

No. 696,500.

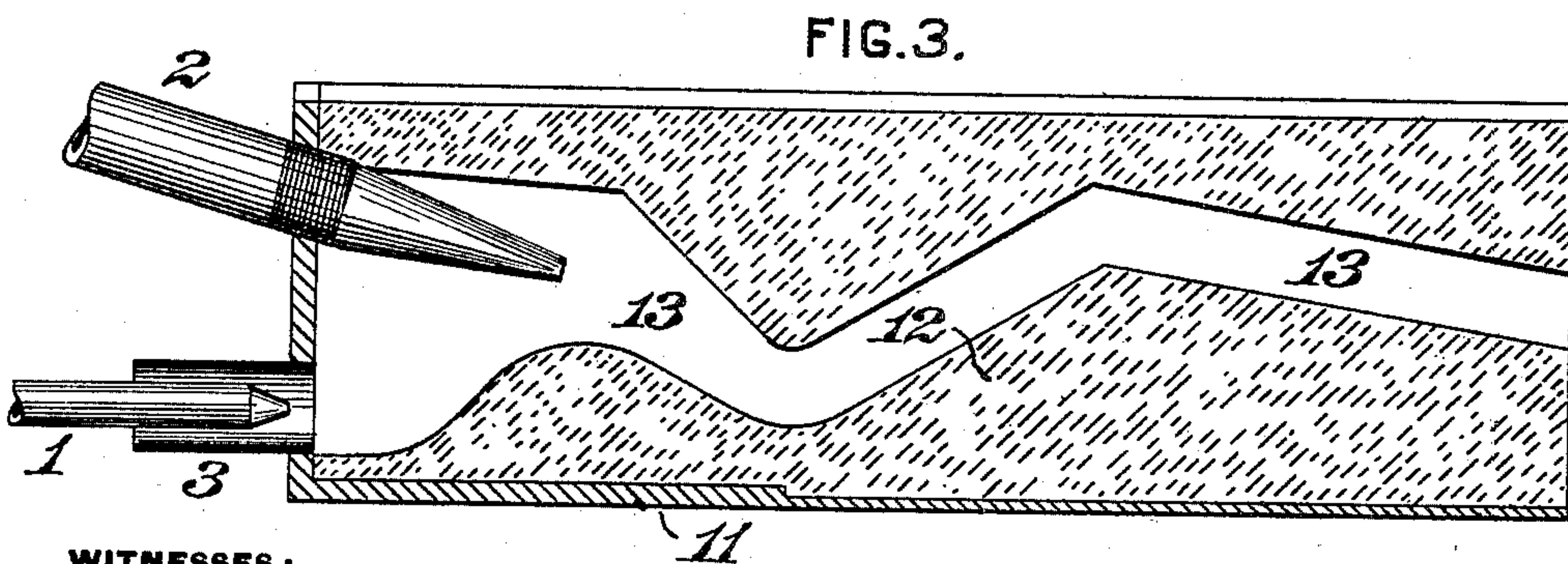
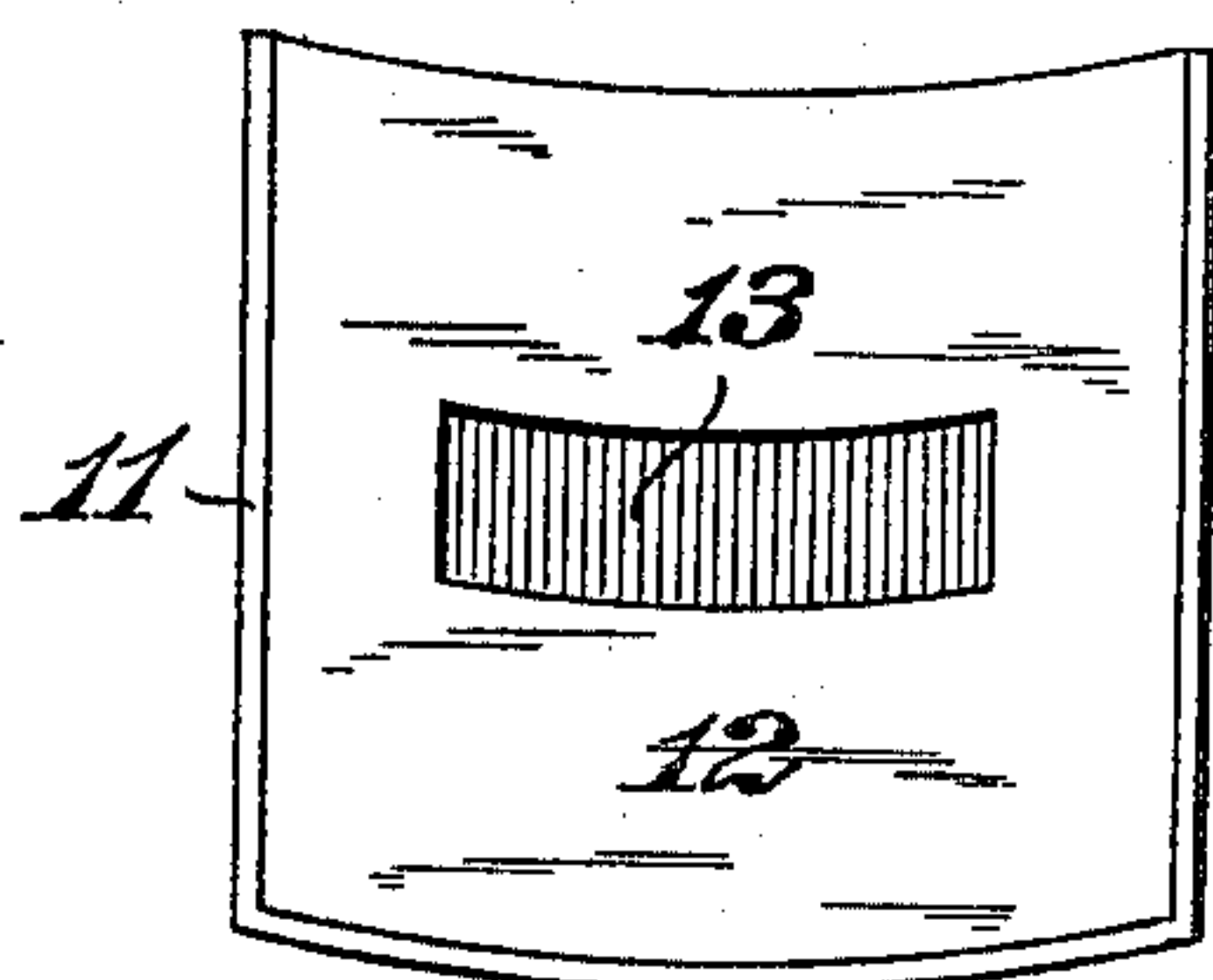
