

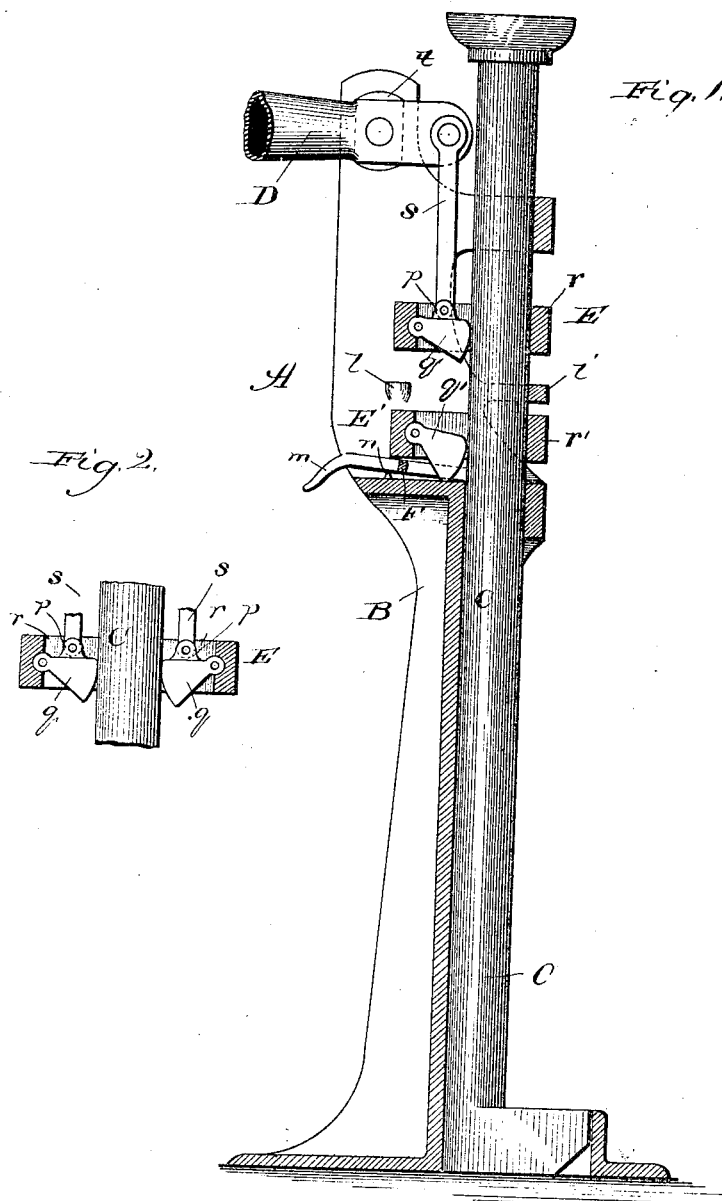
(No. Model.)

A. A. STROM.

LIFTING JACK.

No. 385,885.

Patented July 10, 1888.



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UNITED STATES PATENT OFFICE.

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LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 385,885, dated July 10, 1888.

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To all whom it may concern:

Be it known that I, AXEL A. STROM, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Lifting-Jacks, of which the following is a specification.

My invention relates to an improvement in the class of lifting-jacks employing a friction-clutch device on the lifting-bar through which to actuate and control the bar, and my object is to provide a simple, reliable, and positively-acting friction-clutch for the lifting-bar.

To this end my invention consists in a collar on the lifting-bar, a wedge pivoted to one side of the collar and extending into contact with the lifting-bar and releasable by downward movement upon the pivot from its wedging engagement with the lifting-bar, and a lever linked to the pivotal wedge toward the free end of the latter, and a retaining-clutch on the lifting-bar and supported on the standard.

My invention further consists in details of construction and combinations of parts.

In the drawings, Figure 1 shows a lifting-jack in sectional elevation provided with my improvement; and Fig. 2 shows the collar of the friction-clutch in section on a broken piece of the lifting-bar, with the pivotal wedge duplicated to act against opposite sides of the lifting-bar, and provided with links (shown broken) for connection of the pivotal wedges with the operating-lever.

A is the lifting-jack, having the standard portion B and lifting-bar C, of common construction, and a lever, D, fulcrumed, as shown, in a box, *t*, on the upper end toward the rear side of the expanded portion of the standard; whereby its short arm extends toward the lifting-bar. Near the end of the short arm of the lever D, on opposite sides thereof, are pivoted links *s*, only one of which is shown, however, in Fig. 1, owing to the nature of the view, though the construction will readily be understood, being common, without detailed illustration of the two links.

