

R. E. CRANE.
MANUFACTURE OF LAVATORIES AND THE LIKE.
APPLICATION FILED JULY 27, 1909.

1,001,622.

Patented Aug. 29, 1911.

Fig. 1,

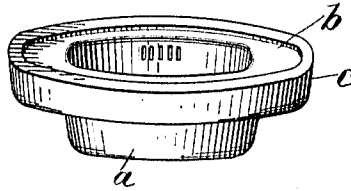


Fig. 2,

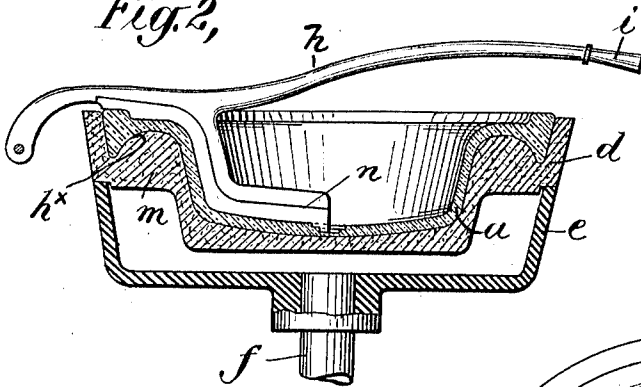


Fig. 3,

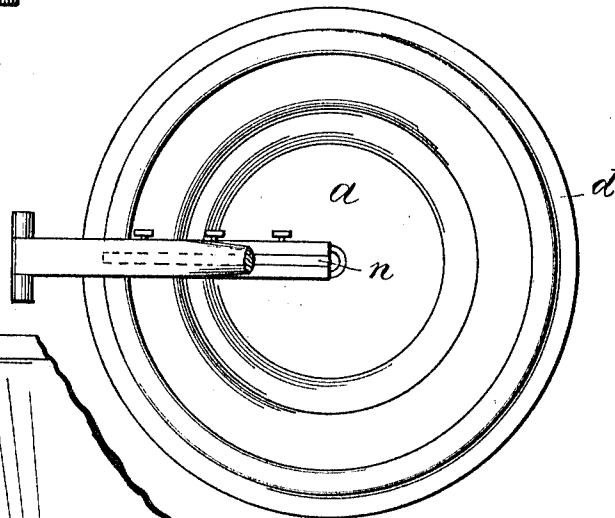
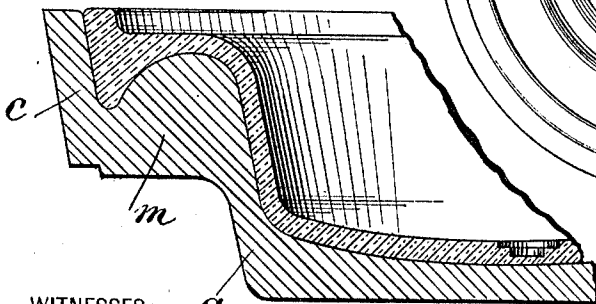


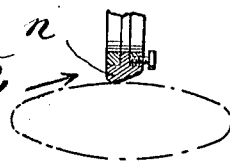
Fig. 4,



WITNESSES:

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Fig. 5,



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MANUFACTURE OF LAVATORIES AND THE LIKE.

1,001,622.

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To all whom it may concern:

Be it known that I, RAYMOND E. CRANE, a citizen of the United States, residing at Cameron, in the county of Marshall and State of West Virginia, have invented certain new and useful Improvements in Manufacture of Lavatories and the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in the manufacture of earthenware vessels such as are used for lavatory purposes, as, for instance, earthenware wash basins, foot tubs, and the like. These articles, which are provided with a main body portion or basin and an outlying slab draining into the basin, are sometimes provided with strengthening aprons beyond the slab, which aprons, in the usual processes of manufacture, are made up separately from the clay and are stuck on to the green ware, before the final firing operation occurs.

In accordance with my present invention, the slab and apron of the lavatory constitute together an integral and homogeneous unit, made up as such in the green ware, during the molding operation and while the slab and apron are simultaneously passing through a spinning stage which works the clay, imparting to it a "twist" incident to the action of the spinning or jigging tool, and squeezing water out of the clay and any air bubbles which may possibly have been occluded therein during the formation of the clay sheet after it has left the pugging mill. In some instances, and preferably, I also include the basin itself in an integral and homogeneous unit with the slab and apron, but, broadly considered, this is not indispensable.

In carrying out my invention, because of the high coefficient of shrinkage exhibited by the green ware, while it is in the mold, I make provision for accommodating this shrinkage, without causing the apron or slab to check or crack, by so fashioning the apron and consequently the mold surface upon which it is formed that under the influence of the shrinkage strains the apron will ride over the mold surface and at the same time will rise correspondingly in the mold. This feature of my invention permits me to completely fill the mold with clay

from the sheet of clay employed, and to effectually spin or jig both the apron and slab in such manner as to obtain a deep, substantial protecting apron, strengthening the slab above and below, and absolutely homogeneous therewith, and without any danger whatever that in the subsequent shrinking in the mold there will be a rupture of the integral and homogeneous unit thus produced.

