

No. 676,698.

Patented June 18, 1901.

A. ROEMISCH.

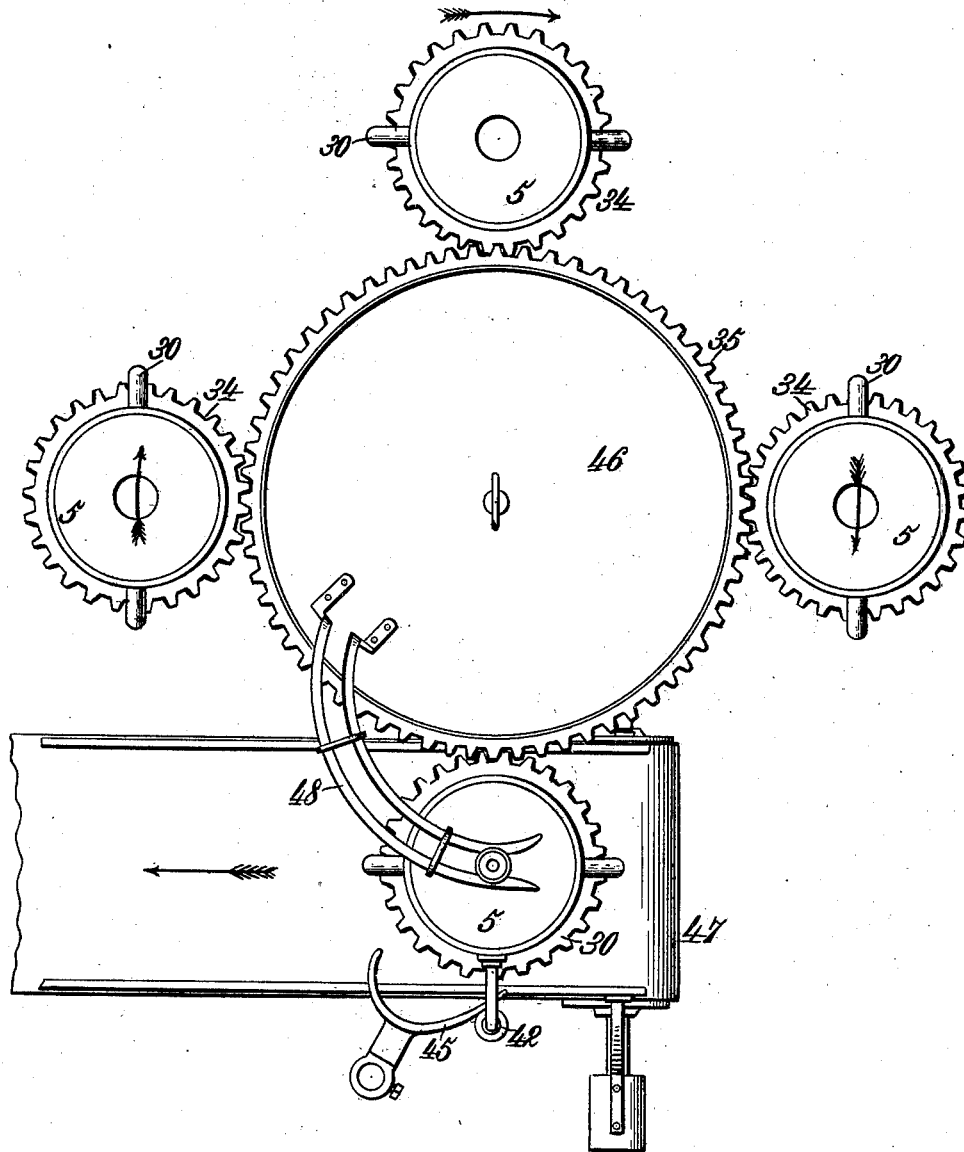
APPARATUS FOR SEVERING ARTICLES OF GLASSWARE.

(No Model.)

