March 8, 1960 D. N. FANTACI 2,927,769

HYDRAULIC AUTO JACK

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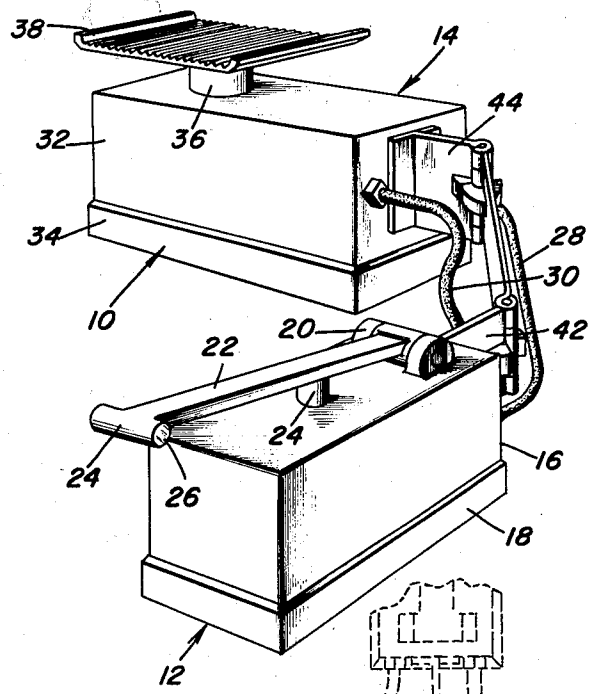


