

A. A. STROM.
LIFTING JACK.

No. 344,794.

Patented June 29, 1886.

Fig. 1.

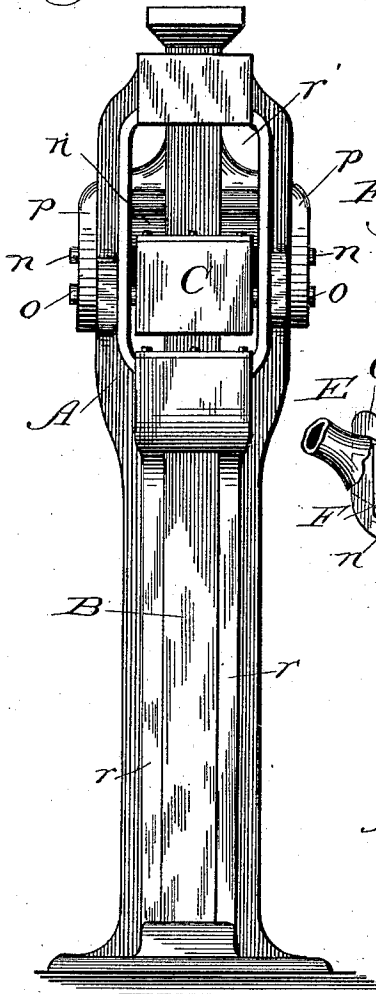


Fig. 2.

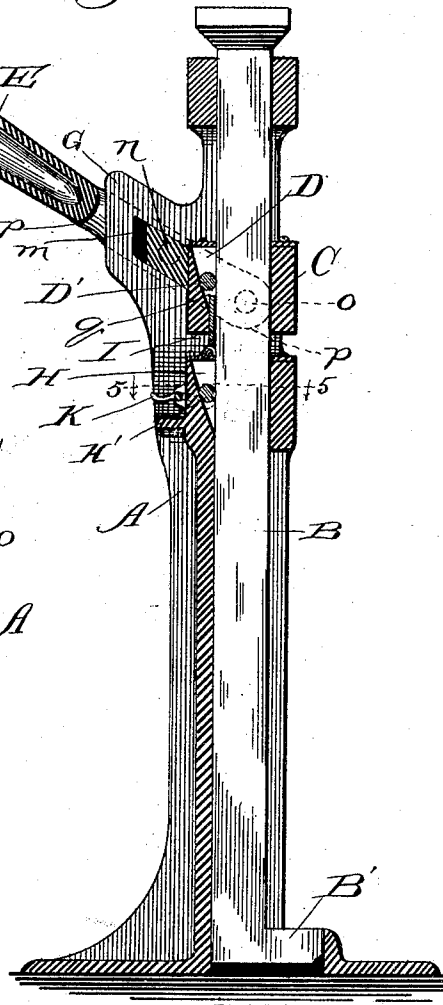
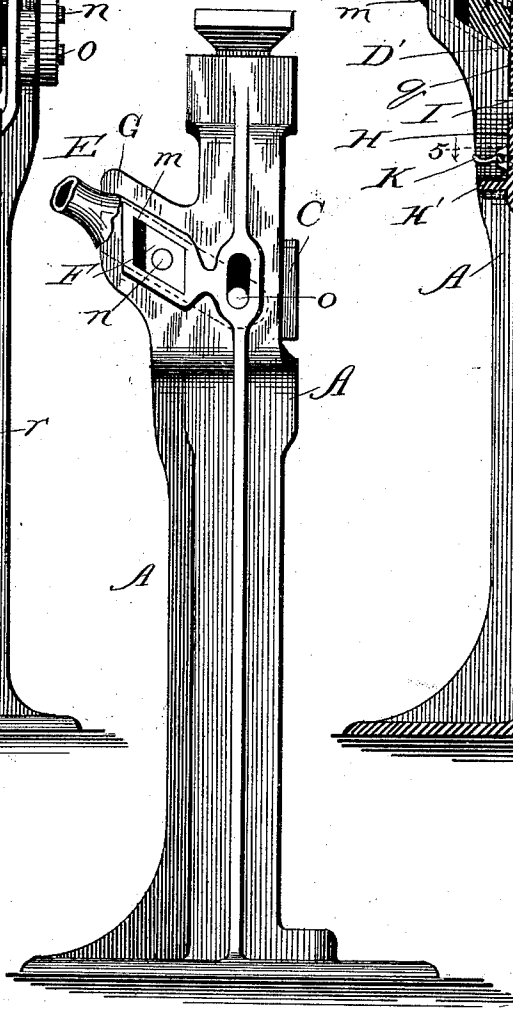


