106. COMPOSITIONS, COATING OR PLASTIC

CROSS REFERENCE

Examiner

81

Oct. 21, 1941. A. SCHWARTZ 2,260,155

TOILET SEAT

Filed Jan. 20, 1940

Fig. 1

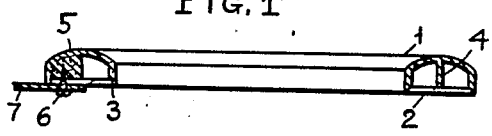



Fig. 2

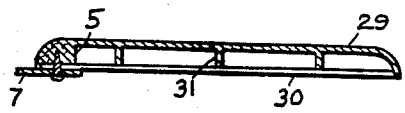



Fig. 3

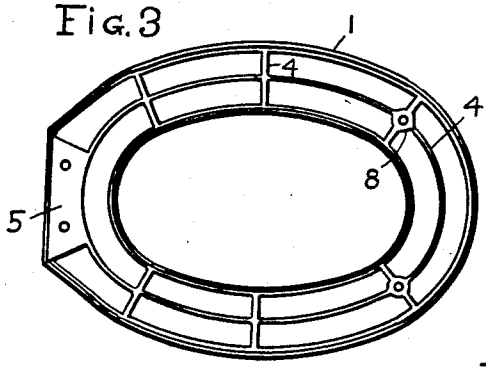



Fig. 4

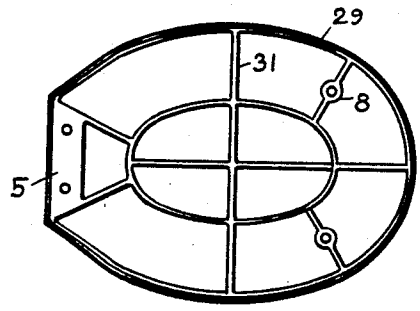



Fig. 5

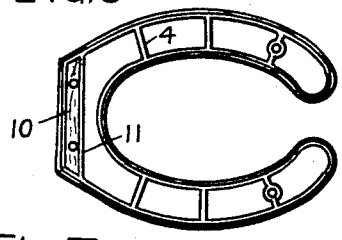



Fig. 6

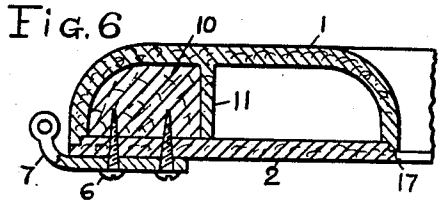



Fig. 7

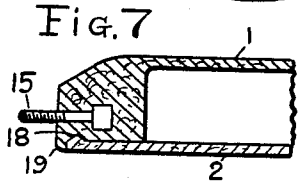



Fig. 8

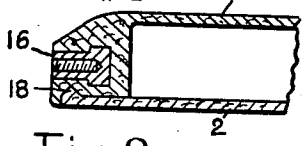



Fig. 9

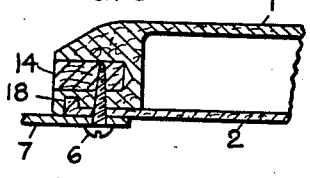



Fig. 10

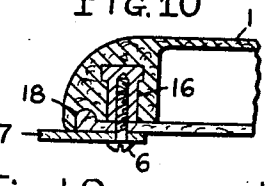



Fig. 11

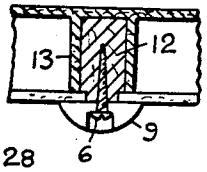



Fig. 12

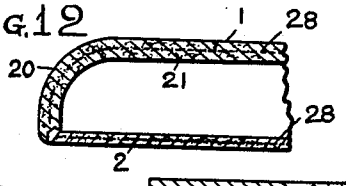
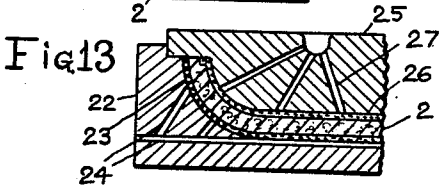



Fig. 13




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# UNITED STATES PATENT OFFICE

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## TOILET SEAT

Alexander Schwartz, New York, N. Y.

Application January 20, 1940, Serial No. 314,763

3 Claims. (Cl. 4—237)

My invention relates to toilet seats and has particular reference to toilet seats and covers made of moulded compositions.

