No. 701,823. Patented June 3, 1902.

E. WOODINGS.

LIFTING JACK.

(Application filed Sept. 4, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

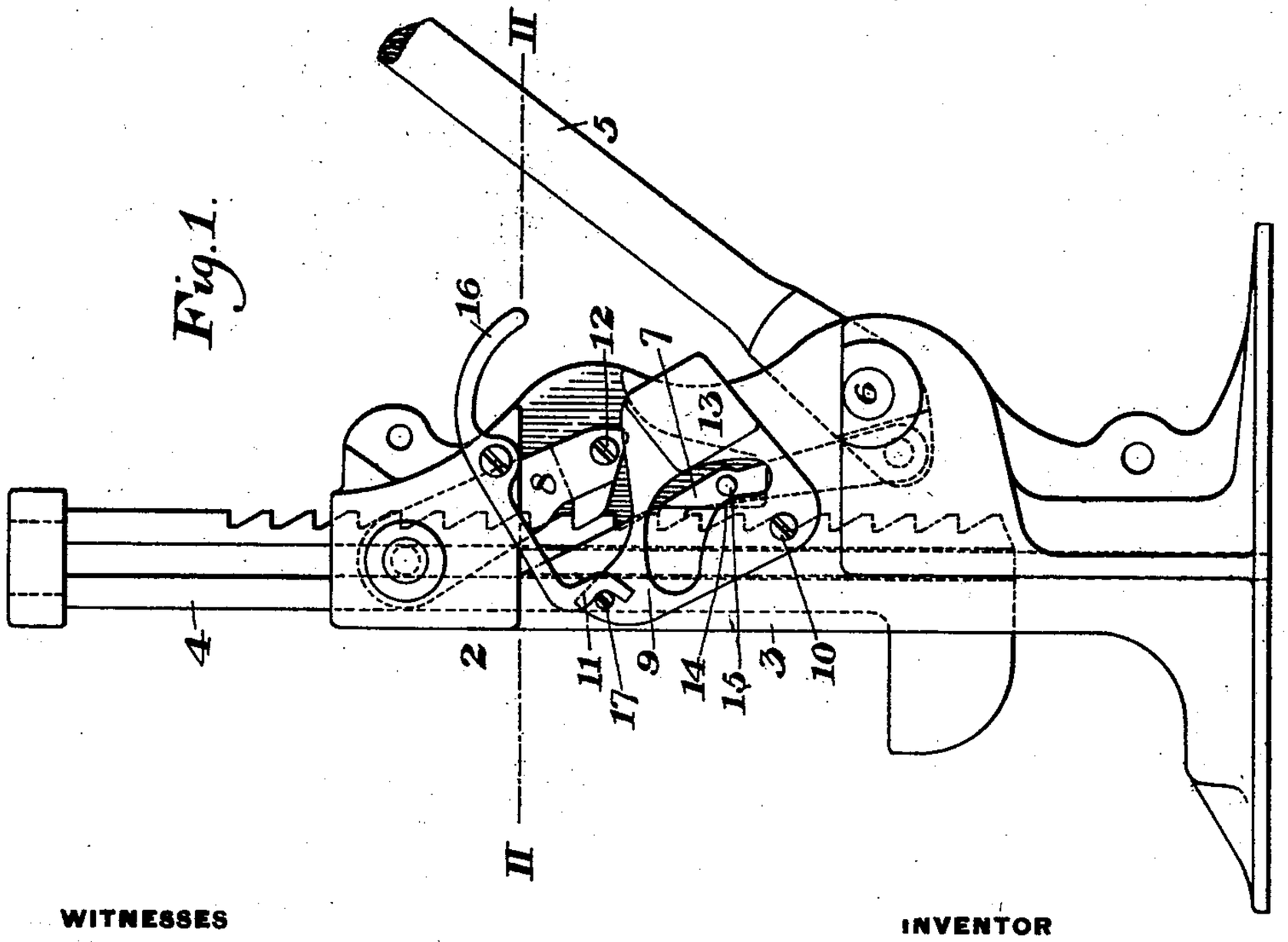
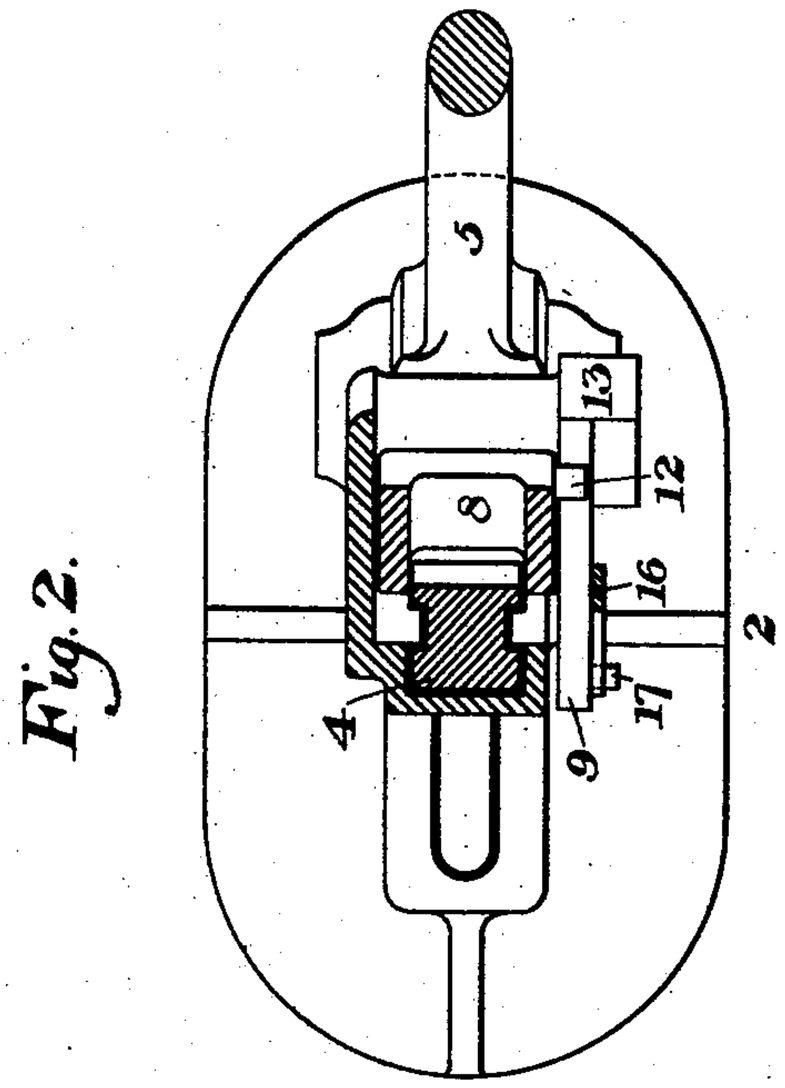


