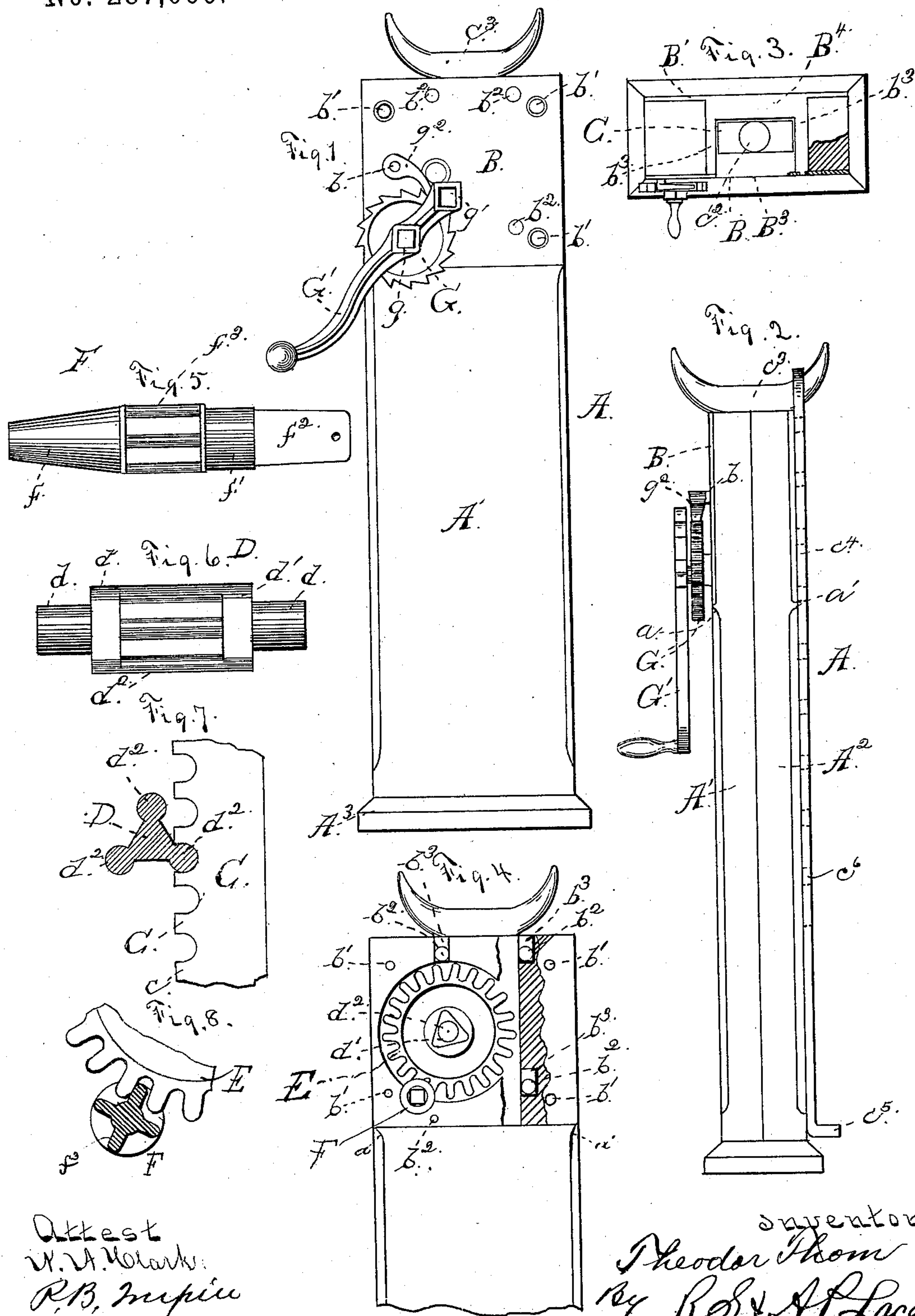


(No Model.)

T. THOM.  
LIFTING JACK.

No. 287,066.

Patented Oct. 23, 1883.



Attest  
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# UNITED STATES PATENT OFFICE.

THEODOR THOM, OF RICHLAND, MINNESOTA.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 287,066, dated October 23, 1883.

Application filed June 5, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, THEODOR THOM, a citizen of the United States, residing at Richland, in the county of Rice and State of Minnesota, have  
5 invented certain new and useful Improvements in Lifting-Jacks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to  
10 make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in  
15 lifting-jacks; and it consists in the construction, combination, and arrangement of the several parts, as will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a side view,  
20 Fig. 2 is an edge view, and Fig. 3 is a plan view, of a jack constructed according to my invention. Fig. 4 is a detached side view with one of the side plates broken away. Fig. 5 is a detail view of the crank-pinion, and Fig. 6 of  
25 the lifting-pinion; and Fig. 7 is a detached view showing the lifting-bar and the pinion meshed, and Fig. 8 shows the crank-pinion and gear-wheel in detail.

