

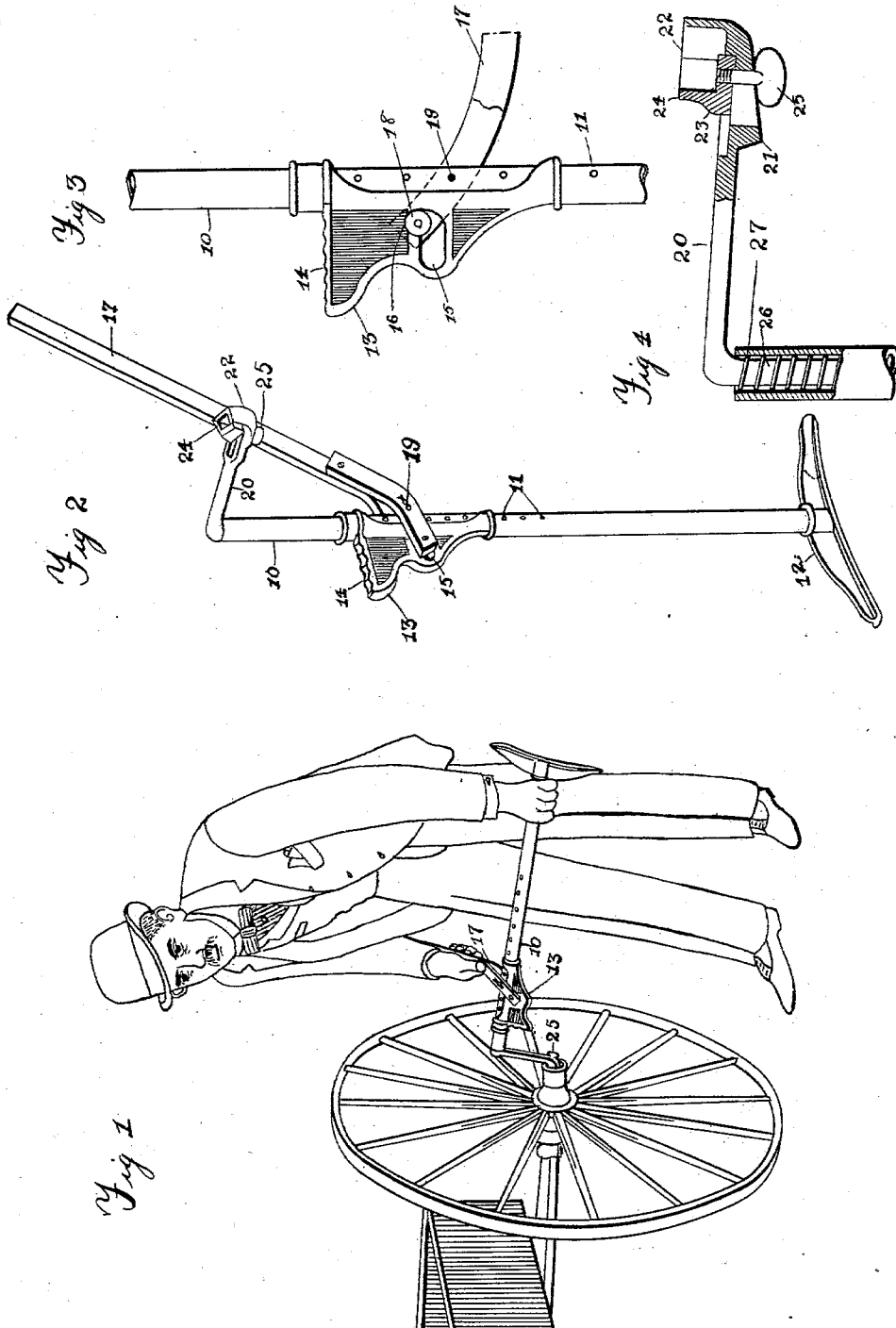
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I. A. WEAVER.
COMBINED LIFTING JACK AND WRENCH.

(Application filed Jan. 15, 1898.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

IRA A. WEAVER, OF DES MOINES, IOWA.

COMBINED LIFTING-JACK AND WRENCH.

SPECIFICATION forming part of Letters Patent No. 634,548, dated October 10, 1899.

Application filed January 15, 1898. Serial No. 666,837. (No model.)

To all whom it may concern:

Be it known that I, IRA A. WEAVER, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Combined Lifting-Jack and Wrench, of which the following is a specification.

The object of this invention is to provide a simple, strong, durable, and convenient wagon-jack, combined with which the operator may readily, quickly, and easily remove a nut from a vehicle-axle without touching it with his fingers and then may elevate the vehicle so that the wheel may be removed, and then when the axle has been lubricated the vehicle may be lowered and the nut screwed in position without the necessity of touching the nut or axle with the fingers.

A further object is to provide a lifting-jack of simple, strong, and durable construction and in which the weight carried by the jack is automatically held in its elevated position until the operating-lever is raised.

My invention consists in certain details in the construction, arrangement, and combination of the parts of the lever-lifting jack and in the construction, arrangement, and combination with a lifting-jack of the nut-wrench, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a view in which the device is in position for use as a nut-wrench. Fig. 2 shows a perspective view of the complete device. Fig. 3 shows an enlarged detail view of the sliding block and accompanying parts of the lever-lifting jack. Fig. 4 shows a side elevation of the nut-wrench with parts broken away to show certain details of construction.

Referring to the accompanying drawings, the reference-numeral 10 is used to indicate an upright, preferably made of pipe and open at its top and provided with a series of transverse openings 11 throughout its length. This upright is secured in a base 12, which is preferably made of cast metal.

