

(No Model.)

E. I. NICHOLS.  
LIFTING JACK.

No. 413,864.

Patented Oct. 29, 1889.

Fig. 1.

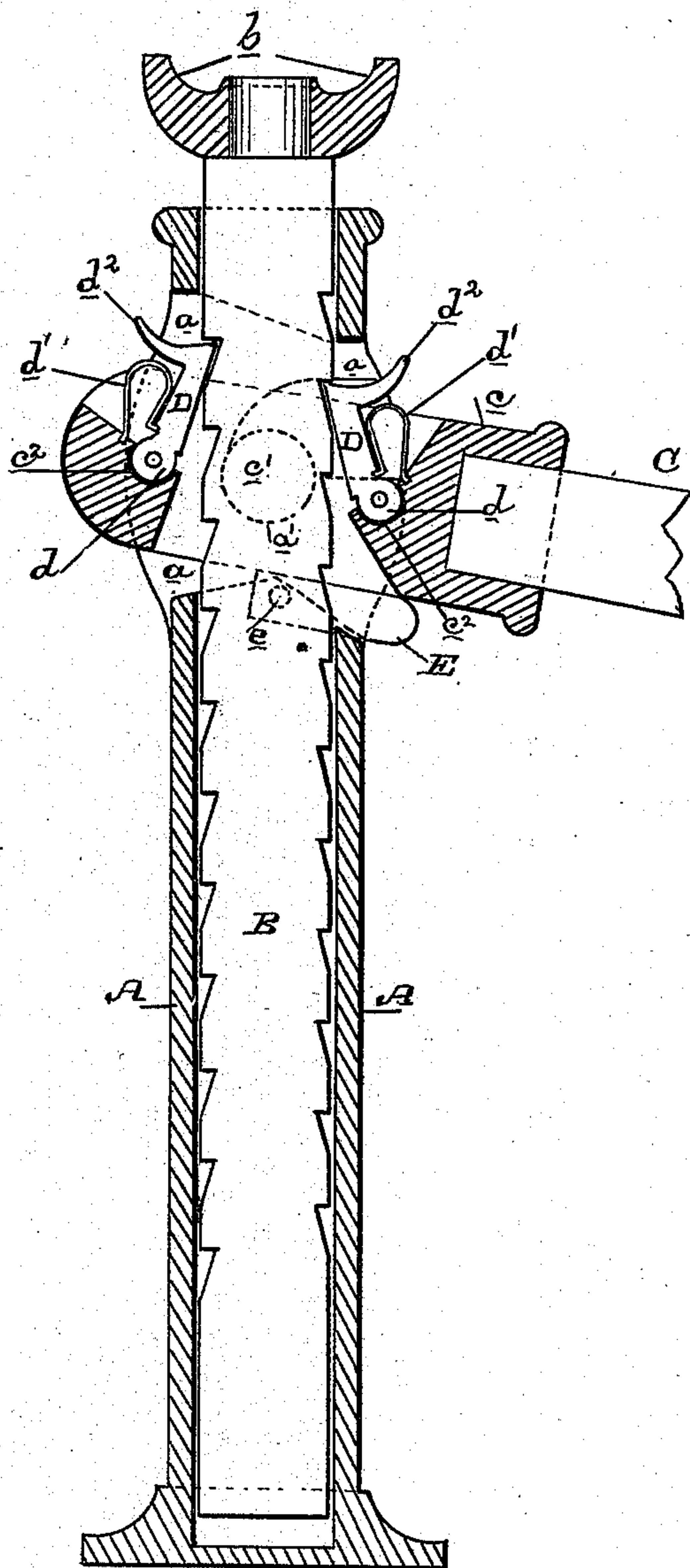


Fig. 2.

