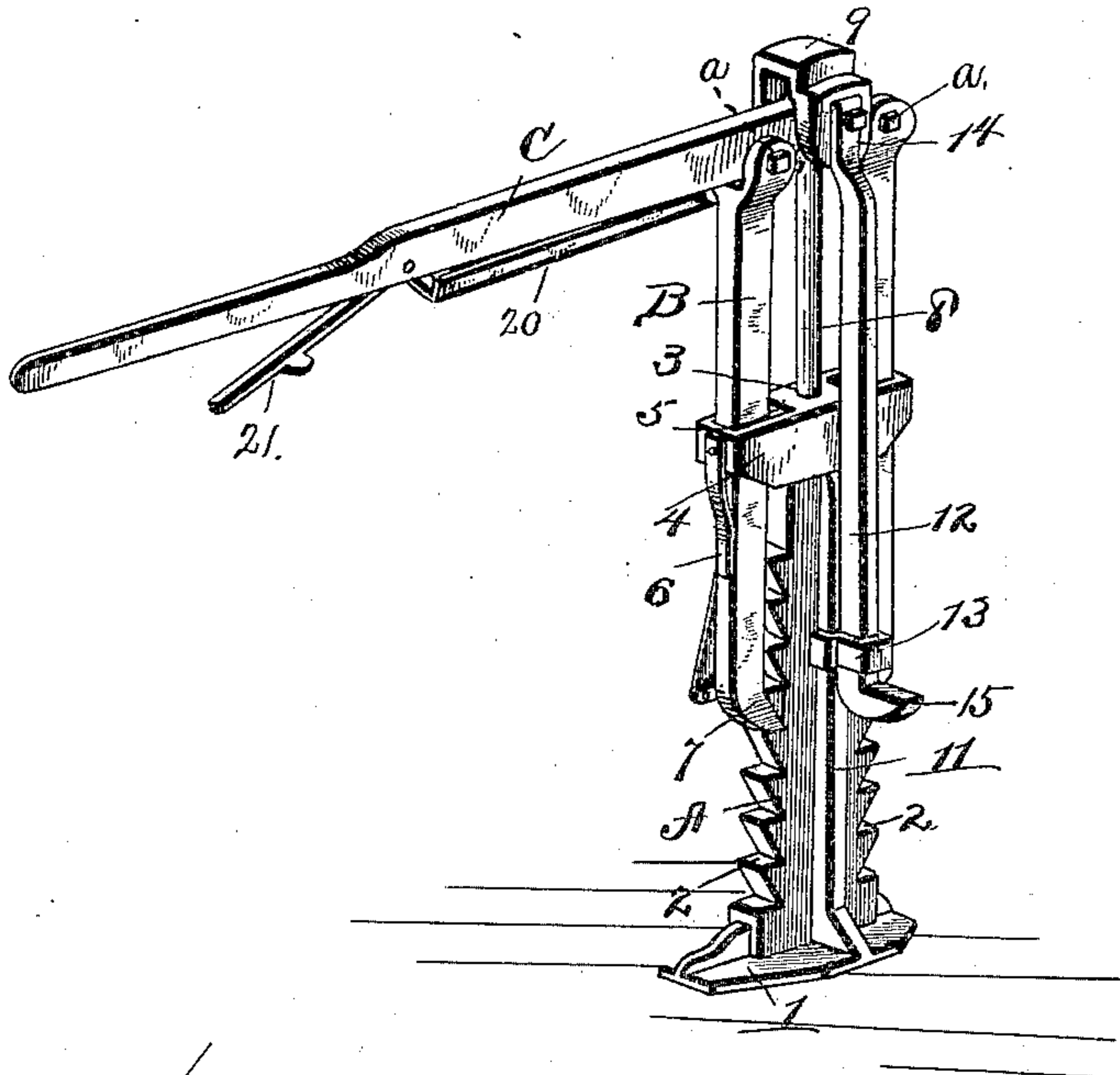


(No Model.)

