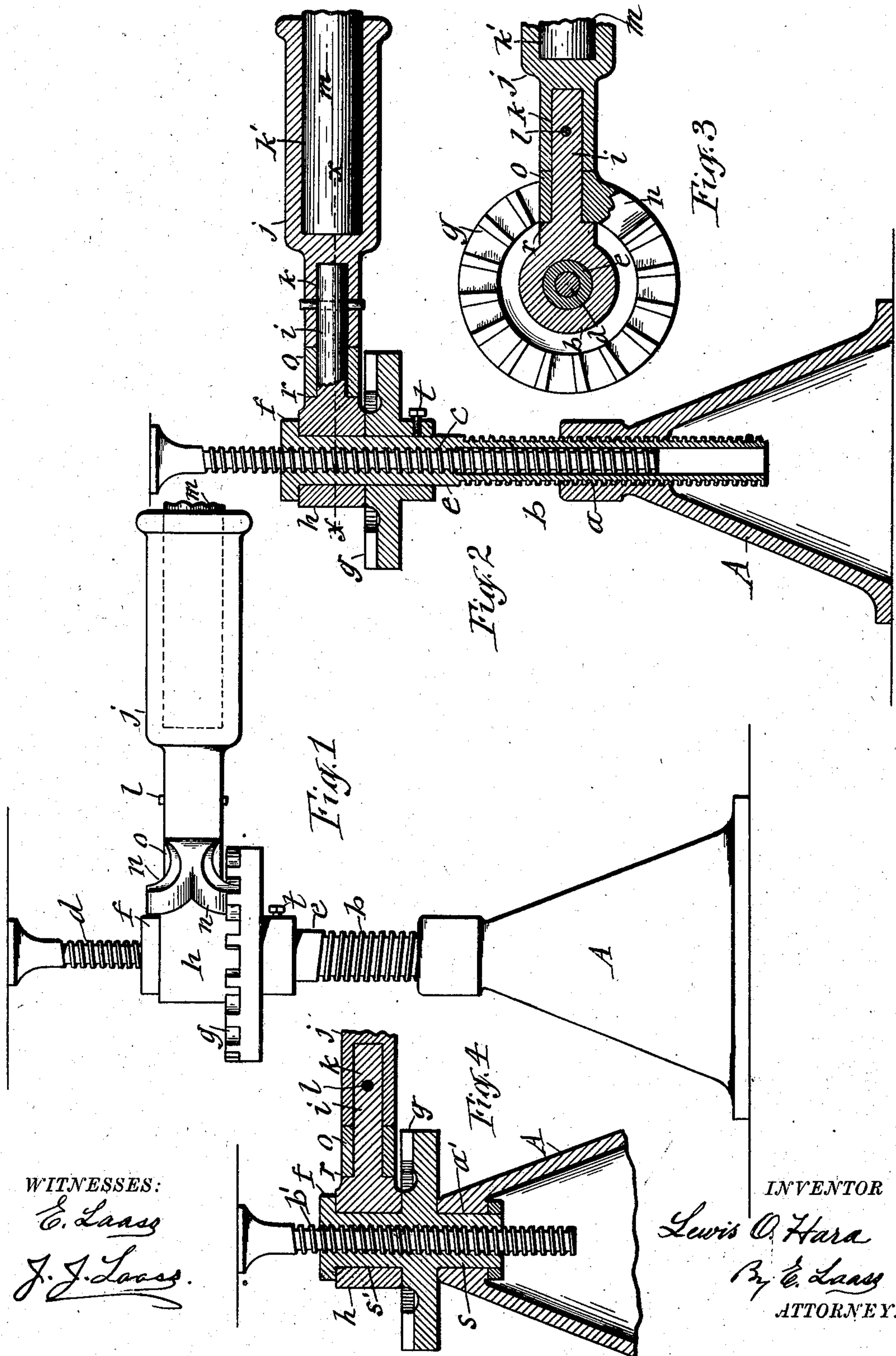


No. 847,662.

PATENTED MAR. 19, 1907.

L. O. HARA.
LIFTING JACK.

APPLICATION FILED SEPT. 8, 1906.



WITNESSES:

E. Laess
J. J. Laess

INVENTOR

Lewis O. Hara
E. Laess
ATTORNEY.

UNITED STATES PATENT OFFICE.

LEWIS O. HARA, OF AUBURN, NEW YORK.

LIFTING-JACK.

No. 847,662.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed September 8, 1906. Serial No. 333,791.

