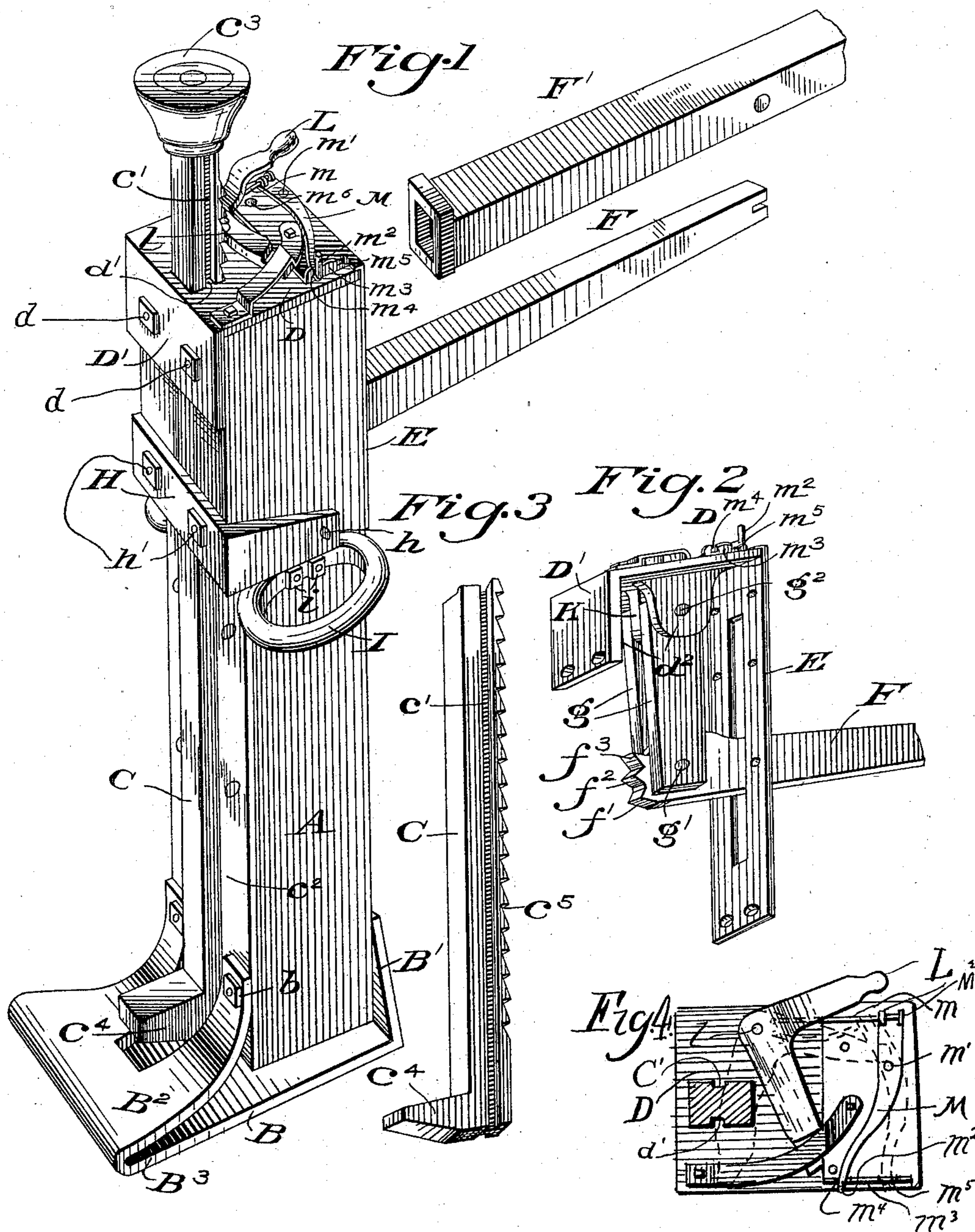


(No Model.)

E. & A. G. HAYFORD.
LIFTING JACK.

No. 598,660.

Patented Feb. 8, 1898.



Witnesses:-

C. H. Kuiper

C. H. Zabel

Inventors
Eugene Hayford and
Arthur G. Hayford

By their Atty. *J. D. Reichel*

UNITED STATES PATENT OFFICE.

EUGENE HAYFORD AND ARTHUR G. HAYFORD, OF SPOKANE, WASHINGTON.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 598,660, dated February 8, 1898.

Application filed December 7, 1896. Serial No. 614,676. (No model.)

To all whom it may concern:

Be it known that we, EUGENE HAYFORD and ARTHUR G. HAYFORD, citizens of the United States, residing at Spokane, county of Spokane, and State of Washington, have invented certain new and useful Improvements in High-Power Lifting-Jacks, of which the following is a specification.

Our invention relates to certain improvements in a high-power lifting-jack which is especially useful for lifting heavy weights, as a log-jack, or for lifting blocks of stone or rails, or for general railroad purposes.

The object of our present invention is to provide a stronger and more effective and reliable jack which will stand rougher usage; and the improvement consists in certain constructions and combinations of parts hereinafter particularly described.

In the accompanying drawings, which illustrate our improved jack, Figure 1 is a perspective view thereof with the extension-handle detached; Fig. 2, a perspective view of the cap-plate, the operating-lever, and parts connected therewith; Fig. 3, a perspective view of the lower end of the lifting-bar, and Fig. 4 a plan view of the catch-plate and latch-lever on an enlarged scale.