Toilet seats are usually made of wood or similar materials and have a disadvantage of being relatively heavy. Wood, moreover, has a disadvantage in that it often becomes warped and is hygroscopic, being affected by moisture and heat.

I have found that all such disadvantages can be overcome by making toilet seats of a strong and light molded composition which is not affected by moisture and heat and which is relatively very inexpensive. Good results are obtained by using for this purpose a fibrous pulp material made of pulpwood or similar raw stock, such as papier mâché, etc. Such material can be prepared in semi-liquid form and poured into moulds under pressure. By adding a suitable sizing such as clay, etc., the mass can be made solid and homogeneous, having a smooth finish at the surface.

In order to reduce the amount of material used and for making the product light in weight, I prefer to make my toilet seat hollow, by moulding separately the upper and lower portions and cementing them together.

I have also found that good results are obtained if the fibrous mass is formed in water-absorbing moulds. The water or other liquids can be then removed either by allowing the mould to stand for several hours, or by pressing the liquids out in a special mould with liquid-absorbing lining in the matrix and on the plunger. The product, when solidified and removed from the mould, can be finished by grinding or by re-compressing in a smooth steel mould. A glossy smooth surface can be obtained if the article is dipped in a cementitious compound prior to re-compressing.

Solid blocks of the moulded material may be left in the portions of the seat for screws which are used for fastening fixtures such as hinges, rubber bumpers, etc. Separate inserts can be also used if, for instance, the pulp mass is very porous, such inserts being made of wood or similar machinable material which can firmly hold the screws.

If desired, screws, bolts or nuts can be permanently moulded into the material of the seats, thereby saving the labor of the subsequent fitting of such parts.

A smooth, hard finish for the seats and covers can be also obtained by spreading a layer of a plastic cementitious material in the mould prior to pouring the pulp mass, the cementitious material being then forced under pressure into the pores of the mass at the surface in the moulding process.

My invention is more fully described in the accompanying specification and drawing in which—

Fig. 1 is a sectional elevational view of my toilet seat;

Fig. 2 is a similar view of a cover;

Fig. 3 is a bottom plan view of the seat with the bottom portion removed;

Fig. 4 is a similar view of the cover;

Fig. 5 is a bottom plan view of a modified seat;

Fig. 6 is an enlarged detail view of a hinge mounting;

Fig. 7 is a detail view showing a screw moulded into the material of the seat;

Fig. 8 is a similar view of a nut moulded into the seat;

Fig. 9 is a similar view of a hinge fastening with a wooden plug for the screws;

Fig. 10 is a view showing a modified hinge fastening;

Fig. 11 is a view showing an insert for fastening a rubber bumper;

Fig. 12 is a detail view showing a seat made of a porous material impregnated at the surface in the mould with a cementitious material;

Fig. 13 is a detail view of a modified method of making seats.

My toilet seat comprises an upper portion or member 1 and a lower portion or member 2 cemented together at 3. The upper portion is made hollow, having relatively thin walls for reducing its weight and the amount of material used, ribs 4 being provided for its strengthening. It is preferably made of a coarse pulp mass prepared with ground pulpwood, waste paper stock or similar fibrous material. The mass, prepared with water or other suitable carrier, is poured into a matrix of a mould and compressed by a plunger mould portion, so that the product is obtained with a smooth, hard surface. Its edges are preferably provided with recesses and shoulders for accurately locating the bottom portion 2 which is made in a similar manner of a fibrous plastic composition. Solid blocks 5 may be provided in the upper portion 1 for screws 6 used for fastening hinges or similar fixtures 7. Similar blocks 8 may be provided for fastening rubber bumpers 9 (Fig. 11). Instead of using the material of the seat for forming screw holding blocks, separate inserts 10, Figs. 5 and 6, may be used. Such inserts can be made of wood or similar machinable material which possesses greater

strength than the material of the seat, especially if the latter is very light and porous. They are held in place by special ribs 11.

A similar insert 12 is shown for screws 6 fastening rubber bumpers 9 as shown in Fig. 11, special ribs 13 being used for retaining the inserts in place.

Separate inserts 14 made of wood or similar material, Fig. 9, may be placed into the body of the seat from the outside, by drilling suitable holes and placing the inserts in the holes with glue or cement. Such inserts are placed preferably at right angles to the screws.