E is the lifting-clutch, comprising a collar, *r*, surrounding the lifting-bar, containing a wedge, *q*, pivoted to it at one inner side and projecting therefrom against the adjacent side of the lifting-bar. The form of the pivotal wedge is preferably that shown—that is, taper-

ing toward its pivotal end and convex vertically at its flaring end, with the upper portion of the rounded extremity normally in contact with the lifting-bar, whereby continued raising of the wedge on its pivot increases its binding effect against the bar, and thus augments the friction hold of the clutch. The flaring end of the pivotal wedge may obviously, however, be straight vertically. A perforated ear, *p*, may be provided on the upper-edge of the pivotal wedge, to which the lower end of the link or links *s* is pivoted, whereby the pivotal wedge is attached to the short arm of the lever D.

By lowering the long arm of the operating-lever the wedge is raised on its pivot and wedged against the side of the lifting-bar, thus also raising the bar by the grip exerted positively by the direct connection of the wedge with the lever, which grip is also to a material extent augmented by the downward pressure or gravity of the metal collar, the tendency of which is to have the same effect as the raising of the wedge on its pivot, already described.

E' is the retaining-clutch, substantially of the same construction as the lifting-clutch, inasmuch as it has a collar, *r'*, surrounding the lifting-bar, (preferably below the lifting-clutch, as shown,) and a wedge, *q'*, pivoted to one side of the collar and extending against the adjacent side of the lifting-bar. There is, however, no link-connection for the pivotal wedge, as in the case of the lifting-clutch; but it rests at the lower edge of the rounded flaring extremity, or toward the lower corner, upon the base of the expanded upper portion of the standard B, and thus, and by its normal pressure against the bar produced by the weight of the collar, sustains or forms the support for the latter. When the bar is raised by the lifting-clutch, the effect on the lower clutch is, by the friction of the outer and lateral side of the collar thereof against the bar, to raise the last-named collar, and thus release the binding effect of the retaining-clutch pivotal wedge, thereby permitting the bar to slide upward, the retaining-clutch being held down by its own weight, while, after the bar has been raised and the lifting-clutch lowered for a fresh grip, the downward pressure of the load causes the retaining-clutch to grip and hold

the bar by the friction of the latter against the collar, which tends to lower it and thus force the supported pivotal wedge more and more firmly against the bar.

- 5 To release the retaining-clutch for the purpose of permitting the lifting-bar to be lowered, I provide a bifurcated lever, F, the prongs of which extend from beyond a fulcrum, *n*, or pivot on the base of the upper expanded portion of the standard B, below opposite lateral sides of the collar, or by any suitable means into the desired contact therewith, and the handle portion *m* of which projects beyond the rear side of the standard, where it is readily accessible. Downward pressure on the handle *m* of the lever F raises the collar of the retaining-clutch, and thus releases its gripping effect on the bar, which can then slide down to its normal condition gradually, if the fall be controlled by a resisting power exerted upon the lever D, or suddenly, if the collar of the lifting-clutch be stopped by contact with the stops *l* and *l'*, provided on the standard to be engaged by opposite ends or sides of the collar.

If desired, the pivotal wedges may be duplicated, as shown in Fig. 2, to extend from opposite sides or ends of the collar against the adjacent sides of the lifting-bar, when of course the links or pairs of links *s* are also duplicated and the lever D bifurcated as to its short arm, for proper connection of the links *s* with it, as is common in lifting-jacks.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a lifting-jack, the combination, with the lifting-bar, of a collar, *r*, a wedge, *g*, pivoted to one side of the collar and extending into contact with the lifting-bar and releasable by downward pressure upon the pivot from its wedging engagement with the lifting-bar, a lever, D, fulcrumed upon the standard and linked to the wedge between its pivot and end in contact with the bar, and a retaining-clutch on the lifting bar and supported on the standard, substantially as described.

2. In a lifting jack, the combination, with the lifting-bar and a lifting-clutch having an operating-lever connected with it, of a retain-

ing-clutch, E', comprising a collar and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar, and with a stationary support, substantially as described.

3. In a lifting-jack, the combination, with the lifting-bar, of a lifting-clutch, E, comprising a collar, and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar, a lever, D, connected with the pivotal wedge toward its free end, and a retaining-clutch, E', comprising a collar and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar and with a stationary support, substantially as described.

4. In a lifting-jack, the combination, with the lifting-bar, of a lifting-clutch, E, comprising a collar and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar, a lever, D, connected with the pivotal wedge toward its free end, a retaining-clutch, E', comprising a collar and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar and with the base of the expanded upper portion of the standard, and a releasing-lever, F, substantially as described.

5. A lifting-jack comprising, in combination, a standard, B, a lifting-bar, C, a lifting-clutch, E, comprising a collar and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar, a lever, D, links *s*, connecting the lever with the pivotal wedge toward its free end, a retaining-clutch, E', comprising a collar and a wedge pivoted to one side of the collar and extending into contact with the lifting-bar and with the base of the expanded upper portion of the standard, and a lever, F, fulcrumed on the standard and extending into engagement with the collar of the retaining-clutch to permit the said collar to be raised when desired, substantially as described.

AXEL A. STROM.

In presence of—

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