Fig. 1

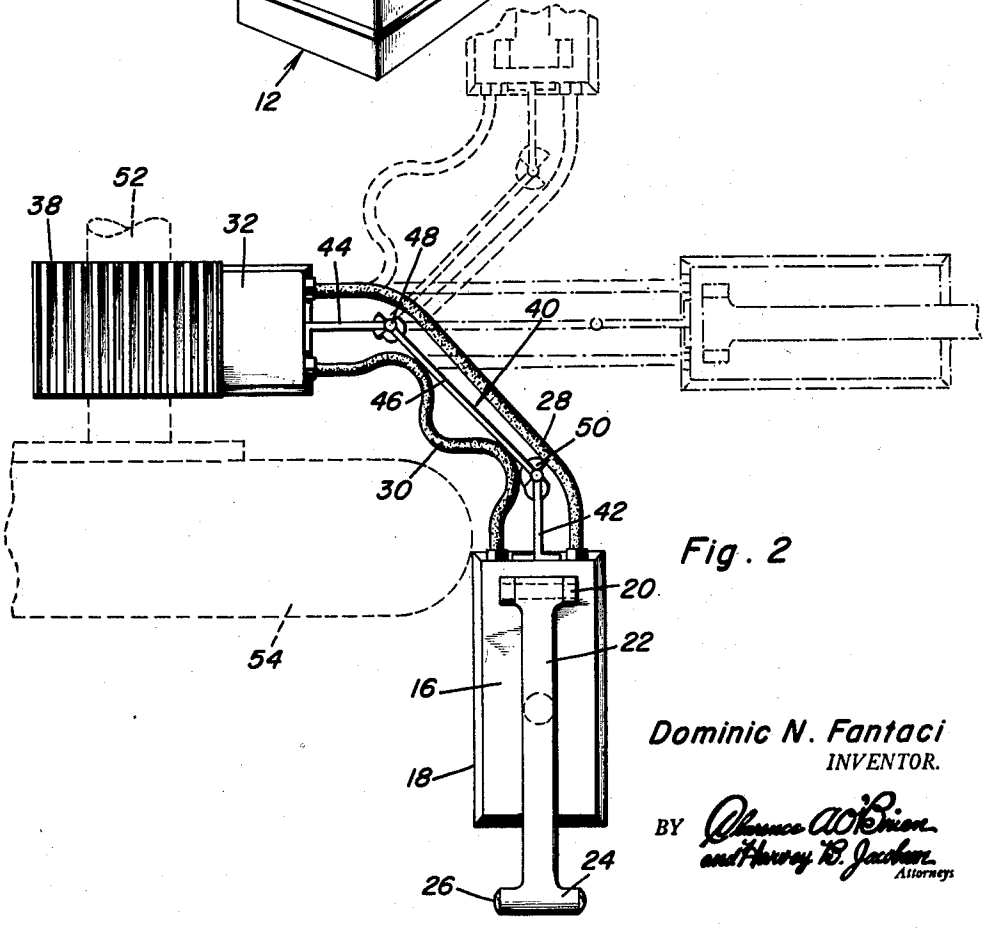


Fig. 2

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Fig. 3

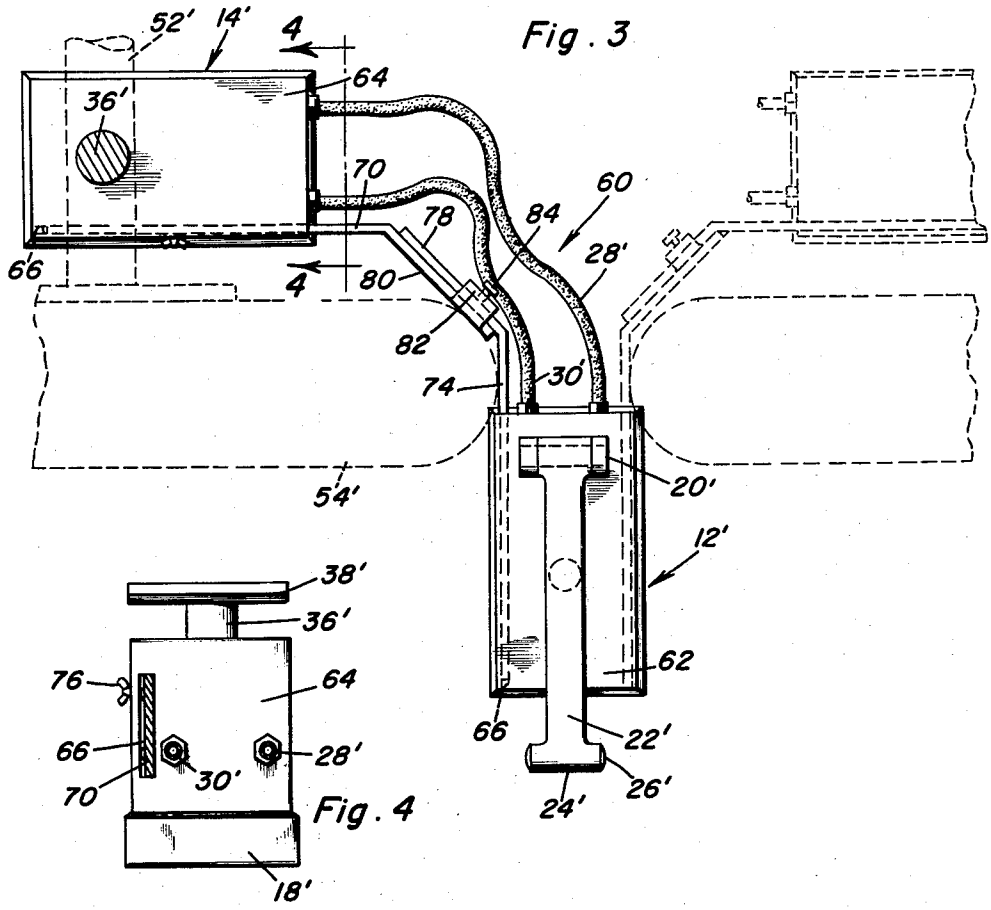


Fig. 4

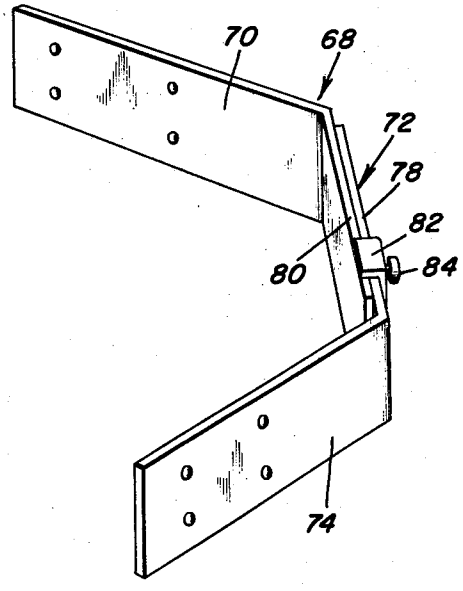


Fig. 5

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HYDRAULIC AUTO JACK

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Application December 6, 1956, Serial No. 626,738

2 Claims. (Cl. 254—1)

The present invention generally relates to an automobile jack of the hydraulic type and more particularly is a continuation in part of my co-pending application, Serial No. 427,705, filed May 5, 1954, now Patent No. 2,827,262.

Various types of jacks have been provided for lifting the ground engaging wheels of an automobile from the ground for replacement of the wheel, such as when a flat tire occurs. Certain types of these jacks incorporate a device which is vertically movable and usually incorporate an elongated handle for the insertion of the jack from the rear or front of a vehicle, inasmuch as the vehicle normally overhangs the axle by a considerable length. Such positioning of the jack under the axle requires that the person employing the jack actually observe the positioning, usually by kneeling on the ground surface with the usual result of soiling of the clothes being worn by the person using the jack. Accordingly, it is the primary object of the present invention to provide a jack having a construction which permits the automatic or positive positioning of the lifting element of the jack under the axle immediately inwardly of the ground engaging wheel without the necessity of observation of the axle, with the actuating means for the jack being disposed laterally of the vehicle for ready access and yet permitting the device to be readily employed and also to be easily stored in the usual trunk compartment of the automobile.

A further object of the present invention is to provide a jack of the type set forth above in which the device is adapted for use in conjunction with any wheel of an automobile.

Further objects of the present invention will reside in its simplicity of construction, ease of operation, efficiency, safety, adaptation for its purposes, and its relatively inexpensive manufacturing cost.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the hydraulic jack of the present invention;

