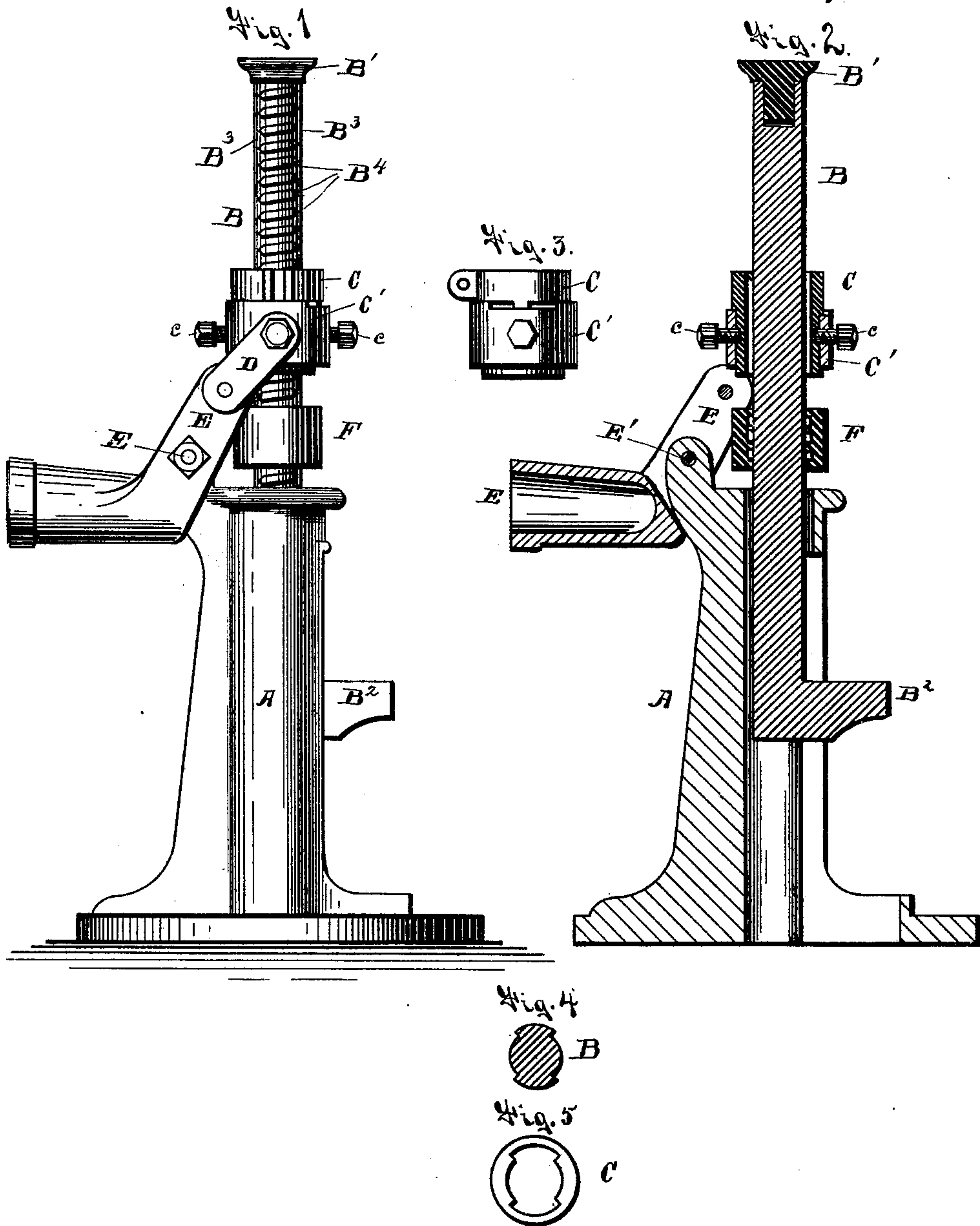


(No Model.)

H. R. FERRIS.  
Lifting Jack.

No. 229,814.

Patented July 13, 1880.



WITNESSES

Frank M. Hubert  
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# UNITED STATES PATENT OFFICE.

HIRAM R. FERRIS, OF CLEVELAND, OHIO.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 229,814, dated July 13, 1880.

Application filed May 24, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM R. FERRIS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Lifting-Jacks; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in lifting-jacks; and it consists in the combination of a lever-jack and a jack-screw having the arrangement of parts and the functions and principles of operation substantially as hereinafter described.