(Application filed Jan. 2, 1901.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses.
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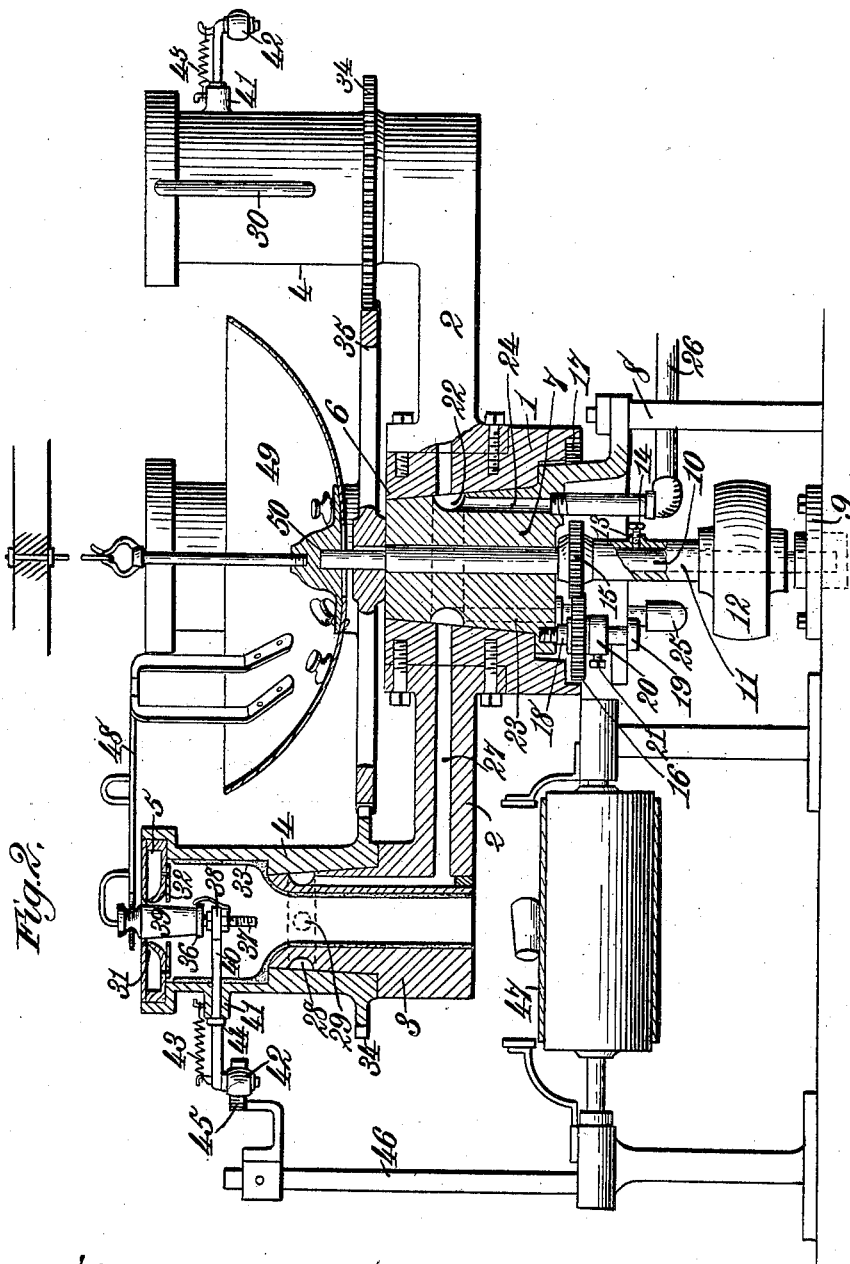


Fig. 2.

