L. STEELMAN.

GLASS DELIVERING MACHINE.

APPLICATION FILED SEPT. 29, 1910.

1,021,904. Patented Apr. 2, 1912

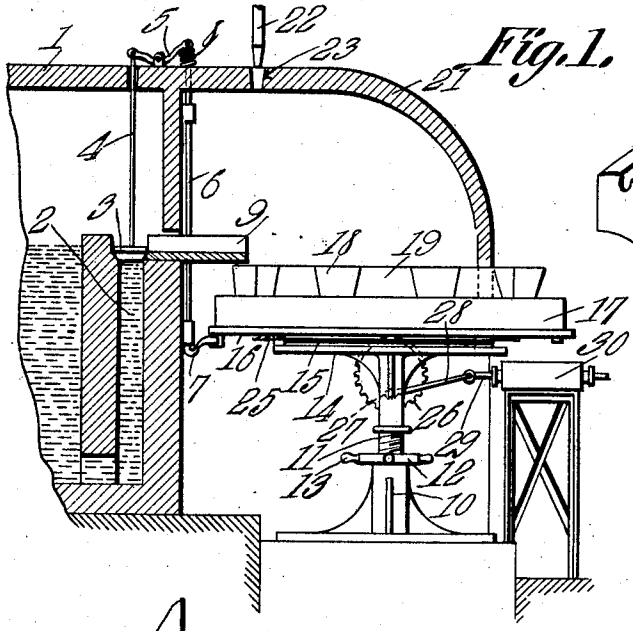

Fig. 1.

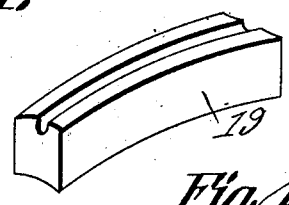

Fig. 4.

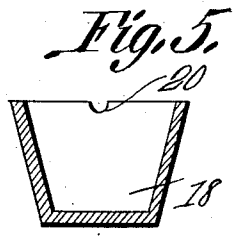

Fig. 5.

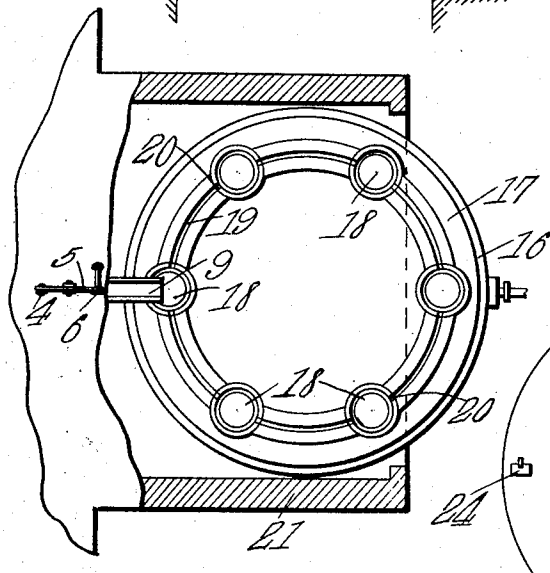

Fig. 2.

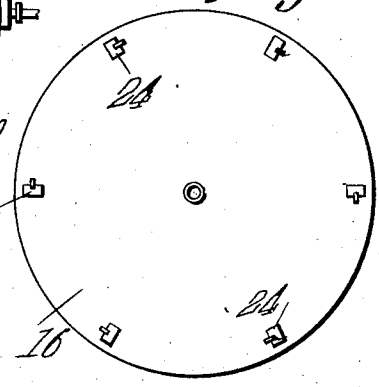

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

LEWIS STEELMAN, OF MILLVILLE, NEW JERSEY.

GLASS-DELIVERING MACHINE.

1,021,904. Specification of Letters Patent. Patented Apr. 2, 1912.

Application filed September 29, 1910. Serial No. 584,531.

To all whom it may concern:

Be it known that I, LEWIS STEELMAN, a citizen of the United States, residing at Millville, in the county of Cumberland and State of New Jersey, have invented a new and useful Glass-Delivering Machine, of which the following is a specification.

This invention has relation to machines for delivering glass and consists in the novel construction and arrangement of its parts as hereinafter shown, described and claimed.

