

(No Model.)

2 Sheets—Sheet 1.

S. J. SHIMER.
VARIETY MOLDING MACHINE

No. 353,510.

Patented Nov. 30, 1886.

Fig. 1.

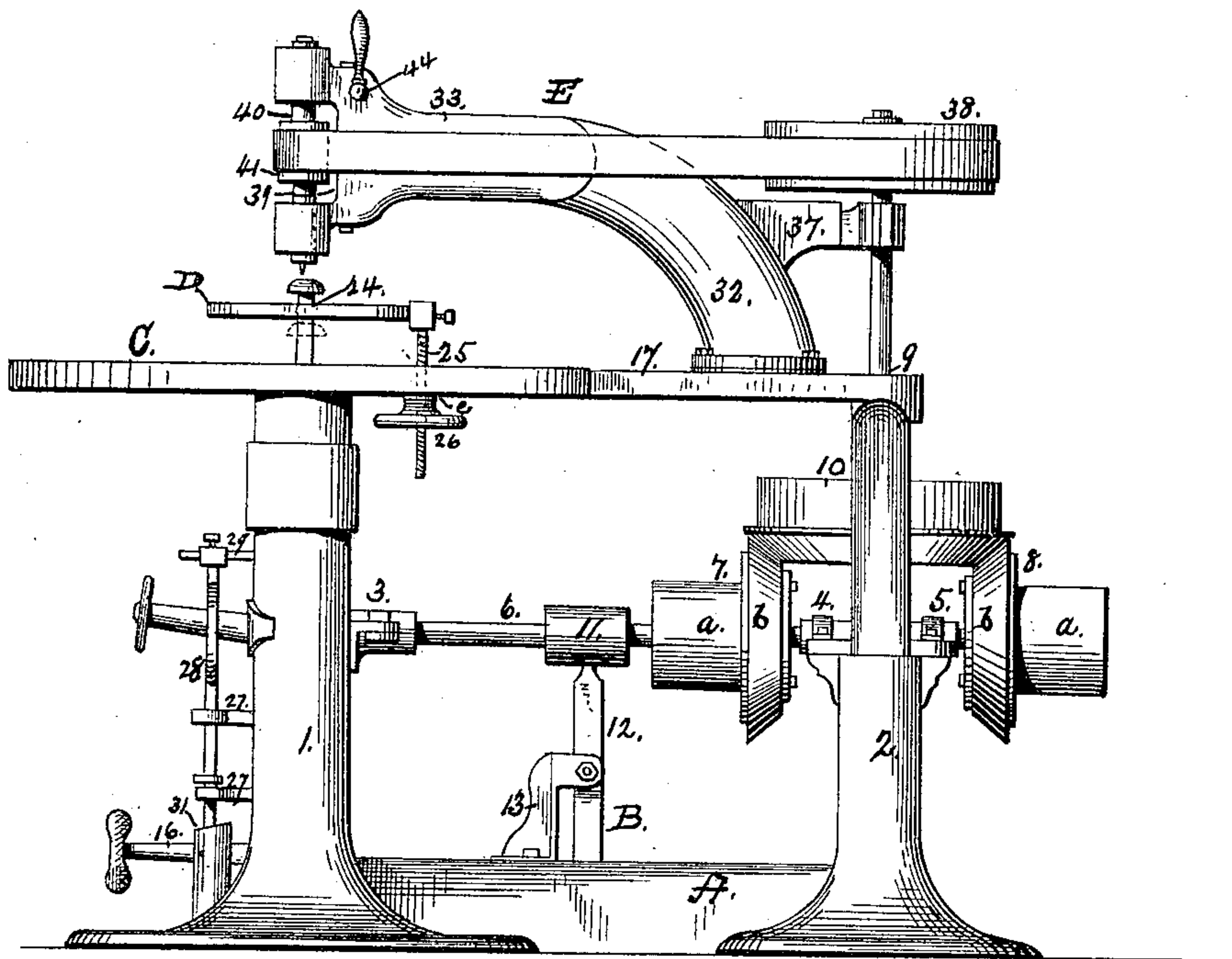
