

H. S. McKEE.
Machine for Finishing Glassware.

No. 215,761.

Patented May 27, 1879.

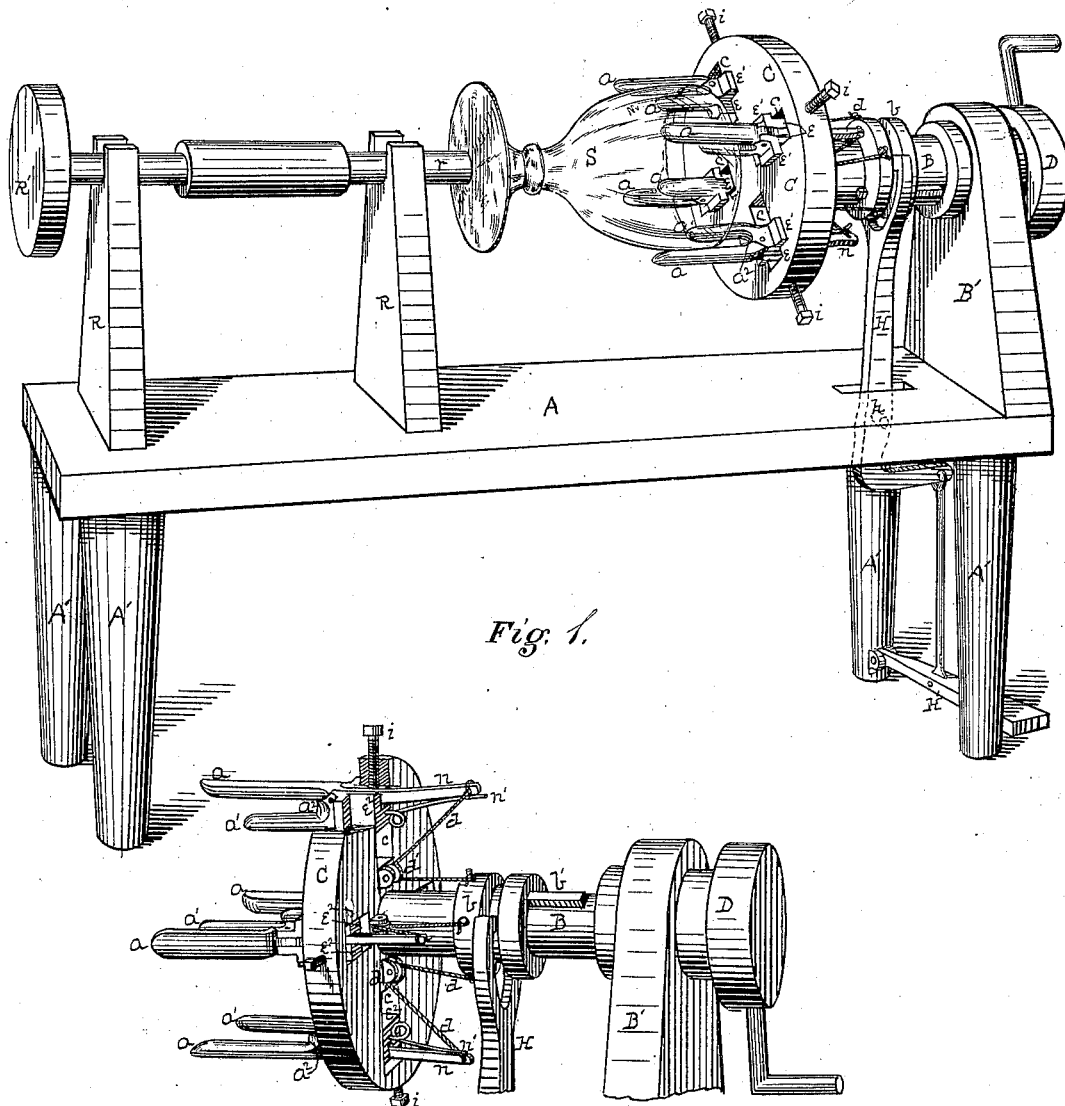


Fig. 1.

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

HENRY S. McKEE, OF ALLEGHENY, ASSIGNOR TO McKEE BROTHERS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR FINISHING GLASSWARE.

Specification forming part of Letters Patent No. 215,761, dated May 27, 1879; application filed March 28, 1879.

To all whom it may concern:

Be it known that I, HENRY SELLERS McKEE, of Allegheny city, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Machines for Finishing Glassware; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a perspective view of my improved machine for finishing glassware, and Fig. 2 is an enlarged perspective view of a detached portion of the same.

In the operation of finishing articles of glassware, the part or parts to be finished or made true and smooth are reheated in a suitable furnace as a preliminary step, and in such reheating there is a greater or less tendency in the heated glass to stretch under its own weight and change to some degree the original form given to the article.

My improved machine is designed to effect this final finishing operation on parts of the glass article, whereby the edges and corners or angles of the edges are not only made true and smooth, but also the heated and distorted part of the article is restored or reduced to the desired form.