The object of the invention is to provide a machine especially adapted to be used to deliver glass to be used in molding articles, as for instance bottle stoppers and other articles. The machine is designed to be used in combination with a melting tank having means for permitting the molten metal to pass therefrom in predetermined quantities. The furnace is provided with a hood which is located over the metal outlet and a heating device is adapted to maintain the air under the hood at a desired degree or temperature. A rotatable table is located under the hood and means are provided for raising and lowering the said table. The table carries upon it a series of pots which are connected to each other by a trough.

In the accompanying drawings:—Figure 1 is a side elevation of the machine for delivering glass, parts being shown in section. Fig. 2 is a top plan view of the said machine parts being shown in section. Fig. 3 is a bottom plan view of the top of the pot carrying table forming a part of the machine. Fig. 4 is a perspective view of one of the troughs used between the pots. Fig. 5 is a sectional view of one of the pots.

As illustrated in the accompanying drawings the tank 1 is provided in the vicinity of its discharge side with a vertically disposed metal passage way 2. A valve 3 is arranged to close against the upper end of the said passage-way and is attached to the lower end of a stem 4 which passes up through the top of the furnace 1. A lever 5 is fulcrumed upon the top of the furnace and one end thereof is pivotally connected to the upper end of the stem 4. The upper end of a rod 6 is connected to the other end of the lever 5 and said rod 6 is located exteriorly of the furnace 1 and extends down along the same and is provided at its lower end with a laterally disposed portion 7. A spring 8 surrounds the upper portion of the rod 6 and is interposed between a fixed support and that end of the lever 5 which is pivotally connected with the said rod 6. The spring 8 is under compression with a tendency to hold that end of the lever 5 in an elevated position. By this means the lever 5 is normally held in such position so that through the stem 4 the valve 3 is normally held closed against the upper end of the metal passage 2 in the tank 1. A spout 9 passes through the vertical wall of the furnace 1 and has its inner end located in the vicinity of the upper end of the passage 2 in the said tank and the outer end of the said trough 9 is disposed over a series of pots hereinafter to be described.

A standard or base 10 is located exteriorly of the tank 1 and beyond the outer or delivery end of the spout 9. An externally threaded post 11 is arranged to slide vertically within the standard 10 and a ring 12 is screwthreaded upon the said post and bears against the upper end of the said standard. The ring 12 is provided at intervals with handles 13 whereby the said ring may be rotated about the axis of the post 11 and when this is done the said post will be moved vertically in the standard 10. A platform 14 is fashioned upon or mounted upon the upper end of the post 11 and is provided upon its upper surface with a ball race which receives bearing balls 15. A table 16 is provided upon its under side with a race which rests upon the said bearing balls 15. A stone or other non-heat-conducting material 17 is mounted upon the upper side of the table 16 and a series of pots 18 are concentrically arranged upon the upper surface of the stone 17. The said pots 18 are held in proper spaced relation and are connected together by means of troughs 19 which connect at their ends with recesses 20 provided at the ends of the said pots 18. A hood 21 is supported upon the furnace 1 and is located over the delivery end of the spout 9 and a burner 22 preferably of the hydro-carbon type has its discharge end arranged to project a flame through an opening 23 provided in the top of the hood 21 and directly above those pots 18 which are in the vicinity of the delivery end of the spout 9. The table 16 is provided upon its under side with a series of lugs 24

into the path of movement of which the laterally disposed end portion 7 of the rod 6 projects. The said table 16 is also provided upon its under side with a concentrically arranged set of gear teeth 25 which mesh with a gear wheel 26 journaled upon a suitable support and having a wrist pin 27 to one end of which a connecting rod 28 is pivotally attached. The other end of the said connecting rod 28 is attached to a piston rod 29 which is arranged to reciprocate in a cylinder 30 mounted adjacent the standard 10. The hood 21 is located over the major portion of the table 16 and is also located over most of the pots 18 although the outer edge portion of the table 16 projects beyond the edge of the hood 21. One or more of the pots 18 are also located beyond the outer edge of the said hood.

The operation of the machine will now be given.