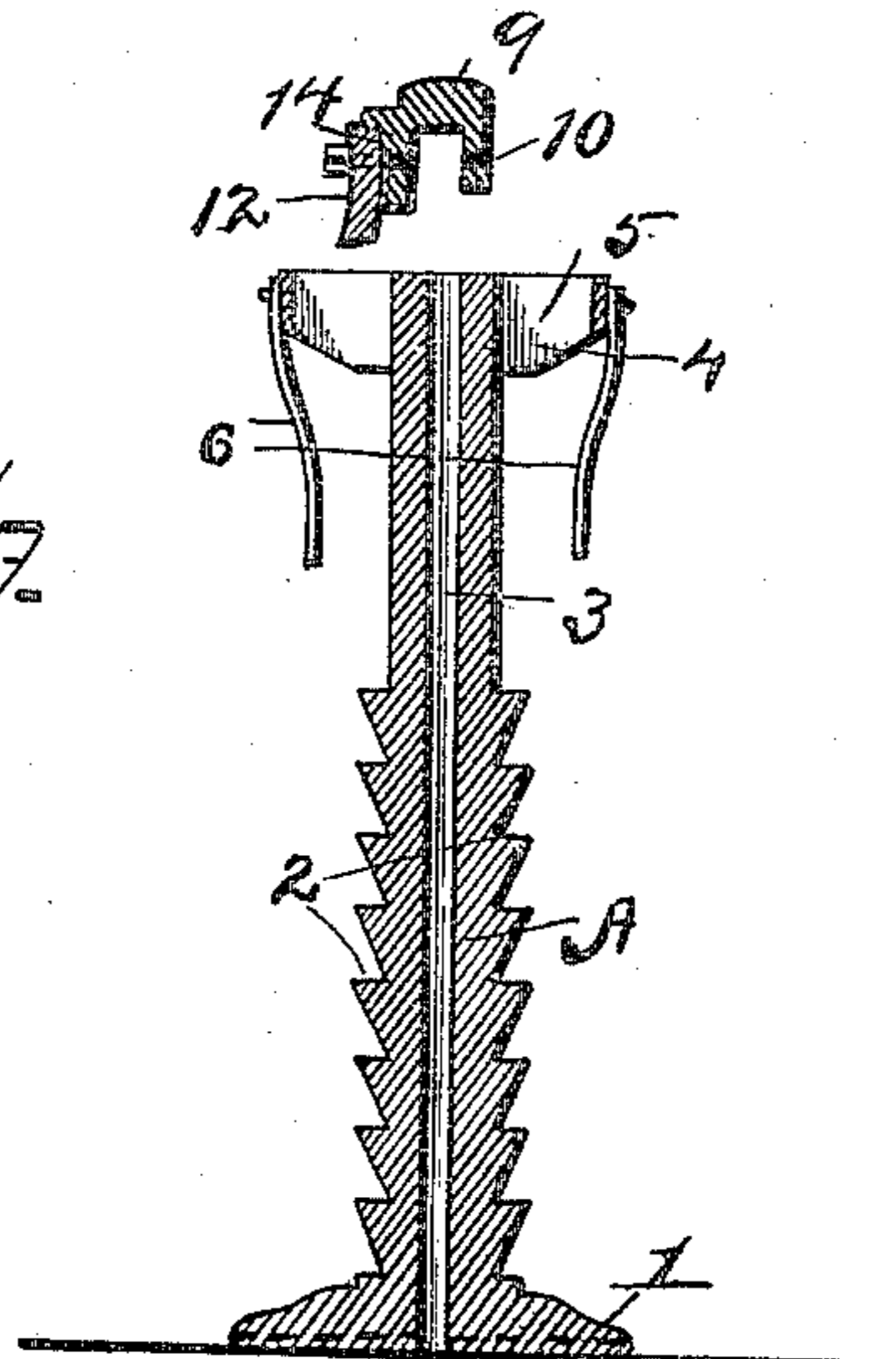

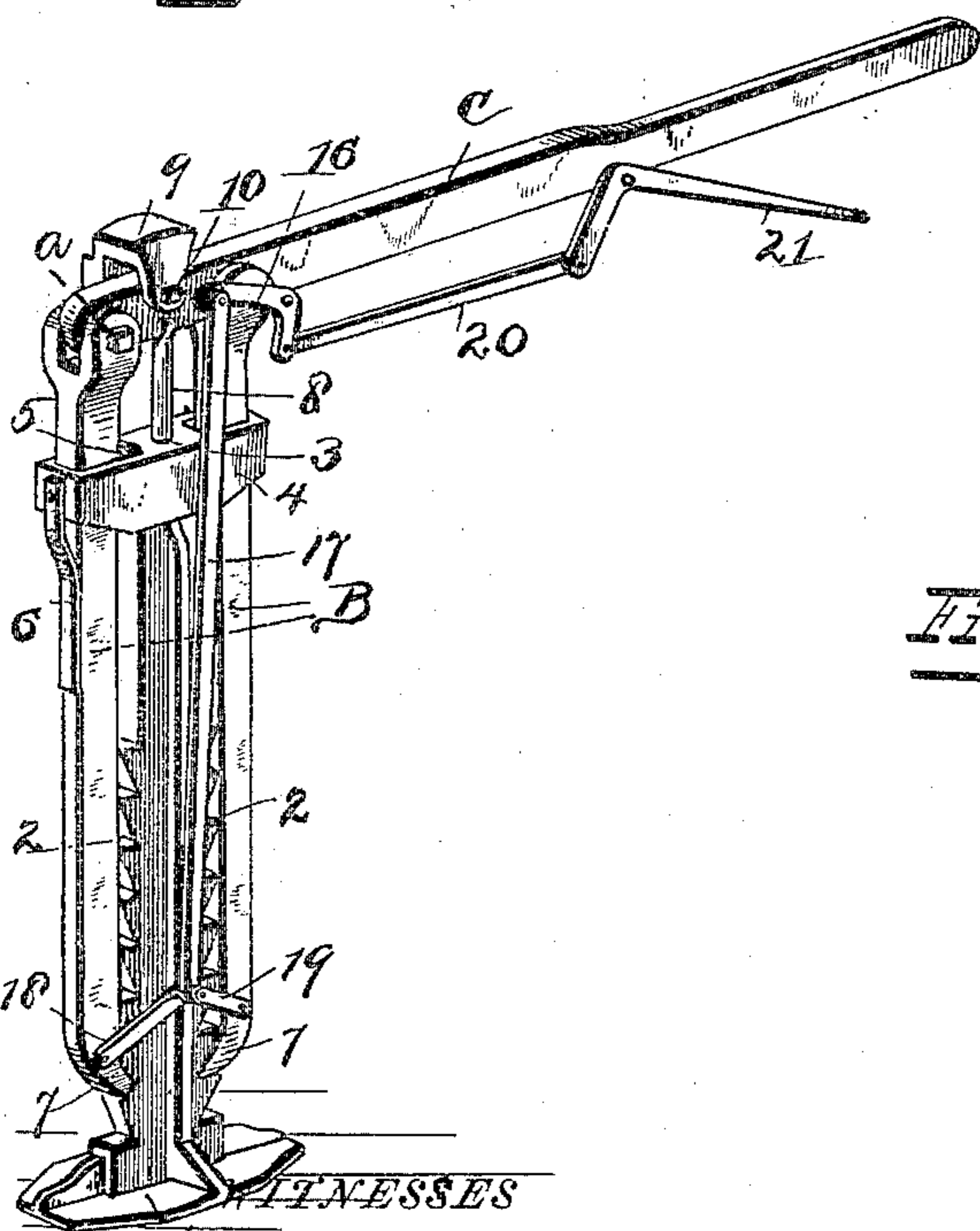
H. H. CLEVER.
LIFTING JACK.

No. 408,373.

Patented Aug. 6, 1889.



~~SECRET~~



INVENTOR

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UNITED STATES PATENT OFFICE.

HENRY H. CLEVER, OF CLEVERSBURG, PENNSYLVANIA.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 408,373, dated August 6, 1889.

Application filed December 27, 1888. Serial No. 294,780. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. CLEVER, a citizen of the United States, residing at Cleversburg, in the county of Cumberland and State of Pennsylvania, have 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 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.

My invention has relation to improvements in lifting-jacks of that class or style denominated "lever" lifting-jacks; and the object is to improve existing devices of the kind named, and especially the mechanical construction and arrangement of that certain lifting-jack shown and described in Letters Patent No. 393,358, dated November 27, A. D. 1888, granted to me.

I have fully illustrated my improved lifting-jack in the accompanying drawings, wherein—

Figure 1 is a perspective of the device. Fig. 2 is a perspective of the device taken from the reverse of Fig. 1. Fig. 3 is a vertical section of the standard and cross-section of the cross-head or housing on top of the standard.

