Sept. 17, 1946. L. A. FALCO 2,407,738

BATHTUB

Filed June 24, 1944 4 Sheets-Sheet 1

Fig. 1.

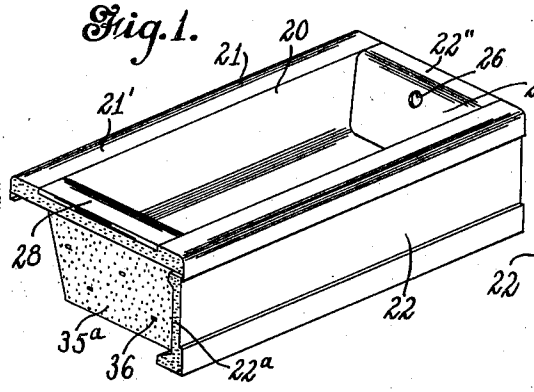


Fig. 4.

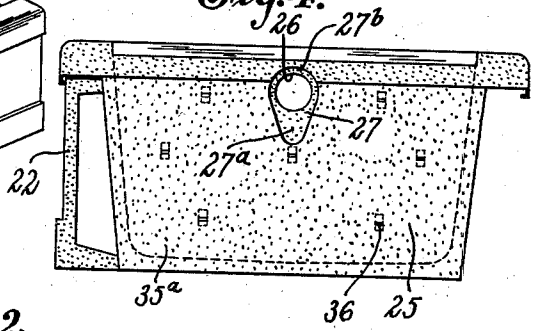


Fig. 2.

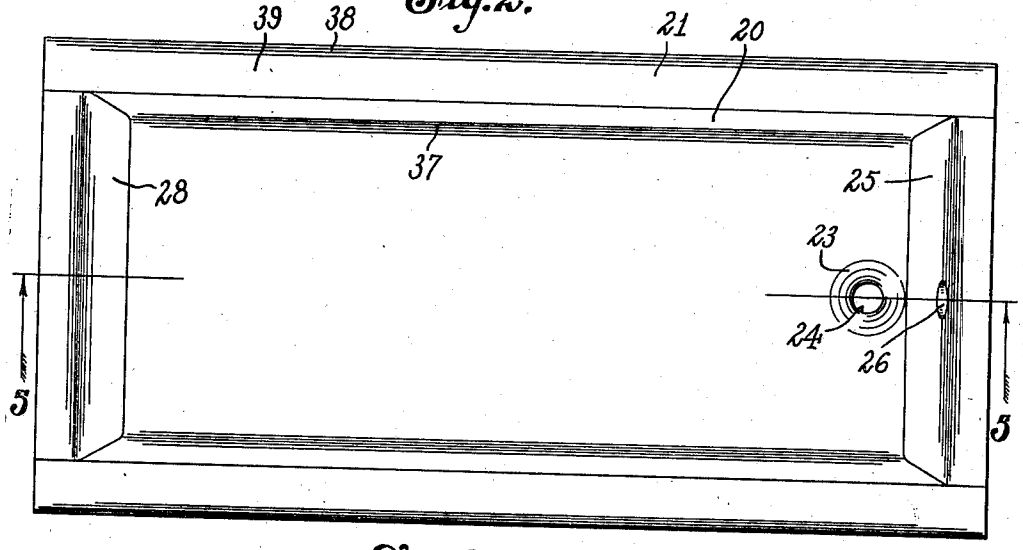
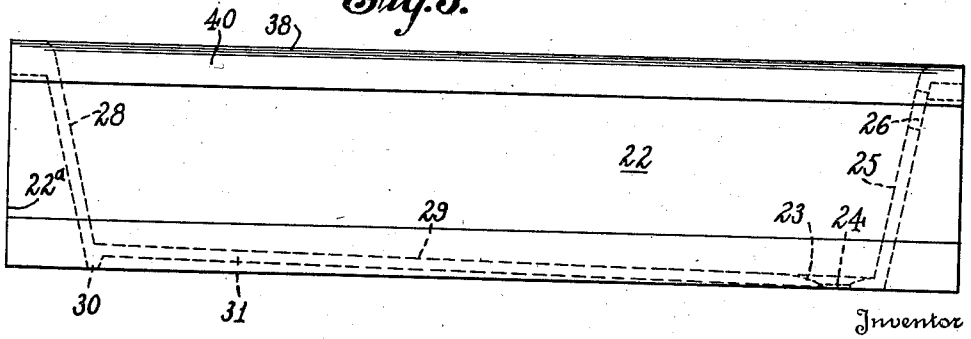


Fig. 3.