Fig. 3.



Witnesses:
Chas. E. Gaylord.
W. F. Puri

Inventor:
A. A. Strom.
By *Dyrenforth* *Dyrenforth*,
ATTORNEYS

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Fig. 4.

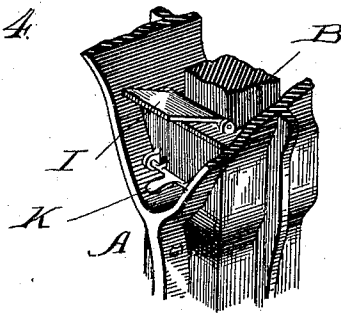


Fig. 5.

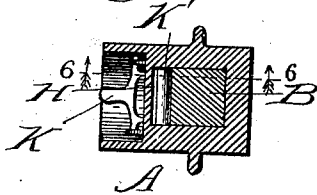


Fig. 6.

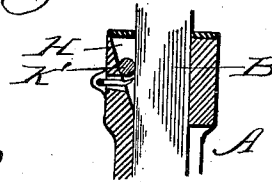


Fig. 7.

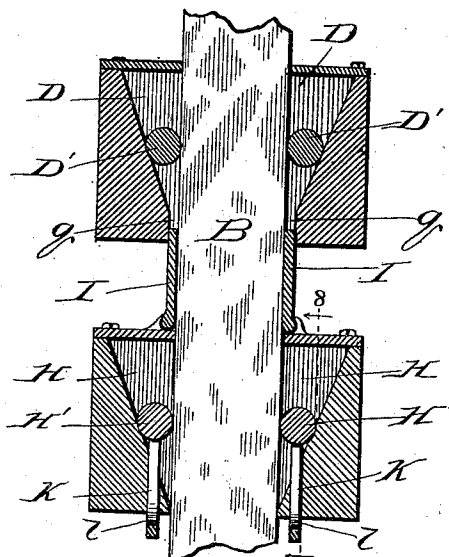
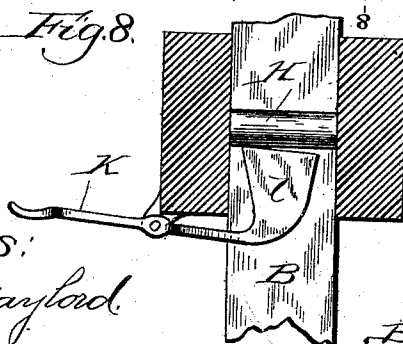


Fig. 8.



Witnesses:
Chas. & Gaylord
v. s. Fair

Inventor:
A. A. Strom,
By Dymally & Dymally,

HEEYSON

UNITED STATES PATENT OFFICE.

AXEL A. STROM, OF AUSTIN, ILLINOIS.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 344,794, dated June 29, 1886.

Application filed November 3, 1885. Serial No. 181,734. (No model.)

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 certain new and useful Improvements in Lifting-Jacks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of lifting-jacks for use particularly as track-jacks, it being my object to provide a simple construction thoroughly effective in its purpose, involving a peculiar friction-clutch for lifting the bar, which, however, forms the subject of a separate application for Letters Patent, and is not, therefore, claimed by itself in the present application, though shown and described to permit the operation of the lifting-jack to be comprehended.