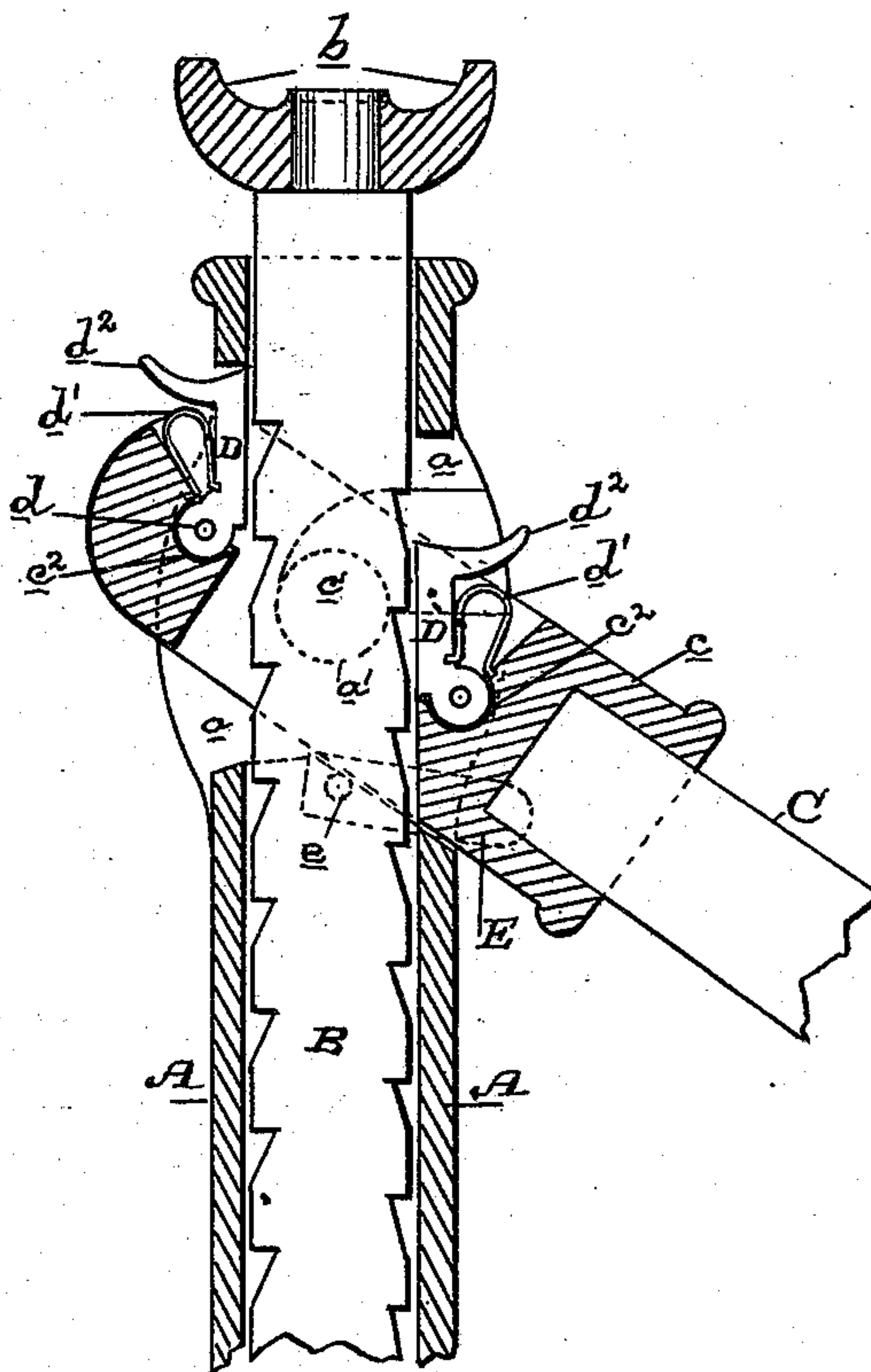
