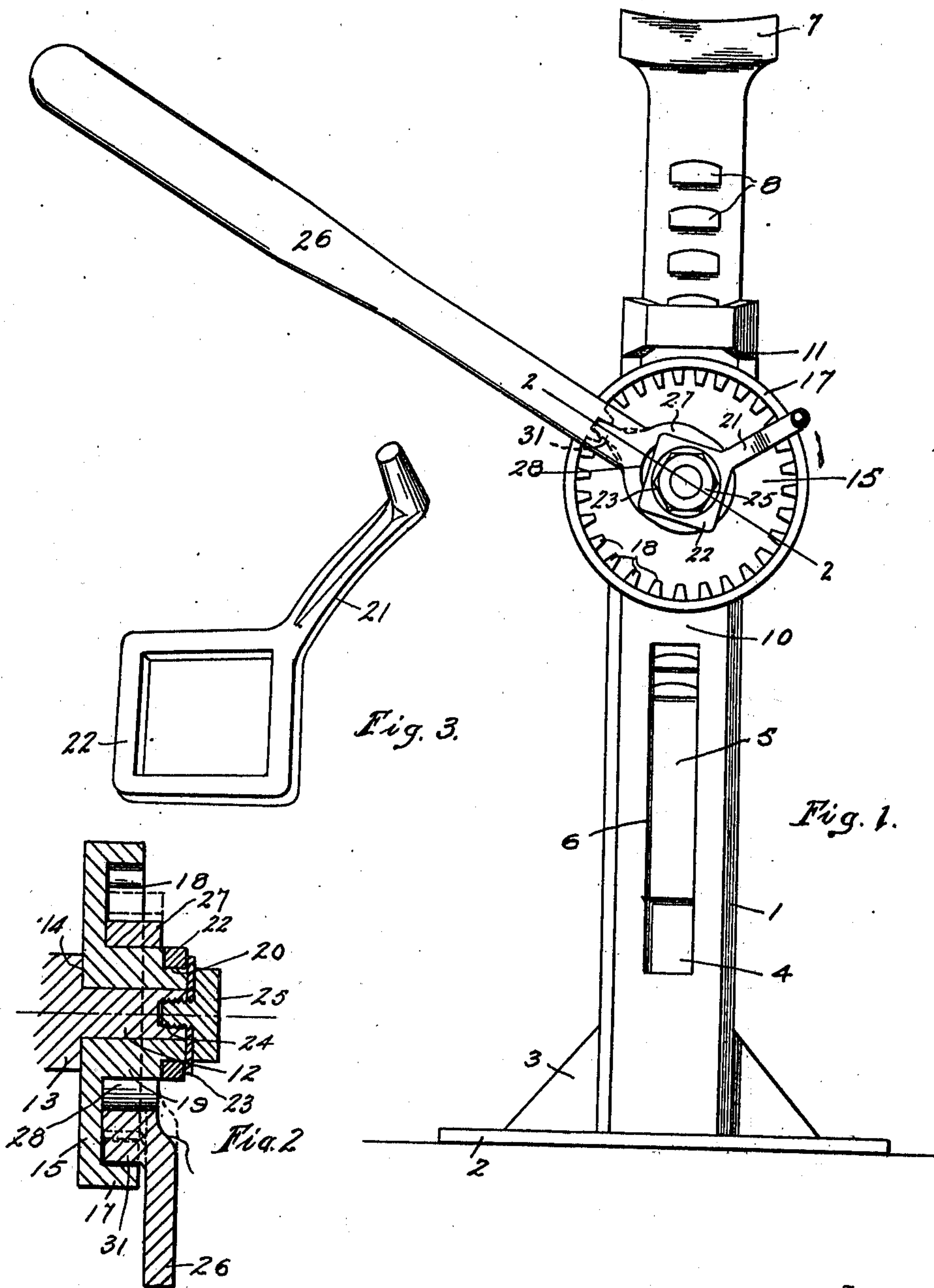


LE ROY WILLOUR.
JACK.
APPLICATION FILED JUNE 25, 1910.

