H. C. REUTER.

LIFTING JACK.

APPLICATION FILED JUNE 5, 1918.

1,291,146.

Patented Jan. 14, 1919.

3 SHEETS—SHEET 1.

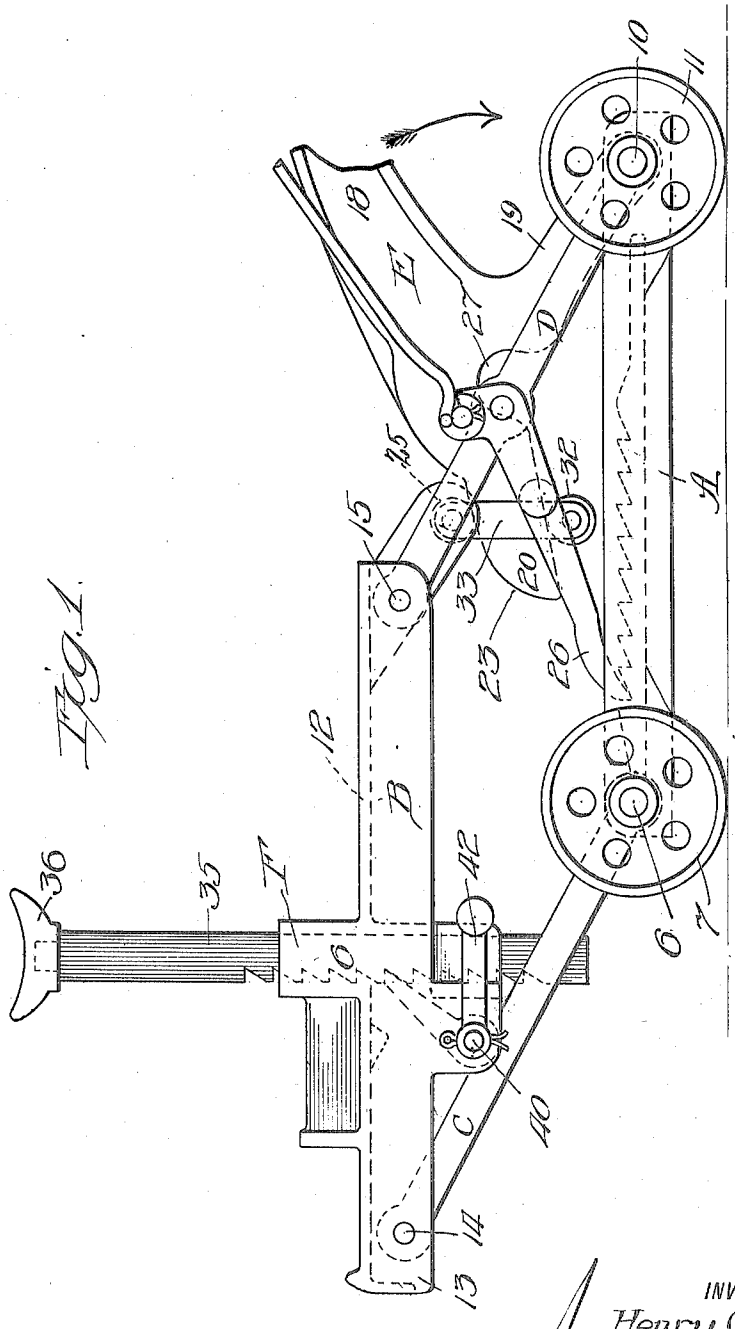

Fig. 1.