To all whom it may concern:

Be it known that I, LEWIS O. HARA, a citizen of the United States, and a resident of Auburn, in the county of Cayuga, in the State of New York, have invented new and useful Improvements in Lifting-Jacks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention has special reference to the species of lifting-jack which has the pawl mounted on a horizontal pivotal support and engaging a disk ratchet which has its teeth projecting from the top surface of the disk, as shown in my Letters Patent No. 317,951, dated May 12, 1885. In the said patent the pawl is pivoted directly on the lever of the jack, which lever is attached by means of a threaded end portion of the lever screwed into a socket formed in the side of a collar embracing the screw. In practice it is found that the lever attached in said manner is liable to become loose in the socket and sag from its requisite horizontal position and also move out of its radial position, and thus disarrange the pawl in relation to the ratchet. A further objection to the said construction of the jack is the detachment of the pawl simultaneously with the detachment of the lever, and thus incurring the liability of losing the pawl.

The object of my present invention is to obviate the aforesaid defects and objectionable features of the lifting-jack; and to that end the invention consists in the improved construction and combination of parts hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a lifting-jack embodying my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a horizontal transverse section on the line $x x$ in Fig. 2, and Fig. 4 is a vertical section of a modification of my invention.

A represents the base of the jack, the top portion of which base is formed with a vertical channel, which may be either plain, as shown at a' in Fig. 4, or screw-threaded, as shown at a in Fig. 2. In the threaded channel a works the externally-threaded lower end portion of the main screw b , which is hollow and screw-threaded internally, as shown at c , reverse from the external threads of said screw and receives in it the auxiliary screw d .

The upper end portion of the screw b is of the form of an externally plain cylinder e , terminating in a circumferential rim or flange f . At a short distance below the said flange is a horizontal disk ratchet g , fastened to the cylindrical portion e of the screw b by a set-screw t or other suitable means. Between the top of said rack and flange is a collar h , which loosely embraces the cylindrical portion e of the screw b and is provided with a rigid horizontal stem i , which is formed integral therewith and extends radially therefrom for securely supporting the pawl and for attachment of the lever by means of which the jack is operated.

j denotes an arm which is formed with sockets $k k'$ in opposite ends of the arm.

Into the socket k is inserted the end portion of the stem i , which is fastened therein preferably by means of a pin l , passing transversely through the arm j and stem i .

Into the socket k' is inserted the attaching end of the lever m , which is removable without disturbing the attachment of the arm j to the screw b .

n represents a duplex pawl which is pivotally connected to the stem i by means of a sleeve o , embracing the shank and confined laterally by the end of the arm j and a shoulder r on the stem i , abutting against the ends of said sleeve.

The component parts of the described lifting-jack are assembled by placing the collar h on the smooth upper end portion of the screw b and fastening the rack g to the screw immediately under the collar h , then inserting the lower end of the said screw into the threaded channel a of the base A. The auxiliary screw d is then inserted into the main screw b . The pawl n is applied to the stem i and then retained thereon by the insertion of said shank into the socket k of the arm j and fastening the stem therein. Finally the lever m is inserted into the socket k' of the arm j , and thus the jack is in condition to be operated by oscillation of the said lever, which in swinging in one direction causes the pawl n to engage the rack g and thereby turns the screw b , the engagement of which with the threaded portion a of the base causes the said screw to ascend and at the same time the engagement of the internal thread of the screw b with the auxiliary screw d forces the latter screw to travel up-

ward in the screw *b* and thus accelerates the operation of the jack. The pawl is duplex to allow it to be used for turning the ratchet either to the right or to the left.

5 In the construction shown in Fig. 4 of the drawings the disk ratchet *g* rides on top of the base *A* and is formed integral with the internally-threaded tubular screw extending below and above the disk ratchet, as shown
10 at *s s'*. The lower portion *s* is journaled in a plain vertical channel *a'* in the top portion of the base *A*, and the upper portion *s'* is loosely embraced by the collar *h*, which has integral with it the radial horizontally-ex-
15 tending stem on which the pawl is pivoted, as shown at *o*, in the same manner as illustrated in Fig. 2 of the drawings.

It will be observed that in each of the described constructions the pawl is securely
20 supported and retained on the jack after the arm *j* has been removed, it merely requiring the pin *l* to be reinserted in the stem *i*.

What I claim as my invention is—

The combination with the internally-threaded tubular screw receiving through it 25 the externally-threaded screw, and the disk ratchet rigidly attached to said tubular screw and formed with upwardly-projecting teeth, of a collar loosely embracing the tubular screw above the disk ratchet and having 30 a horizontal radially-extending stem formed integral with it, the pawl formed with a sleeve embracing the stem adjacent to the collar, and an arm formed with a socket in one end receiving the end portion of the 35 stem, a fastening-pin passing transversely through said arm and stem, and a handle detachably secured to the opposite end of said arm substantially as set forth and shown.

LEWIS O. HARA.

Witnesses:

M. K. DWYER,

J. J. LAASS.