Figure 2 is a plan view of the construction of Figure 1 illustrating the two positions of the lifting element;

Figure 3 is a plan view of another form of the present invention;

Figure 4 is a detailed sectional view taken substantially upon a plane passing along section line 4—4 of Figure 3 illustrating the details of construction thereof; and

Figure 5 is a perspective view illustrating the interconnecting element for the jack operating mechanism and lift element.

Referring now specifically to Figures 1 and 2 of the drawings, the numeral 10 generally designates the hydraulic auto jack of the present invention including an operating assembly generally designated by the numeral 12 and a lifting assembly generally designated by the numeral 14.

The operating assembly generally includes a rectangular casing 16 having a base 18 thereon, with upstanding pivot lugs 20 pivotally receiving one end of an elongated operating handle 22 which has a piston type pump operating member 24 extending downwardly through the casing 16. The outer end of the handle 22 is provided with a transverse member 24 having reflectors 26 on each end thereof. The details of the particular pump mechanism are not shown, but it is provided with a pressure hose 28 and a return hose 30 extending therefrom, with the hoses 28 and 30 being flexible and connected to the lift element 14. A suitable reservoir may be provided for the piston type pump and also a needle valve for controlling the return flow of pressurized fluid into the reservoir, thus maintaining the lifting assembly 14 operative.

The lift assembly 14 includes a housing or casing 32 with a base 34 thereon and an upstanding member 36 having an axle-engaging, roughened plate 38 thereon. The member 36 is vertically elevatable in response to movement of the pump handle 22 and is of any conventional construction wherein pressurized fluid in a cylinder will cause upward movement of the member 36. The structural details of the pump and lift arrangement may be the same as those illustrated in my co-pending application, Serial No. 427,705, filed May 5, 1954.