Presuming that the tank 1 contains glass in a molten state and that through the gear wheel 26 meshing with the gear teeth 25 upon the under side of the table 16 the said table and those parts mounted thereon are rotated under the hood 21. It is of course understood that the gear wheel 26 is rotated by means of the connecting rod 28 and piston rod 29 operating in the cylinder 30. The operation of the piston within the cylinder 30 is intermittent and is caused by an operator or attendant and as such controlling means form no part of the present invention they are omitted in the present illustration and description. As the table 16 rotates upon the bearing balls 15 the pots 18 are successively carried under the delivery end of the spout 9. As the pots move under the delivery end of the said spout the lugs 24 successively come into contact with the laterally disposed lower end portion 7 of the rod 6 and the said rod 6 moves in a downward direction against the resistance of the spring 8. This movement on the part of the rod 6 rocks the lever 5 upon its fulcrum as the valve stem 4 is moved in a vertical direction which lifts the valve 3 from the upper end of the metal passage 2 provided in the tank 1. When the valve 3 moves away from the upper end of the passage the metal is free to flow from the said passage along the spout 9 and into that trough 8 which is located below the delivery end of the said spout. As the table 16 continues in its rotary movement the lug 24 which has just been in engagement with the laterally disposed portion 7 of the rod 6 moves beyond the said portion 7 and the tension of the spring 8 then comes into play and lifts the rod 6 whereby the operation of the lever 5 and the valve stem 4 and valve 3 is reversed and the said valve 3 is closed down against the upper end of the metal passage 2 in the tank 1 and the flow of the metal from the tank to the trough 9 is interrupted. This operation is repeated throughout the entire series of pots and at the same time a jet of flame is permitted to escape from the burner 22 through the opening 23 in the top of the hood 21 and this flame keeps the contents of the pots at a desired temperature. Any excess of metal which is received by any one of the pots 18 may flow through the opening 20 of the said pot and along the trough 19 into one or more of the adjacent pots and thus means is provided for preventing the pot from overflowing. The slab of stone 17 or an equivalent material prevents the table 16 and the parts located thereunder from becoming unduly heated.

The object in providing table 16 with means for vertically adjusting it is to accommodate said table to pots of different heights.

It is to be understood that the machine herein described is more particularly designed for use in connection with gathering and molding mechanism such as constitutes the subject matter of an application filed by me on March 31, 1911, Serial No. 618,155, said application being a division of the present application.

Having described the invention what I claim as new and desire to secure by Letters Patent is:

1. A melting tank, an outlet trough a movable table, pots supported thereby, and movable successively under the trough, a hood extending from the tank and overhanging the trough, a portion of the table, and the pots upon said portion, and means for directing a flame into the pot registering with the trough.

2. A melting tank, an outlet trough, a rotary table, pots supported thereby, means for bringing the pots successively under the trough, means operated by the table for controlling the flow of metal into the trough, a hood extending from the tank and overhanging the trough and a portion of the table, and means for directing a flame into the pot registering with the trough.

3. A melting tank having a valved outlet, a rotary table, pots supported on the table, spacing troughs interposed between and opening into the pots, said pots and troughs being movable with the table successively into position to receive metal from the outlet.

4. A melting tank having a valved outlet, a rotary table, pots supported on the table, spacing troughs interposed between and opening into the pots, said pots and troughs being movable with the table successively into position to receive metal from the outlet, and means for directing a flame into the trough or pot under the outlet.

5. A melting tank having a valved outlet, a table mounted for rotation, heat non-conducting material upon the table, pots sup-

ported thereby, and combined spacing elements and troughs interposed between and communicating with the pots, said troughs and pots being movable successively into register with the outlet.

6. A melting tank having an outlet, a valve, a slidable valve operating element, means coöperating therewith for holding the valve yieldingly in closed position, a table mounted for rotation, pots mounted on the table and movable successively into position to receive metal from the outlet, and projecting devices upon one face of the table and movable successively into engagement with said slidable element to open the valve.

7. A melting tank having an outlet, a movable table, pots supported thereby and movable successively into position to receive metal from the outlet, a hood overhanging the outlet and a portion of the table, and means for directing a flame into the pots successively during the movement of the table.

8. A melting tank having a valved outlet, a movable table, heat non-conducting material upon the table, pots supported thereby, and combined spacing elements and troughs interposed between and communicating with the pots, said troughs and pots being movable successively into register with the outlet.

9. A melting tank having a valved outlet, a table mounted for movement, pots supported on the table, spacing troughs interposed between and opening into the pots, said pots and troughs being movable with the table successively into position to receive metal from the outlet.

10. A melting tank having an outlet, a movable table, pots supported thereby, troughs between and opening into the pots, said pots and troughs being movable successively into position to receive metal from the outlet.

11. A melting tank having an outlet, a movable table, non-conducting material upon the table, pots supported thereby, and troughs between and communicating with the pots, said troughs and pots being movable successively into register with the outlet.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LEWIS STEELMAN.

Witnesses:

MARY M. TULLER,

J. E. MITCHELL.