permit a relative angular movement of said members when in extended position, and means for locking said members against relative angular movement upon a contracting movement of said body and socket members.

5. An operating handle for lifting jack, comprising a body member having a slotted end portion, a jack-engaging socket member having a relatively large bore adjacent one end thereof in which said body member is pivoted through its slot to receive a rocking

or relative universal motion, said socket member also having a portion of smaller bore into which the slotted end of said body may extend when in contracted position to retain these parts against a relative rocking movement.

6. A handle for a rotatably operated lifting jack, comprising a body member having an elongated slot at one end, a socket member shaped to operatively engage the portion of the jack to be rotated and having an end portion of an inner diameter greater than said body, a pin carried by said socket member and extending through said slot, a second pin carried by said body member for closing the end portion of said slot, to limit its relative extending movement.

In testimony whereof I affix my signature.

NILS G. LARSON.