Fig. 2.



WITNESSES

Warren W. Swartz

L. M. Redman

INVENTOR

Emanuel Woodings

by Bakewell & Symmes

his Attys

No. 701,823.

Patented June 3, 1902.

E. WOODINGS.

LIFTING JACK.

(Application filed Sept. 4, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

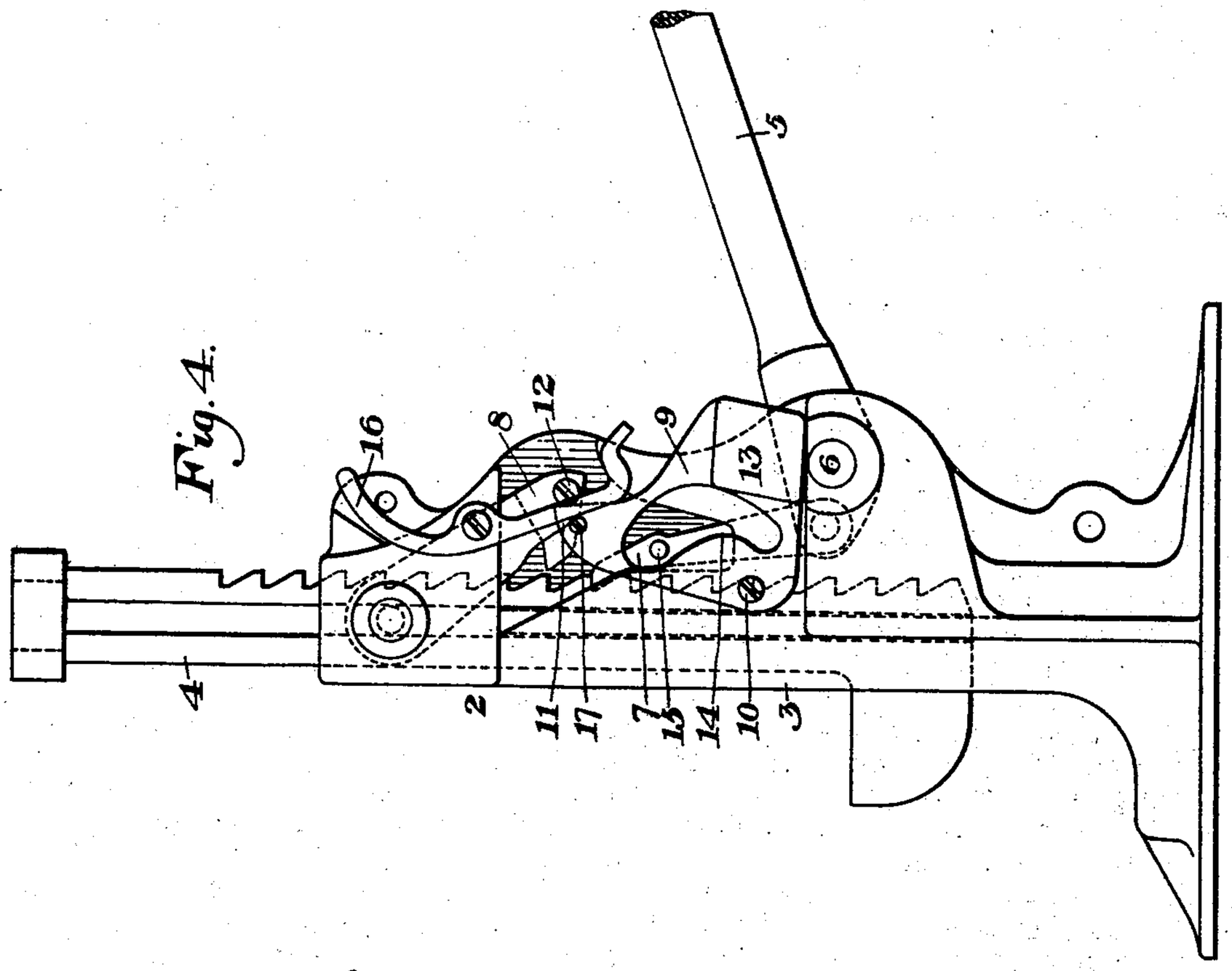


Fig. 3.

WITNESSES

Warren W. Swartz

L. M. Redman

INVENTOR

Emanuel Woodings

by Bakewell & Byrnes

his Attys.

UNITED STATES PATENT OFFICE.

EMANUEL WOODINGS, OF OAKMONT, PENNSYLVANIA, ASSIGNOR TO VERONA TOOL WORKS, OF OAKMONT, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 701,823, dated June 3, 1902.

Application filed September 4, 1901. Serial No. 74,271. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL WOODINGS, of Oakmont, Allegheny county, Pennsylvania, have invented a new and useful Lifting-Jack, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation showing my improved jack with the parts in position for lifting. Fig. 2 is a horizontal section on line II II of Fig. 1. Fig. 3 is a view similar to Fig. 1, showing the parts in position for lowering step by step; and Fig. 4 is a view similar to Fig. 3, showing the position in lowering as the lower pawl takes the weight and allows the upper pawl to be released.

My invention relates to that class of jacks wherein a toothed bar is moved in either direction step by step by the action of a plurality of pawls and is designed to simplify and improve the mechanism for reversing the movement of the lifting-bar.

In the drawings I show a jack 2 of an ordinary type, having the hollow frame 3, which incloses and guides the toothed lifting-bar 4. The operating-lever 5 is pivoted to the frame at 6, and to its inner end is pivoted the lower pawl 7. The upper depending pawl 8 is pivoted to the frame and normally swings inwardly by gravity to engage the teeth of the lifting-bar.

When the parts are in the position shown in Fig. 1, the two pawls operate in the ordinary way, the lever being oscillated and the pawls alternately engaging the teeth.

To reverse the movement of the lifting-bar, I provide a swinging block 9, which is pivoted to the frame at 10 within the casing and is provided with an upper finger 11, which engages a pin 12, projecting laterally from the upper pawl. This block is provided with a weighted portion 13, which normally tends to swing the upper pawl outwardly out of engagement with the teeth. The block is also provided with an interior cam-surface 14, which engages a pin 15, projecting sidewise from the upper part of the lower