990,089.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.



Witnesses
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B. Fishburne

Inventor
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By

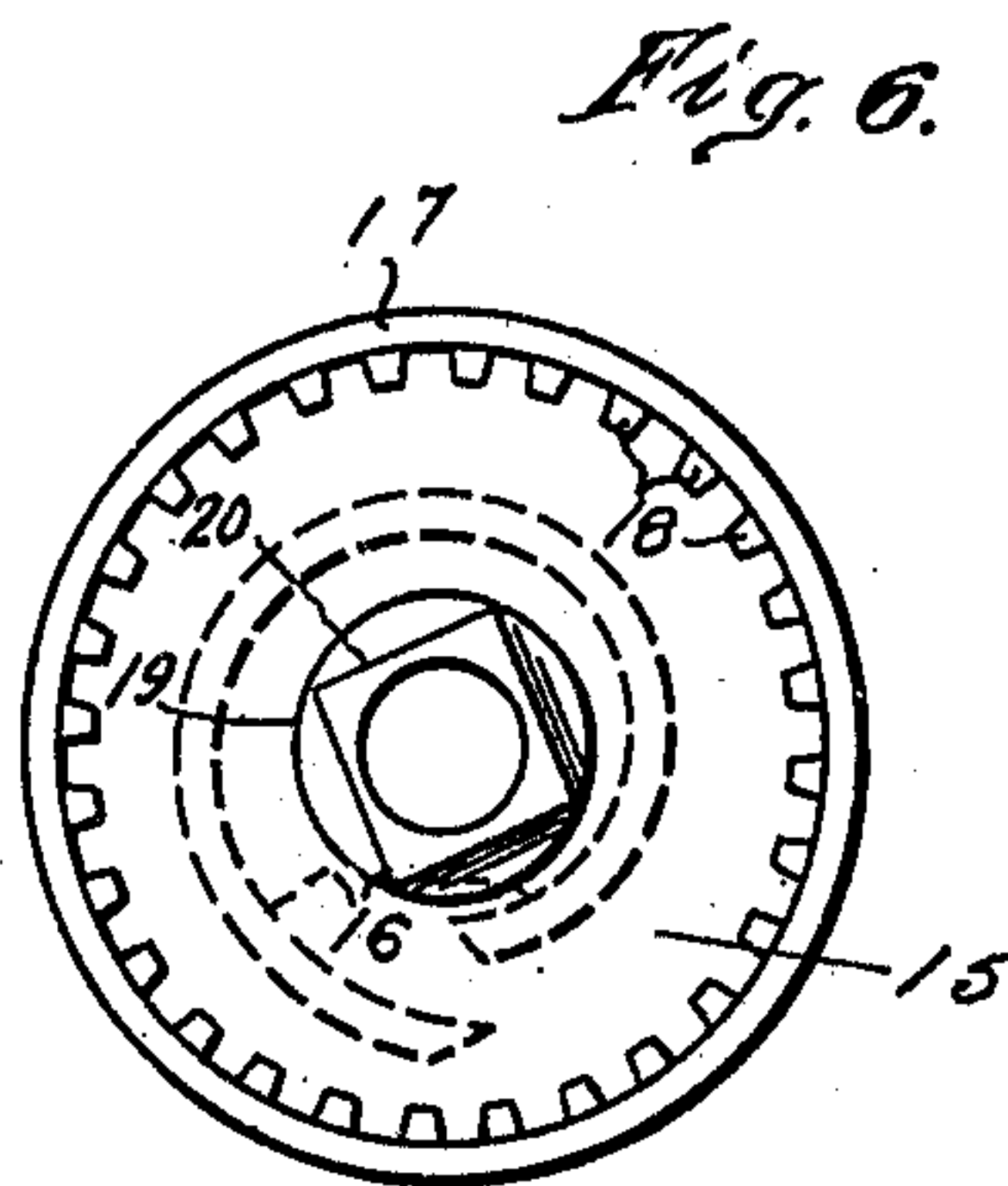
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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE.

