

H. W. LAMPMAN.
LIFTING JACK.
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1,064,076.

Patented June 10, 1913.

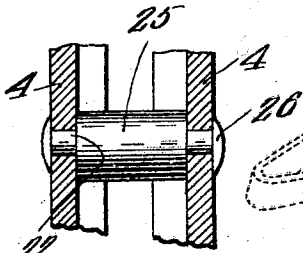


Fig. 6.

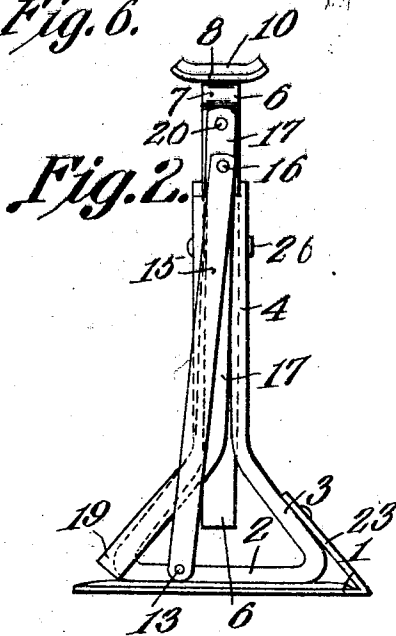


Fig. 2.

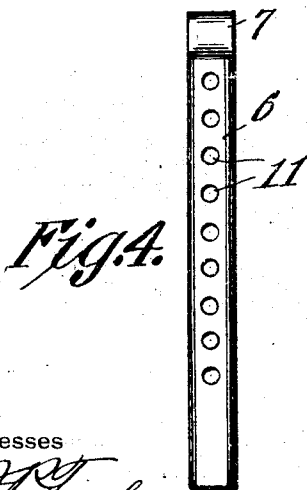


Fig. 4.

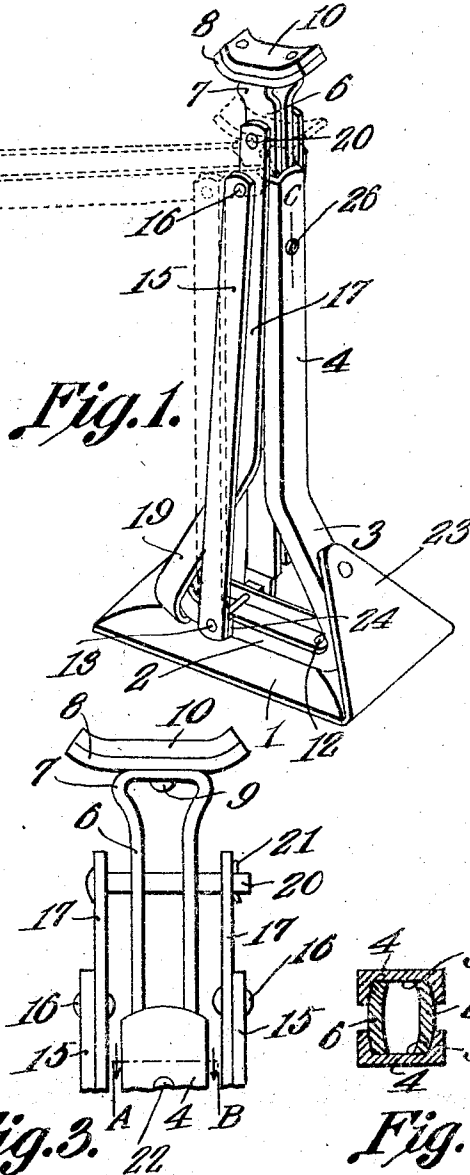


Fig. 1.

Fig. 3.

Fig. 5.

Witnesses

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LIFTING-JACK.

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To all whom it may concern:

Be it known that I, HERMAN W. LAMPFMAN, a citizen of the United States, residing at Lagrange, in the county of Lagrange and State of Indiana, have invented a new and useful Lifting-Jack, of which the following is a specification.

This invention relates to lifting jacks and is particularly designed for use in elevating motor vehicles and the like.

One of the objects of the invention is to provide a lifting jack which is simple and durable in construction, all parts thereof being made of stock of standard or commercial forms, the said jack being compact in construction and easy to operate.

A further object is to provide a lifting jack which can be adjusted so as to support a vehicle at a desired distance from the ground.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a perspective view of the jack, one of the positions of the movable parts being indicated by dotted lines. Fig. 2 is a side elevation of the structure. Fig. 3 is an enlarged front elevation of upper portion of the jack, the head being elevated. Fig. 4 is a detail view of the slide. Fig. 5 is an enlarged section on line A—B Fig. 3. Fig. 6 is an enlarged section on line C—D Fig. 1.

