No. 697,521. Patented Apr. 15, 1902.

W. R. McCLOY.

FINISHING MACHINE FOR GLASSWARE.

(Application filed Apr. 8, 1901.)

(No Model.)

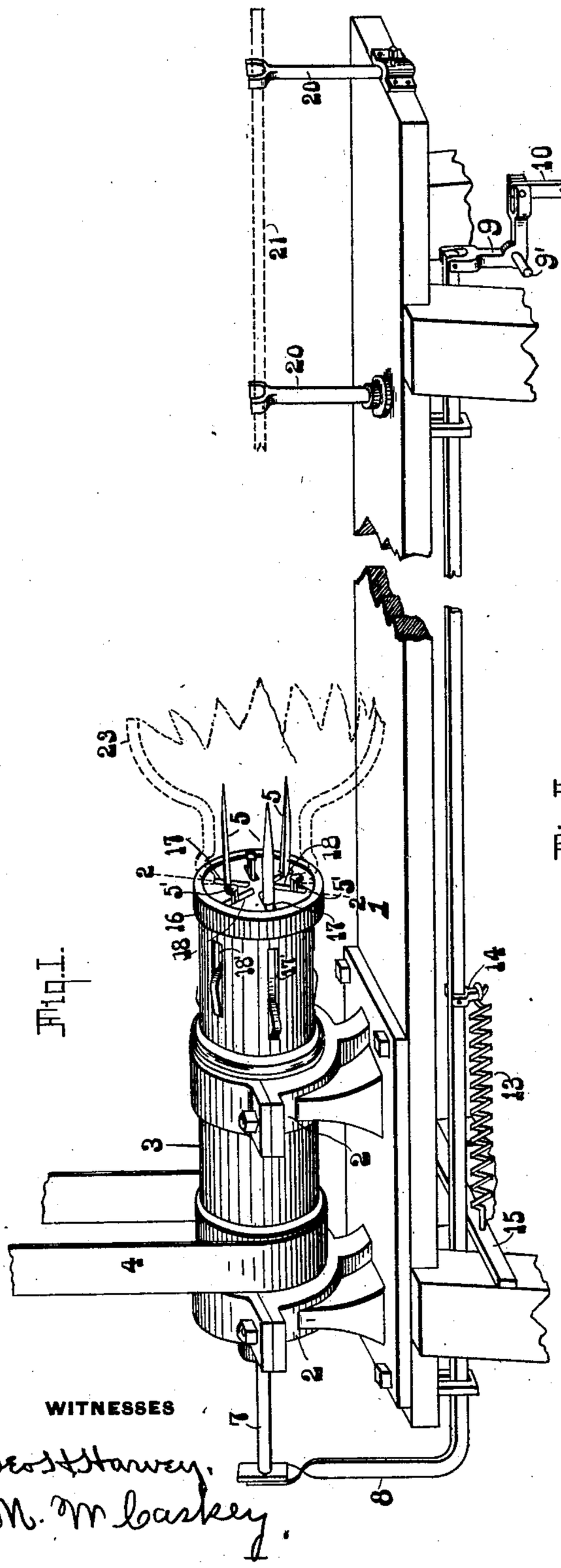

Fig. I.

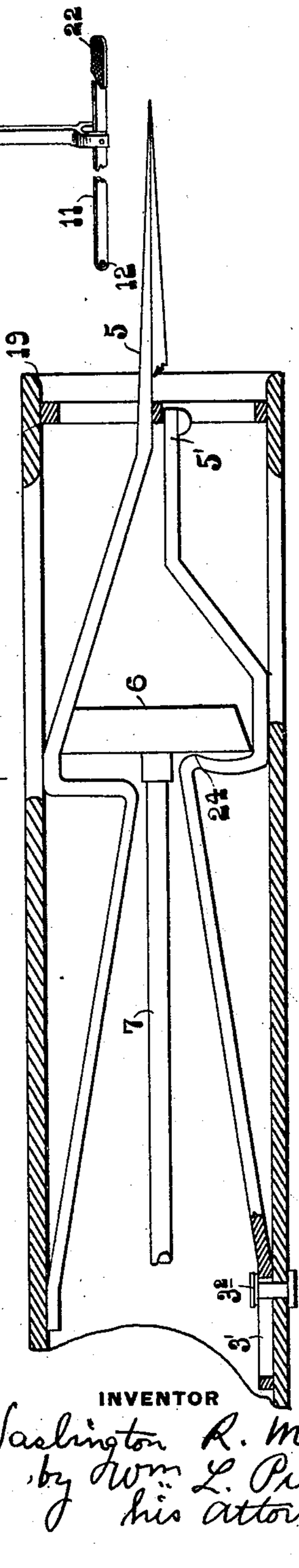

Fig. II.

WITNESSES

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FINISHING-MACHINE FOR GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 697,521, dated April 15, 1902.

Application filed April 8, 1901. Serial No. 54,862. (No model.)

To all whom it may concern:

Be it known that I, WASHINGTON R. McCLOY, a citizen of the United States, residing at Elwood, in the county of Madison and State of Indiana, have invented or discovered new and useful Improvements in Finishing-Machines for Glassware, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure I is a perspective view of my machine, showing a lamp-chimney in dotted lines and partly broken away. Fig. II is a detail section on line 2 2 of Fig. I.

