

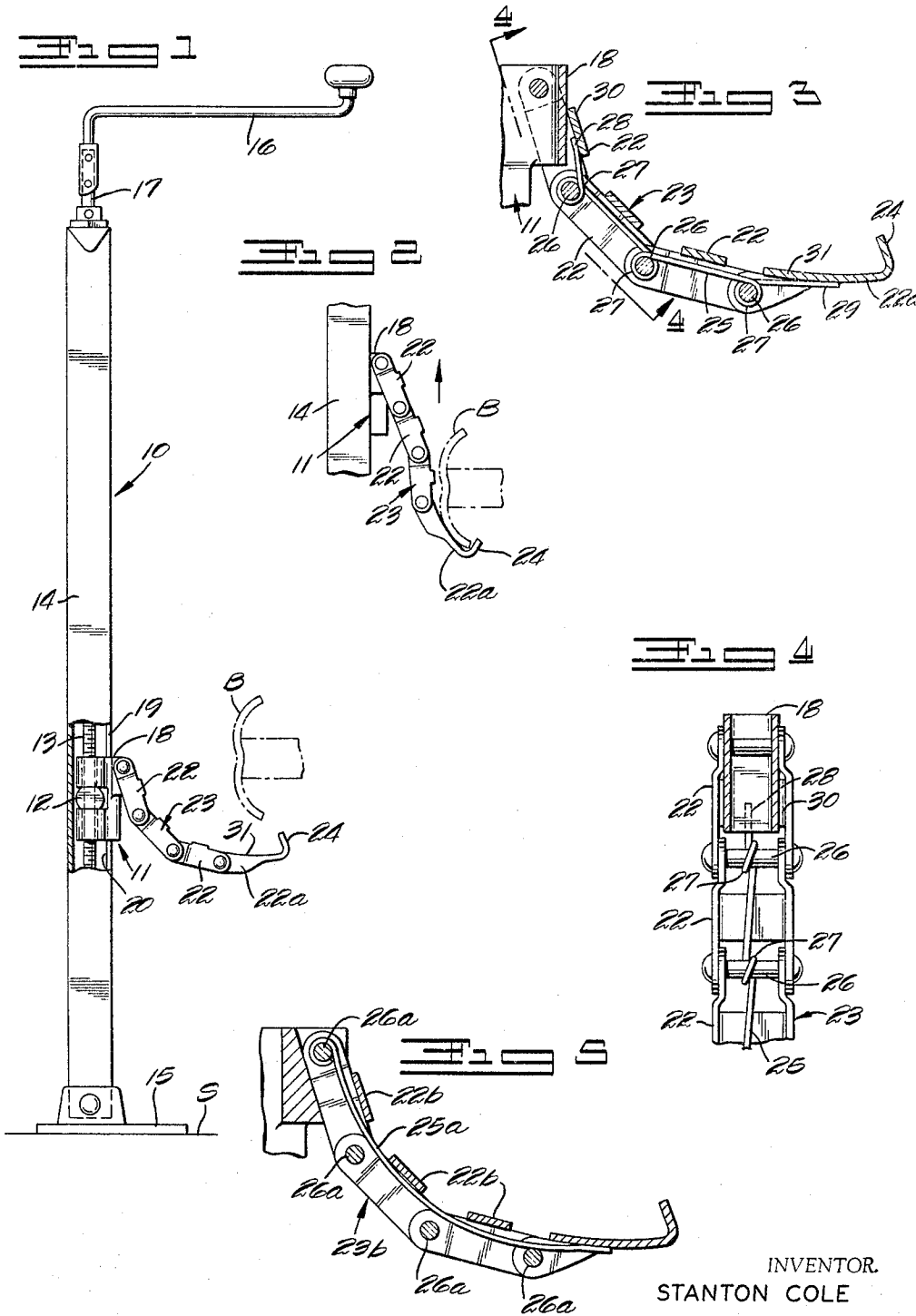
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VEHICLE BUMPER JACK

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VEHICLE BUMPER JACK

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This invention relates to bumper-type lifting jacks for automotive vehicles.

In the past, jacks of the type described have been provided with a screw-actuated lifting member carrying a flexible, link-chain hook member. In use of such jacks, however, it was necessary for the operator to use one hand to adjust the supported position of the jack with respect to the vehicle bumper, while supporting the flexible hook with the other hand and flexing the same into hooked engagement with the under edge of the bumper. This not only made it difficult and awkward for the operator to adjust the height of the lifting member, but exposed the operator to possible injury to the hand holding the link chain.

An object of the present invention is to provide a lifting jack of the character described having a flexible hook member adapted to move with the jack into hooked engagement with the vehicle bumper without requiring the operator to touch or hold the hook member at any time.

Another object of the invention is to provide an improved jack of the character described which is easily and safely movable into lifting position with one hand while leaving the other hand free for operating the jack for vertically adjusting the lifting member.

Other objects of the invention will be manifest from the following brief description and the accompanying drawings.

Of the accompanying drawings:

FIGURE 1 is a side elevation, partly broken away and in section, illustrating a bumper-type automobile lifting jack, embodying the features of the invention, a portion of a bumper being shown in chain-dotted lines.

FIGURE 2 is a fragmentary view taken from FIGURE 1, showing the lifting-member in yieldingly flexed lifting engagement with the bumper.

