Dec. 28, 1926. 1,612,447

N. G. LARSON ET AL

LOAD LIFTING JACK

Filed Oct. 23, 1925

Fig. 1.

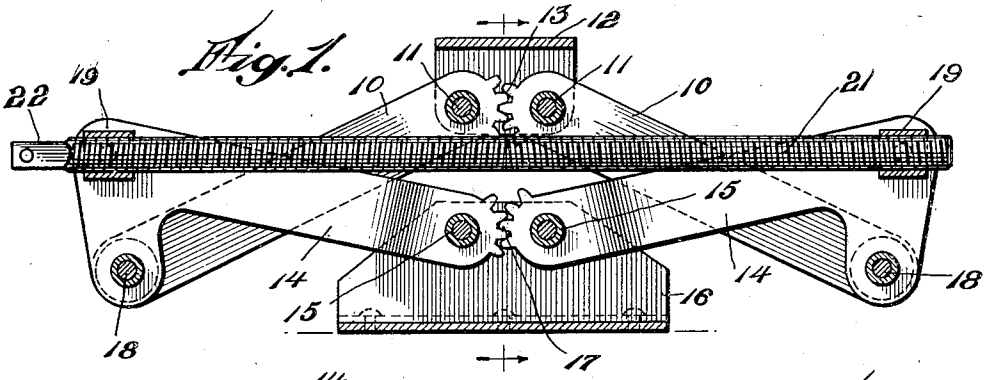


Fig. 2.

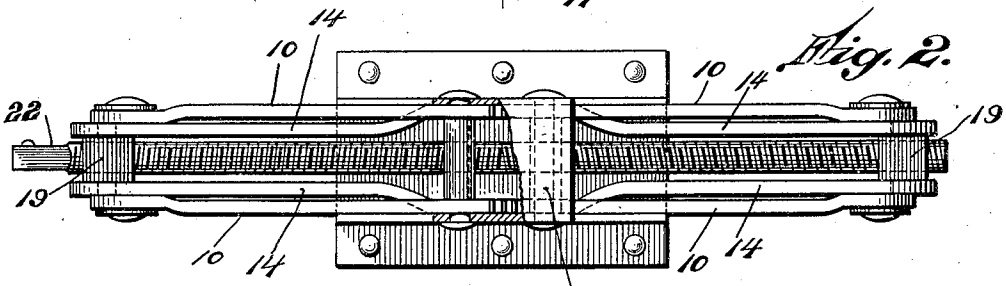


Fig. 4.

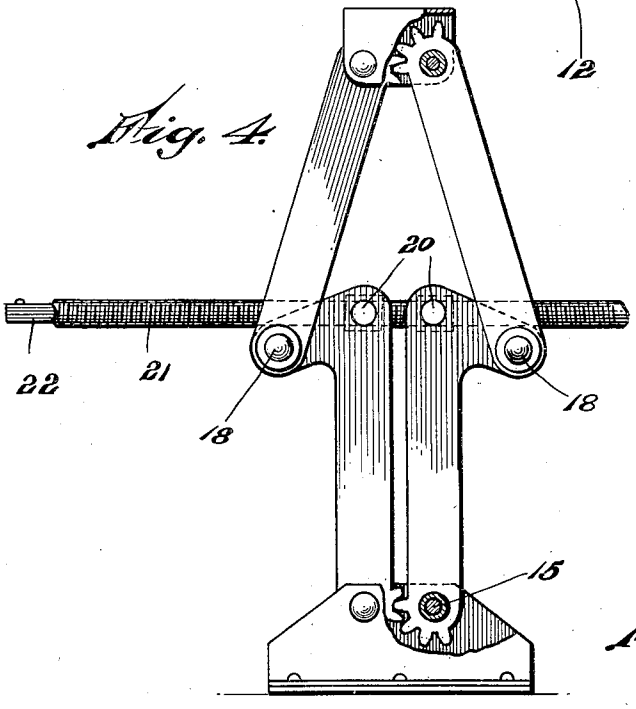
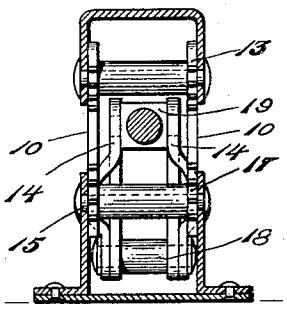


Fig. 3.



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UNITED STATES PATENT OFFICE.

NILS G. LARSON AND FRANK MOSSBERG, OF ATTLEBORO, MASSACHUSETTS, ASSIGNORS TO SO-LO-JACK CO. INC., OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

LOAD-LIFTING JACK.

Application filed October 23, 1925. Serial No. 64,334.

