

C. D. MOORE.
LOGGING JACK.

APPLICATION FILED NOV. 5, 1909. RENEWED JULY 8, 1912.

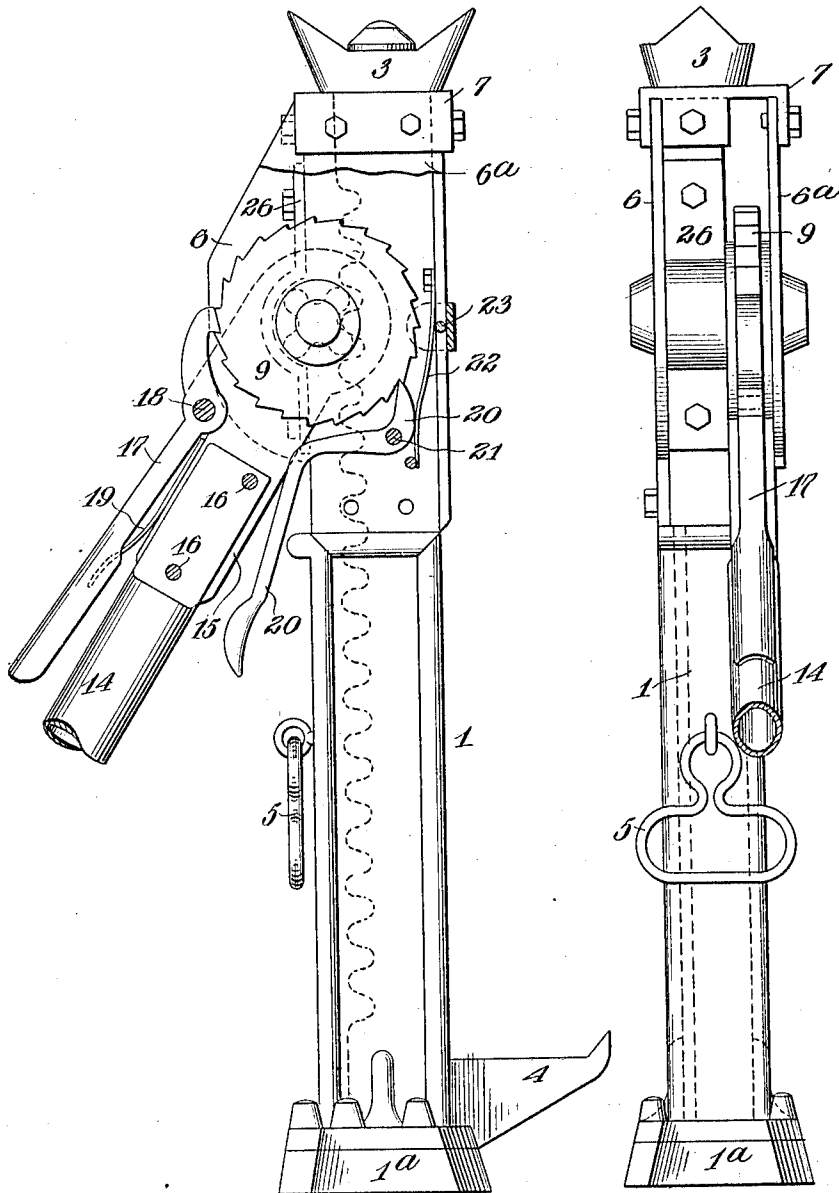
1,051,616.

Patented Jan. 28, 1913.

2 SHEETS-SHEET 1.

Fig. 1

Fig. 2.



WITNESSES

Samuel E. Wade.
Amos W. Hart

INVENTOR

CHARLES D. MOORE

BY Munroe & Co.

