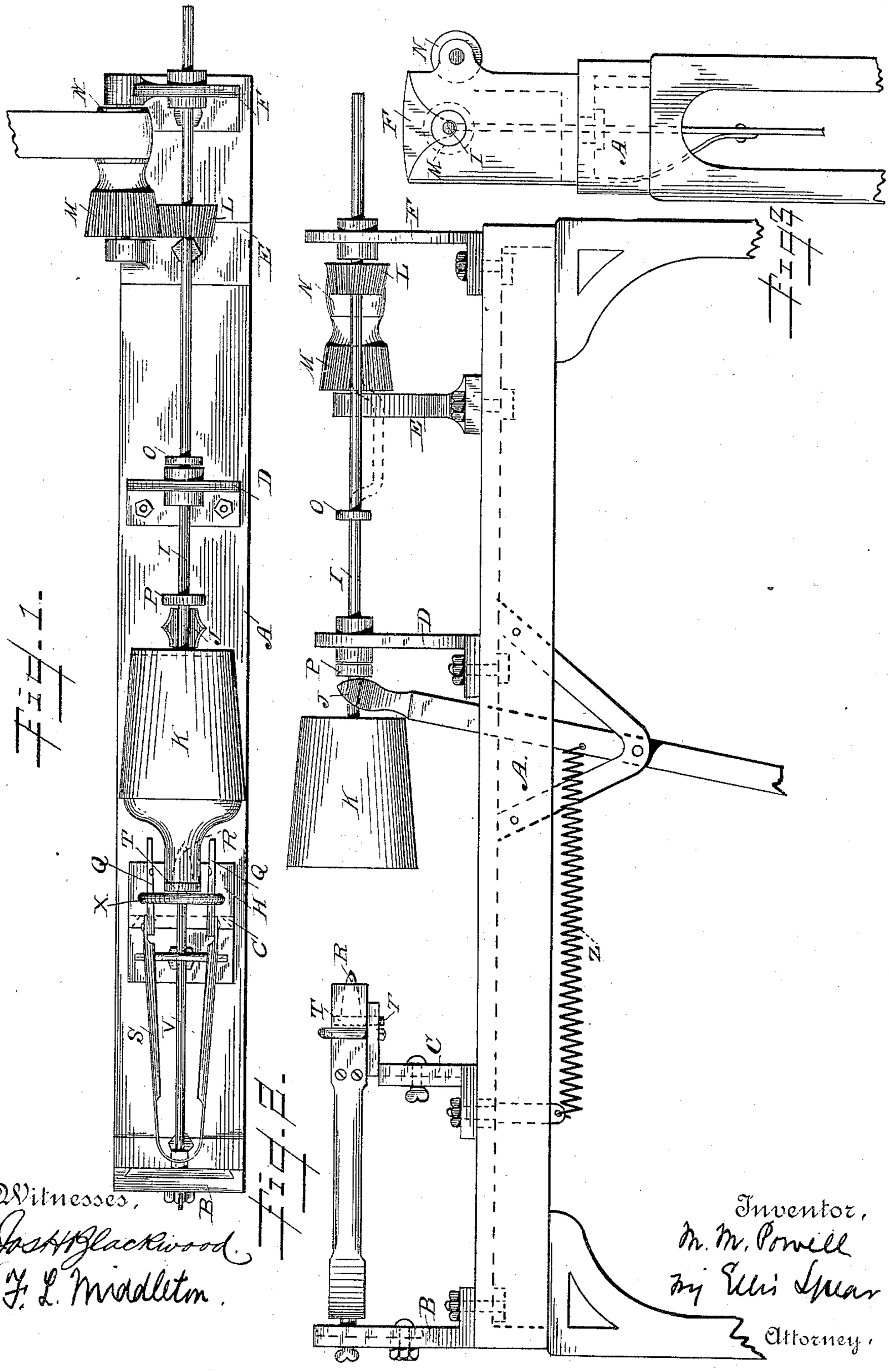
(No Model.)

M. M. POWELL.

MACHINE FOR FINISHING BOTTLES.

No. 398,280. Patented Feb. 19, 1889.



UNITED STATES PATENT OFFICE.

MAURICE M. POWELL, OF KERRTOWN, PENNSYLVANIA.

MACHINE FOR FINISHING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 398,280, dated February 19, 1889.

Application filed January 20, 1888. Serial No. 261,383. (No model.)

To all whom it may concern:

Be it known that I, MAURICE M. POWELL, of Kerrtown, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Machines for Finishing Bottles; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improved bottle-neck-forming machine; and it consists in the various devices and combination of devices, all as hereinafter described and particularly claimed.

