J. F. KELLY.

SANITARY BOWL.

APPLICATION FILED JAN. 14, 1922.

1,435,644.

Patented Nov. 14, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

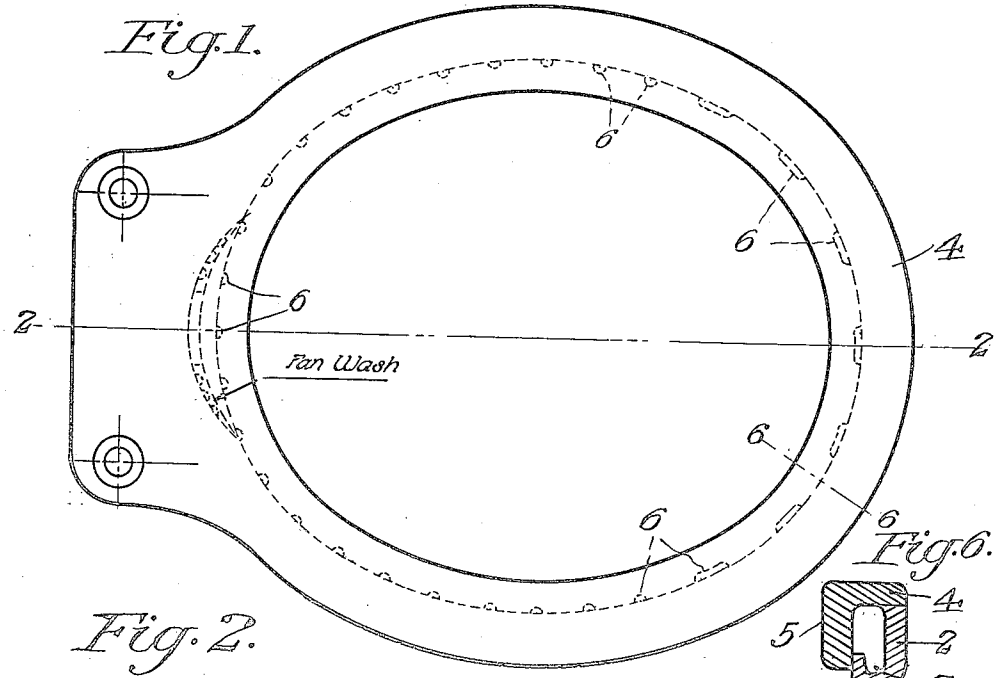


Fig. 6.

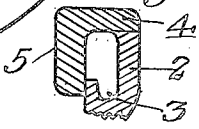
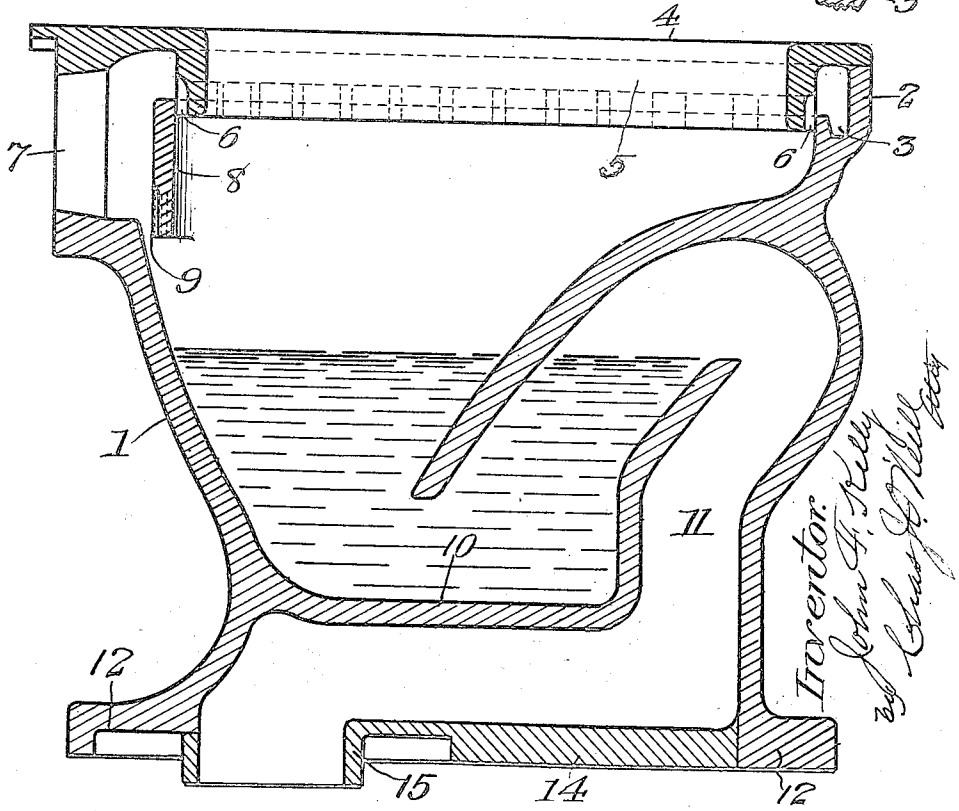