In the drawings, Figure 1 is a view, in elevation, of my device. Fig. 2 is a longitudinal central view of the same. Fig. 3 is a view, in elevation, of the nut through which the lifting-shaft passes and with which the lever is connected. Fig. 4 is a view, in cross-section, of the lifting-shaft; and Fig. 5 is a view, in cross-section, of the nut shown in Fig. 3.

In the said drawings, A is a post or standard, which supports and to which are attached the various parts of my device. It is made preferably of metal, and is hollow for the reception of the lifting-shaft B.

B is the support or lifting-shaft, upon which the weight to be lifted or lowered is received. This shaft B is constructed to have a vertical longitudinal movement, and is provided at its top with any suitable bearing-surface, B<sup>1</sup>, and at its lower portion with another bearing-surface, B<sup>2</sup>, to either of which the weight may be applied. The lifting-shaft B has formed upon it a mutilated screw-thread. This screw-thread is mutilated by having one or more longitudinal slots or grooves, B<sup>3</sup>, cut through it. The cut ends of this mutilated screw-thread I prefer should be tapered or beveled, substantially as shown at B<sup>4</sup>, Fig. 1. By thus beveling the mutilated ends of this screw-thread it will insure the more easy and certain engagement with the nut C.

C is the nut, provided with a female screw and adapted to turn upon the lifting-shaft B. It is also mutilated by cutting slots or grooves longitudinally through it, and adapted to turn

about the shaft B. By means of the mutilations in the screw-thread of the lifting-shaft B and the mutilations in the screw-thread of the nut C, by bringing the parts into conjunction the nuts can be moved readily upon the lifting-shaft, or the screw-thread portion of the nut may be turned so as to engage with the screw-thread of the lifting-shaft. This nut C turns within a collar, C', and is attached to it by means of set-screws c. To this collar C' is attached a toggle-arm, D, by means of which the collar C' is connected with the short arm of the lever E. The lever E is pivoted at E' to a rigid arm, which projects from the standard or support A.

F is a second nut, adapted to turn upon the lifting-shaft B, and placed thereon between the collar C' and the standard or support A. The office of this nut is to hold the lifting-shaft B at any desired point by bearing against the top of the standard or support A.

The operation of this portion of my device is as follows: The lifting-shaft B has been raised as high as possible by means of the lever E. The nut F may now be turned down so as to bear upon the standard or support A. This will support the lifting-shaft B, and with it any weight that may be upon its bearing-surfaces, either B<sup>1</sup> or B<sup>2</sup>, without the aid of the lever E. The nut C may be now turned so as to permit its mutilated portion to come opposite the screw-thread of the lifting-shaft B and its screw-thread portion opposite the mutilated portion of the lifting-shaft B, whereby it can be readily moved longitudinally upon this lifting-shaft B without the threads of the nut coming in contact. The long arm of the lever E may now be raised, when the collar C', with its nut C, may be lowered to the lowest point permissible by the length of the short arm of the lever, when a quarter-turn may be taken in the nut C, which will engage the screw-thread of the shaft with the screw-thread of the nut. Power may again be applied to the lever E, when the same relative position of parts will again be taken, as shown in Fig. 1. Again, the nut F may be turned down to support the lifting-shaft B, the nut C again turned, and the collar C' again lowered. This operation may be continued until the weight is raised to any height desired equal to the length of



the lifting-shaft. To lower a weight that has been raised the operation is simply reversed.

5 The screw-thread of the nut C is made to engage with the screw-thread of the lifting-shaft B, and power applied to the lever E, when it is raised as high as practicable by means of the lever E. The nut F is now turned up until it bears against the collar C', when the lever E is raised and the shaft B lowered until the  
10 nut F rests upon the standard A.

What I claim is—

1. A lifting-jack provided with a lifting-shaft having a mutilated screw-thread, in combination with a nut also having a mutilated screw-  
15 thread, whereby the nut can be made to engage with and disengaged from the lifting-shaft, substantially as and for the purpose shown.

2. In a lifting-jack, the combination of the lifting-shaft B, provided with a mutilated  
20 screw-thread, nut C, also provided with a mutilated screw-thread, and the nut F, adapted to turn upon the shaft B and support the weight thereon by resting upon the standard A, substantially as and for the purpose shown. 25

3. A lifting-jack provided with a lifting-shaft having a mutilated screw-thread, substantially as and for the purpose shown.

In testimony whereof I have signed my name to this specification in the presence of two sub-  
30 scribing witnesses.

HIRAM R. FERRIS.

Witnesses:

JNO. CROWELL, Jr.,  
WILLARD FRACKER.