In the accompanying drawings, Figure 1 is a plan view of my improved machine with an article in place ready to be acted upon. Fig. 2 is a side elevation with the article removed and the parts out of engagement. Fig. 3 is an end view of the machine.

In these drawings the bed of the machine is represented at A. Upon this bed are standards D E F, in which are bearings in open slots in the standards adapted to receive a shaft, I. The slots are slightly flaring, so that the shaft may be readily removed or replaced. Two forms of the shaft are shown, one having the crank and the other straight, and either may be used. That with the crank is adapted to be rotated by hand. On the shaft is a beveled pinion, L, fixed and adapted to mesh with a gear, M, mounted in standards on the frame by the side of the shaft. On the same shaft with the gear M is a pulley, N, adapted to receive a belt.

On the front end of the shaft is a clamp, K, of any suitable form, fitted to receive and hold the bottle while the neck is formed by the other parts of the machine. The clamp K is held forward to present the bottle to the work by means of a lever, J, and a spring Z. The lever is forked at its upper end, which engages with its shaft between the clamp and the collar, and its lower end is provided with a treadle, by means of which the shaft is thrown back. When the clamp is forward, holding the bottle to the work, the pinion L is in mesh with the gear M; but when the clamp is thrown back the gear is released and the shaft no longer rotated. At the other end of the machine is the mechanism for holding the bottle in a central position and for forming the neck. This is mounted on extensible standards B C, the parts of which are held together by bolts and nuts, so that they may be raised to suit different-sized finishing-tools. On these standards is mounted a central arbor, V, the forward end of which carries a collar, T, and in front of it a central spindle, R, adapted to enter the neck of the bottle. The collar T is extended downward and is fixed to the plate H, which is on the upper part of the extensible standard C. On each side of the central spindle is an arm, Q. These are formed on the inner faces to give shape to the neck of the bottle when they are pressed against the neck on the outside thereof. These arms are connected to a pair of spring-arms, S, formed preferably in one piece, like the arms of a pair of sheep-shears. The broad part at the spring end has a hole in the center, through which the rear end of the arbor V passes, clamping the spring-arms to the standard by means of a nut, W. The spring-arms are thus adapted to be grasped by the hand and to press the forming-arms Q against the neck of the bottle on each side. The forming-arms are guided and limited in their movement by means of a loop or staple, X, which is mounted on the plate H. The spring-arms cause the forming-arms Q to open freely when the pressure is removed. This part of the apparatus being set at the proper height, according to the size of the fashioning-tools, the bottle is held in the clamp and the lever J released, so as to allow the spring Z to press the bottle forward until the spindle R enters the neck of the bottle and the end bears against the collar T. Then the operator grasps the spring-arms and presses the forming-arms Q against the neck of the bottle with a proper amount of pressure. The clamp K is then revolved with the bottle, and the bottle, being turned against the forming-tools, is properly shaped.

It will of course be understood by those skilled in the art that the clamp and rotating shaft may be substantially the same as those heretofore used, and that the neck of the bottle is heated in the ordinary manner; but by means of a central spindle in connection with the shaping-tools the bottle is held accurately and automatically in place, and by these bot-

tles may be finished with perfect accuracy and uniformity by unskilled labor. Heretofore as much skill was required to give proper shape to the necks of bottles as was required in blowing them.

I claim as my invention—

1. In a machine for finishing open-mouth vessels, the combination of a holder for the vessel, suitable means for revolving the same, a stationary bearing for the end of the vessel, consisting of a disk mounted upon a spindle, and spring forming-plates for finishing the exterior of the neck of the vessel, substantially as described.

2. In combination, a clamp for holding the vessel to be finished, suitable means for revolving the same, a stationary bearing for the opposite end of the vessel, a centering-point on said bearing for directing the vessel to its seat thereon and for finishing the interior of the neck, and spring forming-plates, normally open, adapted to be compressed by hand to be brought into contact with the vessel to finish the same, substantially as described.

3. In a machine for finishing open-mouth vessels, a suitable base-plate, a shaft operated in suitable standards thereon, beveled gears in connection with a power device for rotating said shaft, a clamp for the articles to be acted on, secured to said shaft, a pivoted lever, J, for throwing said shaft out of connection positively, automatic means for engaging said shaft, a bearing-disk for the end of the vessel, and spring forming-plates to act upon the same.

4. In combination with a revolving clamp, a central spindle with its collar and the spring forming-arms, the arms and the spindle being mounted on vertical adjustable standards, all substantially as described.

5. In combination, a longitudinally-movable clamp for holding one end of the vessel to be finished, a bearing for the other end of said vessel situated opposite the clamp, and neck-forming mechanism situated at the bearing opposite the clamp, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAURICE M. POWELL.

Witnesses:

L. H. LAUDERBAUGH,

CHARLES KNORR.