FIGURE 3 is an enlarged fragmentary view of the lifting member as shown in FIGURE 1, but broken away and in cross-section to illustrate one form of spring means incorporated in the link-chain hook means to support the same in convenient arcuate condition.

FIGURE 4 is a fragmentary view, partly broken away and in cross-section, taken substantially on the line 4-4 of FIGURE 3.

FIGURE 5 is a view corresponding to FIGURE 3, illustrating a modified form link-chain hook arcuately supported by a flat or leaf type spring.

Referring generally to FIGURES 1 to 4 of the drawings, and to FIGURE 1 in particular, the numeral 10 designates a lifting jack having a lifting member 11 non-rotatably supported, in known manner, on a nut 12 threaded on a screw rod 13, which is manually rotatably mounted within an elongated, channel-shaped support 14 pivoted on a ground-engaging base 15. The nut is non-rotatably retained within the support to move vertically along the rod, with rotation of the latter as by means of a suitable turning handle 16 affixed on an outward extension 17 of the screw shaft.

Pivoted on a portion 18 of lifting member 11, protruding through a longitudinal slot 19 in the forward wall 20 of the support 14 may be an inner end link of a plurality of pivotally connected links 22 on a resilient flexible hook element 23. An outer end link 22a of the element 23 is provided with a reversely bent portion 24 for hooked engagement with the lower edge of a vehicle bumper B. For yieldingly supporting the hook element in a given

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upwardly concave, curvate condition, as shown in FIGURES 1 and 3, one or more strong wire springs 25 may be looped around the pivot pins, 26, 26 of the links, as indicated at 27, 27 in FIGURES 3 and 4, free ends 28 and 29 of the springs being extended into yielding engagement thereof with cross-pieces 30 and 31 on the inner and outer end links, respectively. Thus, the chain-links are at all times resiliently supported by the spring 25, so that the linked element can only be flexed or extended as shown in FIGURE 2 against the yielding resistance of said spring.

In use of the improved jack to elevate an automobile, as for changing a tire, the support 14 is vertically supported with the base 15 on the ground, closely adjacent the bumper B of the vehicle. The operator may easily move the support 14 along the supporting surface S with one hand, while simultaneously or otherwise using the other hand to turn the handle 16, so that the hooked outer end of element 23 will move freely under the bumper B. Next, the operator, while still steadying the support 14 with one hand, turns handle 16 with his other hand, to raise the lifting member 11 until the hook 22a engages under the bumper. Continued upward operation of the lifting member 11 will first yieldingly wrap the flexible element 23 upwardly into substantial cradling conformity with the shape of the bumper, and then elevate the vehicle (see FIGURE 2).

During the aforementioned lifting operation the support 14 may be kicked closer to the bumper and/or swung inwardly on its pivotal connection with the base 15, as necessary or expedient. In any event, the flexible hook element 23 will readily conform to a very wide variety of differently shaped bumpers, and in not event should it be necessary for the operator to touch the flexible element at the risk of injury to the hands. The same is true for converse operation of the jack to lower the vehicle. In most instances the operator may control the entire operation of positioning and adjusting the jack, and of operating the same either to elevate or to lower the vehicle, all while conveniently maintaining the hands at the top of the jack.

The flexible hook element 23b shown in FIGURE 5, is like the element 23 of FIGURES 1 to 4, except that a flat leaf spring 25a of predetermined normal curvature is anchored at its inner end to the innermost connecting pin 26a of the linked element, and extends freely outwardly between the other pivot pins 26a and upwardly presented cross-pieces 22b of the other chain links. In other words the spring 25a yieldingly supports the flexible hook element 23b substantially in the manner described above in connection with FIGURES 1 to 4.

While the invention has been described in connection with a one-legged jack, it is readily apparent that it is equally applicable to known types two-legged or three-legged jacks.

Other modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

1. An automobile lifting jack, comprising: an elongated support having means for supporting the same upright on a surface and carrying a vertically movable lifting member and means for vertically moving the same; a flexible bumper-engaging hook element carried by said member, including a series of pivotably connected links the outermost of which has a reversely bent portion for hooked engagement with the lower edge of the bumper; and resilient means normally supporting the series of links in given curvate, pivotably connected relationship outstretched forwardly of the support for ready hooked engagement of said outermost link under the bumper, whereby upon operation of lifting member upwardly on said

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support, said hook element is yieldingly flexed and tensioned into cradling conformity with the lower portion of the bumper for lifting the vehicle.

2. A lifting jack as in claim 1, said resilient means including an elongated spring element mounted in coextending relationship to said hook element and yieldingly supporting the respective said links thereof.

3. A lifting jack as in claim 2, said links having spaced flange portions pivotably connected by cross-pins, and said spring element being anchored to at least one of said cross-pins.

4. A lifting jack as in claim 1, said links having spaced flange portions pivotably connected by cross-pins, and said resilient means being anchored to at least one of said cross-pins.

5. A lifting jack as in claim 1, said links being channel-

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shaped to define spaced flanges and connecting cross-pieces; said links having the portions of said spaced flanges thereof pivotably connected by cross-pins; and said resilient means including an elongated spring element resiliently mounted with respect to said cross-pieces and cross-pins for supporting the links in said curvate, pivotably connected relationship.

References Cited by the Examiner

UNITED STATES PATENTS

2,867,410	1/1959	Southerwick	-----	254—133
3,180,618	4/1965	Ulm	-----	254—109

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