Reference being had to the drawings, A denotes the standard of the lifting-jack, which is provided with a base plate or piece 1, of such dimensions as to sustain the lifting-jack in an upright position. The standard is formed with racks 2, having the steps or notches formed with horizontal upper faces, substantially as shown, to serve as substantial stops or rests for the turned-in ends of the lifting-bars. The standard is formed with a central hole 3, which receives the guide-rod connected to the lever-head. On the top of the standard is a casing or housing 4, having vertical ways or passages 5 to take the reciprocable lifting-bars and guide them in their up and down movements. To the ends of the casing 4 are secured springs 6, which extend downward and are arranged to press inward and keep the ends of the lifting-bars engaged with the racks of the standard. The

ways 5 are made longer than the width of the lifting-bars to permit the latter to have inward and outward movement as they lift over the steps of the racks.

B denotes the lifting bars or rods arranged in the vertical ways of the casing and turned inward at their lower ends, as at 7, to engage the racks and set with their end faces on the steps of the racks, substantially as shown in the drawings. At the upper ends the lifting-bars are pivotally connected to the operating-lever C by bolts a. For this purpose the upper ends of the lifting-rods are bifurcated or formed with seats to receive the lever, and bolts are projected through the parts to secure them together, as shown in Figs. 1 and 2 of the drawings.

In the hole 3 in the center of the standard is arranged a guide-rod 8, which has its upper end pivotally connected to the operating-lever between the connections of the lifting-bars, as shown. This guide-bar serves to keep the lifting-levers and the standard in alignment while the machine is in use.