Metal studs or bolts 15, Fig. 7, can be permanently moulded into the material of the seat; or, if preferred, nuts 16, as shown in Fig. 8. A modified arrangement of such nuts is shown in Fig. 10.

The upper portion 1 may be provided with ribs or webs 17 fitting in corresponding recesses in the upper portion 1, thereby exactly positioning the lower portion in relation to the upper part, or the lower portion 2 may be provided with beads 18 fully recessed into the upper portion as shown in Figs. 7 to 10, so that the upper portion will have an unbroken side surface and may even be provided with a rounded lower edge at 19, Fig. 7.

A fine hard finish may be provided for seats when the latter are made of a coarse, porous pulp mass, by placing a layer of a plastic cementitious material into the cavity of the mould prior to pouring the mass, so that the plastic material 20, Fig. 12, becomes embedded in the pores of the mass 21 at the surface of the article.

A fine finish can be also obtained by drying first the moulded portion, then applying to its surface a layer of a suitable coating, as by painting, spraying or dipping, and compressing again in the same mould in order to force the coating into the pores of the material and imparting a smooth finish to the coating.

I have also found that hollow toilet seats can be made by the following method:

A fibrous mass is prepared, using ground pulpwood, waste paper, etc., or a mixture of various fibrous ingredients, suspending this material in a weak solution of liquid glass or sodium silicate. The mass is then poured into a mould made of a porous material such as plaster of Paris, filling the mould and letting it stay for several hours until the fibrous mass settles on the walls of the mould in the form of a more or less thick layer, depending on the consistency of the mass, the water being largely absorbed by the mould. The thus obtained hollow article is removed from the mould and dried. It can be finished on the outside by grinding and polishing or by covering it with a heavy coating of a suitable enamel. Instead of grinding, however, the product can be covered with a layer of a cementitious plastic material and compressed in a steel mould to a final shape, the plastic material acquiring a smooth, glossy surface in the mould.

Another method of making toilet seats is shown in Fig. 13. The mould 22 is made of metal or other suitable material and is lined with a metal mesh or other porous material 23, sufficiently fine to retain the fibers in the mass, but allowing escape of the liquid. The latter is conducted by a number of channels 24 into a common receptacle. The upper or plunger portion 25 of the mould is also lined with a mesh 26 and is also provided with ducts or channels 27 for conducting the liquid away. The mould is filled with a relatively thick mass, which is then compressed by the plunger 25. The pressure must be applied slowly so as to let the water escape through the channels. The product bears marks of the mesh on its surface and must be ground smooth or reformed in a smooth steel mould with a layer of a plastic composition on its surface.

The material of the seats can be reinforced with a light wire mesh 28, as shown in Fig. 12.

The seat can be also made of metal such as aluminum, steel, etc., stamped in hollow sections joined together as by brazing, welding, etc.

The seat covers are made in a similar manner as shown in Figs. 2 and 4, consisting of an upper hollow portion 29 and a flat lower portion 30, the upper portion having reinforcing ribs 31. It is understood, therefore, that the term "toilet seat," as employed herein, implies also seat covers and similar articles in general.

It is understood that my toilet seat may be further modified without departing from the spirit of my invention, as set forth in the appended claims.

I claim as my invention:

1. A toilet seat comprising a hollow convex member and a relatively flat lower member, the lower member having a transversely shaped peripheral edge, the upper member having a recess abutting the outer side of the edge of the lower member and having a shoulder abutting the upper corner of the edge of the lower member, the outer member fully covering the edge of the lower member and being connected thereto.

2. A toilet seat comprising a hollow convex member and a relatively flat lower member, the lower member having a transversely shaped peripheral edge, the upper member having a recess abutting the outer side of the edge of the lower member and having a shoulder abutting the upper corner of the edge of the lower member, the lower member having an upward extending bead at the edge engaging a corresponding groove in the upper member, the outer member fully covering the edge of the lower member and being connected thereto.

3. A toilet seat comprising a hollow convex member and a relatively flat lower member, the lower member having a transversely shaped peripheral edge, the upper member having a recess abutting the outer side of the edge of the lower member and having a shoulder abutting the upper corner of the edge of the lower member, the outer member fully covering the edge of the lower member and being connected thereto, and inserts made of a machinable material supported in the upper member and adapted to receive screws for fastening hinges.

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