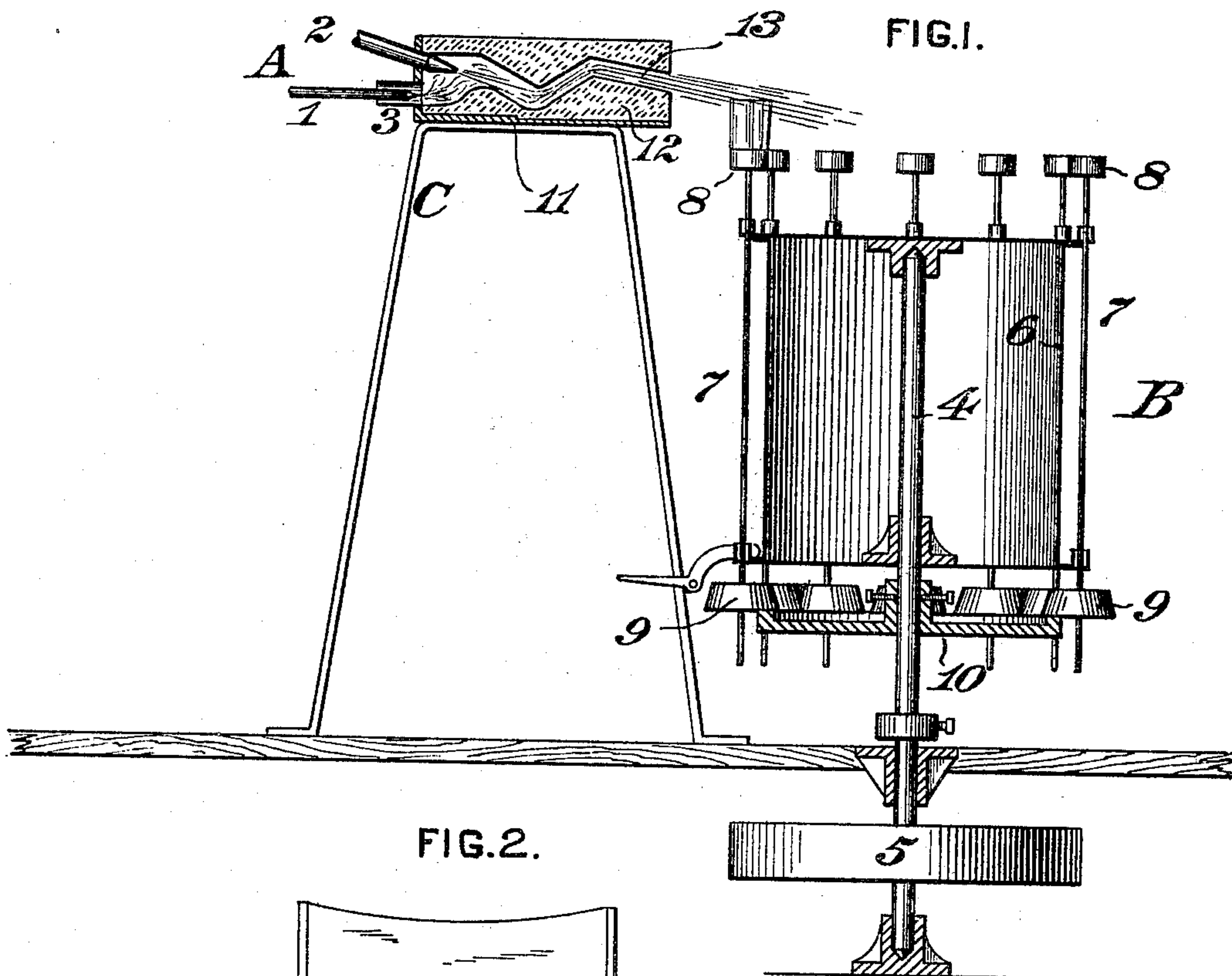
Patented Apr. 1, 1902.