INVENTOR

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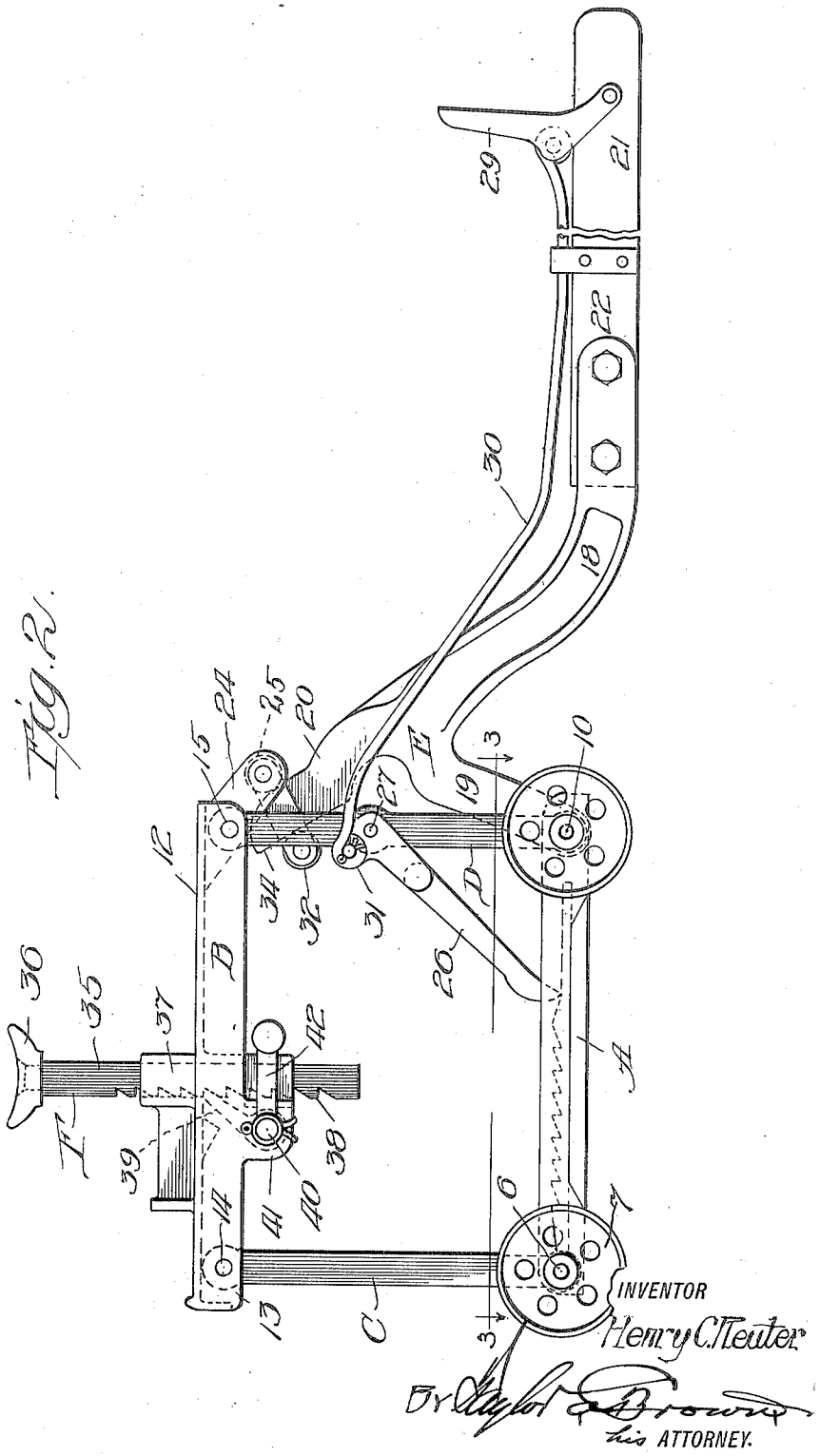
3 SHEETS—SHEET 2.

Fig. 2.