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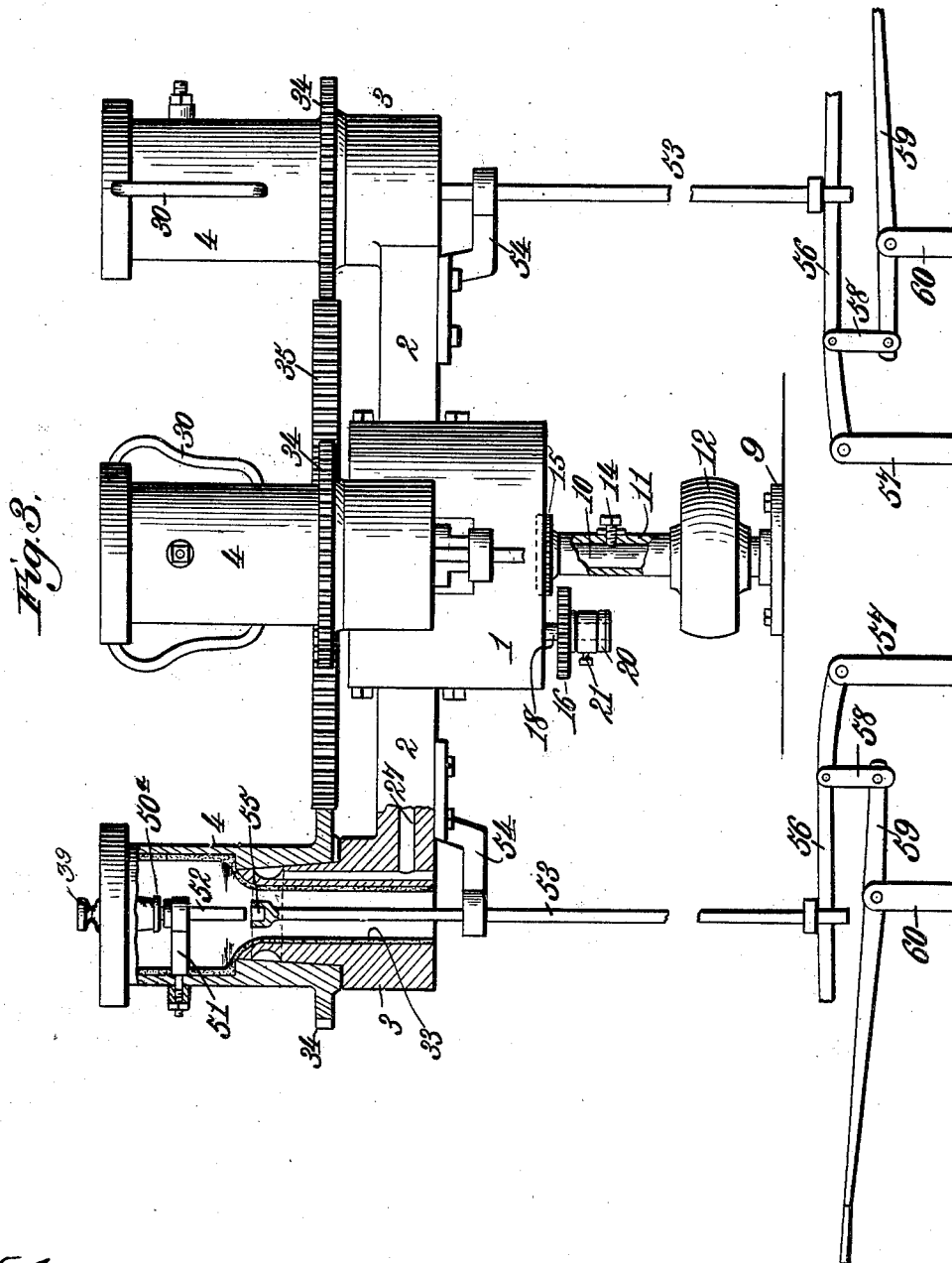
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

ANTON ROEMISCH, OF MORGANTOWN, WEST VIRGINIA.

APPARATUS FOR SEVERING ARTICLES OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 676,698, dated June 18, 1901.

Application filed January 2, 1901. Serial No. 41,856. (No model.)

To all whom it may concern:

Be it known that I, ANTON ROEMISCH, a citizen of the United States, residing at Morgantown, in the county of Monongalia and State of West Virginia, have invented new and useful Improvements in Apparatus for Severing Articles of Glassware, of which the following is a specification.

My invention relates to apparatus for severing or cracking off articles of glassware, one object of the same being to provide improved means whereby the nib or projection formed upon a blown article of glassware may be quickly, safely, and effectively removed in a simple and economical manner.

A further object of the invention is to provide means whereby a machine comprising a plurality of revolving burners requiring but one operator may be converted into one comprising a plurality of separately-rotatable burners requiring the services of a number of operators.

A further object of the invention is to provide means whereby the cracked-off nib or projection on the glassware may be stripped off the upper end thereof and removed to a receptacle for containing the same.

