

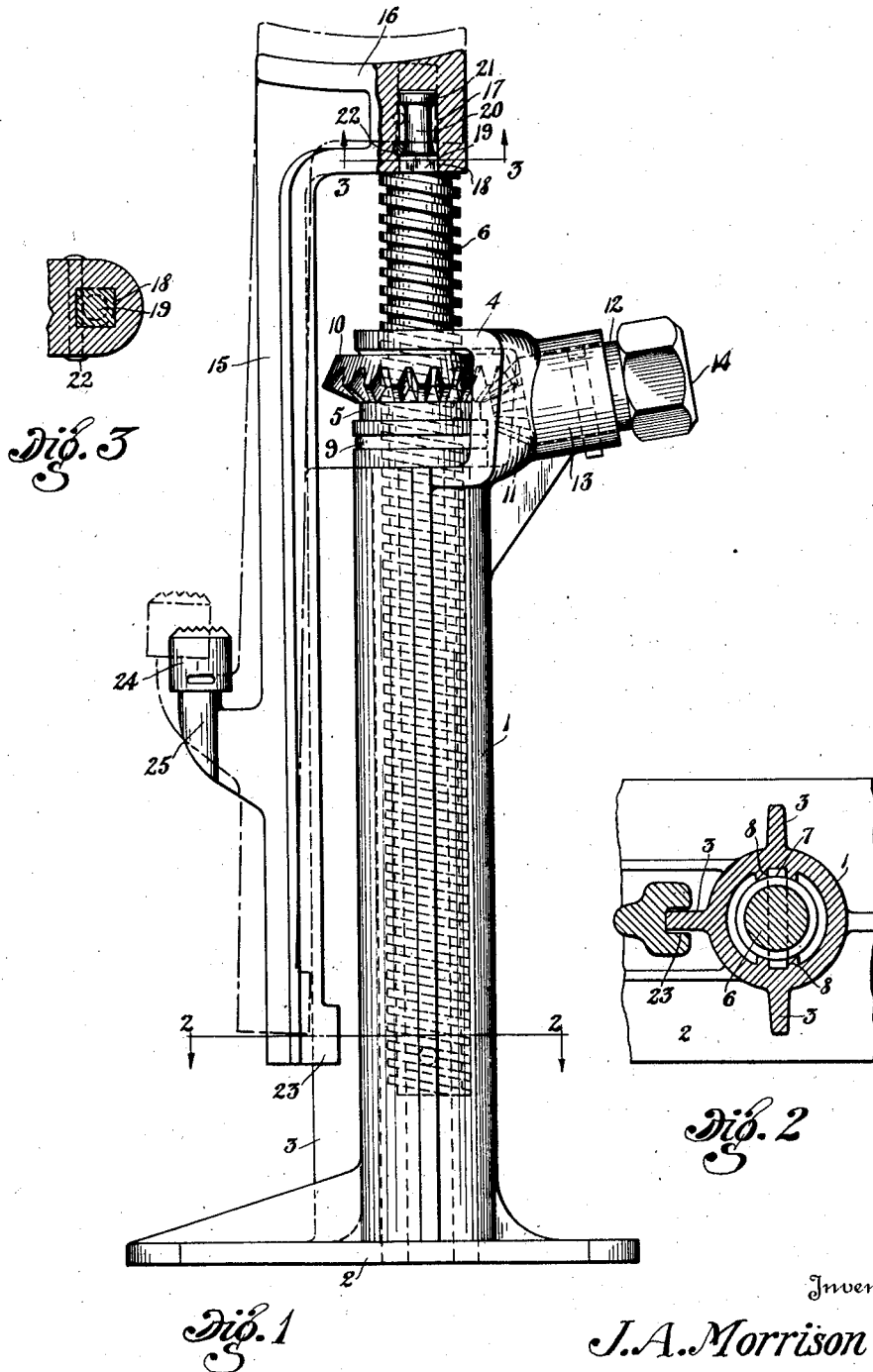
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LIFTING JACK

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UNITED STATES PATENT OFFICE.

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LIFTING JACK.

Application filed December 21, 1925. Serial No. 76,612.

The invention relates to jacks such as are used for raising automobiles for removing or repairing a tire and more particularly to a jack especially adapted for use upon vehicles equipped with balloon tires, in which it is necessary to provide for a greater lifting range than is necessary for the standard type of tire, and the invention relates more particularly to an improvement upon the type of jack disclosed in my copending application filed October 12, 1925, Serial No. 61,963.

The type of jack to which the invention pertains comprises a tubular standard having a lifting member, such as a screw mounted therein and carrying a swiveled lifting arm having a lifting head thereon and being adapted to be moved into any of a plurality of positions to permit the jack to be operated from any desired position relative to the vehicle, means being provided for causing the lifting head to travel in a definite path as the lifting screw is operated.

The object of the present improvement is to provide a simple and inexpensive means for swiveling the lifting arm upon the lifting screw whereby the arm may be quickly and easily moved to the desired position relative to the standard and engaged with the standard in any desired position and held against accidental displacement or disengagement from the standard.