The standard A is composed of the beams  
30 A' A<sup>2</sup>, mounted on a suitable base or foot, A<sup>3</sup>. These beams A' A<sup>2</sup> are clamped face to face in the manner hereinafter described, and are provided in their abutting or adjoining faces with grooves, which are formed to coincide and  
35 provide a way for the lifting-bar hereinafter described. The lifting-bar C is placed in the way formed within the beams A' A<sup>2</sup>, and has on one of its edges the rack-teeth c, as shown in Fig. 7. On the top of this bar I preferably  
40 form the projecting pin c<sup>2</sup>, on which is swiveled the head or cap piece c<sup>3</sup>, which has its opposite ends turned up, so that it provides a convenient seat for the vehicle-axle, and also to engage and hold the lifting-hook c<sup>4</sup>, which  
45 is provided with a series of holes, as indicated by dotted lines c<sup>6</sup>, Fig. 2, formed at different points along it, near its upper end, so that its lower bent end, c<sup>5</sup>, may be set at any suitable point desired. The object of this bar c<sup>4</sup>, it will  
50 be understood, is to provide means for raising objects arranged in a position below the cap-

piece c<sup>3</sup>. Where so desired, several of the hooks c<sup>5</sup> may be formed at various points along the bar. On the outer faces of the beams A' A<sup>2</sup>, I form shoulders a a'. The side plates, B  
55 B', are rested against these shoulders and extend to the upper end of the standard A. The plate B is provided with bearings for the lifting and crank pinions, and also provides a support or pivot-pin, b, for the pawl herein-  
60 after described. This plate B is also provided with a series of holes for the clamping-bolts b', which secure the plates and beams together, as well as for the tenons b<sup>2</sup>, formed on the ends of the bars b<sup>3</sup>, projected from the  
65 plate B', as will be described. The upper edge of the plate B is turned over, so as to provide the flange B<sup>3</sup>, which extends to the edge of the lifting-bar way, and receives the friction as well as the lateral strain of said bar on one  
70 side of its way. The plate B' also has its upper edge turned to provide the flange B<sup>4</sup>, which extends close to the edge of the lifting-bar way, opposite the plate B<sup>3</sup>, and serves a  
75 similar purpose on its side of the way to that of the flange B<sup>3</sup>. This plate B' is also provided with the horizontal bars b<sup>3</sup> b<sup>3</sup> b<sup>3</sup> b<sup>3</sup>, which extend therefrom through the standard A, and are provided on their ends with the tenons b<sup>2</sup>, which extend through and rest in the openings  
80 formed therefor in the plate B, as will be understood on reference to the drawings, Figs. 1, 3, and 4. The upper pair of these bars b<sup>3</sup>, as shown in Fig. 3, extend across the ends of the lifting-bar way flush with the edges there-  
85 of, so that by means thereof, in connection with the flanges B<sup>3</sup> B<sup>4</sup>, a continuous metallic bearing or face is provided around the upper opening of the lifting-bar way.

The lifting-pinion D is provided with the  
90 shafts d d on its opposite ends, next to which I form the angular, preferably triangular, portions d' d', between which portions I form the teeth d<sup>2</sup>. This pinion is supported in suitable bearings in the side plates, and is meshed with  
95 the rack-bar edge of the lifting-bar, so that the latter will be raised or lowered as the pinion D is suitably revolved. This pinion is made the same at both ends, as shown in Fig. 6, and its teeth are formed the same on their opposite  
100 faces, as shown in Fig. 7, so that as the said teeth become worn the pinion may be removed



from its bearings in the side plates by unloosing the clamping-bolts of the latter, and be reversed so that the fresh or unworn edge may be brought to do the lifting in the action of the said pinion on the lifting-bar as the former is revolved. By this means the lifting-pinion may be made to last twice as long as would be the case were only one edge of its teeth available.

10 The gear-wheel E is arranged in a suitable mortise formed in the outer side of the beam A', close to the inner side of the plate B, and turns close against the inner side of the said plate in the operation of the machine. This gear-wheel is provided with a central angular opening corresponding to the shape of the portion  $d'$  of the pinion D, and the said wheel is slipped on the angular portion  $d'$ , and the wheel E and pinion D are thus keyed together, 20 and the motion of the former becomes that of the latter, as will be understood on reference to the drawings.

The crank-pinion F is provided with the end bearing,  $f$ , which rests in the plate B', and 25 on its opposite end with the bearing portion  $f'$ , bearing in the plate B, and with the shank portion  $f''$ . The teeth  $f'''$  mesh with those of the wheel E, and motion is communicated thereto and through the medium of the pinion D to the rack lifting-bar. A ratchet-wheel, G, is slipped on the angular shank portion  $f''$ , and then the crank G' is slipped on. This crank G' is provided with two sockets,  $g g'$ , for the shank, so that the crank may be made 35 longer or shorter, as desired. A pawl,  $g^2$ , is pivoted on pin  $b$ , and engages the teeth of the wheel G and prevents the backward movement of the crank-pinion and its connections when such motion is not desired.

40 The operation of the device will be readily understood from the description before given. It is strongly made, and yet so that the several

parts may be replaced or reversed as may be desired.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, substantially as described, of the standard A, composed of the beams A A', having grooves formed in their adjoining faces to provide a way for the lifting-bar, the lifting-bar C, having a rack edge and placed in the said way, the side plate, B', having arms  $b^3$  and bearings for the lifting-pinion and the crank-pinion, the plate B, the reversible lifting-pinion, the crank-pinion, and suitable retaining-bolts, all as and for the purposes set forth.

2. In a lifting-jack, the combination, substantially as hereinbefore set forth, of the lifting-bar, the standard, the lifting-pinion, made the same at both ends and reversible, as described, and the operating mechanism, as specified.

3. In a lifting-jack, the combination, substantially as hereinbefore described, of the standard having a mortise or way for the lifting-bar formed therein, the plates B B', having their upper edges turned over close to the opposite sides of the lifting-bar way, forming metallic bearing-surfaces at the upper edge of said way, the lifting-bar, the cap-piece C', swiveled thereon, and the lifting-hook provided with a hole or holes to engage the ends of the swiveled cap-piece, and having a hook or hooks formed thereon, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THEODOR THOM.

Witnesses:

J. B. QUINN,  
PATRICK QUINN.