H. SCHAUB.

APPARATUS FOR FIRE FINISHING GLASSWARE.

(Application filed Oct. 28, 1901.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR FIRE-FINISHING GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 696,500, dated April 1, 1902.

Application filed October 28, 1901. Serial No. 80,229. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY SCHAUB, of Mount Pleasant, in the county of Westmoreland and State of Pennsylvania, have invented a certain new and useful Improvement in Apparatus for Fire-Finishing Glassware, of which improvement the following is a specification.

My invention relates to apparatus for "fire-finishing," "melting," or "glazing" the edges of blown tumblers or other articles of glassware by the application of heat thereto while supported upon a suitable traversing mechanism by which they are successively presented to and withdrawn from a blowpipe-flame or other source of heat. In apparatus of this type in which a furnace is not employed for the generation and evolution of the required heat and in which the heat is exerted upon the glassware by the direct application of a blowpipe-flame thereto it has been found that where a hydrocarbon of the character of benzine-gas is employed as a fuel and where the proportions of gas and air under pressure are not properly and carefully regulated, which will often be the case by reason of negligence or lack of skill on the part of the operator, the edges of the ware are liable to be smoked or blackened to some extent by the action of impurities, such as sulfur and unconsumed carbon, which are liberated from the flame and deposited on the ware.

The object of my invention is to provide simple and effective means whereby articles of glassware may be perfectly and rapidly fire-finished by the direct application of flame in the open air without liability to deterioration by impurities in the flame, as above indicated.

To this end my invention, generally stated, consists in the combination of a blowpipe-flame appliance, a traversing mechanism by which articles of glassware are successively presented to and withdrawn from the flame of said appliance, and a purifier interposed between said appliance and the ware-traversing mechanism.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a vertical central section through an apparatus for fire-finishing glassware, illustrating an embodiment of my invention; Fig. 2, an end view, in elevation and on an enlarged scale, of the purifier, detached; and Fig. 3 a vertical longitudinal central section through the same.

In the practice of my invention I provide as essentials the following instrumentalities, viz: a suitable blowpipe-flame appliance A, the same being an appliance of the well-known type in which the energetic combustion of gaseous fuel is effected by the application of an air-blast, a ware-traversing mechanism B of any suitable known construction adapted to successively present a plurality of articles of glassware to and withdraw them from the blowpipe-flame, and a purifier C, interposed between the blowpipe-flame appliance and the ware-traversing mechanism and adapted to conduct the flame to and direct it upon the articles of glassware which are successively presented to it by the ware-traversing mechanism and to extract from the flame in transit contained impurities which might otherwise impair the quality of the glassware.

In the instance exemplified the blowpipe-flame appliance A is composed of a gas-supply pipe 1, having a suitable contracted nozzle or discharge-opening, which is surrounded by a mixer-pipe 3 and an air-blast pipe 2, also having a contracted nozzle or discharge-opening, which is located at a proper distance from that of the gas-supply pipe, the relative volumes of gas and air being controlled by regulating-valves (not shown) in the ordinary manner. The specific form and disposition of the members of the blowpipe-flame appliance are not an essential of my invention and may be varied in the discretion of those skilled in the art.