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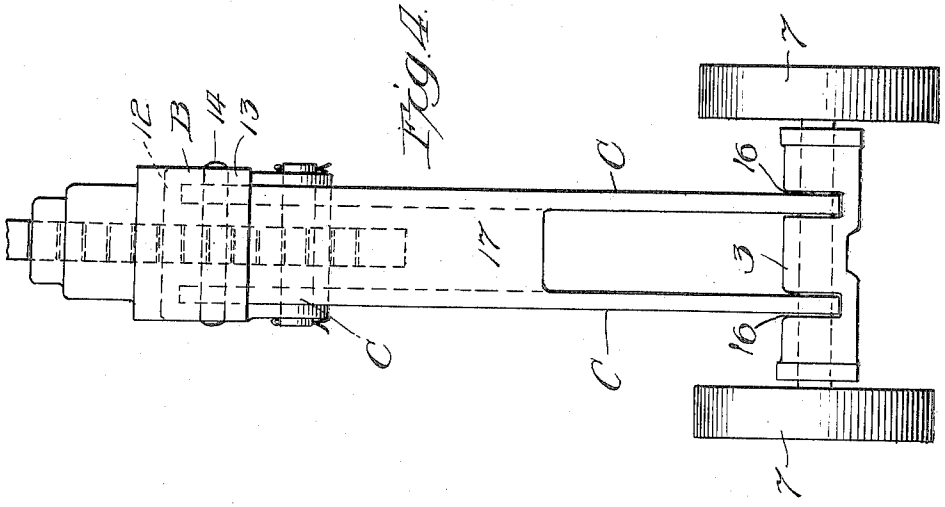

Fig. 4.

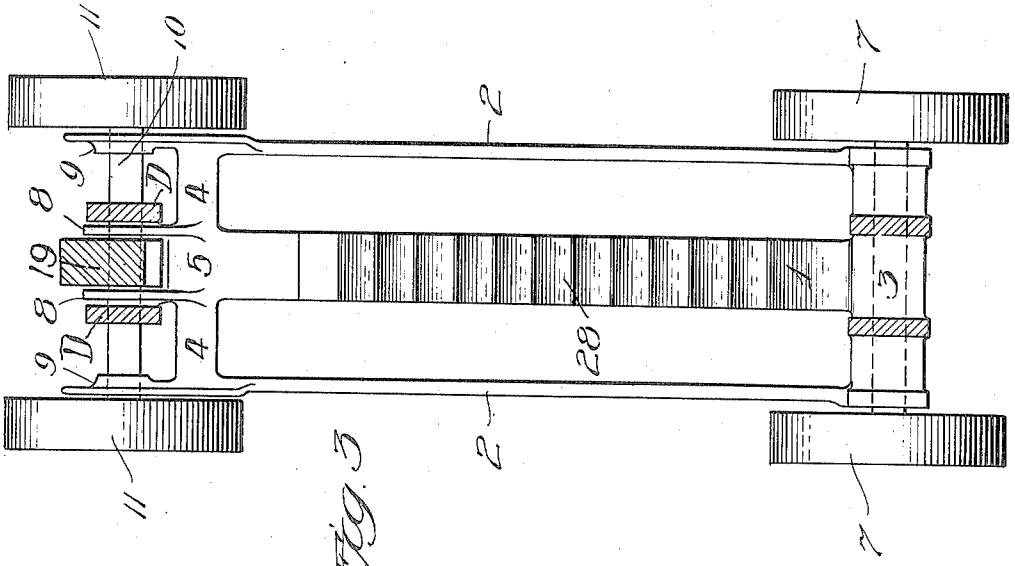

Fig. 3

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UNITED STATES PATENT OFFICE.

HENRY C. REUTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO SAMUEL BLOCK, OF CHICAGO, ILLINOIS.

LIFTING-JACK.

1,291,146. Specification of Letters Patent. Patented Jan. 14, 1919.

Application filed June 5, 1918. Serial No. 238,255.

To all whom it may concern:

Be it known that I, HENRY C. REUTER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lifting-Jacks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to portable vehicle jacks. The object of the invention is to provide a portable lifting jack by means of which the body of an automobile or other vehicle may be lifted from the ground.

A further object of the invention is to so construct a device of this character that the same will not only be readily transportable and easily operated, but which will be relatively narrow, so as to be convenient to be placed under vehicles of various types of construction.

A further object of the invention is to provide a device of the character described by means of which a vehicle may be raised from the ground irrespective of the normal height of the axle of the vehicle from the ground. A still further object of the invention is to provide a device of the kind described, which will be relatively simple of construction, yet strong and durable and easy to manufacture.

These and other objects of the invention will appear as I proceed with my specification.

In the drawings:

Figure 1 is a side elevation of a lifting jack embodying my invention, with the movable table member in its lowered position.

Fig. 2 is a similar view showing the table member in the raised position.