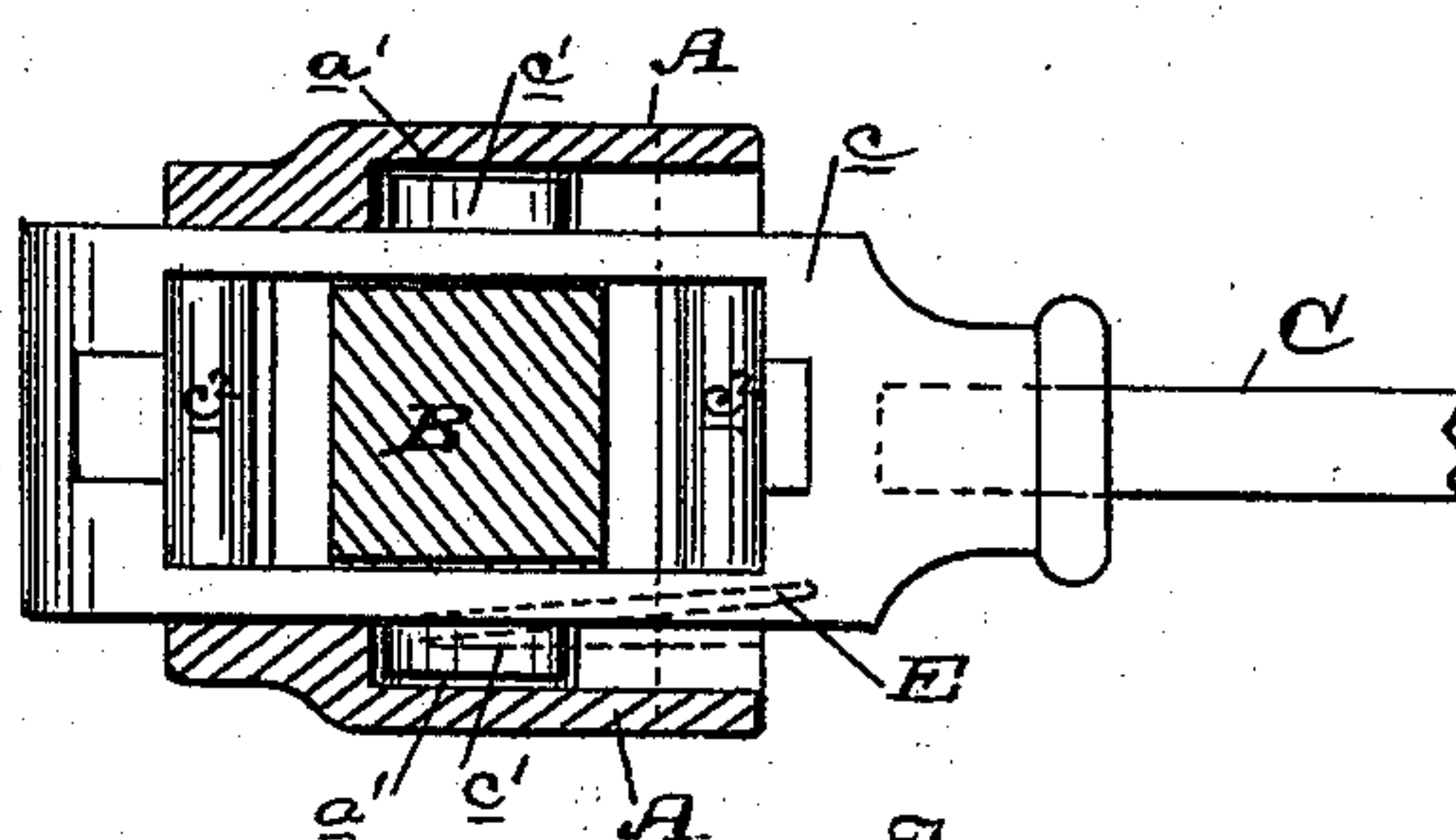