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BATHTUB

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Fig. 5.

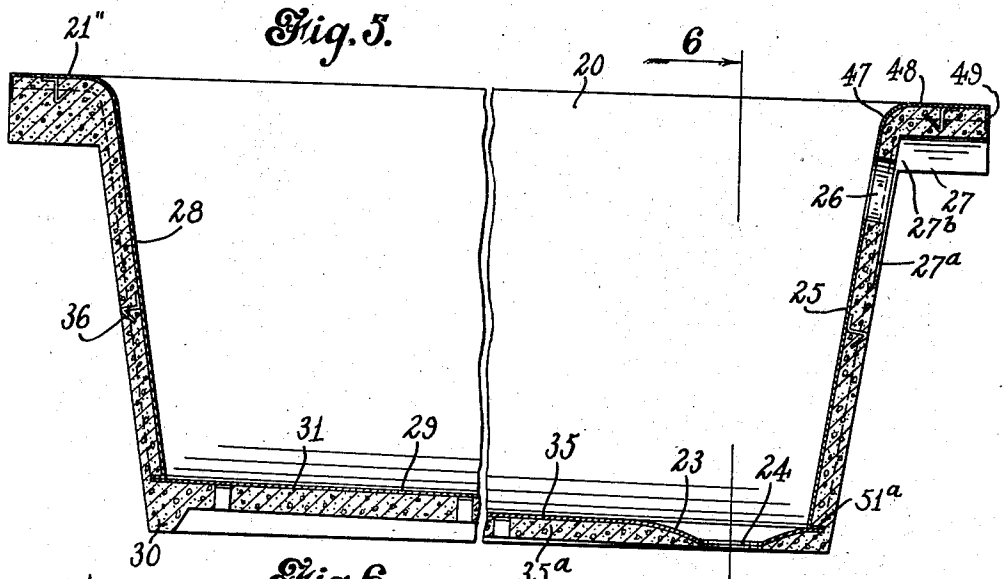


Fig. 6.

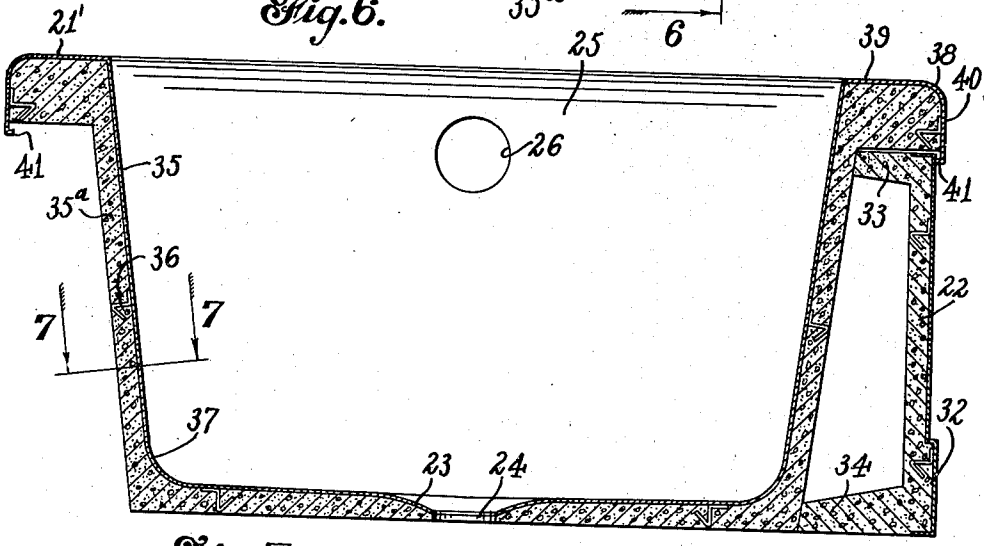


Fig. 7.