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

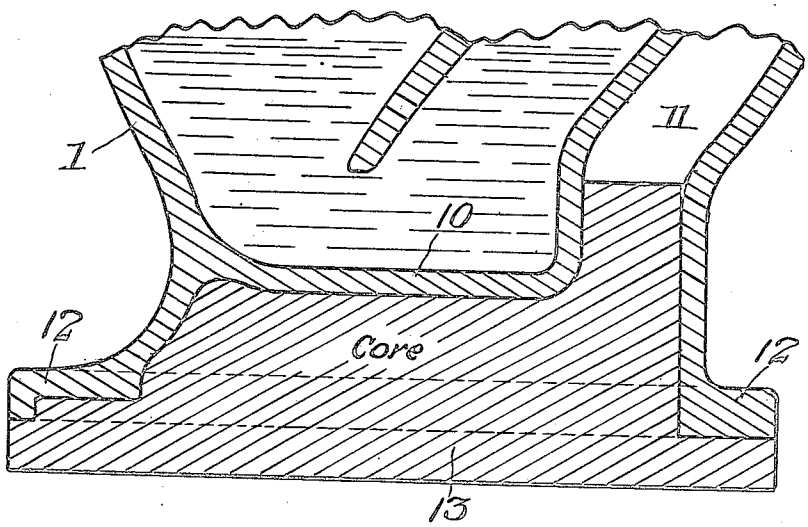


Fig. 4.

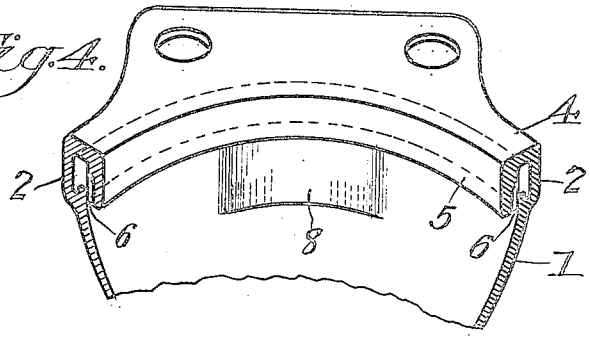
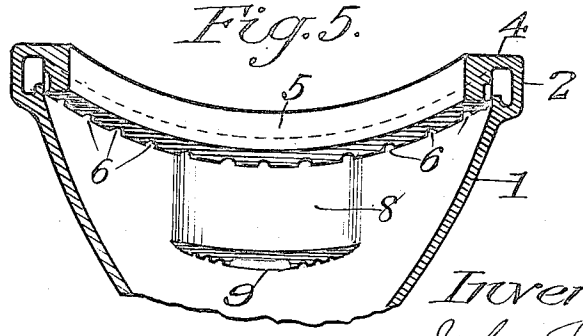


Fig. 5.



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Patented Nov. 14, 1922. 1,435,644

UNITED STATES PATENT OFFICE.

JOHN F. KELLY, OF TRENTON, NEW JERSEY, ASSIGNOR TO THOMAS MADDOCK'S SONS CO., OF TRENTON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SANITARY BOWL.

Application filed January 14, 1922. Serial No. 529,301.

To all whom it may concern:

Be it known that I, JOHN F. KELLY, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Sanitary Bowls; 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.

The invention relates to sanitary bowls made of earthenware or similar material, and more particularly to water-closet bowls having a flushing rim and a siphon discharge, and has for its object the simplification of the manufacture of bowls of this general type, to insure a more stable and uniform product, to materially reduce the cost of production and to largely eliminate wastage due to imperfections incident to the former methods of manufacture. To these ends the invention comprises first forming the body of the bowl including the shell with the siphon discharge, the foot or floor flange and the outer section of the flushing rim, preferably by pouring the clay of suitable consistency into molds having removable core sections, then molding or otherwise fabricating a separate section to constitute the top and inner portions of the rim, and a separate slab section to form a closure for the bottom of the structure within the floor flange, uniting these separate elements to the bowl while the parts are still green or plastic and therefore susceptible of being stuck together to form homogeneous unions or joints, and finally coating and burning the ware in the usual manner.

In the accompanying drawings:—

Fig. 1 is a plan view of a closet bowl made in accordance with the invention.

Fig. 2 is a sectional elevation on line 2—2, Fig. 1.

Fig. 3 is a sectional elevation showing the lowermost core member before removal.

Fig. 4 is a fragmentary sectional perspective.

Fig. 5 is a similar perspective view from below the plane of the rim.

Fig. 6 is a section on line 6—6, Fig. 1.