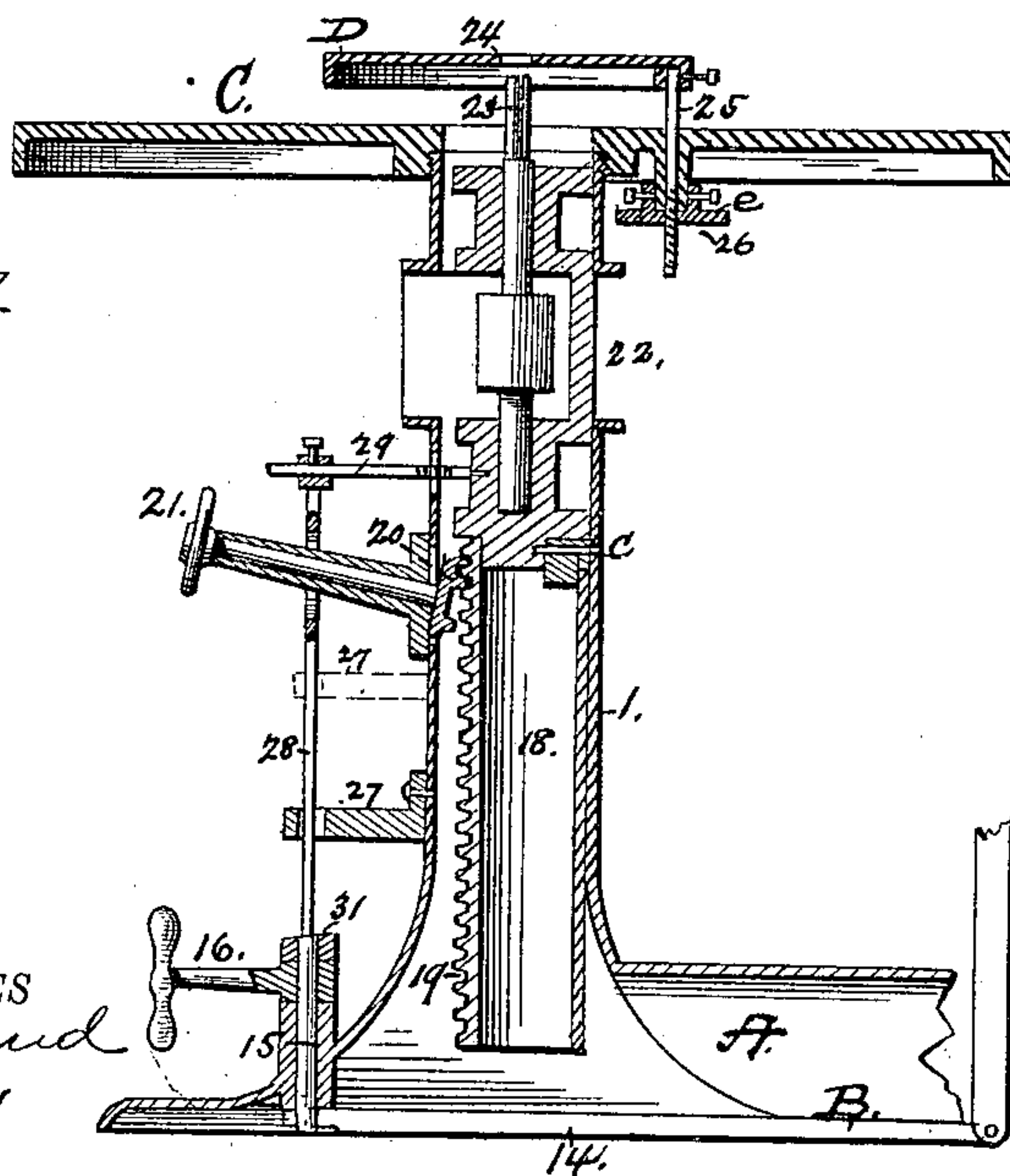


Fig. 2.



WITNESSES
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2 Sheets—Sheet 2.