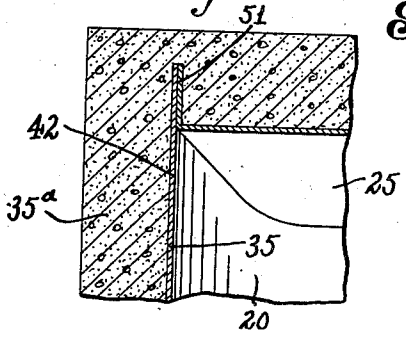
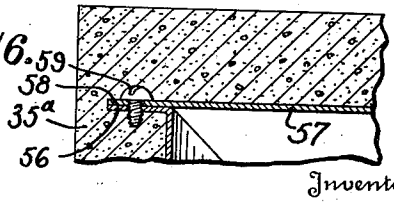


Fig. 16.



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BATHTUB

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Fig. 8.

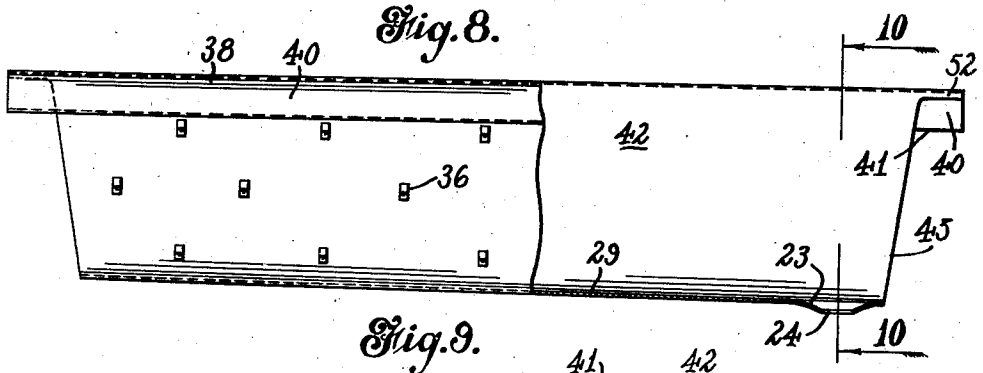


Fig. 9.

