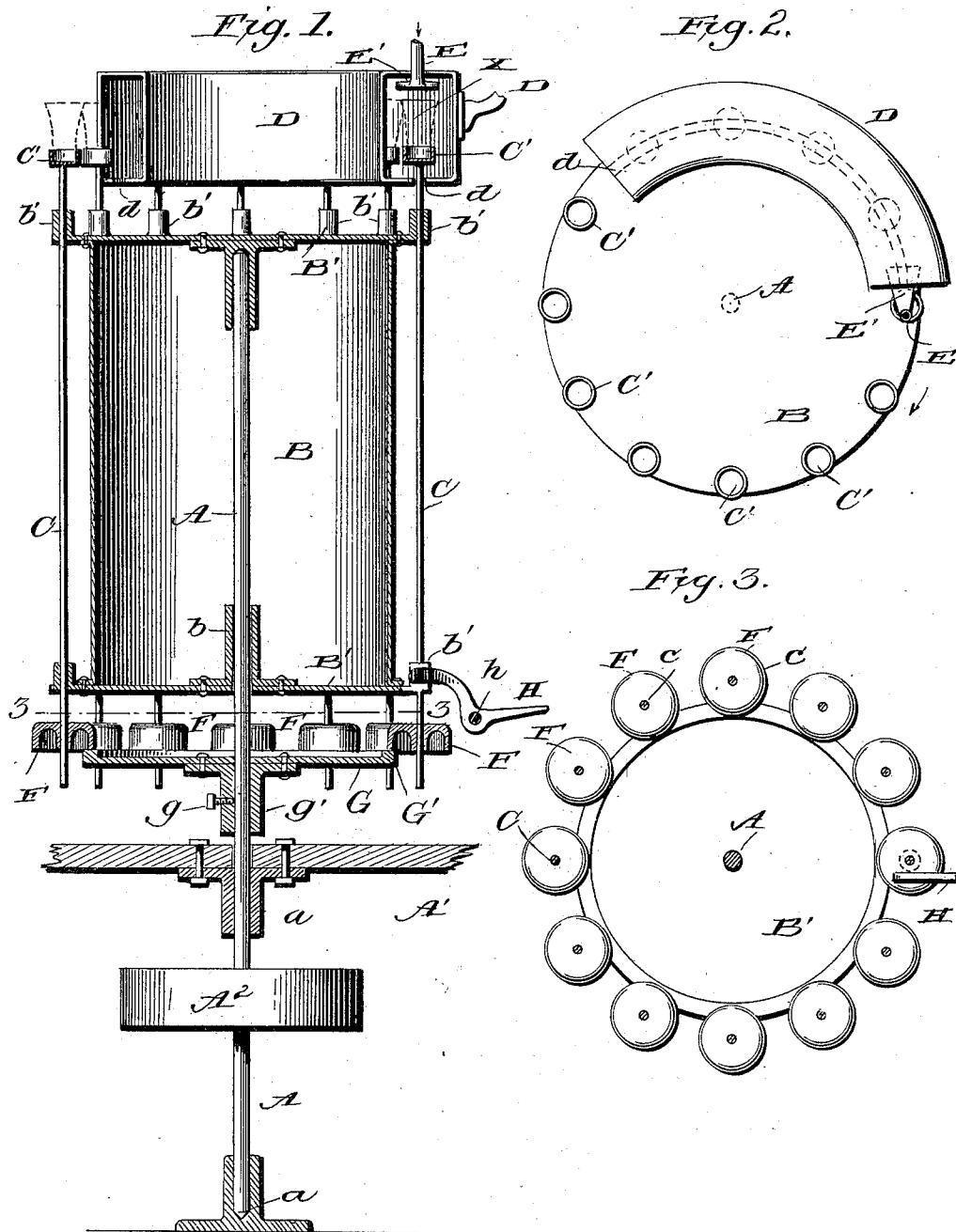


(No Model.)