ATTORNEYS

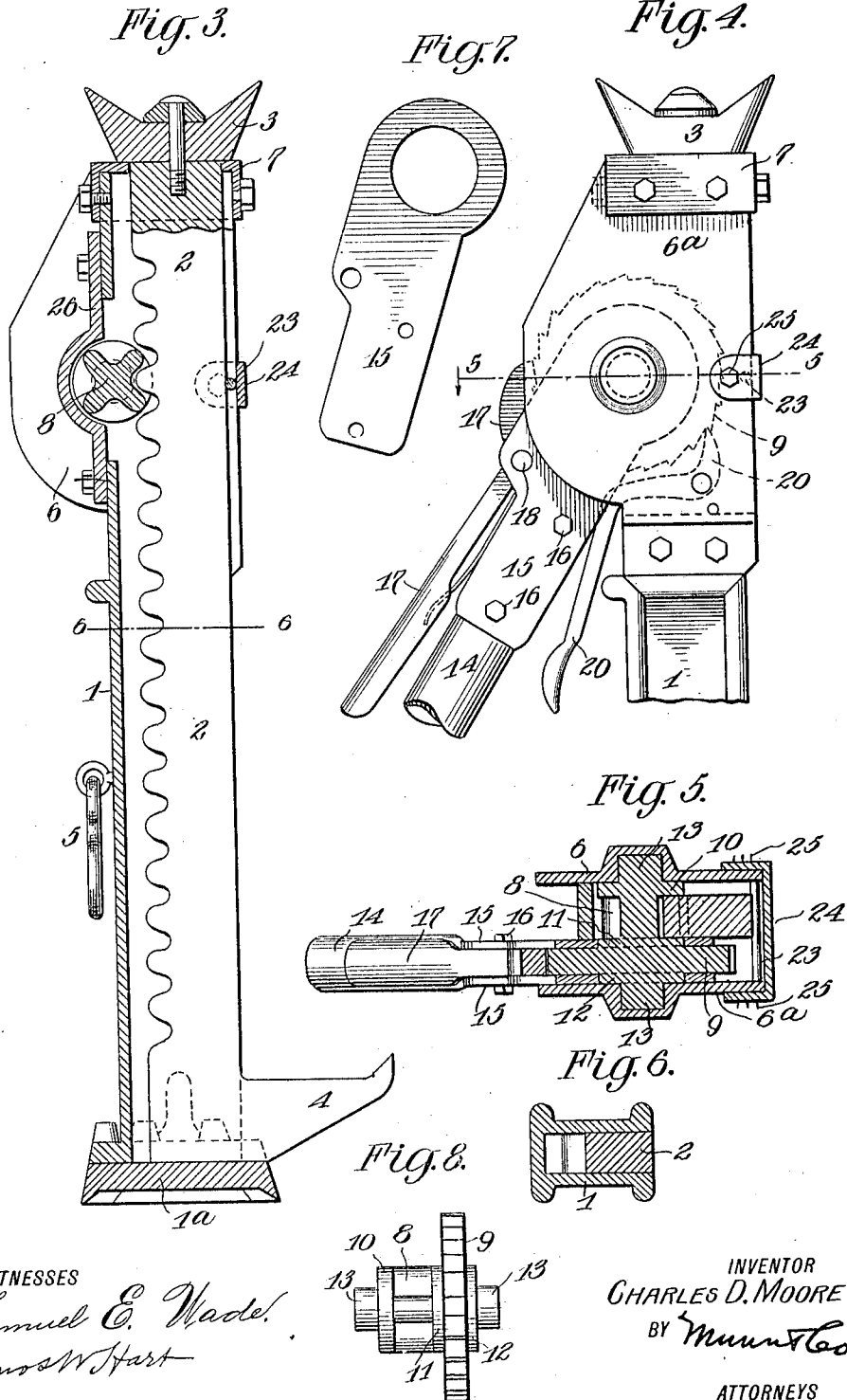
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UNITED STATES PATENT OFFICE.

CHARLES D. MOORE, OF SOUTH BEND, WASHINGTON.

LOGGING-JACK.

1,051,616.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed November 5, 1909, Serial No. 526,390. Renewed July 8, 1912. Serial No. 708,319.

To all whom it may concern:

Be it known that I, CHARLES D. MOORE, a citizen of the United States, and a resident of South Bend, in the county of Pacific and State of Washington, have invented certain new and useful Improvements in Logging-Jacks, of which the following is a specification.

I have received Letters Patent of the United States, No. 902,987, dated November 3, 1908, for a jack of that class in which a rack-bar is raised by means of a pivoted lever provided with a pawl adapted to engage a rotatable ratchet connected with the said rack-bar through the medium of a pinion.

The objects of my present invention are to simplify the construction, reduce the cost, lessen the friction, and increase the power, speed, and efficiency of the jack. I have attained these results by the construction, arrangement, and combination of parts hereinafter described, and illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of my improved jack, a side plate being removed and a small portion shown in section. Fig. 2 is an edge view of the jack, the same being taken at right angles to the view shown in said Fig. 1. Fig. 3 is a longitudinal section of the jack. Fig. 4 is a face or side view of the upper portion of the jack. Fig. 5 is a horizontal section on the line 5—5 of Fig. 4. Fig. 6 is a cross section on the line 6—6 of Fig. 3. Fig. 7 is a side view of one of the lever plates. Fig. 8 is a view of the pinion and ratchet detached.