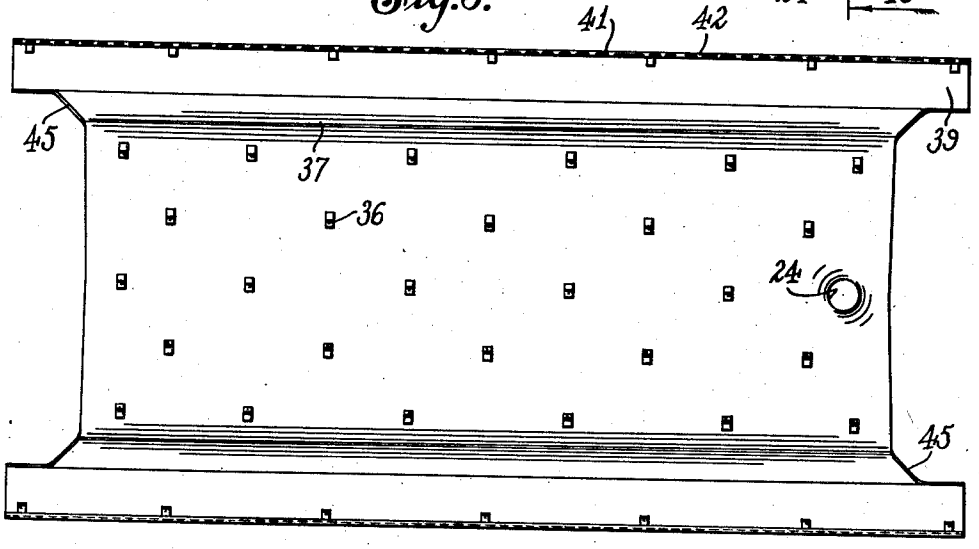
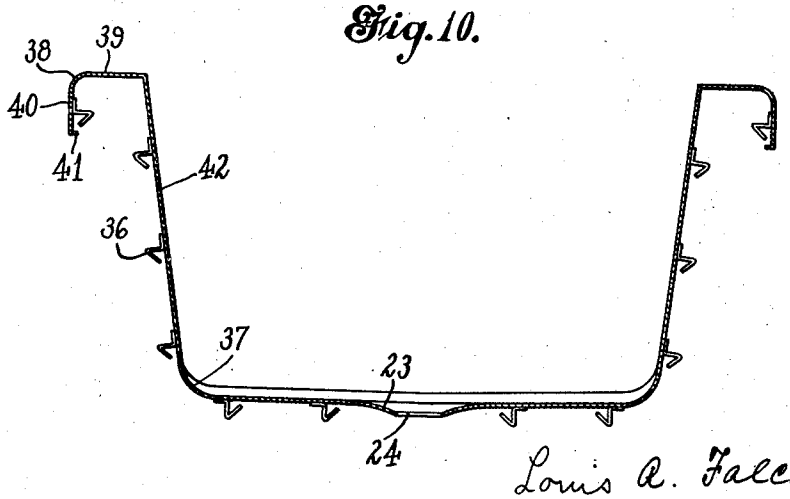


Fig. 10.



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BATHTUB

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Fig. 11.

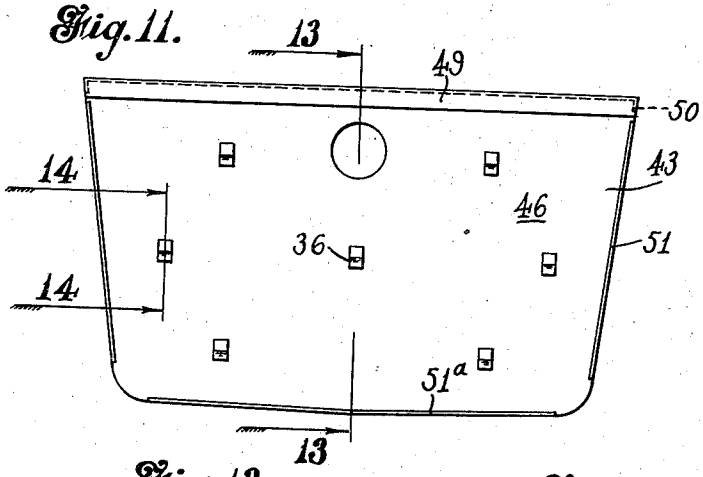


Fig. 12.

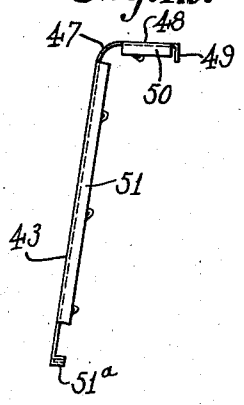


Fig. 13.

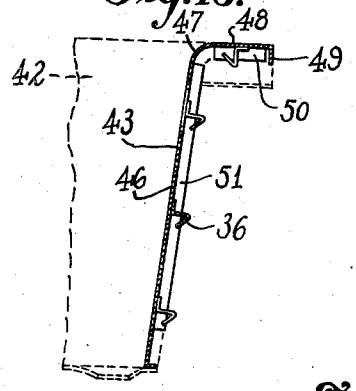


Fig. 14.