Fig. 3 is a horizontal, sectional plan view taken on the plane indicated by the dotted line 3—3 of Fig. 2.

Fig. 4 is a front end elevation of the lifting jack.

In said drawings, A indicates the lower frame as a whole, B the movable table member as a whole, C C and D D the front and rear standards, respectively, by which the table B is supported on the frame A. The operating lever as a whole is indicated by the letter E and the adjustable vehicle supporting jack member as a whole is indicated by the letter F.

The frame A is shown as a single casting comprising a centrally and longitudinally disposed member 1 and two relatively wide and thin side bar members 2, 2, on edge, and in parallel arrangement with the central member 1, united thereto at the front and back. The front member of this frame is indicated by the enlarged head 3 cast integral with the front ends of the members 1 and 2 as shown clearly in Fig. 3.

Transversely extending plates 4, 4 integrally connect the back portions of the members 1 and 2, as indicated at 5. The head 3 is cored transversely and suitably machined to afford a bearing for the front axle 6 which extends therethrough, transversely of the frame A, and is provided on its ends with suitable rollers or wheels 7. The back end of the frame is shown as provided with four extension bearing arms 8, 8, 9, 9, the latter in prolongation of the side bars 2, 2, each suitably apertured to afford a journal bearing for the transversely positioned axle 10, upon the outer ends of which are mounted the wheels 11.

The movable table B is provided with a top surface 12 and with a downwardly extending wall 13 on each side, suitably apertured near each end to form a bearing for the front pivot pin 14 and back pivot pin 15, by which the standards or links C C and D D are respectively joined to said table member B.

The lower ends of the supporting link standards C C are suitably apertured and the axle 6 is passed therethrough at the same time that it is inserted into the bearing in the head 3 and before the wheels 7 are placed upon said axle, the head 3 of the frame member being suitably recessed at 16, 16 for this purpose. The two link standards C C are preferably made integral by means of the strengthening web 17. The lower ends of the link standards D D are similarly apertured transversely to afford bearings for the rear axle 10, and when the frame is assembled will be found in position on said axle on either side of the extensions 8, 8, as shown in Fig. 3,—the upper ends, as stated, being engaged with the pivot pin 15. It will thus be manifest that the table member B may be readily swung from the position shown in Fig. 1 to that shown

in Fig. 2, and back again, by reason of the pivotal or rocking engagement of the links C C, D D with the pins 14, 15 and the axles 6 and 10.

The operating lever E comprises a main arm 18, a pivoted bearing arm 19 and a lifting arm 20. The arm 19 is provided in its lower end with a transverse opening affording a suitable bearing for the axle 10 upon which the arm 19 is loosely mounted, so as to swing thereon. The lever E, having a handle 21, is of such length as to perform the desired function and is usually provided with a suitable extension 22, bolted or otherwise secured to the arm 18. The lifting arm 20 is arranged in such manner as that its upper bearing edge or surface 23 will raise the table in one movement of the lever E.

This is accomplished in the present instance, as follows: The table B has a rearwardly and downwardly integral extension member 24, positioned in the plane of the path of movement of the lever E, and preferably carrying an anti-friction roller 25. The cam edge 23 of the lifting arm 20 bears against the under side of this roller, and consequently, when the arm 20 is raised from the position shown in Fig. 1, to that shown in Fig. 2, the table B is easily and quickly raised in the desired direction, until the standards or links C C and D D are in the vertical position.

A locking pawl 26 is pivotally and loosely mounted upon a pintle pin or bolt 27 secured to the link supports D, D the long arm of the pawl 26 being adapted for engagement with ratchet teeth 28 located upon the top surface of the central frame member 1. A releasing handle 29 pivotally secured to the lever handle 21, is connected by a suitable rod or connection 30 with the short arm 31 of the pawl 26, whereby the point of the pawl 26 may be lifted free from engagement with the ratchet teeth 28 when desired.

To more readily bring the table B from the position shown in Fig. 2 to its initial position shown in Fig. 1, I have provided a bearing roller 32 suspended between two strap members 33 pivotally hung on the extension member 24 in such position that the lower edge or face 34 of the lifting arm 20 will rest upon the roller 32. Thus, by moving the handle of the lever E upwardly, the edge or bearing surface 34 will tend to depress the roller 32 and through the connection with the extension member 24, cause the latter and the table B to be moved downwardly into the initial position.

