Nov. 20, 1923. 1,474,860

J. W. TALBOT

METHOD OF MANUFACTURING COMPOSITION TOILET SEATS AND SIMILAR ARTICLES

Filed Jan. 13, 1921

Fig. 1

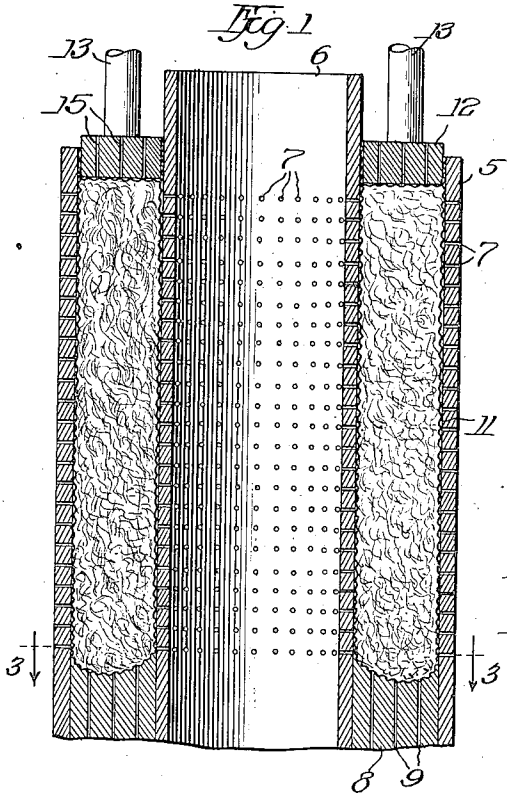


Fig. 2

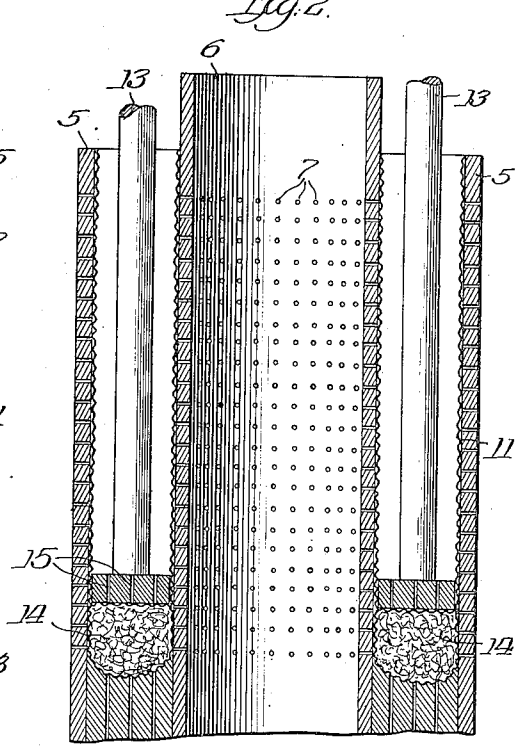


Fig. 4

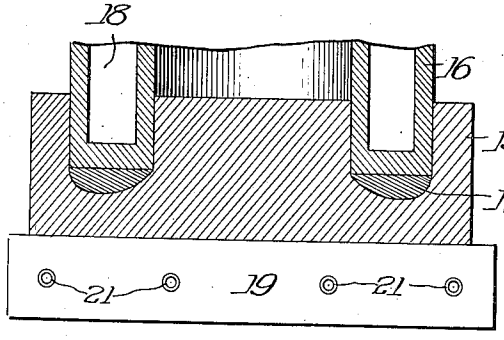


Fig. 3

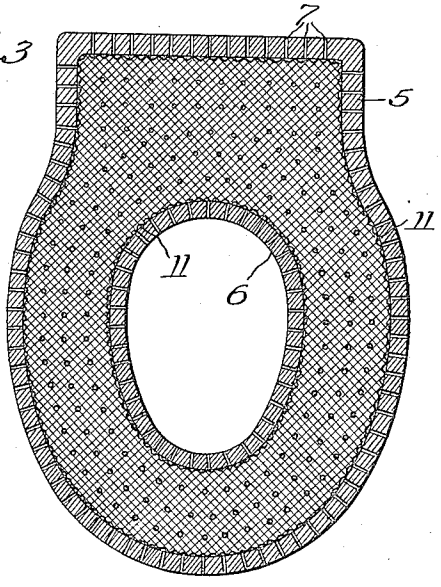
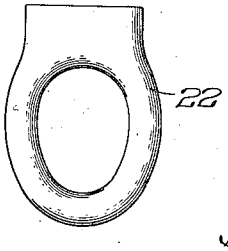


Fig. 5



Witness:
Fred C. Dorsey

Inventor
John W. Talbot
By Dana J. Wilson Atty

Patented Nov. 20, 1923. 1,474,860

UNITED STATES PATENT OFFICE.