LE ROY WILLOUR, OF ASHLAND, OHIO, ASSIGNOR TO THE ASHLAND MANUFACTURING COMPANY, OF ASHLAND, OHIO, A CORPORATION OF OHIO.

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990,089.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LE ROY WILLOUR, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Jacks, of which the following is a specification.

My invention relates to jacks, and particularly to a jack which may be easily and quickly operated, and to be used in connection with automobiles or the like.

The object of this invention is to provide a lifting jack formed of few and simple parts, and which may be therefore manufactured very cheaply.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a side view of the jack, Fig. 2 is a detail sectional view taken on the line 2—2 of Fig. 1, Fig. 3 is a perspective view of the adjusting handle of the jack, the same being removed, Fig. 4 is a central vertical sectional view taken through the jack, and at right angles to Fig. 1, Fig. 5 is an enlarged fragmentary elevation of the actuating lever or handle, and Fig. 6 is a side view of the disk, constituting a portion of the jack.

In the drawings, wherein is illustrated a preferred embodiment of my invention, the numeral 1 designates a vertically disposed standard forming the body support of the jack. This standard is provided at its lower end with a base 2, which is further connected with standard 1 by means of triangular sections of material 3. The standard 1 is provided with a main axial opening 4 extending therethrough, to receive a longitudinally movable rack-bar 5, as shown. The standard 1 may preferably have its walls provided with longitudinally disposed slots 6 to lessen the weight of the jack. The rack-bar 5 is provided upon its upper end with a head 7, as shown, and upon one side thereof with teeth 8. As clearly illustrated in Fig. 4, the teeth 8 are disposed to operate within an auxiliary longitudinal opening 9 formed through the standard 1, and which leads into the axial opening 4. The standard 1 is provided upon its side wall 10 and near its upper end, with an opening 11, which has communication with the opening 9, as shown.

The wall 10 of the standard 1, has a cylindrical stud-shaft 12 formed thereon, as

shown. This stud-shaft has an enlarged base 13, which forms with the stud-shaft proper, a shoulder 14. A disk 15 is rotatably mounted upon the stud-shaft 12 in engagement with the base 13, as shown. The disk 15 is provided upon its inner side with an involute thread 16. The stud-shaft 12 is disposed at an obtuse angle to the standard 1 with relation to the lower end of said standard, whereby the disk 15 is disposed to operate within the opening 11. The involute thread 16 engages the teeth 8 of the rack-bar, as clearly shown in Fig. 1. The disk 15 is provided upon its outer side, with an annular flange 17 which is adjacent the periphery of said disk, and this annular flange is provided upon its inner surface with teeth 18, as shown. The disk 15 is further provided with a hub portion 19, cast integral with the disk and disposed upon the stud-shaft 12. The hub portion 19 has its outer end reduced and formed square in cross section, as shown at 20. An adjusting lever or handle 21 is provided, to the inner end of which is connected a square skeleton portion 22, adapted to fit snugly upon the reduced end 20 of the hub portion 19. The handle 21 is retained upon the reduced end 20, by a washer 23, as shown in Fig. 2. The stud-shaft 12 has its outer end provided with an axially extending screw threaded opening 24, to receive a screw 25, the head of which engages said washer and holds the same in place.

An actuating handle or lever 26 is provided, upon the inner end of which is formed a head 27 having an elongated opening 28 formed therethrough, as shown. The opening 28 is of sufficient transverse diameter to loosely receive the hub portion 19, and said opening is sufficiently elongated to permit of a longitudinal movement of the head 27 with relation to the hub portion 19. The head 27 surrounds the hub 19 and is disposed within the annular flange 17, and the handle 26 is off-set as shown at 30 to clear said annular flange. The head 27 is provided adjacent its connection with handle 26, with a lug or tooth 31. The lug 31 engages the teeth 18 to effect proper rotation of the disk 15. The head 27 is disposed between the disk 15 and the skeleton portion 22, whereby said head is prevented from lateral displacement. From the above description it is obvious that the actuating handle 26 is prevented from undue lateral

movements, while the same is permitted to be moved longitudinally, to effect the engagement or disengagement of the lug 31 with the teeth 18.