My machine is constructed as follows: From a table, A, supported in any suitable way, as by legs A', is erected one or more plumber-blocks, B', in which is journaled a shaft, B, to which rotary motion may be imparted by band or crank wheel D, or in other suitable way. To the forward end of this shaft is attached a disk-wheel, C, the face of which is at right angles to the line of the shaft. Radial slots *c* in any desired number are cut through this disk, and the shank or stem *e* of the finishing-tools *a a'* are arranged to slide in these slots, the tools being held within the grooves by shoulders *e'* on one side and suitable upset heads *e''* on the other side bearing against the faces of the disk.

The tools may be adjusted separately in each slot toward or from the center of the disk by means of adjusting-screws *i*, working through the rim of the disk, and having suitable con-

nections at their inner ends with the stems *e*, or all the tools may be moved simultaneously toward or from the center by means of any of the well-known combination chuck devices for giving equal motion to two or more different parts as commonly employed in lathes and other like machines. By means of this adjustment toward and from the rotating center the tools *a a'* may be adapted to operate on circular-rimmed articles of different size.

The tools are, by preference, made with two arms or bearings or rubbing-surfaces, one arm or bearing, *a*, being adapted to operate on the outside of the rim of the article, and the other, *a'*, to operate on the inside; and the body or block *a''*, which connects the two arms at their base ends, may be rounded in face outline, adapted to shape a correspondingly rounded edge on the article, or it may have any desired angular form, and be joined or connected with one or both side arms, *a a'*, by an angle or curve, as desired, so as to give the desired form or finish to the article. These arms may be arranged at right angles to the disk C, so as to operate on a cylindrical-shaped article, or they may be inclined in either direction to the line of rotation, so as to operate on either an expanding or flaring rimmed article, or on one with a contracted rim. In such case I hinge one or both of the arms *a a'* to the connecting-base *a''* by a socket-hinge or in other convenient way, so that such arms are made movable on their hinges, and by opening such arms when the article is finished it can be removed without injury.

I have shown the outer arms, *a*, hinged in this way; but the inner ones may also be hinged in like manner, if desired. Such hinged arms may be operated in any convenient way—as, for example, by levers *n*, extending back from the hinged arm through the slots *c*, and moved in one direction by springs *n'*, arranged under the levers, and secured to the heads *e''*, and in the opposite direction by cords *d* running from the ends of levers *n*, over pulleys *d'*, to a sleeve, *b*, and attached thereto in any convenient way. This sleeve may be secured on the shaft, so as to move endwise thereon, and to rotate therewith by longitudinal feather and groove *b'*; and the desired longitudinal motion may be

given to it by a forked and bent lever, H, pivoted to the table, as at h, and operated by a foot-treadle, H'.

Other suitable methods of operating the hinged arms may be employed, if preferred; and I do not limit my invention to two side arms, $a a^1$, in the finishing-tools, as, for many purposes, one such arm, either the inner one or the outer one, may be used alone along with the base or edge finisher a^2 .

Suitable rests R are also erected from the table in line with the shaft B, and the snap or blow rod r, to which the article is secured, is laid in such rests, and rotary motion may be given thereto by means of band-wheel R', and this rotary motion may be either with or in the same direction as the tools $a a^1$ or in the reverse direction.

I have illustrated the operation of my machine as used in finishing the rim of an ordinary goblet, S; but it is equally applicable for finishing a wide range or variety of round glass articles. In such uses the tools $a a^1$ are first set at such distance from the center of rotation as will adapt their position to the size of the article to be operated on. The article then being properly heated, or that part of it to be operated on, and being secured in a suitable snap or other device, it is laid in the rests R. The article or the finishing-tools, or both, are then rotated, and while so rotated the article is pushed or fed forward between the arms $a a^1$ of the tools. As the rim enters these arms they reduce or work down any irregularities or deformities made in the article while reheating, and as the article approaches the base of the arms the rim or sides of the article will be given a form corresponding to the shape and position of the arms, whether curved or straight, cylindrical or tapering.

By feeding the article forward, so that its edge or lip bears against the base a^2 of the tools, such edge or lip will also receive a shape and finish corresponding to the form of the tool at that point.

By opening the hinged arms of the tools, if necessary, the finished article may be removed and the operation repeated. I have shown four of these finishing-tools $a a^1$ working in and on the disk C. I do not limit my invention to any particular number, however; and while one such tool may, in many cases, be made to do the work described, yet I prefer to use two or more, both on account of rapidity of working and balancing the machine.

I claim herein as my invention—

1. In a machine for finishing glassware, the combination of rotary shaft B, disk C, having one or more radial guiding-slots, c, therein, and one or more adjustable finishing-tools, $a a^1$, arranged in such slots, having inside and outside finishing-arms, and an edge-finishing device at the base of such arms, substantially as set forth.

2. In a machine for finishing glassware, in which the article or the finishing-tool, or both, are rotated, the combination of slotted disk C and one or more finishing-tools arranged thereon, having inside and outside, or either inside or outside, finishing-arms $a a^1$, one or both of which are hinged to their base or support, substantially as set forth.

3. A glass-finishing tool mounted in a revolving disk or head radially distant from the axis of rotation by one-half or about one-half the diameter of the article to be finished, and provided with an edge-finishing surface, a^2 , and one or more surface-finishing arms, $a a^1$, extending in the general direction of the axis of rotation, substantially as set forth.

4. In a machine for finishing glassware, a forked tool adapted to operate on both the inside and outside of the article, substantially as set forth.

In testimony whereof I have hereunto set my hand.

HENRY SELLERS MCKEE.

Witnesses:

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