Referring to the figures by characters of reference 1 designates a metal base preferably formed in a single plate having its central portion upstruck so as to constitute the bearing for the base of the standard of the jack. This standard is formed of a single length of channel steel or the like bent to form a straight base 2 the ends of which merge into upwardly converging members 3 terminating in upwardly extending parallel arms 4. The channel is formed in the inner faces of the arms 4 and forms guide ways 5 for the reception of a slide made up of a single length of steel or the like such as

shown at 6, the said strip being folded so as to form parallel longitudinally extending portions fitting snugly between the flanges on the arms 4, as shown in Fig. 5. The crown portion of the slide formed where the parallel portions thereof merge, forms an enlargement 7 to which is secured a curved plate 8 forming the head of the jack. This head is preferably connected to said enlargement by a single rivet 9 and it will be apparent, therefore, that the head can be rotated relative to the enlargement. The upper or concave face of the plate is preferably provided with a cushion 10 of leather or the like. A longitudinal series of openings 11 is formed in each of the parallel members of the slide 6, as shown particularly in Fig. 4. The base 2 of the standard is attached to the base 1 by means of rivets 12 or the like so that the standard is thus held fixed relative to the base 1.

A bolt 13 is extended transversely through the base portion 2 of the standard and upwardly extending links 15 are pivotally mounted on this bolt and extend along opposite sides of the standard. The upper end portions of the links are pivotally connected, as by means of studs 16, to the sides of a lever 17, said lever straddling the standard and the slide and being pivotally connected to the slide close to the enlargement 7. The free end portion of the lever is enlarged to form a loop 19 and said looped portion is preferably offset, as indicated particularly in Fig. 2, so that, when the slide 6 and the head 8 are elevated, the loop 19 is free to straddle one of the upwardly converging portions 3 of the standard while the remaining portions of the lever move into position between the links 15 and one of the arms 4. This is illustrated in Fig. 2. The lever 17 is preferably connected to the slide 6 by means of a pin 20 insertible through any of the openings 11 in the slide 6 and said pin is prevented from being withdrawn from the openings and the lever by a cotter pin 21 or the like engaging one end thereof.

It will be apparent that, by offsetting the looped portion 19 of the lever, said lever can be swung inwardly a sufficient distance toward the standard to bring the pivots 16 past the vertical line passing through the pin 20, and as shown in Fig. 2, when the parts are thus positioned the jack will support any weight which may be applied to the head 8 without danger of the lever 17

swinging upwardly and permitting the slide 6 to move downwardly. As the pivots 16 are very close to the pin 20, it will be seen that considerable leverage can be had by means of this jack.

In using the device, the jack is placed under the part to be lifted and pin 20 is removed. Lever 17 is then swung about 45 degrees above the horizontal after which the slide 6 is moved upwardly until the cushion 10 comes into contact with the part to be lifted. Pin 20 is then inserted through lever 17 and through the opening 11 in alignment with the pin. After the pin has been secured by means of the cotter 21, the looped end 19 of the lever is pushed downwardly. Slide 6 will thus be forced upwardly and the head 8 will cause the part in the path thereof to be elevated. In moving the lever 17 downwardly to its greatest extent, the pivots 16 are moved under the pin 20 and past the dead center so that the jack becomes self-locking and will support the weight to which it is subjected, without the use of any special locking means. To lower the head 8 and the parts supported thereby, it is merely necessary to swing the looped end 19 of the lever upwardly so as to bring the pivots 16 from under the pin 20 whereupon the weight of the object being supported will cause the slide 6 to move downwardly and the lever 17 to swing upwardly.

It will be seen that the jack can be actuated by pressing lever 17 downwardly with the foot and by pushing the lever upwardly in the same manner. As the head 8 is swiveled on the slide 6 and is arranged directly over it at all times, it will be seen that the jack can be placed so as to cause the lever to extend in any desired direction from under the part to be lifted so as thus to suit the convenience of the operator.

The arms 4 are prevented from spreading apart at their upper ends, by a tie 22 which extends through said arms adjacent their upper ends and also extends between the side members of the slide 6. This tie can be in the form of a rivet, bolt or the like.

