L. A. FLEURY.

PNEUMATIC JACK.

APPLICATION FILED SEPT. 20, 1917.

1,295,471. Patented Feb. 25, 1919.

Fig 1

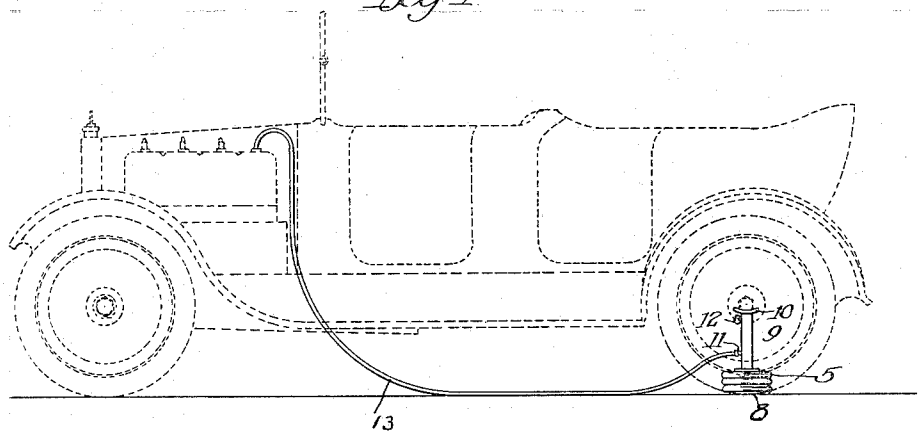


Fig 2

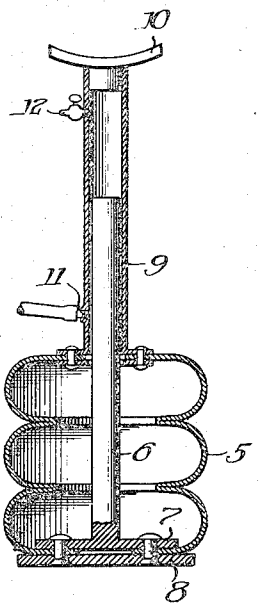
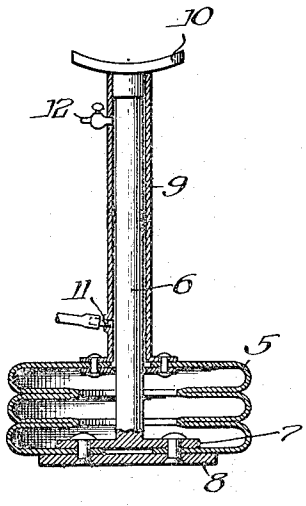


Fig 3



Witness:

E. R. Dawson

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UNITED STATES PATENT OFFICE.

LOUIS A. FLEURY, OF INDIANAPOLIS, INDIANA.

PNEUMATIC JACK.

1,295,471. Specification of Letters Patent. Patented Feb. 25, 1919.

Application filed September 20, 1917. Serial No. 192,399.

To all whom it may concern:

Be it known that I, LOUIS A. FLEURY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Pneumatic Jacks, of which the following is a specification.

My present invention relates to a lifting device, preferably in the form of a jack for elevating vehicles, and is actuated by fluid under pressure. In connection with motor vehicles it is especially applicable, as I am enabled to utilize compressed air generated by the motor, or coming from a compression tank, and thus provide a jack which may be utilized for raising the vehicle at any required location, and which may be automatically accomplished by such power without the necessity of manual labor other than placing the jack in position, all of which will hereinafter be more specifically explained in detail.

In the accompanying drawing, forming a part hereof, Figure 1 is a side elevation of a vehicle showing my improved jack applied to the rear axle in position to elevate the vehicle; Fig. 2, a longitudinal sectional view of said jack when the structure has been actuated by fluid pressure, and Fig. 3 is a similar view when the fluid has been released showing the jack in normal position.

In said drawing I have chosen to illustrate my improved jack designed to be operated by compressed air, but it will be understood that other fluid than compressed air may be utilized without departing from the general principles of construction. It consists essentially of a collapsible chamber and may comprise a series of small folds which can be alternately expanded and contracted, preferably embodying the principles of a bellows, being constructed of fabric or other flexible material capable of collapsion, so that when in contracted condition it occupies but a minimum amount of space and can be readily positioned in a vehicle as an accessory, and obviates the necessity of providing for the storage of cumbersome lifting devices as now commonly employed.