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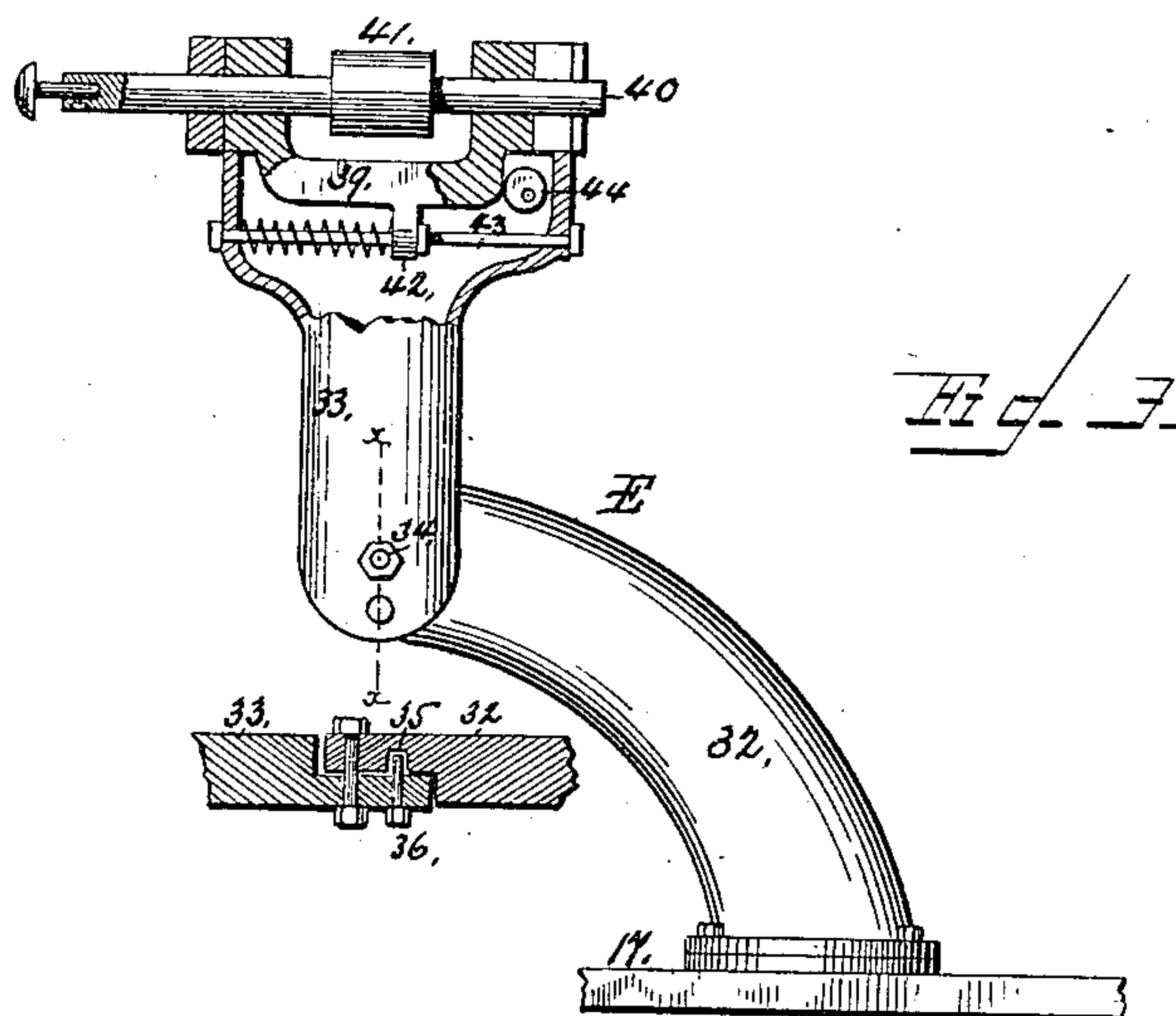


Fig. 4.