JOHN W. TALBOT, OF CHICAGO, ILLINOIS.

METHOD OF MANUFACTURING COMPOSITION TOILET SEATS AND SIMILAR ARTICLES.

Application filed January 13, 1921. Serial No. 437,073.

To all whom it may concern:

Be it known that I, JOHN W. TALBOT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Manufacturing Composition Toilet Seats and Similar Articles, of which the following is a specification.

This invention relates in general to toilet seats, toilet seat covers, and other articles of a similar nature, and has more particular reference to a method of producing a composition article which will possess all of the desirable characteristics inherent in similar articles made of wood, but which can be produced at a much less cost than a wooden one, and which will not check, warp, become unglued, or absorb moisture, one which will receive and hold screws by which the fixtures may be attached, and one which will be durable in use and attractive in appearance.

Other objects and advantages of my method and an article produced in accordance therewith will be readily appreciated as the same becomes better understood by reference to the following description when considered in connection with the accompanying drawings:

Referring to the drawings:

Fig. 1 is a vertical sectional view through a mould, by means of which the material employed is subjected to the initial compression;

Fig. 2 is a similar view showing substantially the amount of compression to which the material is subjected in the initial compression operation;

Fig. 3 is a transverse sectional view taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary view showing the heated dies employed in the final compression operation; and

Fig. 5 is a plan view of a toilet seat produced by my improved method.

In the manufacture of a composition toilet seat, in accordance with my invention, I contemplate the employment of paper pulp as the basis of the composition, and this pulp is admixed with and subjected to the action of certain substances which produce a binder throughout the article, serving to hold the fibres of the paper pulp together in a compact, homogeneous mass, while at the same time rendering the article waterproof and enabling the production thereon of a smooth, glossy, polished finish which lends attraction to the appearance of the article.

While I am aware that resinous substances have heretofore been employed in the manufacture of composition articles of various kinds, these resinous materials have customarily been dissolved in a suitable solvent, and in that condition intermixed with the material forming the basis of the article. The use of a solvent, however, possesses certain disadvantages, among which may be mentioned the expense of the solvent, the fact that the solvent performs no function in the completed article but must be volatilized therefrom before the article is finished, thus adding to its cost, and if the solvent is not completely removed from the article before it is finished, it will eventually set up a decomposition in the article and will furthermore, produce injurious effects upon any finish which may be applied to the surface of the article.

My invention contemplates the elimination of all of these objectionable features inherent in the use of a solvent, by employing the resinous binder in powdered form, which is thoroughly intermixed with the paper pulp, and thereafter at a subsequent stage in the manufacture, the partially finished article is subjected to the action of heat sufficient to melt the powdered resinous binder and cause it to flow and thoroughly intermingle with and permeate the fibres of the paper pulp, thereby binding them together into a compact, homogeneous mass, which possesses great strength and durability, said mass being substantially impervious to moisture, and because of the resinous binder, being capable of receiving a highly polished finish.

The resinous binder contemplated by my invention is in itself a composition consisting of a mixture of fatty acid pitch and a resinous substance, such as rosin, a resin gum, or for some purposes shellac or varnish rosin might be used, or as an alternative, an asphalt derivative. While rosin alone might be employed, it does not give as satisfactory results as a composition of rosin or a resin gum mixed with a fatty acid pitch, which, when melted together, produce a tough, brittle composition, capable of being readily and finely pulverized. After producing this composition by melting together a fatty

acid pitch, or a resin, or resin gum in substantially the proportions of one part of pitch to two of rosin, as a resin, the composition is thoroughly pulverized into a fine powder. This resinous binder in powdered form is then thoroughly mixed without a solvent with the proper proportions of paper pulp produced from waste paper thoroughly macerated and incorporated in an excess of water. The powdered resinous binder is thoroughly mixed with the paper pulp, preferably in approximately the proportion of two parts of pulp to one part of binder.