H. C. SCHRADER.
APPARATUS FOR FIRE POLISHING.

No. 566,412.

Patented Aug. 25, 1896.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY C. SCHRADER, OF HAMMONDVILLE, PENNSYLVANIA.

APPARATUS FOR FIRE-POLISHING.

SPECIFICATION forming part of Letters Patent No. 566,412, dated August 25, 1896.

Application filed December 23, 1895. Serial No. 573,098. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SCHRADER, a citizen of the United States, residing at Hammondville, in the county of Fayette, State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Fire-Polishing, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in devices for glazing or fire-polishing the edges of blown-glass articles, and, while designed, primarily, for such treatment of blown drinking-glasses, it will be understood that the invention is in no wise restricted to such use.

It has for its object, among others, to provide a simple and cheap machine or apparatus for the continuous treatment of such articles, whereby they may be easily and rapidly glazed with but little attention on the part of the attendant. I provide a drum mounted loosely upon a revolving vertical shaft, but adapted for rotary movement by frictional engagement when not otherwise held, and by this drum are carried the glass-holders, which are given the necessary rotary movement by means of a friction-disk carried by the revolving shaft and engaging a friction-disk on the rod supporting each glass-holder. The glass-holders are designed to pass through a chamber, which is heated in any ordinary manner. The number of holders carried by the drum may be varied at will, as may also the capacity of the heating-chamber, although I have obtained most satisfactory results from a drum equipped with twelve holders, four of which are designed to be arranged within the heating-chamber at once. As fast as one has become treated another takes its place.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a substantially central vertical section through the improved apparatus. Fig. 2 is a top plan thereof. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1, looking downward.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a vertical shaft, mounted in a suitable bearing *a* at its lower end and in another bearing *a'*, secured to the under side of the floor *A'*, and carrying a pulley *A*², designed to receive its motion by belt from any suitable source of power. (Not shown.)

B is a drum disposed vertically and concentric with said shaft, having extending within the same from opposite heads the sleeves *b*, within which the shaft is located, and in the upper one of which the upper end of the shaft is stepped. This shaft is not attached to these sleeves, but is so arranged that when not held against such movement the drum may be slowly revolved by means of the frictional engagement of the shaft with these sleeves.

The heads *B'* of the drum are extended beyond the same, as seen in Fig. 1, and are provided with the upwardly-extending nipples or tubular parts *b'*, through which pass the rods *C*, which extend above and below said tubular parts or nipples and at their upper ends carry the cup-shaped receivers *C'*, adapted to receive the glasses *X*. (Indicated by dotted lines in Fig. 1.) These rods pass through a slot *d* in the bottom of the chamber or case *D*, open at both ends and extending for about one-third the distance around the circumference of the drum, as seen in Figs. 1 and 2, so that the receivers *C'* travel in the said case. This case may be constructed of fire-clay or lined with the same or any other suitable material, so as to withstand the heat, and is fixedly supported in position in any suitable manner, as by brackets *D'*, only one of which is indicated in Fig. 1 and which may be attached to any fixed support.

E is a gas-pipe connected with any suitable source of supply and located at one end

of the case D and provided with a discharge portion E', which is flattened, as seen in Figs. 1 and 2, and broadened toward its inner end, which extends within the case D near the top thereof, so as to be disposed above the glasses.

The lower ends of the rod C have each affixed thereto a friction-disk F, and G is a frictional disk secured to the shaft A in any suitable manner, as by a set-screw g, passed through the head g thereof and engaging the shaft, as seen in Fig. 1, the said disk having a raised flange G' at its outer edge upon its upper face and arranged to engage the under faces of the friction-disks F on the rod C. H is a stop-lever pivoted at its elbow, as at h, to any suitable support and adapted to be actuated by the foot to be thrown into or out of the path of the rods C or the nipples b' when it is desired to hold the drum against movement.

