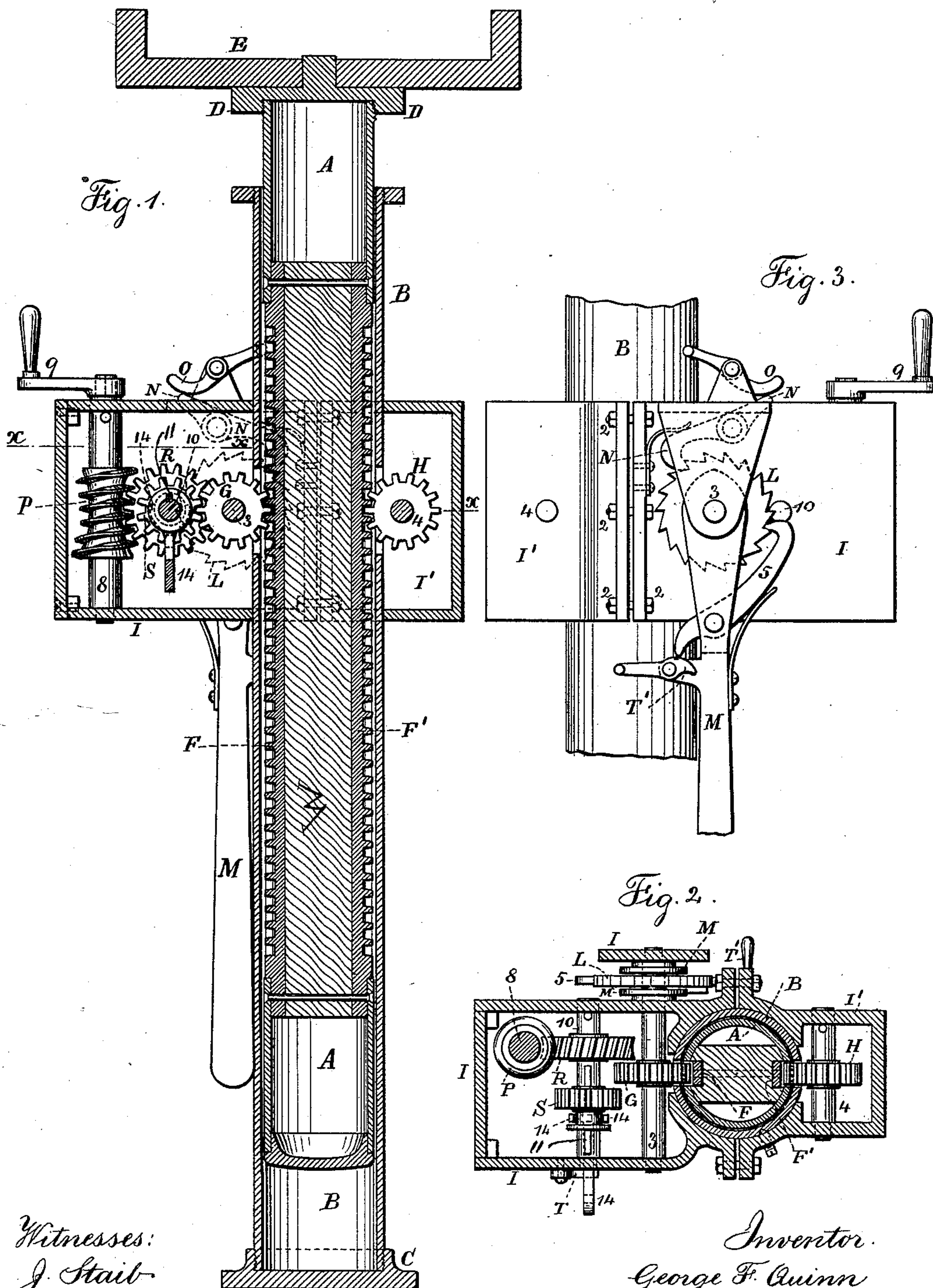


(No Model.)

G. F. QUINN.
LIFTING JACK.

No. 422,539.

Patented Mar. 4, 1890.



Witnesses:
J. Staib
Charles Smith

Inventor.
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UNITED STATES PATENT OFFICE.

GEORGE F. QUINN, OF BROOKLYN, NEW YORK.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 422,539, dated March 4, 1890.

Application filed January 6, 1890. Serial No. 336,074. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. QUINN, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Lifting-Jacks, of which the following is a specification.

This invention is made for rendering the jack light and portable and for adapting it to carriages and wagons and for raising and lowering heavy bodies.