In the drawing, 5 indicates said chamber of cylindrical or other form composed of folds as indicated, said chamber being preferably mounted upon a base, as 8, of any form and in any appropriate manner. In the interior of the chamber I arrange a standard, 6, tubular or otherwise, which may be mounted upon a base 7 connected to the base 8, or in any suitable manner. Said standard 6 extends upwardly through said chamber to any extent desired, and at the upper side of the chamber I mount the lifting jack 9, preferably comprising a tubular member, secured thereto by rivets or otherwise, and which at its upper end is provided with a seat, as 10, for the reception of a vehicle axle or other part to be raised, said standard 6 and tube 9 being in telescopic relation to each other, and the latter constituting an extension of the air chamber. At any appropriate part of the air containing structure, either in the chamber 5 or tubular member 9, I place an inlet valve, 11, which communicates with a source of air supply, such as the motor of the vehicle or otherwise, for the introduction of fluid to expand the chamber. Also, wherever desirable, an outlet or exhaust valve, 12, is provided for exhausting the air supply to contract said chamber.

In operation, the jack, in collapsed condition, is placed under the part of the vehicle to be raised, for example, as indicated in Fig. 1. Compressed air is then introduced into the chamber 5 through a conduit, as 13, communicating with the motor of the vehicle or otherwise, and it will be understood that any appropriate arrangement for supplying such air, or other fluid, may be arranged and employed as desired. As the air discharges into said chamber the folds thereof become inflated and as they distend they gradually raise the jack 9, which in turn raises the vehicle. As indicated in Fig. 2, the range of upward movement of the jack is considerable, but which may be increased or decreased with a fluid receiving chamber of greater or lesser dimensions, and for purpose of illustration I have shown said chamber composed of three folds. When it is desired to lower the vehicle this can be readily accomplished by adjusting the cock, 12, to permit the escape of the fluid, which is further accelerated by the weight of the gradually descending vehicle, so that when the latter reaches the ground the chamber is collapsed, as indicated in Figs. 1 and 3, and in condition to be removed and stored. In this manner I provide a very simple and convenient pneumatic jack which can be readily operated without labor or difficulty, and which

can be utilized in unfavorable situations along the roads or otherwise when employed in connection with a motor vehicle, but, as will be understood, it may be employed under any circumstances where fluid pressure is available.

It will also be understood that my improved jack may be operated by a hand air-pump, not requiring a direct mechanical application of power, as is the case with common types of jacks, and in which manner it can be more conveniently and quickly operated than the ordinary jack, which latter is frequently used in similar situations, for instance, under a vehicle, where the direct application of mechanical power is a very difficult matter.

I have shown a chamber comprising three folds of flexible material, but do not desire to be understood as limiting myself to such particular construction, for, as is obvious, one or more of such folds may be dispensed with and the required lifting power accomplished by slight modification in the size and arrangement of said chamber and telescoping members.

I claim as my invention:

1. A portable fluid-actuated jack comprising a base, a collapsible fluid chamber mounted thereon, a lifting member associated with said chamber, a standard rising from said base and extending into said lifting member in telescopic relation thereto, means for introducing fluid into said chamber for inflating the same and raising said lifting member, and means for permitting the escape of said fluid to lower said member.

2. A portable fluid-actuated jack comprising a flexible fluid chamber composed of a series of collapsible folds, a lifting member associated with said chamber, a standard rising from said chamber and extending into said lifting member in telescopic relation thereto, means for introducing fluid into said chamber to inflate said folds and raise said lifting member, and means for deflating said chamber to lower said member.

3. In a portable jack, a base, a flexible chamber mounted thereon, a standard fixedly secured to and rising from said base, a lifting device connected to the upper side of said chamber and telescoping upon said standard, means for inflating said chamber to raise said lifting member, and means for deflating said chamber to lower said member.

4. In a portable fluid-actuated jack, a base, a collapsible fluid chamber composed of fabric secured to said base, a standard in said chamber rising from said base, a tubular lifting member secured to the upper side of said collapsible chamber and telescoping upon said standard, and means for introducing fluid into said chamber for actuating said lifting member.

In testimony whereof I affix my signature in the presence of two witnesses.

LOUIS A. FLEURY.

Witnesses:

CHARLES R. DILL,

LEE R. GARBER.