The operation will be apparent. The drum being loosely mounted upon the shaft is held in place by forcing the stop H inward, as indicated in Fig. 1, so as to engage one of the rods or its nipple, but when it is desired that the drum shall be partially rotated pressure of the foot on the lever H throws its inner end out and out of the path of the rods and nipples, so that the drum may be turned by frictional engagement of the shaft A with the sleeves b of said drum and the drum moved around until the next succeeding glass is brought into the case or heating-chamber D and the one at the other end thereof is passed out of said case. The glasses are revolved during their retention in the case D and at all times during their retention in the receivers C' by means of the engagement of the friction-disk G, which is continuously revolving with the shaft, with the under faces of the smaller friction-disks F, which rest upon the disk G by their own weight, thus giving sufficient frictional engagement to cause their rotation. The fire being the hottest where the glasses enter the case D, the glass first entered in said case is quickly treated and the operator watches said glass, and when it is sufficiently glazed he places his foot upon the stop-lever and allows the drum to revolve until the next glass comes in place, and so on, it being only necessary to place the glasses in the receivers before they enter the case D and remove them therefrom after having been treated.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination of a revoluble shaft, a drum loosely mounted thereon, rotatable glass-holders mounted in the drum, friction-disks on the shafts of said holders, which shafts are mounted for rotary movement in-

dependent of the rotary movement of the drum, and a friction-disk carried by the revoluble shaft for engaging and frictionally driving the friction-disks of the glass-holders; substantially as described.

2. The combination of a revoluble shaft, a drum loosely mounted thereon rotatable glass-holders mounted in the drum, friction-disks on the shafts of said holders, which shafts are mounted for rotary movement independent of the rotary movement of the drum, and a friction-disk carried by the revoluble shaft for engaging and frictionally driving the friction-disks of the glass-holders, and a stop mounted to be thrown into the path of the drum to prevent its rotation; substantially as described.

3. The combination of a revoluble shaft, a drum loosely mounted thereon, glass-holders carried by the drum, frictional devices for rotating said holders, means for frictional rotation of the drum, and a pivoted stop adapted to be thrown into the path of the rods carrying the glass-holders for holding said drum against revolving, substantially as specified.

4. The combination with a revoluble shaft and a drum loosely mounted thereon, of glass-holders carried by rods supported on said drum, friction-disks on said rods and a friction-disk fast on the shaft and engaging the disks on the rods, substantially as specified.

5. The combination with a revoluble shaft and a drum loosely mounted thereon, of glass-holders carried by rods supported on said drum, friction-disks on said rods, a friction-disk fast on the shaft and engaging the disks on the rods, and a movable stop adapted to be thrown into the path of said rods to hold the drum against movement, substantially as specified.

6. The combination of a revoluble shaft, a drum having its head provided with inwardly-extending sleeves, a revoluble shaft loosely passed through said sleeves frictionally to rotate the drum slowly, when not otherwise restrained from rotary movement, and a series of glass-holders mounted in the drum for rotary movement independent of the rotary movement of the latter, and means to rotate the said glass-holders, substantially as described.

7. The combination of a revoluble shaft, a drum having its heads provided with inwardly-extending sleeves, a revoluble shaft loosely passed through said sleeves frictionally to rotate the drum slowly, when not otherwise restrained from rotary movement, and a series of glass-holders carried on rods or shafts mounted in the drum for rotary movement independent of the rotary movement of the latter, friction-disks on the rods which carry said holders, and a friction-disk carried by the revoluble shaft and arranged be-

neath and adapted to engage and frictionally rotate the disks on the shaft of the glass-holders; substantially as described.

5 8. The combination of a revoluble shaft, the friction-disk thereon, the drum mounted on said shaft and unattached thereto, the open-ended case supported above the drum, the vertical rods carried by the drum and extended into said case, and the friction-disks

on the lower ends of said rods resting upon and revolved by the friction-disk on the shaft, substantially as specified.

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

HENRY C. SCHRADER.

Witnesses:

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THOS. H. RUTHERFORD.