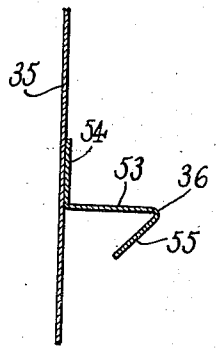
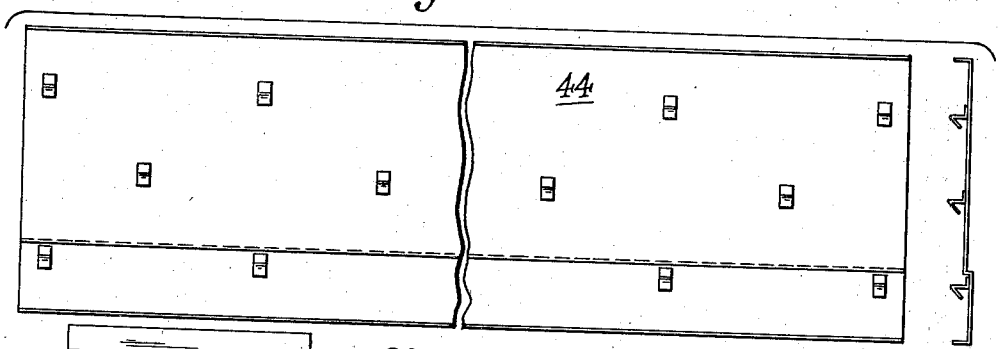


Fig. 15.



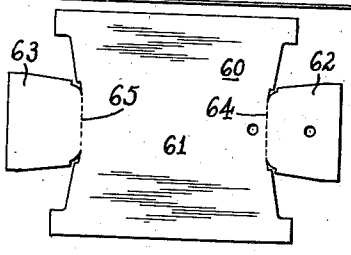


Fig. 17.

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Patented Sept. 17, 1946

2,407,738

UNITED STATES PATENT OFFICE

2,407,738

BATHTUB

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Application June 24, 1944, Serial No. 541,857

6 Claims. (Cl. 4—173)

1

This invention relates to bathtubs, and while not limited thereto, it is directed especially to improvements in bathtubs intended for use in relatively inexpensive dwellings and apartments.

One of the objects of the invention is to provide an inexpensive bathtub fulfilling all of the requirements in respect to attractive appearance, and, in fact, having the appearance of a vitreous clay product, and which is strong and durable and gives very satisfactory service.

Another object is to provide a bathtub of composite structure which can be inexpensively manufactured and which has a sufficiently strong but relatively thin composite wall, including a layer of steel or other sheet metal of relatively light gauge, and a backing layer of cementitious material such as concrete, providing a structure which is of light weight and can be easily transported and installed in the bathroom.

A further object is to provide a composite structure of this nature in which the metal portion of the tub can be readily constructed of separate sections, which are at a later stage backed up with a backing layer of concrete, the metal portion of the tub being divided into sections in a manner conducive to the superiority of the resulting product.

Another object is to provide a very secure and permanent connection between the concrete backing and the metallic layer, and to provide a structure in which the means of attachment, such as welds, between the metal sections are effectively concealed, as well as the means for anchoring the backing to the metal portion, with a view to the enhancement of the appearance of the finished product.

To these and other ends the invention consists in the novel features and combinations of parts and procedure to be hereinafter described and finally pointed out in the claims.

In the accompanying drawings:

Fig. 1 is a perspective view of a bathtub embodying my improvements;

Fig. 2 is a top plan view of the tub;

Fig. 3 is a front elevation;

Fig. 4 is an end elevation looking toward that end which is at the right of Fig. 1;

Fig. 5 is a section on line 5—5 of Fig. 2;

Fig. 6 is a section on line 6—6 of Fig. 5;

Fig. 7 is a section on line 7—7 of Fig. 6;

Fig. 8 is a side elevation, partly broken away, of the channel member of thin metal used in the manufacture of the tub;

Fig. 9 is a bottom plan view of the channel

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Fig. 10 is a section on line 10—10 of Fig. 8;

Fig. 11 is an elevation of one of the metal end pieces;

Fig. 12 is an edge view of the same metal end piece;

Fig. 13 is a section on line 13—13 of Fig. 11;

Fig. 14 is an enlarged view on line 14—14 of Fig. 11;

Fig. 15 comprises a face view and an edge view of the metal component of the separate covering member or apron employed at one side of the tub;

Fig. 16 is a detail sectional view showing a modification; and Fig. 17 shows a further modification.