The above and other objects may be attained by providing a tubular standard, a screw being located within the standard and arranged to be raised by means of a nut, a lifting arm being swiveled to the upper end of the screw, there being cooperating groove or channel and rib engagement between the lifting head and standard for causing the lifting head to travel in any one of several definite paths as the screw is operated.

An embodiment of the invention is illustrated in the accompanying drawings, in which

Figure 1 is a side elevation of the improved lifting jack, parts being broken away for the purpose of illustration;

Fig. 2, a section on the line 2—2, Figure 1, and Fig. 3, a section on the line 3—3, Figure 1.

Similar numerals indicate corresponding parts throughout the drawings.

The lifting jack includes the tubular standard 1 having the pedestal portion 2, and may be provided, preferably at intervals of ninety degrees, with the radial vertical ribs 3. A bracket 4 is provided at the upper end of

the tubular standard and a rotatable nut 5 is mounted within said bracket and receives the lifting screw 6 which normally extends into the tubular standard and is provided with a radial pin or lug 7 slidably engaging vertical grooves 8, upon the interior of the tubular standard, for preventing rotation of the screw.

A ball race, as indicated at 9, may be provided between the rotatable nut and the upper end of the tubular standard to receive the thrust of the lifting screw. A bevel pinion 10 is formed upon the nut 5 and meshes with a bevel pinion 11 fixed upon a short shaft 12, which is journaled in the angular boss 13 formed upon the bracket 4 and provided with a socket 14 to receive the shank of the usual operating handle.

The lifting arm 15 is provided at its upper end with the angular extension 16 swiveled upon the upper end of the lifting screw 6. A socket 17 is formed in the angular portion of the lifting arm, the lower portion of said socket being squared as at 18 to receive the squared portion 19 of the reduced shank 20 formed upon the upper end of the lifting screw, said shank having at its upper end a round head 21 normally fitting within the upper end of the socket 17. A transverse pin 22 is located through the angular portion 16 of the lifting arm, and passes through one side of the socket 17, being located between the head 21 and squared portion 19 of the shank and normally engaging the upper edge of said squared portion.

A groove or channel 23 may be formed at the lower end portion of the lifting arm for selective engagement with any one of the ribs 3, whereby the arm will be held in sliding engagement with the desired rib as the screw is raised.

The lifting head 24 is mounted upon a bracket arm 25 formed near the lower portion of the lifting arm 15 and at a convenient height to be received beneath the spring or axle of an automobile when in the lowered or normal position.

Since the lifting arm is swiveled upon the screw it is obvious that the arm may be swung around the standard and engaged with any one of the ribs 3 thereon in order that the lifting head may be located at either side or directly in front of the standard, thus permitting the operator to stand near the end of the automobile and engage the jack with either spring or the axle as desired.

The squared portion 19 of the shank normally engaging squared portion 18 of the socket prevents rotation of the lifting arm relative to the screw and standard but the arm may be easily disengaged from the rib by raising the same until the squared portion 18 of the socket is disengaged from the squared portion 19 of the shank when the arm may be tilted, as shown in broken lines in Figure 1, to disengage the groove or channel 23 from the rib after which the arm may be swung around the standard and engaged with the other rib.

This squared portion of the shank engaging the squared portion of the socket prevents any movement of the lifting arm relative to the screw and holds the arm normally in engagement with the rib.

Although the jack is illustrated as having the ribs upon the standard and the groove in the lifting arm it will be evident that this may be reversed, vertical grooves being provided in the standard for engagement with the rib upon the lifting arm, the rib and groove engagement between the lifting arm and standard being merely to cause the arm to travel in a definite path.

I claim:

1. A lifting jack including a standard having a plurality of vertical ribs thereon, a lifting member carried by the standard, a reduced shank upon the upper end of the lifting member and provided with a squared portion, and a lifting arm having a socket provided with a squared portion to receive the squared portion of said shank, and having means arranged to selectively slidably engage any one of said vertical ribs.

2. A lifting jack including a standard having a plurality of vertical ribs thereon, a lifting member carried by the standard, a reduced headed shank upon the upper end of the lifting member and provided with a squared portion spaced from the head, a lifting arm having a socket provided with a squared portion to receive the squared portion of the shank and a projection in said socket between the head and squared portion of the shank, and having means arranged to selectively slidably engage any one of said vertical ribs.

3. A lifting jack including a standard, a lifting member carried by the standard, a reduced shank upon the upper end of the lifting member and provided with a squared portion, a lifting arm having a socket provided with a squared portion to receive the squared portion of the shank and a plurality of rib and groove engagements between the standard and lifting arm.

4. A lifting jack including a standard, a lifting member carried by the standard, a reduced headed shank upon the upper end of the lifting member and provided with a squared portion spaced from the head, a lifting arm having a socket provided with a squared portion to receive the squared portion of the shank, a projection in said socket between the head and squared portion of the shank, and a plurality of rib and groove engagements between the standard and lifting arm.

In testimony that I claim the above, I have hereunto subscribed my name.

JOHN A. MORRISON.