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METHOD AND APPARATUS FOR GLAZING CIRCUITOUS PASSAGES

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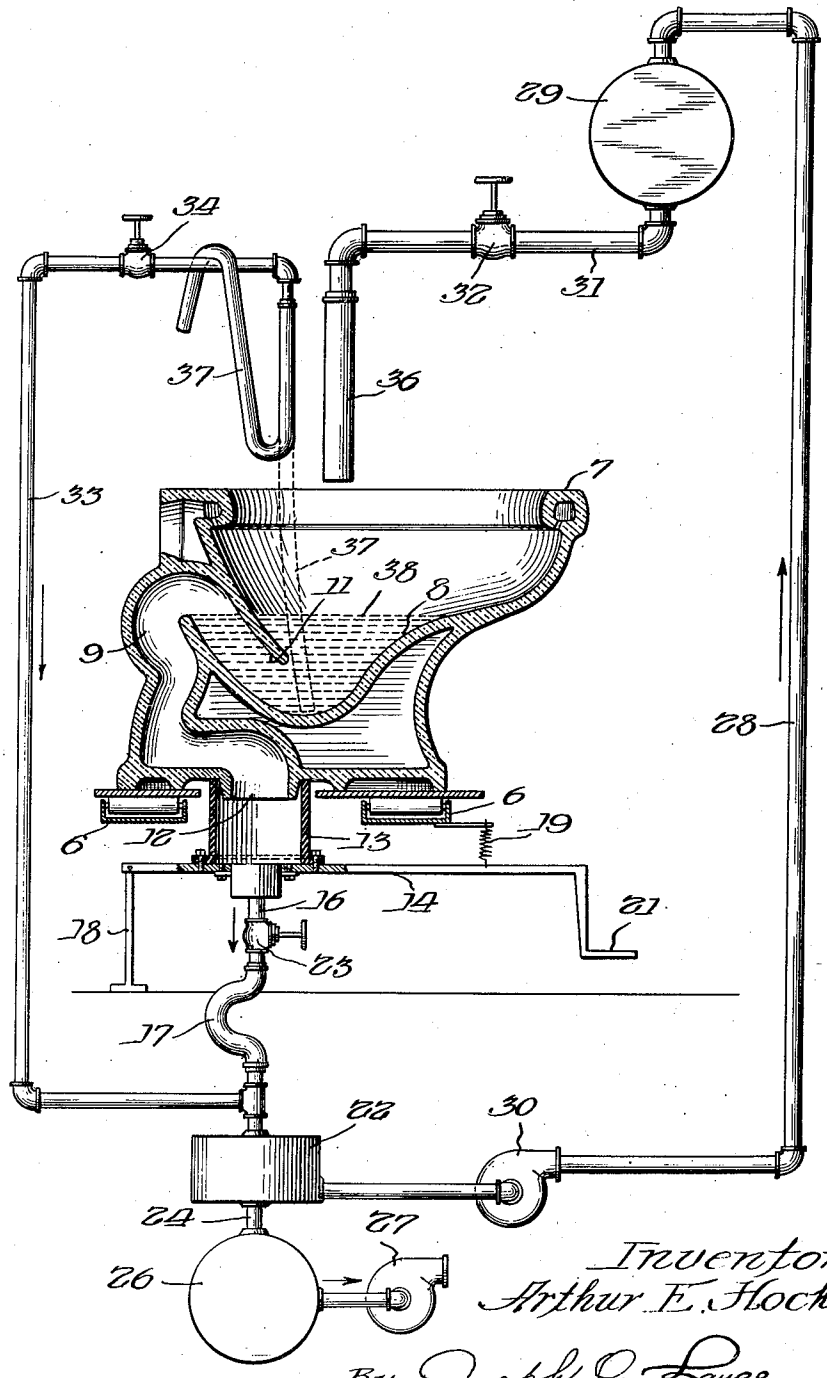


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## METHOD AND APPARATUS FOR GLAZING CIRCUITOUS PASSAGES

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4 Claims. (Cl. 117—95)

1

This invention relates to a method and apparatus for applying glaze to ceramic products and is more particularly concerned with an improved method and apparatus for applying glaze to the walls of closet trapways.

The method heretofore employed for applying glaze to closet trapways consists in pouring a supply of glaze into the closet bowl and then manually rotating the closet to cause the glaze to flow through the trapway. It is apparent that this old method required considerable manual effort as closets are quite heavy, and further that this method does not necessarily provide thorough nor complete wall coverage as it is dependent upon the haphazard manner in which the closet may be rotated. In the application of glaze to trapway surfaces of single fired closets as received from the drying room in their "clay" state, many closets were heretofore broken in handling due to their weight and relatively fragile condition.

This invention, therefore, has for an object the provision of a method and apparatus to facilitate the application of glaze to the walls defining the closet trapways and to decrease the length of time required to perform this operation.