In the bathtub selected for illustration, the tub is of a type especially adapted for use in inexpensive dwellings and apartments where the tub is provided with a drain in the bottom and with an overflow opening at one end, but where the supply of cold and hot water to the tub is extraneous, that is to say, where the faucets are above the tub, suitably supported on the wall of the room. The tub illustrated is also of the type in which the tub is received in a niche or recess in the room, which niche or recess is of a shape to receive the tub and to leave only one side wall of the latter exposed. At the last-mentioned side of the tub it is preferred to employ a separate apron or covering member which extends from the floor to the rim which is provided upon the tub structure. The tub is of rectangular shape having a relatively wide rim extending along all four sides, the rim at three sides abutting the room wall. The tub body or receptacle portion has upwardly diverging inner side surfaces along the walls of greater length, and it also has upwardly diverging inner side surfaces along the shorter walls, in other words, the end walls. The tub is of composite formation, having the outer visible portions constructed of thin sheet steel which is covered with a suitable coating such as baked enamel, and this also includes the separate apron previously mentioned. These metallic portions are backed up and reinforced by a backing layer of suitable cementitious material such as concrete, which is applied to the metal wall and secured thereto in a manner which will be described hereinafter.

In constructing a tub the procedure is to construct the metal portion of the tub proper in sections of thin-gauge metal such as steel having a suitable baked-on enamel on those portions of the metal plate which will be exposed to view in

the dotted line 64, and similarly the section 63 is integral with the main section in a location indicated by the dotted line 65. It is understood, of course, that the rim portions of the sections are, at a later stage, rounded over in the manner previously described. Where the adjacent edges of the sections are separate from each other, they may be fastened together in a suitable manner as by welding after the blank has been formed to final shape.

It will be evident from the foregoing description that the invention provides a bathtub which is quite inexpensive in comparison to bathtubs at present in use, and which is of relatively light weight so as to be easily transported and readily installed. The metal lining is of such thinness that it can be provided at low cost and can be easily and inexpensively fabricated, and the cementitious backing or reinforcement imparts to the structure the necessary strength, with ample margin, without adding greatly to the weight. The reinforcement also provides a monolithic structure in which there will be no problem of leakage at the joints provided between the sections of the metal lining. The composite wall as described, especially in view of the reinforcement provided by the anchoring members on the metal lining, embedded in the concrete, provides a very strong rigid wall. From the standpoint of appearance also, the improved tub is eminently satisfactory by reason of the fact that the surfaces visible at the exterior are all of baked enamel, or finished in some other suitable manner, and by reason of the fact that a smooth inner tub surface can readily be provided, and also the fact that the tub can have a substantial rim and a substantial apron of attractive appearance.

In the foregoing description, the backing is referred to as composed of concrete, but the backing may, if desired, be formed of aggregate bound by a binder which is not an hydraulic cement but, for example, of an asphaltic nature or, for example, of a resinous nature. The drawings do not show the metal lining as having a layer of baked-on enamel, but it is understood that such a layer is provided in a tub of a certain class, the enamel in the cheaper tubs being of what may be termed synthetic porcelain. In a more expensive tub, a porcelain coating, that is to say an earthenware coating, can be provided. In some cases, the lining may be made of stainless steel, and in such a case, no coating layer is necessary. The article shown in the drawings is used for bathing purposes, but it will be apparent that the invention is applicable to tublike structures such as sinks, laundry tubs, basins, and other articles.

While the foregoing description goes into the various details of the structure shown for purposes of illustration, it is to be understood that the invention is capable of various other embodiments within the principles of the invention and the scope of the claims.