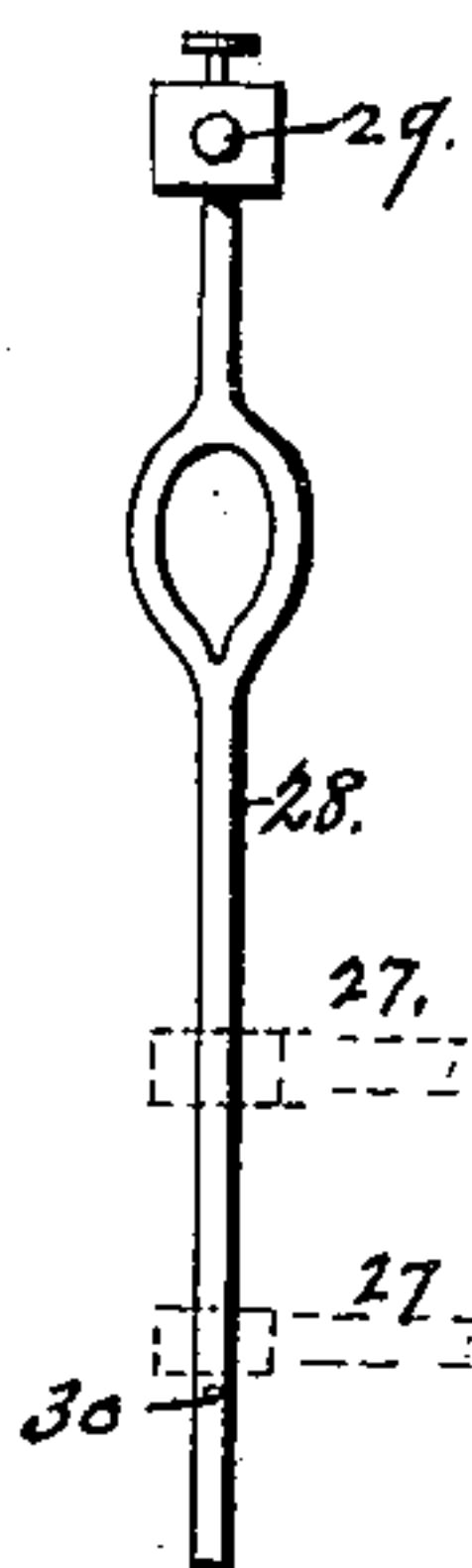
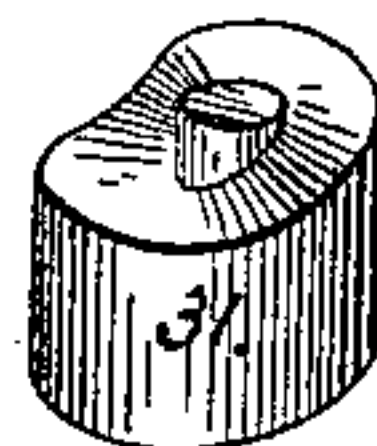


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

SAMUEL J. SHIMER, OF MILTON, PENNSYLVANIA.

VARIETY-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,510, dated November 30, 1886.

Application filed May 13, 1886. Serial No. 202,050. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. SHIMER, a citizen of the United States of America, residing at Milton, in the county of Northumberland, in the State of Pennsylvania, have invented a new and useful Molding-Machine, of which the following is a specification.

My invention has relation to improvements in wood-working machines of that class known as "variety-molding machines;" and the objects are, first, to construct a machine of the kind named which can be utilized for doing surface or variety molding from below or above; second, to provide improved means for adjusting the table of the machine; third, to construct an improved arm for conveying the upper tool or guide-pin; fourth, to provide improved means for raising and lowering the lower tool simultaneously with the means for shifting the mechanism; and, fifth, to provide an intermediate detachable and adjustable table for the machine.

With these objects in view my invention consists in the novel construction of parts, and in their combination, as will be hereinafter more fully described, and especially as the same are pointed out in the claims made hereinafter.

I have fully illustrated my invention in the accompanying drawings, wherein Figure 1 is a side view of my improved machine. Fig. 2 is a central vertical sectional view of the front standard and the mechanism contained therein and supported thereby. Fig. 3 is a side view of my improved supporting-arm, showing the tool end raised and partly in section to show the mechanism held by it. The joint of the arm is given in detail as taken through the line *xx* of main figure. Fig. 4 is the vertical lifting-rod, and Fig. 5 is a perspective view of the cam-block on which the foot of the lifting-rod sets.