To this end my invention consists in the means operating with the said friction-clutch device to sustain the bar in lifted position, and comprising a recess or chamber in the standard portion below each recess in the clutch-block adjacent to the lifting-bar and slanting toward the same on its rear side, and a sustaining-roller within each recess.

My invention also consists in means operating with the foregoing mechanisms to permit the bar to be lowered from a raised position; and it further consists in certain details of construction and combinations of parts, all as hereinafter more fully set forth.

Referring to the drawings, Figure 1 is a front elevation of my improved device; Fig. 2, a vertical central section of the same, presenting a side elevation; Fig. 3, a side elevation of the same with a portion of the operating-lever broken away; Fig. 4, a perspective view of a broken portion of the device, showing a detail; Fig. 5, a horizontal section taken on the line 5 5 of Fig. 2; Fig. 6, a vertical section taken on the line 6 6 of Fig. 5; Fig. 7, a vertical sectional view of a broken portion of the device, showing a modified construction of the lifting-clutch mechanism; and Fig. 8, a sectional view showing a detail taken on the line 8 8 of Fig. 7.

A is the hollow standard, cast preferably in the form shown, with a vertical slot, r , in its

front side, to permit the vertical movement of the foot B' on the lifting-bar B, contained within the standard, and with a chamber, r' , toward its upper end.

Within the chamber r' , and surrounding the lifting-bar, which is preferably quadrilateral in form, as shown, is the clutch-block C, having the recess or chamber D formed in its opening, through which the lifting-bar passes, and slanting toward the latter from its upper side, where it is closed, as shown, ending in the vertical recess q .

D' is the loose roller within the recess or chamber D, and extending transversely across the lifting-bar.

E is a lever hollow toward one extremity to receive an extension, and bifurcated toward its opposite extremity to afford arms p , which embrace the standard and are pivotally connected toward their ends with journals o , which support the clutch-block, and fulcrumed upon journals n , extending from the ends of a shifting block, F, supported in a slot, m , in a rear extension, G, of the standard.

Directly below the recess or chamber D, and provided in the web of the standard A, is a chamber or recess, H, similar in form to the chamber or recess D, but ordinarily closed at the bottom, and containing a loose roller, H', lying transversely in contact with the lifting-bar; and this chamber is covered at the top and provided with a hinge, I, the leaf of which is sufficiently high to extend, when raised to a vertical position, into the chamber or recess D, and serves to release the bar from the clutch D D', in the manner hereinafter described. The recess H is provided with the lever K, extending into it through the web of the standard and fulcrumed upon the latter, and bent toward its inner extremity, as shown, to receive the roller H'.

To operate the device to lift the bar B, the lever E is forced downward, whereby the clutch-block C is raised, carrying the lifting-bar with it, owing to the frictional contact of the roller D' against it, and while the clutch-block is lowered by raising the lever E, preparatory to another rise of the lifting-bar, the latter is held in its raised position by the frictional contact with it of the roller H' in

the recess or chamber H. By continuing to actuate the lever E in the manner just described the lifting-bar may be raised to its full extent. It is lowered or allowed to fall from its raised position by manipulating the hinge I and lever K, hereinbefore mentioned, in the following manner: Pressure is exerted first upon the lever K, to raise the roller H' out of contact with the lifting-bar, which is then sustained only by the roller D'. The normal position of the hinge I is that illustrated in Fig. 4 of the drawings, and its leaf is raised to a vertical position when it is desired to let the bar down to enter the recess or chamber D, which is effected by raising the lever E to cause the clutch-block to slide over it, when its abutment against the roller D' will raise the latter out of close contact with the bar B, which will fall, having been freed by first releasing the roller H' from contact with it by pressing down upon the lever K, and by then actuating the clutch-block C by means of the lever E, to cause the roller D' to be released by the leaf of the hinge I.