A further object of the invention is to provide means whereby the glass article may be automatically discharged from the burner after its nib or projection has been cracked off and delivered upon a carrier for conveying the same from the machine.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be set forth in the claims.

In the drawings forming a part of this specification, Figure 1 is a plan view of my improved apparatus. Fig. 2 is a sectional elevation of the same, and Fig. 3 is a similar view showing the apparatus in its converted form.

Like reference-numerals indicate like parts in the different views.

In carrying out my invention I employ a rotatable burner-supporting frame 1, having a series of radially-extending arms 2 secured thereto, which arms are provided with vertically-disposed tubular extensions 3, each carrying a burner-support 4, in which is mounted an annular burner 5. The frame 1 is provided at its center with what may be

termed a "hub" 6, having a tapering opening therethrough which receives the central stationary support 7, having tapering or cone-shaped walls, which are ground to fit the inner walls of the opening through said hub. The support 7 serves as a bearing, on which the frame 1 is mounted to turn, the same being secured to the uprights 8. Extending through the support 7 and having bearings therein and also in a bearing-plate 9 is a central vertically-disposed shaft 10. Surrounding the shaft 10 is a hollow sleeve 11, constituting the drive-shaft of the apparatus and having thereon a pulley 12, through which power may be supplied from any suitable source. The said sleeve 11 is provided with a boss 13, through which extends a set-screw 14, said set-screw being provided for the purpose of coupling and uncoupling the sleeve 11 and the shaft 10. To the sleeve 11 is secured the gear 15, which meshes with an intermediary gear 16, which intermediary gear in turn meshes with the teeth 17 of an internal rack on the frame 1. By this means the motion of the sleeve 11 may be transmitted to the burner-supporting frame 1 for the purpose of rotating the latter around its central support or bearing 7. In order to provide means for throwing out of gear the connection between the sleeve 11 and the frame 1, I mount the intermediary gear 16 upon an elongated stud 18, secured to and extending downwardly from the support 7 and having a shoulder or nut 19 upon its lower end. The gear 16 is held in its raised position in mesh with the gear 15 and the teeth 17 by means of an adjustable collar 20, mounted on the stud 18 and locked therewith by means of a set-screw 21. When it is desired to throw the gear 16 out of mesh with the gear 15 and the teeth 17, it is merely necessary to loosen the set-screw 21 and force the collar 20 and the gear 16 downwardly or allow these parts to fall by gravity.

In the outer surface of the support 7 is formed an annular groove or channel 22, the same lying in a horizontal plane and having communicating with it the ducts 23 24. An air-supply pipe 25 communicates with the duct 23, and a gas-supply pipe 26 communicates with the duct 24. Air and gas may thus be admitted to the groove or channel 22 and be there mixed prior to the feeding of the

same to the burners. Of course, if desired, the air and gas may be mixed prior to their introduction into the channel 22. In this event one of the ducts 23 24 and the pipe communicating therewith may be dispensed with. In each of the arms 2 of the burner-supporting frame 1 is a duct or passage 27, communicating with the groove or channel 22 in the support 7 at one end and with an annular groove or channel 28 in the extension 3 at the other end. In each of the burner-supports 4 are openings 29 in the same plane with the groove or channel 28 in the extension 3, with which connects one end of a pipe 30, whose other end communicates with the annular burner 5. Through the passage 27, the groove or channel 28, and the pipe or pipes 30 gaseous fuel is conveyed from the channel or groove 22 in the support 7 to each of the burners 5. As heretofore stated, the burners 5 are annular, and each of the same may be made up of one or more parts, as may be desired. An annular discharge-orifice 31, however, at the center of each of the annular burners is provided, through which a thin annular inwardly-extending jet of flame projects. As the burners 5 are mounted on the burner-supports 4, the same are stationary or movable, according as the supports 4 are stationary or movable. Beneath the burner 5 is an annular sheet 32, of asbestos, mineral wool, or other like material, and the inner walls of the burner-supports 4, as well as of the hollow extensions 3, are lined with asbestos, mineral wool, or the like, as shown at 33, this lining being for an obvious purpose. Each of the burner-supports 4 is provided with the cog-teeth 34, which mesh with a driving-cog 35, secured to the central shaft 10, heretofore referred to.

