

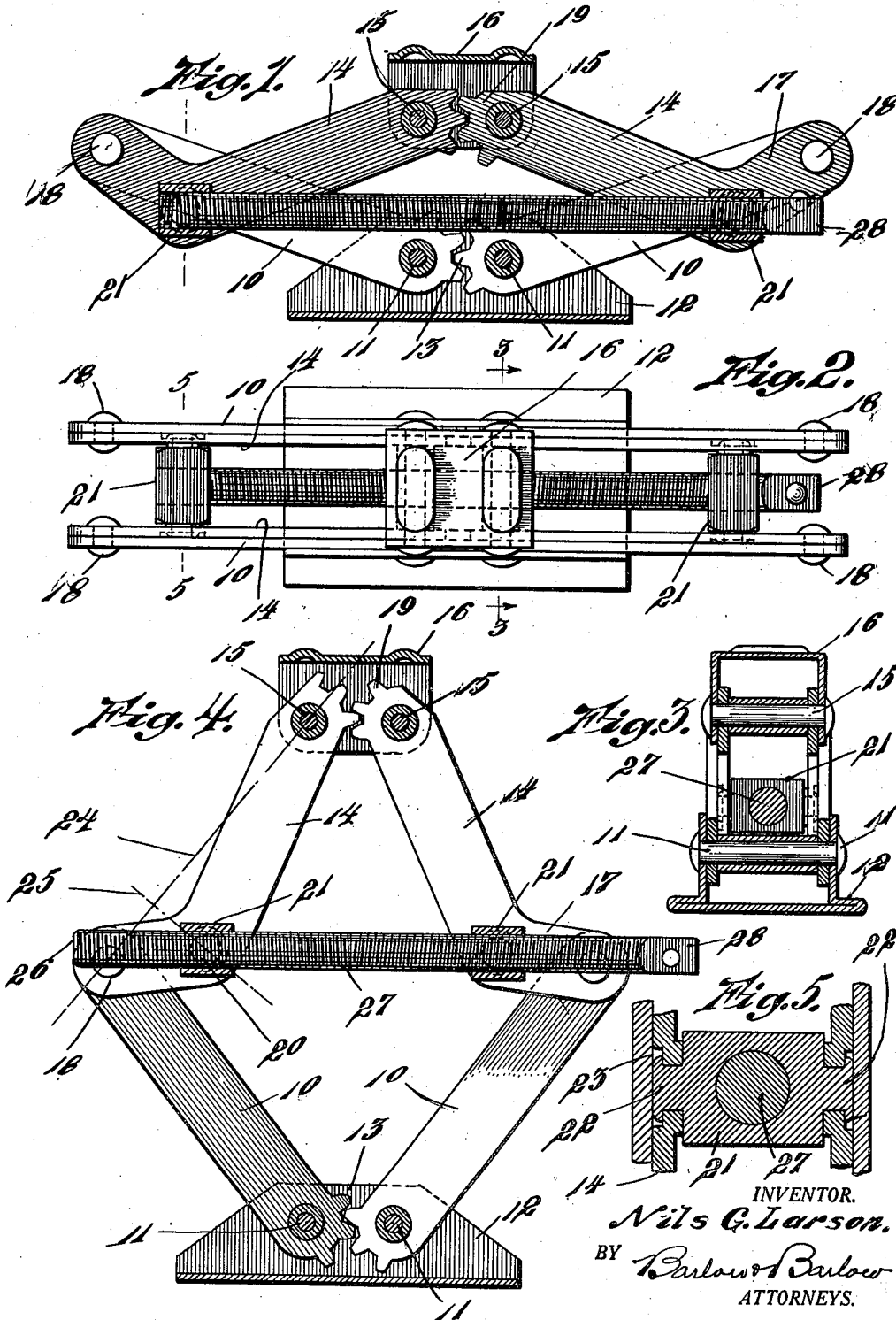
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LOAD LIFTING JACK

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LOAD-LIFTING JACK

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This invention relates to an improved construction of lifting jack, which simulates the so-called lazy tongs construction in its opening and closing actions, the same being more particularly adapted to be positioned beneath the axle of an automobile to lift the same; and this invention is an improvement on the patent numbered 1,612,447, dated December 28, 1926, and assigned to the assignee of the present invention; and the object of the present invention is to provide a jack of this character which is adapted to be contracted to a very low position so that it may be readily inserted under the axle of a vehicle when one or both of the tires are deflated, which is particularly necessary where the vehicle has the so-called "balloon" type of tire, which permits the axle to drop very close to the ground.

A further object of the invention is to provide an improved construction of lazy tongs type of jack wherein the arms of the jack are so shaped and the screw is so positioned on these arms that the arms afford protection to the ends of the screw to prevent the same from being bent when the jack tips over which is often the case while being positioned beneath the axle and withdrawn from such position.

The invention further consists in the pivoting of the operating screw-receiving nuts on the arms of the jack at a point to one side of a center line thru the end pivots of the arm and in such position that a center line thru the nut pivot at right angles to said line thru the end pivots, will intersect this end pivot center line at a point intermediate said end pivots, by which construction the end portions of the arms between which the operating screw is mounted serve as an effective protection for the ends of the screw to prevent the same from being bent out of alignment during the positioning of the jack by the upsetting or falling of the jack upon the screw.

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

In the accompanying drawings:

Fig. 1 shows my improved jack in collapsed or contracted position.

Fig. 2 is a top view of the jack shown in the position illustrated in Fig. 1.

Fig. 3 is a sectional elevation on line 3-3 of Fig. 2.