pawl. The swinging block is cut away in front of the cam-surface, so that the block may be held in inoperative position by means of a hand-trigger 16, the rear part of which may be forced against a pin 17 upon the block to lock the block out of operation in lifting the bar. When the trigger is released, the block assumes the position shown in Fig. 3, and when the lever is lifted the pin upon the lower pawl riding over the cam-face of the block is forced backwardly out of engagement with the teeth, the load then resting upon the upper pawl. On lowering the lever the lower pawl is moved upwardly into the next tooth above, and as it takes the load the upper pawl is released and the weight upon the block acting by gravity upon the pin of the upper pawl forces it out of engagement with the teeth. As the lever is again raised the toothed bar moves down with the lower pawl until the cam-surface of the block forces out the lower pawl and at the same time allows the upper pawl to swing into engagement with the next tooth. The lifting-bar is thus lowered step by step.

The advantages of my invention result from the simplicity of the reversing mechanism. A single weighted lever or block pivoted to the frame acts upon the pawls to reverse the movement when it is released and brought into contact with them.

The device may be cheaply made and is not liable to get out of order.

Many changes may be made in the form and arrangement of the pawls, the toothed bar, and the other parts without departing from my invention.

I claim—

1. A jack having a toothed bar, a plurality of pawls engaging the bar, and a weighted lever pivoted to the frame and arranged to act upon both pawls to reverse their movement; substantially as described.

2. A jack having a toothed bar, a plurality of pawls engaging the bar, a weighted lever pivoted to the frame and having portions arranged to act upon both pawls, and a latch device arranged to hold the weighted lever in inoperative position; substantially as described.

3. A lifting-jack having a toothed lifting-bar, an operating-lever having a pawl engaging the teeth of the bar, a depending pawl pivoted to the frame and also engaging the teeth of the bar, and a weighted lever pivoted at one side to the frame and having a cam-surface bearing upon the lower pawl, and an upper portion arranged to engage the upper pawl, in lowering the bar step by step; substantially as described.

In testimony whereof I have hereunto set my hand.

EMANUEL WOODINGS.

Witnesses:

WARREN W. SWARTZ,

GEO. B. BLEMING.