Within the hollow burner-support 4 is a glass-holder 36, the same having a stem 37 thereon adjustably mounted in the bracket 38, by means of which the glass article 39 to be subjected to the action of the jet of flame from the burner 5 may be properly supported and adjusted. The bracket 38 has an arm 40 thereon which projects out through a boss 41 on the side of the burner-support 4 and has a roller 42 on its outer end. The bracket 38 is normally held inwardly at the center of the burner-support 4 by means of a spring 43, secured at its ends to the arm 40 and the boss 41, respectively. The inward movement of said arm 40 and of the bracket 38 thereon is limited by a collar 44 on said arm, which is adapted to engage the outer end of the boss 41. The roller 42 extends downwardly from the arm 40 and during the rotation of the burner-supporting frame 1 is adapted to engage a stationary cam 45, secured to the post or upright 46 and lying within the path of movement of each of the rollers 42 pertaining to the different burners. When the roller 42 comes into engagement with the cam 45 during the rotation of the frame 1, the arm 41 is drawn outwardly against the action of the

spring 43, carrying with it the bracket 38 and the glass-holder 36. The support for the glass article 39 being thus removed from beneath it, the same is caused to drop by gravity down through the lower end of the tubular extension 3, as will be apparent. When the glasses are thus caused to drop, they fall upon a carrier 47, by means of which they are conveyed away from the apparatus to a grinding-machine, where the next operation thereon is to be performed.

When the glass articles 39 drop from the machine, some provision must be made for removing the cracked-off nibs or projections. To do this, I employ a stripper 48, consisting of two substantially parallel curved arms whose outer ends are flared and the space between which is located directly over the path of movement of the glass articles 39, carried by the holders 36. During the revolution of the burners, therefore, upon the central support or bearing 7 the nibs at the outer ends of the glass articles 39 are caused to pass between the stripper-fingers and be held and supported thereby, an engagement being had with said nibs or projections through the beads or flanges which are formed thereon. The inner ends of the stripper-fingers are secured to a pan or receptacle 49, which is suspended from a point directly above the shaft 10 and is located just above the driving-gear 35 within the space between the burner-supports 4. The lower end of the pan or receptacle 49 has a socket 50 therein, which receives the upper projecting end of the shaft 10. In this way lateral displacement of the pan or receptacle 49 is prevented. As the nibs or projections from the glass articles 39 are successively removed they are forced along in the guideway formed by the stripper-fingers and finally discharged into the pan or receptacle 49. The latter may be readily removed when full for the purpose of carrying the severed glass nibs or projections to the dump or trash-pile.

When the machine is used in the form in which it is illustrated in Fig. 2 of the drawings, the hollow shaft or sleeve 11 is loose upon the shaft 10, and the shaft 10, the driving-gear 35, and the parts connected therewith are idle or at rest. Power being now applied to the hollow shaft or sleeve 11 through the pulley 12, the burner-supporting frame 1 is caused to rotate upon the support or bearing 7 through the gearing consisting of the gears 15 and 16 and the rack-teeth 17. The various burner-supports 4 and the burners carried thereby are thus caused to revolve about the central support 7. One operator only is necessary, and he is located at the burner to the left of the cam 45 and stripper 48. At that point he introduces the glass articles 39 into the burners 5 as they successively reach that point and deposits the same upon the glass-holders 36 in the respective burners. Said glass-holders having been previously adjusted to the proper height, the glass arti-

cles 39 are subjected to the action of the thin annular jets of flame issuing from the burners 5, and the nibs or projections at the upper ends thereof are severed or cracked along the proper lines. As the burners 5, carrying the glass articles 39, reach the cam 45 and the stripper 48 the said articles with the nibs removed are automatically dropped down upon the carrier 47, whence they are conveyed from the apparatus, and the nibs or projections at the upper ends of the glass articles are lifted off by the stripper 48 and caused to traverse said stripper and finally be deposited in the pan or receptacle 49.