The general object of my invention is to provide means for expanding and impressing expanded articles of glassware while in a plastic state.

In the class of lamp-chimneys for which the present illustrations were designed it has been the practice to blow or press the bulb portion of the chimney either by hand or by a machine. The bulb was then opened at the end and the tubular base formed by hand.

The impressing of indentations or spiral or circular rings by suitable means, said means advancing within the interior portion of the tubular base during or after the finishing operation of forming such base, is new in this art so far as I am aware.

In the sheet of drawings accompanying this specification, 1 represents a stand; 2 2, bearings for the revolving cylinder 3; 4, a belt for said cylinder.

5 5 are fingers rigidly secured at one end to the revolving cylinder 3.

5′ 5′ are beaders mounted so as to have a horizontal movement along cylinder 3 by means of slot 3′ and bolt 3^2.

6 represents the spreader secured to the forward end of rod 7.

8 is a connecting-rod attached to the rear end of rod 7. Connecting the forward end of rod 8 and the upper end of rod 10 is lever 9. The lower end of rod 10 is connected to lever-bar 11, and lever-bar 11 is secured to a stationary support at 12. Spring 13 is secured to lug 14 on rod 8 and to the rear support 15 of stand 1.

16 represents the head of the cylinder 3, in which are slots 17 17 and 18 18. The head 16 is set back in the cylinder as shown, so as to form flange 19.

In the forward portion of cylinder 3 are horizontal slots 17′ 17′ and 18′ 18′.

20 20 represent guide-supports for punty 21.

In the operation of my invention the punty 21, having a suitably-formed bulb of plastic glass 23 attached thereto, is placed on supports 20 20 and in alinement with the fingers 5 5 when closed, as shown in Fig. II. The operator pushes the punty forward until the fingers 5 5 have entered the bulb sufficiently. Foot-treadle 22 is then pressed, drawing down vertical rod 10 and one end of lever 9. Lever 9, through its vertical end and fulcrum 9′, draws the connecting-rod 8 forward, putting tension on spring 13 and pushing rod 7 and spreader 6 forward, pressing against the inclined sides of fingers 5 5, forcing their shouldered portions through slots 17′ 17′, while the tips of the fingers 5 5 move outwardly, spreading the plastic glass and forming the tubular base of the chimney or bulb 23. When fingers 5 5 have partly completed their work, spreader 6 has advanced until it engages the inclined sides of beaders 5′ 5′, moving the beaders 5′ 5′ forward to the slots 18′ 18′, which they partly enter. The spreader 6 continues to travel forward, pressing the beaders 5′ 5′ outwardly faster than the fingers 5 5, thereby impressing a bead in the base. This is accomplished by means of the angle of the incline of spreaders 5′ 5′ being greater than the angle of the incline of fingers 5 5. After the tubular base and bead are formed, the operator releases the pressure from the foot-treadle 22, causing spring 13 to contract and drawing on connecting-rod 8, which in turn draws the spreader back, releasing the pressure on the fingers 5 5 and beaders 5′ 5′. In the backward movement of the spreader 6 it presses against the shoulders 24 24 of beaders 5′ 5′, thereby forcing the beaders back to the position shown in Fig. II.

The fingers 5 5 and beaders 5′ 5′ are composed of spring-steel, thereby giving them sufficient elasticity to move inwardly toward the center of the cylinder when the spreader 6 recedes.

During the operation of spreading and beading the driving-belt 4 revolves the cylinder 3 rapidly, causing the fingers and beaders to finish their work in a very small fraction of time.

In the subjoined claims I do not, of course, limit myself to the particular details of mechanism shown in the accompanying drawings and described in the accompanying specification, as the same can be modified indefinitely by any skilled constructor now that I have described the principle on which the machine should work. Therefore, believing that I am a pioneer in the particular principles of expanding and impressing tubular or circular articles of glass while in a plastic state by the separate advancement of means for forming the impressments, such means advancing within the interior portion of the tubular glass and during or after the glass has been expanded therefor, I claim the same broadly.

I claim—

1. In a machine for expanding and impressing the tubular end of glass articles while in a plastic state, the combination of a rotating cylinder, fingers secured to said cylinder, the free ends of said fingers converging to a common center, beaders secured to said cylinder and capable of a horizontal movement, means for operating the forward ends of said fingers and said beaders, transversely to their lengths.

2. In a machine for expanding and impressing the tubular end of glass articles while in a plastic state, the combination of a rotating cylinder, spring-actuated fingers secured to said cylinder, beaders spring-actuated and capable of a horizontal movement secured to said cylinder and a spreader; means for advancing it horizontally.

3. In a machine for expanding and impressing the tubular ends of glass articles while in a plastic state, the combination of a rotating cylinder, spring-actuated fingers secured to said cylinder, beaders, spring-actuated and capable of a horizontal movement secured to said cylinder, and a spreader operating said fingers and said beaders.

4. In the approximately simultaneous expanding and impressing of the end of a glass article while in a plastic state, means for expanding said end and secondary means for impressing outwardly said expanded end.

Signed at Pittsburg this 27th day of March, 1901.

WASHINGTON R. McCLOY.

Witnesses:

GEO. H. HARVEY,

G. W. LERCH.