Bracket means generally designated by numeral 40 interconnects the assemblies 12 and 14 and the bracket means 40 includes a rigid section 42 secured to the central end portion of the casing 16 and also a portion 44 extending longitudinally and centrally from the casing 32.

An interconnecting element 46 is provided between the portions 42 and 44, and the interconnecting element 46 is provided with a limiting hinge 48 at each end thereof for pivotal engagement and connection to the sections or portions 42 and 44. The limiting hinge construction 48 includes stop means 50 for limiting the pivotal movement of the hinge and preferably also provides a snap lock construction which will permit the lift assembly 14 to be oriented in the position illustrated in Figure 2 under the axle 52 or in the position illustrated in dotted line in Figure 2 under a similar axle on the other side of the car. The engagement of the casing 16 with the tire 54 will automatically position the axle engaging plate 38 in underlying relation to the axle for lifting of the tire and wheel assembly off of the ground for changing thereof. The reflectors 26 projecting longitudinally of the car will warn approaching drivers of the presence of the vehicle and impending danger during periods of poor visibility, such as at night.

Referring now specifically to Figures 3–5, the numeral 60 generally designates a modified form of the invention incorporating certain of the same structural features which are designated by the same numerals and which are primed for distinction.

The assemblies 12′ and 14′ are employed in the same relationships as illustrated in Figures 1 and 2. The housings or casings are designated by numerals 62 and 64, respectively, and the casing 62 is provided with a longitudinal pocket 66 at each side thereof, while the casing 64 is provided with a longitudinal pocket 66 at one side thereof. An interconnecting bracket generally designated by the numeral 68 interconnects the assemblies 12′ and 14′ and the bracket assembly 68 includes a first portion 70, an interconnecting portion generally designated by the numeral 72, and a second portion 74. The portions 70 and 74 are arranged in oblique angular relation to the interconnecting portion 72 and are in perpendicular relation to each other for disposing the assemblies 12′ and 14′ in perpendicular relation. Wing

screws 76 are provided for locking the portions 70 and 74 in the pockets 66 respectively. The interconnecting section 72 is constructed of two telescopically overlying sections 78 and 80, with the inner section 80 having a sleeve 82 thereon slidably receiving the section 80, together with set screw 84 for clamping the sections 78 and 80 in adjusted position, thus orientating the position of the lifting element 38' on the lift assembly 14', so that when the casing 62 is engaged with the wheel, the lifting element 38' will be accurately positioned in relation to the axle 52'.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A jack for engaging the undercarriage of a vehicle having a ground engaging wheel, said jack comprising a first housing having a lift member mounted thereon, said lift member being in the form of a hydraulically operated piston and cylinder arrangement, a second housing, a hydraulic pump mounted in said second housing, actuating means for said pump, flexible hose lines interconnecting the pump and piston and cylinder arrangement and bracket means interconnecting said housings for limiting pivotal movement therebetween between two perpendicular positions with the first housing disposed generally parallel to the wheel and the second housing disposed transversely of the wheel, said bracket means including a member rigid with and extending longitudinally from each of said housings, and an interconnecting member pivotally attached to the outer ends of said rigid members.

2. A jack for engaging the undercarriage of an automobile having a ground engaging wheel, comprising a lift assembly including a vertically movable lift member, an operating assembly including actuating means, means communicating said actuating means with said vertical lift, connecting means supported by and between said lift assembly and said operating assembly for selectively limiting the positioning of said lift assembly between either of two extreme pivotal positions relative to said operating assembly, said connecting means including a first bracket portion attached to the operating assembly, a second bracket portion attached to the lifting assembly, an interconnecting bracket portion hingedly attached to the outer end of the bracket portions, and limiting hinge means for limiting the movement of the portions of the brackets between two extreme pivotal positions for orienting the assemblies in perpendicular relation.

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