When it is desired to convert the machine into one requiring the services of one operator for each burner and having the different burner-supports and burners carried thereby rotatable upon their respective axes, the gear 16 is uncoupled from the gear 15 and the rack-teeth 17 by the means described and the hollow shaft or sleeve 11 is locked to the central shaft 10 by tightening the set-screw 14. The rotation of the hollow shaft 11 by the power derived through the pulley 12 thereon now has no effect upon the burner-supporting frame 1, but does rotate the shaft 10 and the driving-gear 35, connected to said shaft. The frame 1 therefore remains stationary, and one operator is necessary at each burner. Each of the burner-supports 4, carrying a burner 5, is rotated upon its axis by the engagement of the driving-gear 35 with the cog-teeth 34. The operator at each burner feeds and discharges his particular burner independently of the others. Of course when the apparatus is used in this form the cam 45 and the stripper 48 are dispensed with. I also employ a slightly-different form of glass-holder, as illustrated in Fig. 3 of the drawings. The glass-holder 50^a, upon which the glass article 39 is supported, is adjustably mounted on the bracket 51 and is provided with a vertical stem 52, which extends loosely through the bracket 51 centrally of the burner-support 4 and extension 3. The glass-holder 50^a is adapted to be elevated by means of a rod 53, extending through a guide-bracket 54, secured to the arm 2, and has a socket 55 at its upper end adapted to receive the lower end of the stem 52. The lower end of the rod 53 is pivoted to a lever 56, fulcrumed upon an upright 57 and connected through a link 58 with an operating-lever 59, fulcrumed upon an upright or standard 60. By depressing the free end of the lever 59 the rod 53 is through the connections described elevated and brought into engagement with the lower end of the stem 52. The glass-holder 50^a is thereby raised, carrying with it the glass article 39, which has had its nib or projection cracked off or removed through the action of the burner 5 and ready to receive a new glass article to be subjected to the cracking-off action of said burner.

Having now described my invention, what

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

1. In an apparatus for severing articles of glassware, the combination with a support, having an annular groove or channel therein, of a burner-supporting frame mounted upon said support, burners carried by said frame and communicating with said channel, and means for supplying gaseous fuel to said channel.

2. In an apparatus for severing articles of glassware, the combination with a support having an annular groove or channel therein and having ducts communicating with said channel, of a burner-supporting frame mounted on said support, burners carried by said frame communicating with said channel, and air and gas supply pipes connected respectively with said ducts.

3. In an apparatus for severing articles of glassware, the combination with a support having tapering outer walls, an annular groove or channel therein and ducts communicating with said channel, of a burner-supporting frame having a central hub, and a plurality of radially-extending arms provided with tubular extensions, the inner walls of said hub being tapering and shaped to conform to the outer walls of said support, each of said extensions being provided with an annular groove and each of said arms having a duct or passage therein connecting the annular grooves in said extensions with the annular groove in said support, burner-supports on said extensions, burners carried by said supports, communicating with the grooves in said extension, and air and gas supply pipes communicating respectively with the ducts in said support.

4. In an apparatus for severing articles of glassware, the combination with a support, of a burner-supporting frame mounted to turn on said support, burners mounted to turn in said frame, rotating means for said frame, rotating means for said burners, and means for throwing the rotating means for said frame and that for said burners into and out of operation.

5. In an apparatus for severing articles of glassware, the combination with a support having a groove or channel therein and means for supplying gaseous fuel to said groove or channel, of a burner-supporting frame mounted to turn on said support, burners mounted to turn in said frame and communicating with said groove or channel, rotating means for said frame, rotating means for said burners, and means for throwing the rotating means for said frame and that for said burners into and out of operation.

6. In an apparatus for severing articles of glassware, the combination with a support, of a burner-supporting frame mounted to turn thereon, burners mounted to turn in said frame, a driving-shaft, gearing between said driving-shaft and frame for rotating the lat-

ter, a driving-cog for rotating the burners in said frame, means for coupling and uncoupling said cog with said drive-shaft, and means for connecting and disconnecting the gearing between said drive-shaft and said frame.

7. In an apparatus for severing articles of glassware, the combination with a support, of a burner-supporting frame mounted to turn on said support and having a circular rack thereon, burners mounted to turn in said frame having gears or pinions on the supports therefor, a vertical shaft extending through said support, a gear-wheel secured to said shaft and meshing with said pinions, a hollow driving-shaft surrounding said vertical shaft, means for connecting and disconnecting said shafts one with the other, a gear on said driving-shaft, a pinion meshing with said gear and with the rack on said frame, and means for disconnecting the latter pinion from said gear and rack.