What I claim is:

1. A composite bathtub structure of generally elongated shape provided with a main receptacle portion and with an outstanding rim portion, said tub having in the receptacle portion and also in the rim portion a thin metallic lining and a backing layer of cementitious material anchored thereto, the metallic lining comprising a number of sections joined together at their adjacent edges, said sections including a main section of channeled shape providing the main or body portion of the tub and upwardly sloping end sections, said end sections being set in said channeled section and welded thereto, the cementitious backing being anchored to the metallic lining by anchoring members having portions of extended area applied to the surface of the metallic lining by an adhesive cement and arranged in staggered rows.

2. A composite bathtub structure of generally elongated shape provided with a main receptacle portion and with an outstanding rim portion, said structure having in the receptacle portion and also in the rim portion a thin metallic lining or facing and a backing layer of cementitious material, the metallic lining comprising a main section of channeled shape providing a main or body portion having upwardly sloping sides and also comprising upwardly sloping end sections, the end sections being provided on their body portions and also on their rim portions with bent-up flanges at their ends, said end sections being set in said channeled section and having their flanges welded to said channeled section, the rim portions of the lining in said channeled section and in said end sections being provided with downturned outer marginal flanges and being open at their under portions, the backing being disposed at said under portions in a relatively thick mass, and the backing extending over the body portion of the tub being of less thickness.

3. In a bathtub structure, the combination of a bathtub body having at one side of the tub an upwardly sloping wall and a laterally extending upper rim, said wall and rim comprising a thin metallic lining or facing and a backing layer of cementitious material applied thereto, the lining and backing being formed to present a relatively deep rim having a thick body of cementitious material anchored by anchoring devices to the metallic portion of the rim, and the side wall portion having a backing of less thickness than the rim backing, which backing is likewise anchored to the lining by anchoring devices, and an apron set in under the rim and having at the exposed side of the tub structure a metallic lining or facing and having a cementitious body backing up said facing and anchored thereto by anchoring devices, said cementitious body being provided with a relatively wide bottom flange serving as a base support for the apron on the floor and abutting the side wall of the tub, and said body having an inwardly extending top flange of less width than the bottom flange, the inner edge of the top flange abutting the wall of the tub body immediately below and under the rim so as to position the upper part of the apron with respect to the tub body.

4. In a composite bathtub structure, the combination of a lining member of thin sheet metal, a metallic clip having an integral foot applied at its under portion by adhesive cement to the surface of the lining member, said clip having a shank rising from the foot at one side of the foot and bent over at a sharp angle to form a hook facing toward the lining member at that side of the clip which is opposite the foot, and a cementitious layer applied over the lining member and anchored thereto by the clip, the depth of said cementitious layer approximating the depth of the clip.

5. A composite bathtub structure of generally elongated shape provided with a main receptacle portion and with an outstanding rim portion, said structure having in the receptacle portion and also in the rim portion a thin metallic lining or facing and a backing layer of cementitious

material, the metallic lining comprising a main section of channeled shape providing a main or body portion having upwardly sloping sides and also comprising upwardly sloping end sections, the end sections being provided on their body portions and also on their rim portions with bent-up flanges at their ends, said end sections being set in said channeled section and having their flanges welded to said channeled section, the rim portions of the lining in said channeled section and in said end sections being provided with downturned outer marginal flanges and being open at their under portions, the backing being disposed at said under portions and extended therefrom over the body portion of the tub.

6. A composite bathtub structure of generally elongated shape provided with a main receptacle portion and with an outstanding rim portion, said structure having in the receptacle portion and also in the rim portion a thin metallic lining or facing and a backing layer of cementitious mate-

rial, the metallic lining comprising a main section of channeled shape providing a main or body portion having upwardly sloping sides and also comprising upwardly sloping end sections, the end sections being provided on their body portions and also on their rim portions with bent-up flanges at their ends, said end sections being set in said channeled section and having their flanges welded to said channeled section, the rim portions of the lining in said channeled section and in said end sections being provided with downturned outer marginal flanges and being open at their under portions and having their under portions covered by the backing layer, the rim portions of the main section being extended longitudinally beyond the body portion of said section, and the rim portions of the end sections being set in between the extended rim portions of the main section.