The ware-traversing mechanism B is in this instance shown as substantially similar to that set forth in the patent of H. C. Schrader, No. 566,412, dated August 25, 1896, and comprises an upright rotary shaft 4, to which power is applied through a belt-pulley 5 and



which supports a drum or carrier 6, having the capacity of movement with the shaft and of remaining stationary at desired intervals, respectively, said drum having journaled on its periphery a plurality of spindles 7, each carrying a support 8 for an article of glassware, and a friction-wheel 9, through which the spindle may be rotated by the contact of the wheel 9 with a wheel 10, fixed to the axle of the drum. The ware-traversing mechanism above described is, however, only one of several constructions which have been long known in the art and employed for the purpose of mechanically transporting in succession a plurality of glass articles to a point at which they are acted upon by the application of heat and of successively withdrawing them from the action of such heat after it has been sufficiently exerted. Among such ware-traversing mechanisms may be mentioned endless-chain carriers, instances of the employment in which, in combination with a source of heat in the manner stated, are of public record as early as 1883 and at different dates thereafter. The specific construction of ware-traversing mechanism employed does not form part of my invention, and any other suitable and preferred form may in the discretion of the constructor be substituted without departure therefrom.

The characteristic feature of the purifier C is a channel or conduit, through which the flame from the blowpipe-flame appliance A is led to a point proper for its discharge upon an article of glassware supported on the ware-carrying mechanism B, the walls of said channel or conduit being composed of refractory material and being of such form as to present one or more deflecting-surfaces by which the flame is diverted to a greater or less extent from a direct and uninterrupted course to its point of discharge upon the ware and is caused to impinge upon the walls of the channel or conduit in its traverse through the purifier. In the instance herein shown the purifier is composed of a sheet or plate metal case 11, which serves to contain a body or block 12 of fire-clay or other refractory material or composition which is capable of being readily molded or pressed into desired form and which is preferably of a porous nature. A channel or conduit 13 is formed in and extends throughout the refractory body 12, the entrance end of said channel being made sufficiently large to receive the discharge ends of the gas-supply pipe 1 and mixer-pipe 3 and the air-blast pipe 2 and to present no obstruction between them, and the walls of the channel being thereafter alternately downwardly and upwardly inclined or curved to its discharge end, which is located at a proper distance from the line of traverse of the ware-supports 8 of the ware-traversing mechanism. The inclined portions of the walls of the channel 13 form deflecting-surfaces against which the

flame impinges in its traverse through the channel. The body of refractory material 12 of the purifier becomes highly heated by the flame, and impurities contained in the latter, such as free carbon and sulfur, are eliminated and consumed by its impingement against the hot deflecting-surfaces, the flame discharged from the purifier upon the glassware being thereby exempted from tendency to blacken the ware. A purifier eighteen inches long by six inches wide and having a flame-channel one inch deep and three and one-half inches wide has been found to operate satisfactorily in regular practical service; but the specific form and dimensions of the purifier may be varied from those indicated without departure from the spirit of my invention. Thus, for example, the walls of the flame-channel might be formed of plates of fire-clay or tile, inclined so as to present deflecting-surfaces to the flame. Other variations of structural detail will readily suggest themselves to those skilled in the art.

The employment of an apparatus embodying my invention attains the substantial advantage of dispensing with the complicated and expensive furnace structures and mechanism for moving glass articles into or through them which have heretofore been used and of enabling glassware to be properly fire-finished by the application of a blowpipe-flame in the open air with the expedition which is afforded by mechanically transporting the ware to and from the melting or glazing flame.

I claim as my invention and desire to secure by Letters Patent—

1. In an apparatus for fire-finishing glassware, the combination of a blowpipe-flame appliance, a traversing mechanism by which articles of glassware are successively presented to and withdrawn from the flame of said appliance, and a flame-purifier interposed between said appliance and the ware-traversing mechanism.

2. In an apparatus for fire-finishing glassware, the combination of a gas-supply pipe, an air-blast pipe, a flame-purifier consisting of a body of refractory material having a tortuous channel or conduit with which the gas and air pipes are connected, a plurality of inclined deflecting-surfaces in said channel, and a ware-traversing mechanism located adjacent to the discharge end of said channel.

3. A flame-purifier for fire-finishing apparatus composed of an inclosing case or shell and a body of refractory material supported therein and having formed within it a longitudinal channel or conduit provided with deflecting-surfaces which are presented by alternately oppositely inclined or curved portions of its walls.

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Witnesses:

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