Similar letters of reference and like notations indicate like parts.

Reference being had to the drawings, the letter A designates the base-plate or bed of the machine. This bed consists of a shell, under the cover of which the shifting-rod is concealed. The ends of the base-plate open into the base of two hollow standards, 1 2, formed on or secured to the base-plate, substantially

as shown in the drawings. On the upright 1 is formed a bearing, 3, and in the upright 2 are formed bearings 4 5, in which the journals of the shaft 6 are seated. On the shaft 6 are adjustably fixed the driving-pulleys 7 8, which have a belt-rim, *a*, and cone-bearing face *b*. In the standard 2, in bearings formed therein, is a vertically-arranged shaft, 9, conveying a combined belt-and-cone pulley, 10, the cone of which bears on the cone of the driving-pulleys 7 8.

The letter B designates the shifting device. This is comprised of a collar, 11, set on the shaft 6, the upright lever-arm 12 having its upper end attached to the collar 11. Its middle is fulcrumed to the standard 13 in the bed-plate, and its lower end attached to the shifting-bar 14. The outer end of the shifting-bar is eccentrically attached to a turning-bar, 15, arranged vertically in the foot of the standard 1, as shown, and to the top of the turning-bar 15 is secured a hand or foot lever, 16.

The letter C designates the stationary table detachably fixed on the standard 1 and formed with an extension, 17, the free end of which is secured to the standard 2. In the standard 1 is disposed a tubular shell, 18, provided with a rack, 19, which is engaged by the teeth of a face-gear, 20, arranged in incline on a rod let through a sleeve on the standard and turned by a hand-wheel, 21. The shell 18 is detachably connected to the housing by a bolt or screw, as at *c*. In the upper portion of the standard 1 is the sliding housing 22, carrying the tool-spindle 23. The foregoing description is laid to the driving mechanism of the machine, as shown in Letters Patent No. 206,360, dated July 23, 1878, granted to Samuel J. and George J. Shimer, for improvement in variety-molding machine.

I now proceed to describe specifically my improvements.

The letter D designates a small detachable and adjustable table, which is of any desired area, and formed with a mandrel or tool aperture, 24. To the rear of the table D is fixed a small burr or socket, in which is fitted the end of a depending screw-threaded supporting-rod, 25, let through a hole in the main table, as shown, and passed through a sleeve,

and has a threaded nut, *e*, turned by a hand-wheel, 26, which adjusts the supporting-rod, the hand-wheel being held up by screws, the points of which set in an annular groove about the pendant below the table, substantially as seen in Fig. 2 of the drawings. By this means the small table may be adjusted in either direction vertically to accommodate the work to the action of the tool in the lower housing or to the tool in the hinged arm. To the face of the upright 1 are secured two projecting guide-arms, 27, having holes in their outer ends, through which is passed the lifting-rod 28, the upper end of which is struck at right angles to form a lifter, 29, the end of which is passed through a slot in the upright into the sliding housing 22, as best seen in Fig. 2 of the drawings. The lifting-rod 28 may be formed with a sleeve at the top and the lifter 29 secured in the sleeve by a set-screw, as shown. The lifting-rod 28 has a loop-hole formed in it in that part adjacent to the projecting arm on the post 1, which carries the bar of the gear-wheel which engages the rack in the shell in the upright, and at a suitable point, as 30, a hole is made in the rod in which a pin may be passed, the purpose of which is that when only the upper tool is used the lifting-rod may be raised from its seat and held in that position by the pin above the guide-arm of the rod. The upper tool can then be reversed at will, and the lower spindle be idle, the tool of the mandrel having been previously removed. On the top of the vertical rod 15, and secured to turn with the movement of the hand-lever 16, is a cam-shaped block, 31, on which the foot of the lifting-rod 28 sits. Thus by turning the hand-lever the rod is moved vertically and the tool raised or lowered, and at the same time the mechanism is reversed.