8. In an apparatus for severing articles of glassware, the combination with a cracking-off burner, of supporting means for the article to be severed carried by said burner and means for automatically moving said supporting means bodily and thereby discharging the glass article from said burner.

9. In an apparatus for severing articles of glassware, the combination with a cracking-off burner, of a bodily-movable glass holder or support carried thereby, and means for automatically moving said support and causing the glass article thereon to fall by gravity from the burner.

10. In an apparatus for severing articles of glassware, the combination with a cracking-off burner, of a bodily-movable glass holder or support carried by said burner, and means for automatically moving said glass holder or support from beneath the article thereon.

11. In an apparatus for severing articles of glassware, the combination with a burner, of supporting means for the glass article carried by said burner, means for automatically moving said supporting means bodily and thereby discharging the glass article from said burner, and means for automatically removing the severed nib or projection from the end thereof.

12. In an apparatus for severing articles of glassware, the combination with a burner and means for supporting a glass article therein, of means for discharging said article from said burner, a carrier for conveying said article from the apparatus, and means for automatically removing the nib or projection from the end of said glass article and depositing the same in a suitable receptacle.

13. In an apparatus for severing articles of glassware, the combination with a revolving burner, and a hollow support therefor having its lower end open, of a laterally-movable glass-holder carried by said burner, and means for automatically and intermittently actuating said holder and thereby permitting

the glass article thereon to drop by gravity through the lower end of said support.

14. In an apparatus for severing articles of glassware, the combination with a revolving burner and a hollow support therefor having its lower end open, of a laterally-movable glass-holder carried by said burner, and a cam for automatically actuating said holder.

15. In an apparatus for severing articles of glassware, the combination with a revolving burner and a hollow support therefor having its lower end open, of a glass-holder carried by said burner, a laterally-extending arm connected therewith and projecting through said support, a spring for normally holding said glass-holder centrally of said burner, an engaging portion on said arm, and a fixed cam with which said engaging portion is adapted to contact.

16. In an apparatus for severing articles of glassware, the combination with a revolving burner and a hollow support therefor having its lower end open, of a glass-holder, a laterally-movable bracket upon which said holder is adjustably mounted, an arm connected with said bracket and extending loosely through said support, a stop on said arm for limiting the inward movement thereof, a spring for holding said arm and the glass-holder connected therewith at the limit of its inward movement, an antifriction-roller carried by said arm, and a fixed cam with which said roller is adapted to contact.

17. In an apparatus for severing articles of glassware, the combination with a revolving cracking-off burner, of a stripper for removing the severed nibs or projections from the end of the glass article, the same comprising a pair of substantially parallel arms adapted to embrace said nibs or projections.

18. In an apparatus for severing articles of glassware, the combination with a revolving cracking-off burner, of a stripper for removing the severed nibs or projections from the glass articles, the same comprising a pair of substantially parallel curved arms having flared ends, the said arms being located above said burner and the space between said flared ends lying within the path of movement of the nibs of the glass articles carried by said burner.

19. In an apparatus for severing articles of glassware, the combination with a revolving cracking-off burner, of a pan or receptacle, and a stripper for removing the nibs or projections from said glass articles and for depositing the same in said pan or receptacle, the same comprising a pair of substantially parallel curved arms having flared ends, the said arms lying above said burner and communicating with said pan or receptacle and the space between said flared ends of said arms lying within the path of movement of the glass articles carried by said burner.

20. In an apparatus for severing articles of glassware, the combination with a rotating

burner-supporting frame, having a plurality of radially-extending arms thereon, and cracking-off burners carried by said arms, of a pan or receptacle suspended from a suitable support and located in the space between the supports for said burners at the ends of said arms, and a stripper for removing the nibs or projections from the glass articles, the same comprising a pair of substantially parallel curved arms secured at their inner ends to said pan or receptacle and having flared outer ends, the said arms lying

in a plane above said burners and the space between the flared ends of said arms lying within the path of movement of the nibs or projections on the glass articles carried by said burners. 15

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

ANTON ROEMISCH.

Witnesses:

CHAS. F. BOCHLER,
LEOPOLD SIGWART.