1 indicates the steel box or casing of the jack in which the lifting rack-bar 2 is adapted to slide vertically. The casing 1 is provided with an octagonal base 1^a. The bar 2 is provided with a rotatable head 3, and the toe or foot-piece 4, as in other jacks of this class. The casing 1 is provided with a pivoted handle 5, for convenience in handling the jack. Side plates 6 and 6^a are secured by bolts to the upper portion of the box or casing 1. A cap 7 is applied at the top of the jack, and the side plates project into and are bolted to the same, as shown best in Figs. 2 and 3. A pinion 8—see Fig. 3—engages the rack bar 2, and, as shown in Figs. 5 and 7, it is constructed integral with a ratchet 9, also with collars 10, 11, and 12, and trunnions or journals 13. The side plates 6 and 6^a are provided with recesses which receive the journals 13 of the com-

bined-pinion-and-ratchet. The collar 10 abuts the side plate 6, and the collar 12 is similarly in contact with the side plate 6^a.

The jack is operated by a hand lever 14, which is journaled on the collars 11 and 12 of the combined-pinion-and-ratchet, by means of two parallel side plates 15, which are secured by bolts 16 to the flattened head of the lever, and provided with openings of a diameter sufficient to receive the said collars. The lever attachment is thus on the side of the frame, as illustrated in Fig. 2, and the combined-pinion-and-ratchet serves as a pivot for the lever, whereby the working combination is simplified. A hooked pawl 17 is pivoted at 18 between the lever plates 15, and in alinement with the ratchet 9 which it engages on the upper side. The lever arm or shank of the pawl 17 is extended along the lever 14, and a spring 19 is provided for holding the pawl normally engaged with the ratchet. By this arrangement, in place of constructing it in two parts and pivoting it to the box or casing of the jack, as in my aforesaid patent, I simplify the construction, reduce the cost, and improve the efficiency of the jack, for, among other advantages, with the present arrangement of the pawl, a considerably longer lever stroke may be made so that the jack may be operated more rapidly. Ordinarily, in jacks of this class, only three or four, and exceptionally five, teeth or notches of the ratchet may be taken in by the pawl at one stroke of the lever, whereas, in this case, six or seven teeth or notches may be taken in both raising and lowering the load.

Space is provided below the ratchet and the operating lever for a locking dog, or detent, 20, which is pivoted at 21, between the plates 6 and 6^a, and is held in normal engagement with the ratchet by means of a spring 22. This dog prevents backward rotation of the ratchet, whereby the rack-bar is caused to hold its position when raised. The dog is bent twice at an obtuse angle, and the shank or lever arm projects downward nearly parallel to the casing 1, but in the same vertical plane with the main lever 14, the shank of the dog being thus entirely out of the way of the lever when the latter is vibrated, but being at the same time readily accessible so that it may be seized and raised or held close to the lever when it is required to release the rack-bar, as will be further stated.

By the arrangement of the shanks 17 and 20 of the pawl and dog, respectively, they may both be seized together to release them from the ratchet when it is desired to allow the rack bar to run down rapidly; on the other hand, the dog may be released from the ratchet when it is desired to ease the rack bar down. In other words, by disconnecting the dog from the ratchet, the pawl will hold the rack and it may be lowered as slowly as desired; then, by holding the ratchet with the dog, the rack will support the load and by lowering the lever 14, the load may be lowered easily without jar or danger to the operator. This arrangement of the shanks or handles of the pawl and dog is thus very important in a practical way, since it enables either to be operated singly or both to be operated simultaneously for disconnecting them from the ratchet.

The engagement of the pinion 8 with the rack-bar 2 necessarily crowds the latter forcibly back against the opposite side of the casing, thus creating friction, whereby the elevation of the rack and the load thereon is hindered to a considerable degree. To avoid this result, I provide an antifriction bar at a point directly opposite the pinion,

as shown in Figs. 1 and 3. The same consists of a small roller 23, which is supported horizontally in contact with the back of the rack-bar 2 by means of a U-shaped bracket 24, whose side portions are secured to the side plates 6 and 6^a, by means of screw bolts 25. On the opposite side of the casing a plate 26 is secured by cap screws for the purpose of covering and protecting the pinion.

What I claim is:—

The improved logging-jack comprising a hollow vertical standard, a rack-bar slidable therein, a pinion engaging the rack-bar and a ratchet-wheel formed integrally therewith, a main lever pivoted on the shaft of the pinion and ratchet wheel, a hook pawl engaging the wheel and its shank extending along the lever, a locking dog also engaging the ratchet but pivoted within the casing and its shank curved and extending downward outside the casing and lying in the same vertical plane with the lever, as and for the purpose specified.

CHARLES D. MOORE.

Witnesses:

CHAS. LEIDY,
H. W. B. HEWEN.