In the drawings, Figure 1 is a vertical section of my improved jack. Fig. 2 is a sectional plan view at the line $x x$, and Fig. 3 is a partial elevation of the side of the jack on which the working-lever is situated.

The two principal parts of my jack are made of iron or steel tubes, one within the other. The tube A is smaller than the tube B, and slides freely therein, but is guided in its movement, and at the lower end of the tube B is a foot or base C, of cast-iron, screwed upon such tube B, and at the upper end of the tube A is a lifting head or cap D, screwed upon such tube A, and this head may have projections or a pivoted cross-bar E, with lugs or claws at its end. The tube A is slit or mortised longitudinally to receive the rack-bars F F', the teeth of which are adapted to receive the teeth of the pinions G H. These rack-bars F F' are secured within the tube A in any suitable manner. I prefer to introduce a piece of hard wood W between them and to secure the wood and the racks at their upper and lower ends by rivets passing through them and through the tube A, as shown. Around the tube B is a frame made of two parts I I', flanged and bolted together, as at 2 2, so as to connect the frame firmly to the tube by the clamping action of the bolts, and the shafts 3 and 4 of the pinions G H are received into the respective parts I I' of the frame, and the tube B is cut through or mortised for the pinions G H to pass in and gear with the respective racks F F'. The pinion G is connected with the power that raises or lowers the tube A, and the pinion H acts as a support at the opposite side to lessen friction and insure uniformity in the movement of the parts.

In order to rotate the pinion G and shaft 3, I place upon the shaft 3 a ratchet-wheel L,

and provide a lever M with cheek-pieces extending to the shaft 3, and having eyes for such shaft, so that the lever M can be swung upon the shaft, and by the pawl 5, that is pivoted between the cheek-pieces, the ratchet-wheel L can be turned, and with it the shaft 3 and pinion G, to raise the tube A and the carriage-axle or other article against which the jack is placed.

The holding-pawl N is pivoted upon the frame I, and its end serves to hold the ratchet-wheel L and the parts therewith connected, and the pawl N has a tail-piece against which a cam-lever O can be swung to raise the pawl from the wheel L and allow the parts to revolve and the tube A to descend. Springs are provided for the pawls N and 5 upon the lever M and frame I, respectively.

It is often necessary to lower a jack gradually, especially when a heavy weight is resting on it. To effect this object, I make use of a screw or worm pinion P, the shaft 8 of which stands vertical, and it is provided with a crank-handle 9 for rotating the same and turning the wheel R in either one direction or the other. This wheel R is upon a shaft 10, supported in the frame I, and there is a pinion S, sliding on a feather 11 on the shaft 10, so as to be brought into gear with the pinion G or disconnected therefrom, and there is a sliding coupler 14, the forked end of which engages a collar on the pinion S to slide the same endwise of the shaft 10 and cause the wheel S to engage with or disengage from the pinion G; hence the worm-pinion P can be used alone in hoisting and lowering the tube or plunger of the jack through the intervening wheels or pinions R, S, and G, and the rack F or the screw-pinion P can be used to lower the jack after it has been raised by the lever M, pawl 5, and ratchet-wheel.

A lever T, with a projecting point, is preferably hinged to one side of the frame I, so that it may be employed to hold the projecting end of the sliding coupler 14 when the pinion S is either in one position or the other.

The pawl 5 on the lever M preferably has a tail or rear end, that is acted upon by a cam-lever T' to disconnect the pawl from the teeth of the ratchet-wheel L whenever desired.

This lifting-jack is very strong, and it is well adapted to use in different places because the leverage or power can be varied at will.

5 I claim as my invention—

1. In a lifting-jack, the metal tube A and the head D, screwed upon its upper end, and the racks F F' within such tube, in combination with the exterior tube B around the tube
10 A, the metal base C, screwed upon the lower end of this tube B, the two-part frame I I', bolted together and clamped upon the tube B, and the gearing carried by such frame and acting upon the racks of the tube A, substantially as set forth.
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2. The combination, with the tubes A and B, of the frame I I', the pinions G and H, and their shafts supported by the frame, the racks within the tube A, and the ratchet-

wheel, lever, and pawls to turn the shaft of the pinion G, substantially as set forth. 20

3. The two-part frame I I' and the tube B, to which such frame is clamped, in combination with the tube A, the racks within such tube, the pinions G H, gearing with such
25 racks and supported by the frame, the sliding pinion S and its shaft, the worm-wheel R upon such shaft, and the worm-pinion and the sliding coupler to connect and disconnect the shaft from the pinion G, substantially as
30 set forth.

Signed by me this 30th day of December, 1889.

GEORGE F. QUINN.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.