The spinning or jigging operation to which the slab and apron are simultaneously subjected develops a certain grain in the ware, particularly conducive to its ultimate strength, especially as the same grain is produced at the same time and from the same body of clay in both the slab and apron, a condition impossible of attainment where it is attempted to make the apron separately and stick it on to the edge of the slab.

It is also a feature of my invention that the method employed permits the operator to gradually blend the thickness of the apron into the thickness of the slab, without abrupt gradation and in such manner that during the shrinking operation incident to the drying of the clay while the clay is still in the mold, there will be no plane of cleavage, the torsional grain or striation of the clay due to the spinning operation so strongly reinforcing the structure that, in practice, it is found that the green mold product detaches itself cleanly from the mold surfaces during the shrinking operation and without danger to the integrity of the ware.

A further advantage of the invention is that the great inherent strength of the apron formed homogeneously with the slab permits it to sustain the entire lavatory in the saggar kiln, even where the saggars themselves have become more or less deformed and out of level. In such instances, the apron will fully sustain the entire weight of the basin to full advantage, even though the surface of the saggar upon which the apron rests is deformed to such an extent that only a portion of the lower surface of the apron is directly supported by the saggar. Furthermore, the facility afforded by the inherent strength of the apron and its connection to the slab, while permitting the lavatory to be freely suspended in the annular saggar, by means of the lavatory apron, allows a slight angular dropping or inclination of the slab to take place during the

firing operation, permitting the slab in the final fired product to have free drainage into the basin.

In the accompanying drawing, I have illustrated the application of my improvements to the manufacture of a hand lavatory of the type wherein the slab is integral with the basin, although, as I have hereinbefore noted, the basin may be the subject of separate manufacture, in those instances where it is desired to make it up individually, *i. e.*, when it is of some peculiar or irregular cross section, not readily spun.

Figure 1 represents an isometric view of a hand lavatory made in accordance with my invention. Fig. 2 represents, in vertical section, the green ware during the molding and spinning stage. Fig. 3 represents a top plan view of the parts shown in Fig. 2. Fig. 4 represents, on a slightly larger scale, a partial section of the mold and the finished green clay product, and Fig. 5 is a transverse section through the jiggering blade, it also being indicated in what direction the jigger is rotated with respect to said blade.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, *a* indicates the basin of a hand lavatory, *b* the slab, and *c* the apron thereof.

In carrying out my invention, the clay sheet is inserted in the porous plaster mold *d* of a jigger *e* to which a movement of rotation is imparted by the shaft *f*. The operator thereupon forces down, fashions and works the clay into contact with the mold surfaces, by means of the jiggering tool *h* having a handle *i* and which contains a blade *n* whose cross section is indicated on Fig. 5, the arrow showing the direction of rotation of the jigger with respect to the jiggering tool.

It will be noted that the plaster-of-Paris mold is provided at *h** with a molding surface of such curvature that, during the subsequent contraction of the green ware after it has been molded and jigged, the apron *c* will ride up over or upon the mold portion *m*. To enable it to do this, without cracking or checking, the homogeneous character of the apron and slab, together with the torsional grain or striation of the clay due to the action of the jiggering tool is fully effective. The shape of the underside of the basin slab is factitive in producing this result. As the lavatory shrinks into the mold the apron is pulled toward the center of the basin and if the underside of the lavatory

slab were not approximately of the shape indicated in the drawing and strengthened by the thickness of the slab and apron, it could not pull in and at the same time lift the basin up in the mold. In other words, in shrinking the lavatory would break the basin away from the apron if the apron were not constructed to allow for its shrinking, and the apron would not rise up in the curvature of the mold if its underside were not suitably shaped for this purpose. The green clay ware is permitted to remain in the mold for about a day until it has sufficiently dried to permit of its removal, whereupon the mold is inverted and the green ware removed. It is subsequently set up in a drying room and permitted to dry for a further period, dependent upon the dryness and temperature of the room, until it is ready for the hard firing in the kiln. As hereinbefore stated, the dried green product is then inserted in the annular saggar, and together with others, is piled up in the firing kiln and subjected to the vitrifying operation.

It will be understood that in order to make the apron rise in the mold in shrinking, the mold need not be of the precise shape shown in the drawing, and that the shape of the mold may be only such as to permit such manipulation of the article, during shrinking, as will effect the rising of the apron in the mold in substantially the manner indicated.

Having thus described my invention, what I claim is:—

The method of making the slab and apron of an earthenware lavatory or the like, which consists in molding said slab and apron from the clay as a homogeneous unit, by spinning the clay under a forming tool during the molding operation, such operation being carried on in a mold of such shape and under such conditions that in shrinking the apron will rise in the mold, permitting the slab and apron to remain in the mold until shrinkage has taken place and consequently the circumference of the slab is drawn slightly toward the center of the basin, and finally firing the article to constitute the final product, substantially as described.

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

RAYMOND E. CRANE.

Witnesses:

JOHN C. PENNIE,
LAURA B. PENFIELD.