It is a further object of this invention to provide a method and apparatus for applying glaze to closet trapways without manual manipulation of the closet and to thereby dispense with the manual labor and also eliminate a frequent cause for excessive breakage.

Another object of this invention is to provide a method and apparatus which is adapted to insure the complete and adequate coating of the entire wall surfaces of closet trapways.

This invention further contemplates the provision of a glazing apparatus which is simple in operation, inexpensive in construction, and which will not readily get out of order.

This invention embodies other novel features, details of construction and arrangement of parts which are hereinafter set forth in the specification and claims and illustrated in the accompanying drawing, forming part thereof, wherein:

The single figure in the drawing illustrates a preferred form of apparatus for applying glaze to a closet trapway.

Referring now to the drawing for a better understanding of this invention, the apparatus is shown comprising a conveyor line 6 for moving closets 7 from a drying room (not shown) to a glazing station. The closets are formed with the usual bowl portion 8 communicating with a trapway passage 9 having an inlet end 11 and an

2

outlet end 12. A relatively thick-walled, resilient rubber tubing member 13 is secured to an actuating arm 14 for movement into and out of air-tight sealing engagement with the outlet end 12 of the trapway passage, and leads to a discharge conduit 16 having a portion thereof formed of flexible tubing 17 to permit movement of the actuating arm. The actuating arm is pivotally mounted on a bracket member 18 and is normally moved upwardly by means of a spring 19 which serves to maintain the tubing member 13 in tight sealing engagement with the outlet end of the trapway passage. The actuating arm is moved down manually by stepping upon the end portion 21 thereof.

The conduit 16 leads to an air and glaze separating device 22 which may be of any suitable construction. A valve 23 is interposed in the conduit 16 to control the flow therethrough. An air conduit 24 is provided to direct air from the separating device 22 to a vacuum tank 26 from which air is exhausted by means of a pump 27. A glaze conduit 28 leads from the separating device 22 to a glaze supply tank 29, and a pump 30 is interposed in said conduit to force the glaze therethrough. A conduit 31 is provided to direct a flow of glaze from the glaze supply tank to the closet bowl 8, preferably by gravity, and under control of a valve 32. A conduit 33 is provided to direct a flow of glaze from the closet bowl 8 to the separating device 22 under control of a valve 34. The closet engaging ends of the conduits 31 and 33 are preferably formed of flexible rubber tubing at 36 and 37, respectively.

In the operation of the apparatus thus described, glaze is supplied to the closet bowl to the level indicated by the dotted line 38 by operating the control valve 32 in the conduit 31. The valve 23 is then opened to permit a difference in air pressures at opposite ends of the trapway passage. When the air pressure within the vacuum tank 26 and separator 22 is substantially below atmospheric pressure, it causes the glaze to flow in a turbulent manner and at relatively high velocity from the bowl and through the trapway passage to thoroughly coat the walls thereof. A small amount of glaze remains in the bowl at the completion of the coating operation and is removed therefrom by means of the conduits 33 and 37.

While this invention has been shown in but one form it is obvious to those skilled in the art that it is not so limited but is susceptible of various changes and modifications without depart-

ing from the spirit thereof or the appended claims.

I claim:

1. An apparatus for applying glaze to the wall surface of a closet trapway having open ends, comprising a tank containing air below atmospheric pressure, conduit means communicating with said tank for directing glaze from one end of the closet trapway, valve means interposed in said conduit means for controlling the air pressure within said trapway and the flow of glaze therethrough, means for supplying glaze to the other end of the closet trapway, and pivotally movable means for detachably connecting said conduit means to one end of the closet trapway.

2. An apparatus for applying glaze to the wall surface of a closet trapway having open ends, comprising a tank containing air below atmospheric pressure, conduit means communicating with said tank for directing glaze from one end of the closet trapway, valve means interposed in said conduit means for controlling the air pressure within said trapway and the flow of glaze therethrough, means for supplying glaze to the other end of the closet trapway, movable mounting means for the closet trapway and resilient means cooperating with the said movable mounting means for detachably connecting said conduit to one end of the closet trapway.

3. The method of applying a liquid glaze to the wall surface of a closet trapway having open ends which consist in disposing a quantity of the liquid glaze within one end portion of the passage to serve as an air seal, then effecting a difference



in air pressures at opposite ends of the trapway to cause a partially projected flow of the liquid glaze therethrough and then subsequently removing the remaining liquid glaze from the end of the passage serving as an air seal.

4. The method of applying a liquid glaze to the wall surface of a closet trapway having open ends which consists in disposing a quantity of liquid glaze within a trapway portion of one end of the passage to form an air seal therefor, then suddenly reducing the air pressure within the trapway to effect movement of the liquid glaze therethrough at relatively high velocity to include contact with the upper and side wall surface portions of the closet trapway by the resultant turbulent movement of the liquid glaze.

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