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Patented Sept. 17, 1946

2,407,739

UNITED STATES PATENT OFFICE

2,407,739

PLASTIC CEMENTITIOUS MATERIAL

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No Drawing. Application December 2, 1943, Serial No. 512,599

1 Claim. (Cl. 106—98)

1

This invention relates to new and useful improvements in a plastic cementitious material, and has more particular reference to so-called interior wall plaster.

It is an object of this invention to produce a wall plaster (interior) which is far superior than present day similar plaster.

The invention contemplates the use of brick dust incorporated within the plaster to obtain certain advantages. Bricks have been proven to be an excellent material for outside walls. Brick dust embodies many of the advantageous features of brick material, yet, as far as I know, it has never been used for interior wall constructions.

To better understand the invention it must be recognized that Portland cement, and other cementitious substances are not practical as bases for interior plaster because of their lack of plasticity, or spreading qualities under the mechanic's tool, as well as the lack of adhesion. However, such materials have been made adaptable for these uses by the addition of finishing lime (hydrated lime) used in various proportions as the plaster ingredients are being mixed.

It is general practice to use a plaster base mixture with finishing lime, sand, and similar materials in the construction of interior wall plaster. I have discovered by using brick dust, a far superior plaster is obtained. I have discovered that this plaster material may be used to construct plaster board as well. The improved interior plaster and plaster board have especially good fireproof and waterproof qualities—they are sturdy and strong; they have low heat conductivity and act as good heat insulation material. The improved plaster and plaster board does not readily crack, crumble nor break under ordinary conditions of service. It is particularly well adapted to receive coats of paint and covering materials.

I am aware of the fact that brick dust has been used in connection with concrete to construct artificial bricks. I am also aware that brick dust has been used as a coloring material for plastic materials from which various articles are molded. However, the advantages gained by using brick dust in an interior plaster or plaster board has never been discovered before.

It is another object of this invention to use the largest percentage possible of brick dust in a plaster or plaster board, commensurate with the production of a good interior plaster and plaster board.

I believe that an interior plaster is generally characterized by the use of hydrated lime, and the dominating feature of my invention is the use of brick dust with such plaster.

The improved plaster, in accordance with this invention, may be used for all purposes for which interior plasters are now being used.

2

Still further the invention proposes an improved plaster and plaster board which may be manufactured and sold at a reasonable cost and which contains nothing of an injurious or deleterious nature.

For further comprehension of this invention, and of the objects and advantages thereof, reference will be had to the following description, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In order to enable others to better understand this invention specific formulas will now be given for a plaster and plaster board embodying the essential features thereof.

Example I

Formula for an interior wall plaster.

Cement plaster base (interior)	lbs.	100	(71⅓%)
Finishing lime (hydrated lime)	lbs.	10	(07⅛%)
Brick dust	lbs.	20	(14⅔%)
Sand and marble dust	lbs.	10	(07⅛%)
Water	gals.		10–15

The brick dust which I have used with good results was obtained from the nearby New Jersey brick factories. This brick dust I call "Jersey brick dust." The ingredients are mixed together in the usual way used for the making of plaster. It will be found that the plaster has good spreading and adhesive qualities.

Example II

The following formulae may be used for rock lath or plaster boards.

Finishing lime (hydrated lime)	lbs.	60	(30%)
Cement plaster base	lbs.	100	(50%)
Sawdust	lbs.	25	(12½%)
Brick dust	lbs.	15	(7½%)
Water	gals.		5–10

The plaster boards are made by mixing the materials and working them in the usual ways.

While I have described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise formulas herein disclosed, and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

An interior wall plaster, consisting of a mixture of a Portland cement base, 100 lbs.; hydrated lime, 10 lbs.; brick dust, 20 lbs.; sand and marble dust, 10 lbs.; and water, 10 to 15 gals.

GASPARE FERRANTE.