The modification illustrated in Figs. 7 and 8 of the drawings shows the recess D, containing the roller D', and the recess H, containing the roller H', in duplicate, being provided upon opposite sides of the lifting-bar, and though my device is perfectly operative when these features are provided singly, as hereinbefore described, the last-named construction may sometimes be desired, and as it involves the principle of my invention, it is included in the latter.

To adapt the lever K to serve its purpose in connection with my modified construction, it is bifurcated to bring one of its arms *l* under each roller H'.

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

1. In a lifting-jack, the clutch devices for raising the lifting-bar and sustaining it when raised, comprising a recessed clutch-block upon the bar, which passes through it, and having each recess beveled internally in a downward direction, and containing a roller, and the standard portion of the device having a recess below each recess in the clutch-block, and formed like the same and containing a roller, substantially as described.

2. In a lifting-jack, the clutch devices for raising the lifting-bar and sustaining it when raised, comprising a recessed clutch-block upon the bar, having each recess covered and beveled internally on its rear surface in a downward direction, and containing a roller, the standard portion of the device having a covered recess below each recess in the clutch-block, and formed like the same and containing a roller, and means, substantially as described, for actuating the clutch-block, substantially as set forth.

3. In a lifting-jack, the clutch devices for raising the lifting-bar and sustaining it when

raised, comprising a recessed clutch-block on the bar, having each recess covered and beveled internally on its rear surface in a downward direction, and containing a roller, the standard portion of the device having a covered recess below each recess in the clutch-block, and formed like the same and containing a roller, means, substantially as described, for actuating the clutch-block, and means, substantially as described, for raising the rollers in their housings to permit the descent of the lifting-bar, substantially as set forth.

4. In a lifting-jack, the combination of a recessed clutch-block upon the bar, having each recess covered and beveled internally upon its rear surface in a downward direction, and containing a roller, the standard portion of the device having a covered recess below each recess in the clutch-block, formed like the same and containing a roller, a hinge on the cover of each said recess, having a leaf to extend into the recess above it into contact with the roller therein, a lever extending through the standard portion into each lower recess under the roller contained therein, and means, substantially as described, for actuating the clutch-block, substantially as set forth.

5. In a lifting-jack, the combination, with the lifting-bar, of clutch devices for raising the bar and sustaining it when raised, comprising a clutch-block, C, having a central opening to admit the lifting-bar, and provided on two opposite sides with recesses D, containing rollers D', the standard portion of the device having two recesses, H, below the recesses D, and containing rollers H', substantially as described.

6. In a lifting-jack, the combination, with the lifting-bar, of clutch devices for raising the bar and sustaining it when raised, comprising a clutch-block, C, having a central opening to admit the lifting-bar and provided on two opposite sides with covered recesses D, containing rollers D', the standard portion of the device having two covered recesses, H, below the recesses D, and containing rollers H', a hinge, S, on the cover of each recess H, having its leaf to extend into a recess, D, into contact with the roller contained therein, a bifurcated lever, K, fulcrumed on the standard, and extending through the same to cause each arm to enter a recess, H, beneath the roller contained therein, and means, substantially as described, for actuating the clutch-block, substantially as set forth.

7. In a lifting-jack, the combination, with the lifting-bar, of the following elements: a clutch-block, C, having a central opening to admit the lifting-bar, provided on two opposite sides with covered recesses D, containing loose rollers D', a bifurcated lever, E, having its arms journaled at opposite sides of the clutch-block and fulcrumed upon a shifting-block, F, supported in a slot, *m*, in the standard, the standard portion of the device hav-

ing two covered recesses, H, below the recesses
D, containing loose rollers H', a hinge, S, on
the cover of each recess H, having its leaf
to extend into a recess, D, into contact with
5 the roller contained therein, and a bifurcated
lever, K, fulcrumed on the standard, and ex-
tending through the same to cause each arm
to enter the recess H beneath the roller con-

tained therein, the whole being constructed
and arranged to operate substantially as de- ro
scribed.

AXEL A. STROM.

In presence of—
MASON BROSS,
WM. SADLER.