The jack member F comprises the vertically disposed bar 35 carrying upon its upper end a supporting head 36 of such contour as will adapt itself for engagement with the axle of an automobile or other vehicle to be raised by the lifting jack. On the table B is a vertically arranged supporting sleeve 37 having a suitable aperture therethrough for telescopic movement of the bar 35 therethrough. One face of the bar 35 is provided with a series of ratchet teeth 38 adapted to be engaged by a pivoted pawl 39 hung upon the bolt 40, transversely arranged through suitable apertures in extension lugs 41 depending from the sides 13 of the table B. A hand releasing lever 42 is suitably keyed to the bolt 40, as clearly shown in Fig. 2.

The bar 35 may be raised by hand in the usual way, the pawl 39 slipping from one of the teeth 38 to the next sub-jacent tooth, as the bar 35 is raised. When it is desired to lower the bar 35, it will be necessary to first grasp the handle lever 42 and raise it, thus releasing the pawl 39 from engagement with the shoulder of one of the teeth 38, so the bar 35 may be lowered.

Having described the construction of my lifting jack, as shown in the embodiment thereof illustrated in the drawings, it will be manifest, in using the device to lift a vehicle from the floor, that the frame B will be first lowered in the position indicated in Fig. 1, and the entire device moved by means of the wheels 7, 11, in proper juxtaposition beneath the vehicle, until the shoulder or head 36 is beneath the axle of the vehicle, or beneath such part of the vehicle as it is necessary to contact with in order to raise the vehicle. The bar 35 will then be raised vertically by hand until the head 36 is in proper contact with the axle or other part of the vehicle. In this position, the lever E will be in raised position, as indicated in Fig. 1, and the pawl 26 will be in the forward position over the ratchet teeth 28. Then the lever E will be moved downwardly toward the floor, that is in the direction indicated by the arrow in Fig. 1. This downward movement will be continued, the pawl 26 slipping in turn over each of the teeth 28, and thus holding the parts in position against accidental slipping, until the link supports C, C, D, D, are in vertical position. In this position, the table B will be substantially horizontal and the vehicle will be raised off the floor that is supporting the wheels 7, 11, a distance equal to the distance between the horizontal plane of the table B shown in Fig. 1 and the horizontal plane of the table B shown in Fig. 2.

In this position, the weight of the vehicle will hold the parts securely and prevent shifting or movement thereof during the time that the person using the lifting jack may be working upon the automobile or other vehicle.

My device is very simple but strong and durable, and yet relatively cheap to manufacture. Various changes in the details of construction may be made without departing from the principle of the invention, and

therefore I do not desire to have my invention restricted to the particular details shown, although the form illustrated is recommended as a preferred construction.

I claim as my invention:

1. A lifting jack comprising a wheeled frame, a table movably mounted on said frame, a vehicle supporting member mounted on and movable with respect to the table, a bracket extending rearwardly and downwardly from said table, strap members pivotally secured to said bracket, roller bearings at either end of and separating the two strap members, an operating lever pivotally mounted on one of the axles of said frame and a lifting arm on said lever extending between the two strap members and in operative engagement with said roller members.

2. A lifting jack comprising a wheeled frame, a table, links pivotally connecting the table with the axles of said wheels, an operating lever mounted on one of said axles and provided with a rigid lifting arm unattached to said table and operatively positioned to raise the table as the lever is depressed.

3. A lifting jack comprising a wheeled frame, a table, links pivotally connecting the table with the axles of said wheels, an operating lever mounted on one of said axles and embodying a main arm, a pivoted bearing arm and a rigid lifting arm, said bearing arm and lifting arm extending in opposite directions, and the latter being unattached to said table and operatively positioned to raise the table as the lever is depressed and to depress the table as the lever is raised.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 3rd day of June A. D. 1918.

HENRY C. REUTER.

Witnesses:
TAYLOR E. BROWN,
KARL W. DOLL.