This invention relates to an improved construction of lifting jack which simulates the so-called "lazy tongs" in its action the same being more particularly adapted to be positioned beneath the axles of an automobile to lift the same; and the object of this invention is to provide a jack of this character which is adapted to be reduced very low in height so that it may be positioned under the axle of the vehicle when the tires are deflated even tires of the so-called "balloon" type, which permit the axle to drop quite closely to the ground.

A further object of this invention is to provide an improved construction of this "lazy tongs" type of jack wherein the lifting leverage is increased over the old style of "lazy tongs" type of jack particularly when in collapsed or lowered position.

The invention further consists in the provision of a set of arms on the jack which are pivotally connected together to simulate the lazy tongs action and to connect the power-applying screw to the arms at a point removed from the point where the arms are pivotally connected to each other thereby materially increasing the lifting leverage when the jack is in its lowered position.

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:

Figure 1 is a side elevation of our improved construction of jack partly in section and in collapsed or lowered position.

Figure 2 is a top view of the device in collapsed position showing a portion of the load rest broken away.

Figure 3 is an end view of the jack in position shown in Figure 1.

Figure 4 is a side elevation illustrating the jack in maximum raised position with portions of the load rest broken away.

It has been found in the old type of jack of the "lazy tongs" construction that when the power is applied to the jack at the point where the arms are pivoted together when in collapsed or lowered position that an excessive amount of power is required to lift the load; and to obviate this difficulty, I have connected the power-applying screw to the arms of the device at a point removed from that point where the upper and lower arms are pivoted together thereby materially increasing the leverage, and therefore, the lifting power of the jack particularly when in its collapsed position; and the following is a detailed description of the present embodiment of my invention and showing one means by which these advantageous results may be accomplished:—

With reference to the drawings, 10 designates two pairs of upper arms of the set, each pair being spaced from each other and both pairs being pivotally connected at one end 11 to the load-rest 12, these ends of each pair of the set being provided with interengaging teeth 13 which cause them to operate in unison. The lower set of arms 14 also comprises two spaced pairs which are pivoted at one end 15 to the base 16 and these arms of this set are also provided with intermeshing teeth 17 to cause them to move in unison.

The ends of these upper and lower sets of arms are pivoted together at the points 18 and above these points in the space between the pairs of each set a pair of nuts or threaded members 19 are pivoted by the pins 20 to the lower set of arms 14, at a point a substantial distance above the points 18 where the upper and lower sets of arms are pivoted together, and a power applying screw 21 is positioned in the space between these arms and is threaded into both of these nuts 19 and this screw is squared as at its end 22 to receive the usual operating wrench (not shown).

It is found in practice that where the power is applied at the point where the upper and lower arms are connected together that when the jack is collapsed or dropped to its lowest position that the power screw is in a disadvantageous position for exerting a lifting action on the load but by moving the power exerting point to one side either above or below the pivoting point 18 of the upper and lower arms to the extent illustrated in Figure 1, the lifting power is increased about three-fold and the further it is removed the greater the lifting leverage exerted when the jack is in this collapsed position. The lifting power of the jack of course, gradually increases as it is raised and the angle between the arms is reduced. In other words, the further removed the point of power application is from the point where the arms are pivoted together

the lower the jack may be dropped and still exert sufficient power to easily lift the load.

My improved jack is very simple and practical in construction and is effective in its action and by its use a heavy load may be easily lifted even when the jack is lowered to its minimum height.

The foregoing description is directed solely towards the construction illustrated, but we desire it to be understood that we 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.

We claim:

1. A load-lifting jack comprising a base, a set of arms pivoted to said base at one end, a load rest, a set of arms pivoted at one end to said load rest and pivoted at their opposite ends to the first said set of arms, one of said sets of arms carrying portions offset from a line between its pivotal end connections, and means for applying power to said offset portions to move said load-rest away from said base.

2. A load-lifting jack comprising a base, a set of arms pivoted to said base at one end, a load rest, a set of arms pivoted at one end to said load rest and pivoted at their opposite ends to the first said set of arms, one of said sets of arms carrying portions offset from a line between its pivotal end connections, nuts pivoted to said offset portions, and a right and left hand screw threaded through said nuts to move said load rest from said base.

3. In a load-lifting jack, a base member, a load rest member, a set of arms pivoted together and to said members to produce a lazy tongs action, the arms pivoted to one of said members carrying portions offset from a line between the pivotal points between its ends, nuts pivoted to said offset portions, and threaded means for applying power to said nuts to relatively move said base and load members.

4. A load-lifting jack comprising a base, a set of arms pivoted to said base at one end and having downwardly offset portions at their opposite ends, a load-rest, a set of arms pivoted to said rest at one end and pivoted to said offset portions at their opposite ends whereby said arms cross when the jack is in collapsed position, and means for applying power to said arms at a point above the pivotal connection joining said arms and between the pivotal connection of said arms to said base and to said load-rest.

In testimony whereof we affix our signatures.

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