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 413,864, dated October 29, 1889.

Application filed January 16, 1889. Serial No. 296,543. (No model.)

*To all whom it may concern:*

Be it known that I, EMORY I. NICHOLS, of the city and county of San Francisco, State of California, have invented an Improvement in Lifting-Jacks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of lifting-jacks; and my invention consists in the hereinafter-described novel construction and arrangement of hollow standard, ratchet lifting-bar mounted therein, vibrating operating-lever, spring-controlled pawls carried thereby, and stop-piece for releasing the pawls.

The object of my invention is to provide a simple and efficient lifting-jack of that class in which a ratchet-bar is raised by the alternate engagement of opposing pawls carried by a vibrating lever.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section of my lifting-jack. Fig. 2 is a section showing the pawls thrown from their engagement in order to allow the ratchet-bar to be run down. Fig. 3 is a horizontal cross-section showing the mounting of the lever in the standard.

A is the hollow standard.

B is the ratchet lifting-bar, seated in the standard and adapted to have a vertical movement therein. This bar has teeth in both sides, as shown, and carries at its top the lifting-bracket b.

C is the operating-lever. The head c of this lever passes through the slotted top a of the standard, and it has on each side the pivot pins or lugs c', which drop into and are seated in shoulders a', Fig. 3, formed within the standard. These shoulders form the fulcrum-bearings about which the lever vibrates. The head c of the lever is also slotted, Fig. 3, to permit the passage of the ratchet lifting-bar B. In the head of the lever are formed the bearing-shoulders c<sup>2</sup>, in which are seated the rounded bases d of the pawls D, so that said pawls have a pivotal movement in the shoulders, their upper ends engaging the ratchet-teeth of the bar B—one on each side—being held up to their work by the springs d' bearing behind them. These shoulders c<sup>2</sup> thus bear the direct weight, and the pawls, being

nearly vertical, are adapted to support the load to the best advantage. The tops of the pawls have outwardly-projecting extensions d<sup>2</sup>, whereby they may be thrown from their engagement by hand.

The operation of the jack is as follows: The lever C being vibrated, its pawls successively engage the teeth of the ratchet lifting-bar B on each side, and thus raise it, one tooth for each movement of the lever; but in order to relieve the ratchet lifting-bar B of the engagement of the pawls, so that it may be run down, I have secured at e in the base of the slotted top a of the standard a small stop-piece E, which, lying directly under the lever-head, prevents it from moving too far down. By moving this stop-piece to one side out of the way of the lever-head the latter may be moved down, as shown in Fig. 2, so far as to bring the faces of its pawls D against the face of the ratchet-teeth, which, as shown, are preferably formed with plane surfaces. In this position the pawls are held vertically and are out of engagement with the ratchet-teeth, thereby freeing the bar B and allowing it to be moved up or down freely by hand, the plane surfaces of the teeth permitting it to pass by the pawls readily.

The stop-piece E may be pivoted to the standard-top, so as to permit it to be moved out of the way of the lever-head, or it may be of a springy nature, thus adapting it to be forced aside sufficiently to allow the lever-head to move past it. It need not be located in the base of the standard-top under the lever, but may be secured above, the only requirement being that when in position it shall limit the movement of the lever-head, so as to keep the pawls to their engagement, and when out of position shall allow the further movement of the lever-head, for the purpose described.

I am aware that it is not new in lifting-jacks to employ a ratchet lifting-bar and a vibrating lever with pawls engaging said bar and adapted to effect its vertical movement, and I do not, therefore, claim such, broadly; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a lifting-jack, the combination of the



hollow standard, vertically-movable lifting-bar therein having teeth on each side, vibrating lever pivoted in the standard, pawls carried by the lever and engaging alternately the  
5 teeth of the lifting-bar, and a movable stop-piece on the standard for limiting the movement of the lever when operating and allowing, when turned out of the way, its further movement, whereby its pawls are thrown from  
10 and held out of engagement with the teeth of the lifting-bar, substantially as described.

2. In a lifting-jack, the combination of the hollow standard having the slotted top with bearing-shoulders therein, the operating-le-  
15 ver, the head of which is slotted and passes through the slotted top of the standard, said head having side pivot pins or lugs seated in the bearing-shoulders of the standard, and having also bearing-shoulders for the pawls,  
20 the lifting-bar seated in the hollow standard

and passing through the slotted head of the operating-lever, said lifting-bar having ratchet-teeth on both sides, the spring-controlled pawls having bases seated in the bearing-shoulders of the lever-head and adapted to 25 engage the teeth of the lifting-bar, and the movable stop-piece E in the standard-top for limiting the movement of the lever-head when operating and allowing, when turned aside, its further movement, whereby the pawls are 30 thrown from and held out of engagement with the teeth of the lifting-bar, substantially as described.

In witness whereof I have hereunto set my hand.

EMORY I. NICHOLS.

Witnesses:

S. H. NOURSE,  
H. C. LEE.