On the top of the operating-lever is mounted a weight-block 9, which is connected to the lever by a bolt 10, and is arranged in its seat to have a slight rocking function to provide for any variance in the relation of the weight to the standard.

The standard is formed with a guide-flange 11 on one side, and an auxiliary lifting-bar 12, having a guide-loop 13, rests on this guide-flange 11, the said lifting-bar having one end arranged in a groove 14 on the weight-block and bolted thereto, while the lower end is formed with a foot 15. This lifting-bar 12 can be used to engage and lift weights which are too low down to be engaged and lifted by the upper weight-block.

On the operating-lever is fulcrumed a bell-crank lever 16, to the weight-arm of which is connected a rod 17, having its lower end connected to two short rods 18 19, which in turn have their lower ends connected to the lower ends of the respective lifting-bars. The other arm of the bell-crank lever is connected to a rod 20, and the other end of the rod is connected to a hand-lever 21, fulcrumed on the operating-lever. By drawing up the hand end of the lever 21 the rods 18 19 operate to spread the lower ends of the lifting-rods and

disengage them from the racks, so that they may be lowered on the standard as desired, and carry with them the elements of the device connected to them.

5 If a weight is upon the machine, it may be lowered by moving the operating-lever in a direction to loosen one of the lifting-rods from its seat on the step of the rack, and then drawing up the hand-lever, which operates
10 to throw the lifting-rod outward, when the operating-lever can be moved to let that lifting-rod down to the next step of the rack. A similar movement of levers in succession will eventuate in moving the other lifting-rod
15 downward, and by successive similar movements the burden can be let down as far as the limit of the machine.

Having thus described the construction of my improvements and explained the principle and operation thereof, I proceed to particularly point out and distinctly claim the parts, improvements, and combination which I claim as my invention, to wit:

1. The combination of the standard A, having a base-piece and formed with racks 2 on its side edges, and a vertical central hole 3, and provided with a casing 4, having vertically-arranged ways therein, the operating-lever C, having a pivotally-attached weight-block mounted thereon, the lifting-bars B, connected to the operating-lever and projected through the ways in the casing of the standard, with their lower ends formed and arranged to engage the racks of the standard,
35 a guide-rod 8, connected to the operating-lever and arranged in the vertical hole of the standard, and springs 6 on the casing to press the lifting-bars in the racks, substantially as described.

40 2. The combination of the standard A, having a base-piece, and formed with racks on its edges and a vertical hole 3, and a casing 4 mounted thereon, having vertical ways, the operating-lever C, having a pivotally-attached weight-block mounted thereon, the lifting-bars B, connected to the operating-lever and projected through the ways of the casing, with their lower ends formed and arranged to engage the racks of the standard, a
45 guide-rod connected to the operating-lever and arranged in the vertical hole of the standard, springs on the casing to press the lifting-rods in the racks, a bell-crank lever fulcrumed to the operating-lever, having one
50 end connected to a rod provided with spread-

ing-bars at its lower end, said spreading-bars being connected to the lower ends of the lifting-bars, and the other end of the bell-crank lever being connected to a hand-lever, substantially as described.

3. The combination, with the standard having racks on its edges, the lifting-rods arranged in engagement with said racks, and the operating-lever, of levers to disengage the lower ends of the lifting-bars from the racks, 65 consisting of a hand-lever fulcrumed to the operating-lever, a bell-crank lever fulcrumed to the operating-lever and having one end connected to the hand-lever, a connecting-rod jointed to the bell-crank lever, and two spreading-bars pivotally fastened to the lower end of the connecting-rod and their other ends fastened to the ends of the lifting-rods.

4. The combination of the standard, formed with racks on its edges and having a casing 75 with vertical ways on its upper end and a guide-flange on its side, the lifting-bars arranged in the ways of the casing to engage the racks with their lower ends, the operating-lever fulcrumed to the lifting-rods, and 80 the auxiliary lifting-rod connected to the operating-lever and formed with a foot and provided with a guide-piece to engage the guide-flange on the standard, substantially as described.

5. The lifting-jack herein described, composed of the standard formed with racks on its edges, a central vertical hole, and a guide-flange on its side, a casing having ways to receive the lifting-rods and provided with 90 springs to press the lifting-rods in engagement with the racks on the standards, the operating-lever fulcrumed to the lifting-rods, a weight-block on the operating-lever, the levers, substantially as described, to engage 95 the lifting-bars from the racks, a guide-rod connected to the operating-lever and arranged in the hole of the standard, an auxiliary lifting-rod connected to the operating-lever and provided with a guide-piece to engage the guide-flange on the standard, all arranged and combined substantially as described, and for the purposes specified.

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

HENRY H. CLEVER.

Witnesses:

MATTIE KELSO,
W. K. KELSO.