Fig. 4 shows the jack as being in raised or extended position a little short of its extreme extended stroke.

Fig. 5 is an enlarged view thru the pivot screw receiving nut, on line 5-5 of Fig. 2, showing the stock in the arms as being recessed to receive the heads of the nut pivots so as not to interfere with the outside set of arms while working close to the surface of the inside arms.

It has been found in another type of jack of the lazy tongs construction where the screw-operating nuts are pivoted at points beyond and not intermediate the end pivot points of the arms that when the jack is in raised or partially raised position a considerable portion of the ends of the operating screw project and are exposed beyond the parts of the jack so that when the jack is tipped over as is often the case in general use while being manipulated beneath the axle of the vehicle the screw ends are often bent rendering the jack inoperative, and to obviate this difficulty in a simple and effective way, I have so positioned the pivot points of the operating nuts in the arms of the jack that portions of these arms, to some extent in all positions of the jack, extend out beyond the ends of the screw and so afford protection thereto against being bent. Then again, it is found that by locating these screw-receiving nuts at a point intermediate the end pivots a quick operating action to the jack is pro-

vided with the same number of turns on the screw; and the following is a detailed description of the present embodiment of the invention and showing one arrangement of parts by which these advantageous results may be accomplished:

With reference to the drawings, 10 designates the lower set of two pairs of arms, those of each pair being spaced from each other and both pairs are pivotally connected at 11 to the base member 12 and the ends of each pair of the set are provided with intermeshing teeth 13 which cause them to operate in unison.

The upper set of arms 14 comprise two pairs and the arms of each pair are spaced from each other and are pivoted as at 15 at one end to the load rest 16. The opposite ends of these arms are offset as at 17 to extend outwardly in opposite directions and the outer ends of these arms are pivoted as at 18 to the corresponding free ends of the set of arms 10.

These upper arms 14 are also provided at their ends with intermeshing teeth 19 which cause them to move in unison. On each of these offset arms I have pivoted at 20 a screw-receiving nut 21, which is provided with laterally-extending trunnions 22 having up-set ends to nest in the recesses 23 formed in its arm 14.

These nuts 21 are pivoted at each end in its arms 14 at a point to one side of a center line 24 passing thru the centers of the end pivots 15 and 18 and in such position that a center line 25, see Fig. 4, thru the nut pivot 20 and set at a right angle to the line 24 will intersect said line 24 at a point intermediate its end pivots 15 and 18.

The operating screw 27 that engages these nuts 21 is located in the space between the arms and has right and left hand threaded portions which respectively engage these nuts and one end of the screw is flattened or formed square as at 28 to receive the operating wrench (not shown).

By so locating these screw-operated nuts in which the screw is mounted the outwardly-turned portions 17 of the arms 14 serve as a convenient guard for the effective protection of the end portions 26 of the screw and insures them against being bent while the jack is being manipulated.

My improved jack is preferably formed of sheet stock and is therefore very light in weight and at the same time is very strong and durable. The jack is also very simple and practical in construction and is effective in its operation and by its construction may be collapsed or lowered to a minimum height and yet be quickly manipulated to lift a heavy load.

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 load lifting jack comprising a base member, a set of arms pivoted at one end to opposite sides of said base, a load rest, a set of arms pivoted at one end to opposite sides of said rest, the free ends of said different sets being pivoted together, nut members pivoted to the arms of one of said sets at a point in each arm to one side of a center line thru the end pivots of the arm and in such position that a center line thru the nut pivot at right angles to said line thru the end pivots will intersect said end pivot center line at a point intermediate said end pivots, and a right and left hand operating screw in said nuts to move the load rest towards and from its base member.

2. A load lifting jack comprising a base member, a set of arms pivoted at one end to said base, a load rest, a set of arms pivoted at one end to said rest, the opposite ends of said sets being pivoted together, the opposite arms of one set having outturned oppositely extending end portions of a substantial length, a nut member pivoted to each of said arms at the bend of its angle and positioned intermediate the opposite pivot ends of said arms, and a right and left hand operating screw threaded thru said nut members to move the load rest towards and from its base, whereby the outturned portions of said arms serve as a guard for the opposite end portions of the operating screw.

3. A load lifting jack comprising a base member, a set of arms pivoted at one end to said base, a load rest, a set of arms pivoted at one end to said rest, said sets being pivoted together at their free ends, the arms of one of said sets each having a body portion and a screw protecting outturned end portion of substantial length, the center lines thru the pivot points of said body and said outturned end portions being set at an obtuse angle to each other, a nut member pivoted to each of said arms substantially at the intersection of said two center lines, and a right and left hand operating screw engaging said nuts to move the load rest towards and from its base member.

4. A load lifting jack comprising a base member, a set of arms comprising two spaced pairs, said pairs being pivoted at one end to opposite sides of said base, a load rest, a set of arms comprising two spaced pairs, said pairs being pivoted at one end to opposite sides of said rest, the free ends of said different sets being pivoted together, nut members having trunnions pivoted in the arms of one of said sets at a point in each arm to one side of a center line thru the end pivots of the arm, and in such position that a center line

thru the nut pivot at right angles to said line
thru the end pivots, will intersect said end
pivot center line at a point intermediate its
pivots, the arms in which said nuts are piv-
oted being recessed, the ends of said pivot
5 trunnions on said nuts being enlarged in said
recesses to set below the outer surface of its
arm, and a right and left hand screw in said
nuts to move the load rest towards and from
its base member.

10 In testimony whereof I affix my signature.
NILS G. LARSON.

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