A standard A is secured to a base B, made of sheet metal, with an angular upturned end flange B' upon the lever side of the standard and with a slotted or bifurcated flange B² folded over and curved upwardly against the face or lifting side of the said standard and with bolts b passing through the flanges B' B² of the base and also through the lower end of the standard A, thus providing a light strong wrought-metal base, with a forward extension B³ of sufficient length to provide a secure support for the jack-standard.

The lifting side of the standard A has a longitudinal recess to receive a lifting-bar C, adapted to move longitudinally therein and provided with longitudinal side grooves c' therein to receive plates c², bolted to the face of the lifting side of the standard A to project within the grooves c' therein and hold the bar C truly and securely in an upright position upon the standard to freely move thereon, a cap c³, fitted upon the upper end, and a lifting-toe c⁴, forged upon the lower end of

said lifting-bar, providing suitable means for connecting the lifting-bar to the load, whether the latter be in a raised or in a depressed position.

The plates c² provide a secure connection and perfect freedom of movement of the bar C upon the standard, and the said bar is additionally secured thereto by a cap-plate D, fitted upon the top of the standard and turned down at a right angle D' to fit against the lifting-face of the standard and be secured thereto by bolts d at each side, which latter pass transversely through the upper end of the standard and also through a back plate E, flanged at its upper end to overlie a portion of the cap-plate D and slotted vertically to receive the lifting-lever F, which latter is pivotally supported in the recessed upper end of the standard.

The cap-plate D has a rectangular recess at its upper end to receive the lifting-bar C, and with inwardly-projecting spurs d' thereon which fit into the side grooves c' of the bar C and thus securely hold and guide the upper end of said bar C to insure its freedom of movement therein. The bar C is also held at the lifting-face of the standard A, near the upper end thereof, by a metal strap H, secured at the sides of the standard by a through-bolt h and at the lifting-face thereof by bolts h' at each side thereof, which pass transversely through the standard and also through the lower end of the back plate E, and thus securely hold the several parts to the upper end of the standard.

Lifting-handle rings I, at each side of the standards below the strap H, are secured thereto by bolts i, which pass transversely through the standards and through the said hand-rings, thus providing simple, strong, and secure means for lifting the jack and placing it in position.

The lifting-lever F is suspended from the cap-plate D by hanger-plates g g and a cross-pin g' at the lower swinging ends thereof and by a pivot-pin g², which passes through the upper ends of said plates and also through lugs d² d², which project downwardly from the under side of the cap-plate D, and also through a lug K, the hanger-plates g g being thus pivoted and securely held at their up-

per ends between the lugs d^2 d^2 and K to provide a strong swinging fulcrum for the lifting-lever.

The contact-point of the lifting-lever F comprises a series of teeth f^1 f^2 f^3 , which interlock with the ratchet-teeth c^5 of said lifting-bar and provide a rolling contact therewith which may be easily swung into and out of gear to engage and disengage the teeth one with the other when the lifting-lever is vibrated and also swung upon its hanging fulcrum, a number of said teeth being required for car-lifters and similar heavy work. The ratchet-teeth at the upper end of the lifting-bar are engaged by a vibrating bell-crank catch-lever L, pivoted at its angle l to the cap-plate D and connected near its inner end fixedly to the end of a straight wire spring m , the said spring being passed freely through lugs M^2 on the short end of a lever M, pivoted at m^1 to the cap-plate D of the standard. The back plate E, which overlies a portion of the cap-plate D and is fastened thereto by rivets m^6 , has at its one side an upturned flange m^3 , over which the free end of lever M moves, the lever being provided at its free end with an upturned handle or stem m^2 and engages with notches m^4 and m^5 of the flange m^3 of the plate E, which hold said lever in one or the other of its working positions. The lever M, through the spring m , acts quickly upon the catch-lever L to throw it into or out of engagement with the ratchet-teeth of the lifting-bar, thus allowing a rapid drop of said lifting-bar for track-lifting purposes and also causing a quick spring-acting or click movement of the catch-lever to engage with each tooth which presents itself by the upward movement of the lifting-bar. When the lever M is held in the notch m^4 , the spring-actuated lever L is normally held out of engagement with the ratchet-teeth of the lifting-bar, and when the said lever is placed in the notch m^5 it is nor-

mally held to engage with the said ratchet-teeth, but may be easily pushed out of engagement by hand without releasing the lever M from its notch, thus adapting the catch-lever to readily release or engage with any number of ratchet-teeth when the lifting-bar is to be raised or lowered.

A very strong and quickly and certainly acting lifting-jack is thus secured, which will do the heaviest class of work upon which a hand-jack may be used. The lifting-lever F may be made longer by an extension-bar F', having a tubular socket to fit completely around the end of said lever.

We claim as our invention and desire to secure by Letters Patent—

1. In a lifting-jack, the combination with the standard, the cap-plate having depending lugs, swinging hangers pivoted thereto, the lifting-lever, the notched lifting-bar, the angular catch-lever, an adjustable lever and a spring connecting said lever with the catch-lever, substantially as described.

2. In a lifting-jack, the combination with the standard and cap-plate, the notched lifting-bar, means for adjusting the same, an angular catch-lever pivoted to the cap-plate to engage with the notches of the lifting-bar and having a spring-rod connected thereto, near its pivotal point and a lever pivoted to the cap-plate provided with openings at one end to receive the free end of said spring-rod and adjustably secured at the other end to the cap-plate, substantially as described.

In testimony that we claim the foregoing as our invention we have signed our names in the presence of two subscribing witnesses.

EUGENE HAYFORD.
ARTHUR G. HAYFORD.

Witnesses:

J. H. MCBROOM,
R. L. EDMISTON.