The letter E designates an overhanging arm comprised of a stationary part, 32, projected toward the front of the machine, and firmly secured to the extension of the main table by any suitable means, and the arm 33, jointed to the stationary part, and adapted to rest in horizontal position and to be turned up to a vertical one. The joint is a lap secured by a pivotal bolt, 34, and in one face of the lap is a quarter-turn groove, 35, and in the other is fixed a pin, 36, projected within the groove, by which means the movements of the arm are limited, as stated. On the stationary part of the overhanging-arm is formed a bracket, 37, extended horizontally rearward, and provided with a bearing in which the vertical shaft 9 runs, as shown in Fig. 1 of the drawings. On the upper end of this vertical shaft is fixed a belt-pulley, 38, about which a belt is adjusted, and from thence runs on the pulley of the spindle of the forward section of the overhanging arm. The tool end of the overhanging arm is formed with a chamber, as seen in Fig. 3, and therein is disposed a sliding housing, 39, having bearings to carry and hold the tool-spindle 40, carrying the belt-pulley 41. The housing 39

has a lug, 42, on its connecting-piece, which is provided with a hole, through which a bar, 43, secured in the head of the arm, is passed. The lower face of this lug rests on a coil-spring about the bar, and the upper face sits against a nut on the bar. In the chamber of the arm is pivoted an eccentric, 44, which bears on the upper part of the housing, and serves to press it with the tool down, when desired, and when this pressure is released the housing is thrown upward by the force of the coil-spring and the tool lifted from the work. The lower end of the spindle 40 is formed to receive the shank of a tool; or when this part of the machine is used in connection with work done by the lower tool a pin is fitted in the spindle, the lower part of which serves as a guide-pin for the work, the workman guiding the work by keeping it against the pin.

When the main table is used for the work, the rack-sleeve and sliding housing of the upright are connected by the bolt; but when the small table is used these parts are disconnected, and the housing worked by the hand-lever of the shifting mechanism, as heretofore stated.

The operation is as follows for work on the small table and by the tool in the lower spindle: When the pattern or work is adjusted on the table, the hand-lever is turned, which starts the spindle and raises the tool up into the work, at the same time the jointed arm is let down in a horizontal position and the work progressed with. When the molding is done by the upper tool, the lower tool is taken from the spindle and the housing raised up and sustained by passing a pin through the vertical lifting-rod above the arm. The hinged arm is then turned down and the tool pressed down by the eccentric on the housing, when the work is carried on as usual. By jointing the arm it may be thrown up out of the way either for convenience when adjusting the work on the table, or in order to be out of the way when the small table is removed and the main table is in service. I also thus provide a variety-molding machine adapted to do work either from above or below.

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

1. The combination, with the lower tool, the main table, and the upper tool arranged in the hinged arm E, of the intermediate detachable and adjustable table, D, formed with a tool-aperture, and projected from and supported by an adjustable support on the main table between the tools above the main table, whereby the work may be accommodated to the action of the lower tool or to the tool in the hinged arm, as specified.

2. The combination, with the sliding housing of the lower tool-spindle, of the vertical lifting-rod provided with a lifting-arm, a vertical rod or turning-bar beneath the lifting-rod, a cam-shaped block secured to the top of said turning-bar and serving as a rest or sup-

port for the lower end of the lifting-bar, and an operative device for rotating said cam-block and vertically reciprocating the lifting-bar, substantially as described.

5 3. The combination, with the hand-lever of the shifting mechanism formed with a cam-shaped surface upon which the lower end of the lifting-rod rests and is supported, and the sliding housing of the lower tool, of the lifting-rod disposed through guide-arms in the post of the machine and having a projecting arm extending within the housing, substantially as described.

10 4. The combination, with the table of a

molding-machine, of the overhanging arm E, 15 comprised of a stationary base-piece, and a forearm hinged to said stationary base-piece by a lap-joint secured by a pivotal bolt, and having in one face a quarter-turn groove and in the other a pin projected within said groove, 20 substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

SAMUEL J. SHIMER.

Attest:

W. H. BECK,
JOHN A. BECK.