5 In the use of my jack, the actuating handle 26 is first moved longitudinally to disengage the lug 31 and the teeth 18. The adjusting lever or handle 21 is then rotated counter-clockwise to quickly raise the rack-
10 bar so that the head 7 may engage the load to be moved. The actuating handle or lever 26 is moved upwardly and then longitudinally toward the operator, to cause the lug 31 to be disposed between certain of the
15 teeth 18. The actuating handle 26 is then oscillated downwardly to rotate disk 15. After the handle 26 has been moved to its lowermost position, the same is moved longitudinally away from the operator, whereby
20 the lug 31 is disengaged from the teeth 18 and the handle 26 permitted to be oscillated upwardly without causing the rotation of the disk 15. The lug 31 is then urged into engagement with the teeth 18 and the operation is repeated, as above described. It is
25 obvious that the actuating handle 26 may be employed to lower the rack-bar 5, as well as to elevate the same. After the load has been removed from the head 7, the rack-bar 5
30 may be quickly returned to its lowermost position by proper rotation of the handle 21.

I wish it understood that the form of my invention herewith shown and described, is to be taken as a preferred example of the
35 same, and that certain changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the subjoined claims.

40 Having thus fully described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a lifting jack, a standard, a rack-bar having slidable engagement therewith,
45 a stud-shaft rigidly mounted upon said standard, a disk rotatably mounted upon said stud-shaft, having one side thereof provided with an involute thread and its opposite side provided with an annular flange
50 carrying teeth upon its inner side, said disk being further provided upon its outer side with a hub-portion cast integral therewith and rotatably mounted upon said stud-shaft, a relatively small rotary adjusting lever
55 rigidly connected with said hub-portion, an operating lever having a head provided with an elongated slot to receive said hub-portion, whereby said head is disposed between said disk and adjusting lever, and said operating
60 lever carrying a tooth to engage said teeth upon said disk.

2. In a lifting jack, a standard, a rack-bar to cooperate therewith, a disk to move said rack-bar, a rotary adjusting lever to move said rack-bar into engagement with its
65 load, and an oscillatory operating lever having its head disposed between said disk and adjusting lever, said oscillatory lever carrying means to rotate said disk.

3. In a lifting jack, a standard, a rack-
70 bar having slidable engagement therewith, a disk rotatably mounted upon said standard and having a hub portion, said disk being provided upon one side thereof with an involute thread and upon its opposite side with
75 teeth surrounding said hub portion, an adjusting lever connected with said hub portion, and an operating lever comprising a handle and an off-set head portion, said head portion having an opening formed
80 therethrough to receive said hub portion, said head portion being disposed for operation between the rotatable disk and adjusting lever, whereby said head portion is prevented from lateral displacement. 85

4. In a lifting jack, a standard, a rack-bar having slidable engagement therewith, a disk rotatably mounted upon said standard and having a hub portion, said disk being provided upon one side with an involute
90 thread and upon the opposite side with teeth surrounding said hub portion, an operating lever comprising a handle provided with an off-set head having an opening formed there-
95 through for receiving said hub portion, whereby said head may be disposed within the space surrounded by the teeth and the handle portion disposed outwardly of said space to clear said teeth, means carried by
100 said operating lever to engage said teeth, and an adjusting lever rigidly connected with the free end of said hub portion to quickly rotate said disk and to prevent the lateral displacement of said off-set head. 105

5. In a lifting jack, a standard, a rack-bar
105 having slidable engagement therewith, a stud-shaft connected with said standard, a disk rotatably mounted upon said stud-shaft for raising and lowering said rack-bar, said disk being provided with a hub having
110 its free ends formed approximately square in cross-section, an oscillatory lever loosely mounted upon said hub, an adjusting lever mounted upon said free end of the hub, and means to removably hold said adjusting
115 lever upon said free end.

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

LE ROY WILLOUR.

Witnesses:

J. F. WELTY,

J. A. SHEARER.