The reference-numeral 13 is used to indicate a metal block having a vertical opening extended therethrough, designed to admit the upright 10, so that the block may slide relative to the upright. On one side of the block is a horizontally-projecting shoulder 14,

serrated on its upper edge and designed to engage the article to be lifted by the jack. Immediately beneath the shoulder 14 is a slot 15, having at the end of the slot which is adjacent to the upright 10 a notch 16. This notch is formed on the upper boundary of the slot 15.

The reference-numeral 17 indicates the operating-lever, which is bifurcated at its end and curved upwardly. Mounted between the bifurcated end of the lever is a roller 18, which is extended through the slot 15 and is of such a size as to be capable of entering the notch 16.

19 indicates a spring-key of the ordinary construction that is designed to be passed through the bifurcated end portion of the lever and through one of the openings 11 in the upright 10. It is obvious that by means of this pin the block 13 may be adjusted vertically relative to the upright, and when it is in place in the lever it serves as a fulcrum, upon which the lever may move.

In practical use with this portion of the device the shoulder 14 is placed beneath the object to be elevated, the operating-lever having been previously raised to its upper limit, and when in this position the roller 18 will be in the outer end of the slot 15. Then as the outer end of the lever is lowered the block 13, together with the weight carried thereby, will be raised until the roller 18 enters the notch 16, and when in this position the block 13 will be locked against downward movement. It may, however, be easily and quickly released by moving the lever upwardly.

The reference-numeral 20 is used to indicate an arm having a flattened portion at its one end and a slot 21 in the said flattened portion. The lower surface of this flattened portion is tapered toward the end of the arm for purposes hereinafter made clear. Formed on the extremity of the arm 20, beyond the flattened portion, is a part 22 to project upwardly therefrom, the inner surface of which is provided with a right-angled recess.

The reference-numeral 23 is used to indicate a block which is slidingly mounted in the slot 21, and formed on the top surface of this block is a part 24 to coact or mate with the part 22 in forming a nut-wrench. 25 indicates a thumb-screw to project upwardly

through the slot 21 into the block 23. This thumb-screw is made to enter the said block at a point within the space inclosed by the parts 22 and 24. When a great pressure is applied to this movable member, such as would be given when used in unscrewing a nut, there is a tendency for the top of the movable member to bend outwardly from the nut. However, by thus placing the set-screw between the jaws the top is prevented from bending or inclining in this manner.

The inclined surface on the under side of the flattened end of the arm 20 is provided for the purpose of preventing the movable member of the wrench from sliding backwardly in the slot any considerable distance. Inasmuch as the said movable member is forced backwardly in the slot, the thumb-screw is tightened. On the other end of the arm 20 is a journal 26, and 27 indicates a spring connected with this journal and of a size designed to enter the opening in the top of the upright 10, and the said spring will tend to restrict the movements of the journal within the opening in every direction, but will not prevent the journal from entering the opening or from turning therein. The said arm 20 is inclined a certain degree relative to the said journal, so that when in position in the upright the outer end of the arm will extend downwardly below a right-angled position. That this is an essential feature of the wrench attachment will be obvious when it is explained that in practical operation the device is grasped in the operator's hands, with one hand at the base of the upright 10 and the other hand grasping the lever 17. The upright is then held in a substantially horizontal position and the nut-wrench made to engage with the nut on the vehicle-axle. Then the hand that is in engagement with the base of the upright is held stationary, while the other hand is moved in a circle whose axis is on a line between the nut-holder and the hand that grasps the base of the upright. It is obvious that this movement of the hand that grasps the lever will cause the nut to be unscrewed, and when it is unscrewed the upright is placed in a position resting upon the ground and the vehicle-axle elevated in the usual way, which obviously may be done without dropping the nut from the nut-wrench.

The essential feature of my invention is the construction and combination of the nut-wrench and jack whereby the jack may be held in a substantially horizontal position

while the nut is being removed from the axle, and then when the device is being used as a jack the nut will be firmly held within the wrench and not be liable to fall out, as would be the case where the face of the nut-wrench stands in a vertical position when the jack is in use.

Having thus described the device, what I claim as my invention, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved implement, comprising an upright having a vertically-arranged journal-bearing in its top, means on the upright for engaging and supporting a vehicle-axle, a journal mounted in said bearing, an arm formed on the top of the journal and projected sidewise to the upright, a nut-engaging device on the outer end of said arm and a friction device, substantially as set forth, on said journal, for the purposes stated.

2. An improved implement, comprising an upright having a vertically-arranged journal-bearing in its top, means on the upright for engaging and supporting a vehicle-axle, a journal mounted in said bearing, an arm formed on the top of the journal and projected sidewise to the upright, and a nut-engaging device on the outer end of said arm, substantially as set forth.

3. An improved implement comprising an upright having a vertically-arranged journal-bearing at its top, means on the upright for engaging and supporting a vehicle-axle, a journal mounted in said bearing, an arm formed on the top of the journal and extended outwardly and downwardly at the angle shown for the purposes stated, and a nut-engaging device on the outer end of said arm, for the purposes stated.

4. An improved implement comprising an upright having a vertically-arranged journal-bearing at its top, means on the upright for engaging and supporting a vehicle-axle, a journal mounted in said bearing, an arm formed on the top of the journal and extended outwardly and downwardly at the angle shown for the purposes stated, a nut-engaging device on the outer end of said arm and a friction device as set forth in said journal, for the purposes stated.

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