Referring to the drawings, 1 indicates the body portion proper of the bowl which together with the outer portions 2 and 3 of the flushing rim, the inlet coupling horn or nipple 7, the siphon discharge 11 and the foot or floor flange 12, is preferably molded or cast in a suitable mold or form, including removable core sections to give proper form to the interior elements of the bowl. This molding operation is recognized as having distinct merit and advantages over the older methods involving the building up of the bowl of plastic clay or similar material, or the casting of the structure of a highly fluid clay mixture in a mold, letting the mixture set until a suitable thickness had accumulated on the mold walls and then pouring out the excess slip or aqueous mixture of clay, because of the fact that the molded parts will be of uniform texture and homogeneous structure, without joints and also without sections of wall structure that are either too thick or too thin. It will be understood that the mold may be made in any appropriate manner and of any suitable material that will insure the proper setting of the poured clay, and the ready separating of the sections of the mold and core from the bowl after the latter has set. For example, Fig. 3 illustrates the lower portion of a bowl with the lower core member in situ, but being readily removable through the open bottom of the cast of molded structure.

As indicated, the main body portion of the bowl is cast in a mold having removable core sections, the finished casting including the outer wall 2 and the channel section 3 of the flushing rim, which communicates with the water supply nipple or horn 7. In order to complete the flushing rim, the top section 4 and pendant inner rim 5 are formed as a separate integral member as by casting, molding or otherwise, and, after the section has set sufficiently, it is applied to the rim section of the bowl, as indicated in Fig. 2, that is to say, the green or plastic rim section is stuck to the upper marginal edge of the section 2 and the inner wall of the bowl adjacent the channel-like section 3. In order to provide outlets for the water jets, the separate rim section is preferably provided with spaced lugs leaving open spaces 6 between them, the lugs serving as a means for attaching the pendant flange or skirting of the rim section to the interior wall of the bowl as described.

The number, size and disposition of the jet openings 6 may be varied at will, but

they should be so proportioned and disposed as to provide an efficient wash for the entire inner surface of the bowl. The lugs between the openings afford an extensive connecting area between the pendant flange 5 and the inner surface of the bowl, so that when the separate rim section has been united to the cast bowl section there is little danger of the parts being separated or deformed in the subsequent operations involving the finishing of the product.

It will be noted that the bottom of the bowl structure, within the confines of the floor flange 12, is open by reason of the fact that the removable core 13 must be withdrawn through the bottom. This opening is effectively closed by means of a separate slab-like member 14 which is preferably molded or cast as a separate element to conform to the interior of the opening in the bottom of the bowl structure, and while the parts are still green or plastic, the marginal edges of the slab 14 are stuck to the adjacent walls of the bowl structure. It will be noted that, in the particular form of the device illustrated, the slab 14 also constitutes the bottom wall of the discharge duct, and preferably has formed on its lower face the flange or nipple 15, which forms the connection with the sewer-pipe.

In bowl structures of this general character, it has been found that the rear wall is frequently soiled, and in order to avoid this contingency, the present invention also contemplates the provision of a special form of fan wash located at the rear of the bowl, and formed by providing a supplementary wall 8 in front of the inlet nipple 7, said wall 8 being connected to the inner wall of the bowl, while the elements are still in a green or plastic state, the upper edge of the wall 8 also being secured to the adjacent section of the pendant rim 5. The lower section of the rear face of the supplementary wall 8 is provided with a series of channels or ducts 9 which direct jets or sprays of water from the supply nipple downward and laterally over the back wall of the bowl. It will also be noted that outlet ducts 6 in the rear portion of the flushing rim also direct the sprays over the face of the supplementary wall 8 to maintain the latter in a clean, sanitary condition.

Inasmuch as the separate sections of the bowl structure may be readily cast or molded of uniform size and structure, and the several pre-formed elements may be assembled and stuck together along extensive areas of contact, it will be seen that the probabilities of imperfections in the final product are reduced to a minimum, but, on the other hand, the resulting bowl structure is necessarily stronger and more durable than similar devices manufactured according to the old methods, for the reason that the several separate elements or sections all practically coalesce and unite as an integral structure during the burning operation.

What I claim is:—

1. The method of constructing a pottery-ware bowl having a flushing rim, which comprises forming the body of the bowl together with the outer section of the rim, separately forming the top and inner skirting of the rim, and uniting the top of the rim to the upper marginal edge of the outer rim section and uniting the skirting at intervals to the inner face of the rim.

2. The method of constructing a pottery-ware bowl having a flushing rim, which comprises forming the body of the bowl together with the outer wall and the bottom of the flushing rim as a unitary structure, separately forming the top and inner skirting of the rim, and uniting the top of the rim to the upper marginal edge of the bowl section and the skirting at intervals to the inner face of the bowl.

3. The method of constructing a pottery-ware bowl having a flushing rim, which comprises molding the body of the bowl about removable core sections, including a core to define the outer wall and bottom of the flushing rim, separately forming the top and inner skirting of the rim, and uniting the top of the rim to the upper marginal edge of the outer wall of the rim and the skirting of the rim at intervals to the inner face of the bowl.

In testimony whereof I affix my signature.

JOHN F. KELLY.