If desired, the base 1 may be formed at one end, with an angular wing or extension 23 inclined so as to fit snugly on one of the upwardly converging portions 3, said extension being riveted or otherwise fastened to said portion. Furthermore, and as shown in Fig. 5, the members of the slide 6 are preferably slightly bowed transversely so as to fit snugly within the channeled members 4 and, furthermore to reinforce the slide 6.

Spacing washers 24 are preferably interposed between the lower ends of the links 15 and the base portion 2, these washers being mounted on the bolt 15.

The tie 22 is preferably constructed as shown in Fig. 6 wherein it is shown as made up of a spring plate 25 from which studs

26 project, these studs being fastened within the members 4.

Instead of providing a single wing or extension 23 on the base 1, two or more extensions may be employed.

It might be stated that the amount of leverage obtained by the use of this jack can be varied by changing the relative positions of the pivot 16 and the pin 20, thus adapting the jack to the load which it is expected to lift.

It is to be understood that after the jack has once been adjusted for a certain vehicle it is not necessary to change the adjustment. The quick action of the jack renders it especially desirable for use in supporting vehicles in order to relieve their tires of constant weight while in storage.

What is claimed is:—

1. A jack including a base, a standard thereon formed in a single length of channeled material, said standard having upstanding spaced portions with their channels innermost, a slide formed in a single length of metal folded to form parallel spaced members mounted within the channels in said standard, a tie connecting the channeled members of the standard and extending between the members of the slide, and means for shifting the slide longitudinally relative to the standard.

2. A jack including a base, a channeled strip secured on the base and having upstanding portions forming a standard, the channel being formed in the inner faces of said portions, a tie connecting said portions, a slide mounted within the channels in the upstanding portions and consisting of a single length of metal folded upon itself to form opposed parallel portions, the tie being extended between said parallel portions, and means for shifting the slide longitudinally relative to the standard.

3. A jack including a base, a channeled strip secured on the base and having upstanding portions forming a standard, the channel being formed in the inner faces of said portions, a tie connecting said portions, a slide mounted within the channels in the upstanding portions and consisting of a single length of metal folded upon itself to form opposed parallel portions, the tie being extended between said parallel portions, means for shifting the slide longitudinally relative to the standard, a link pivotally connected to the lower portion of the standard, a lever pivotally connected to the slide, and a pivotal connection between the lever and link.

4. A jack including a base, a channeled strip secured on the base and having upstanding portions forming a standard, the channel being formed in the inner faces of said portions, a tie connecting said portions, a slide mounted within the channels in the

upstanding portions and consisting of a single length of metal folded upon itself to form opposed parallel portions, the tie being extended between said parallel portions, means for shifting the slide longitudinally relative to the standard, a link pivotally connected to the lower portion of the standard, a lever pivotally connected to the slide, and a pivotal connection between the lever and link, said connection being shiftable past the lever and slide to lock the slide in elevated position.

5. The combination with a base, of a standard formed in a single length of channeled material and including upwardly extending portions having the channel in the inner faces thereof and forming a guide, a slide within said guide and formed in a single length of metal folded on itself, a lever straddling the slide and standard and pivotally and adjustably connected to the slide, and links connecting said lever and the base portion of the standard, the points of connection between the links and the lever being shiftable past the dead center to lock the slide in elevated position.

6. A jack including a base, a longitudinally channeled strip secured on the base and having upwardly converging portions merging into upwardly extending arms, the channel being formed in the inner faces of the arms, a tie connecting the arms, a slide interposed between and guided by the arms, said slide consisting of a single length of metal folded to form spaced parallel portions, there being an enlargement at the upper ends of said portions, a head on the enlargement, links pivotally connected to the lower portion of the standard, a lever

pivotally and adjustably connected to the slide, and pivotal connections between the lever and the links, said last named connections being shiftable past the dead center to lock the slide in elevated position.

7. A jack including a base, a standard secured on the base and formed in a single length of channeled material, said standard having upstanding opposed portions with channels in their inner faces, a wing upon the base and lapping and secured to one of said upstanding portions, spacing means for tying said upstanding portions together, a slide mounted between and guided by the flanges on said upstanding portions, and means for shifting the slide within the standard.

8. A jack including a base, a standard thereon formed in a single length of channeled material, said standard having upstanding spaced portions with their channels innermost, a slide formed in single length of metal folded to form parallel spaced members mounted within the channels in said standard, said members being bowed transversely, a tie connecting the channeled members of the standard and constituting spacing means, said tie extending between the members of the slide, and means for shifting the slide longitudinally relative to the standard.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HERMAN W. LAMPMAN.

Witnesses:

ANDREW R. WYATT,
LE ROY R. WADE.