The resultant pulp mass, or such proportion thereof as is requisite to produce the desired article, is placed in a mould or press, wherein it is compressed into rough shape and of a thickness considerably greater than that of the completed article. The mould illustrated in Figs. 1 to 3 inclusive of the drawing, is shaped to produce a toilet seat, and comprises as shown, an open top chamber surrounded by an outer wall 5 of the desired contour and an inner wall 6 of substantially elliptical shape. Both the inner and outer walls are provided with a series of perforations 7, and the bottom 8 of the chamber is also equipped with perforations 9. These perforations are for the purpose of permitting the escape of surplus water when the pulp is compressed in the mould, and in order to prevent the pulp from entering the perforations and stopping them up, the walls of the chamber containing the pulp are preferably lined with a fine mesh wire screen, indicated by reference character 11.

The pulp mass is introduced into the chamber in the mould and there subjected to pressure produced by a downwardly moving die 12 carried upon suitable supports 13, which are forced downwardly under hydraulic or other heavy pressure to compress the mass within the mould from the volume shown in Fig. 1 to substantially that shown in Fig. 2, wherein the compressed mass in the form of a roughly shaped article is indicated by reference character 14. The die 12 is also provided with perforations 10 to permit the escape of surplus water, which is forced out of the pulp mass during its compression.

The initial compression of the pulp mass is performed without the application of heat thereto, and a pressure of approximately 75 to 100 tons is exerted upon the mass during compression.

The partially formed article 14 is then removed from the mould and first dried to dispose of moisture still remaining therein, and after being dried, it is subjected to a high temperature, preferably in an oven, wherein the article is baked so that the resinous binder is melted under this high temperature and caused to flow so as to thoroughly permeate and impregnate the interstices and fibres of the article to bind and unite them into a substantially homogeneous mass. The melting of the binder resulting in its thorough and uniform distribution throughout the article, serves not only to unite and bind together the fibres, but also renders the article waterproof and produces an exterior surface which can be smoothed and finished, as will be later explained.

After being subjected to this high temperature in the baking oven for the requisite length of time, the partially formed article is removed and subjected to a second compression operation while hot. The dies by which this final compression is performed are illustrated in Fig. 4, from which it will be observed that the lower die consists of a block 15 having an annular die recess therein and an annular male die 16 adapted to cooperate in the recess of the die block to compress the partially formed article 14 to the dimensions of the finished article which is indicated in Fig. 4 by reference character 17. In order to keep the material being operated upon in a heated and somwhat plastic condition during this final compression, both of the dies are kept hot in some suitable manner. In the present instance, I have shown the male die as provided with a hollow chamber 18 into which steam or other hot fluid is introduced, and the die block 15 is seated upon a steam table or plate 19 to which steam is supplied through suitable connections 21.

After being finally compressed to the desired dimensions under a pressure of approximately 100 tons, the article is removed and its surfaces are smoothed or finished by a hot tool which burnishes and polishes the surfaces of the seat. This tool may be of any preferred construction and is not shown on the drawings, but preferably, it consists of a burnishing wheel which is heated and maintained at a predetermined temperature so that during its operation, the resinous binder at and near the surfaces is partially melted and is worked and distributed over the surfaces of the article to form a smooth and glossy exterior.

The finished article is indicated by reference character 22 in Fig. 5 and because of its composition and structure, it is adapted to receive and hold screws or other fastening means by which the fixtures are customarily attached to the seat. The seat may be used without further finishing, if desired, but since it has become customary to have these seats enameled in white, mahogany or other colored finishes, I prefer in most instances, to apply to the smooth surfaces of the seat finished as before described, a coating of enamel of the desired color which may be baked thereon in the usual manner. The

character and color of the finishing coat, however, may be modified to suit the requirements of the trade.

It will be apparent that by my improved method, I am enabled to produce a seat which will neither check, warp or come unglued, as wooden seats are accustomed to do; furthermore, that the seat is impervious to moisture, is adapted to receive and maintain the screws by which the fixtures are attached, that it is more durable than a wooden seat, is not much if any heavier, and can be produced at practically one half the expense of a wooden seat. The method of producing such a seat will, it is believed, be understood from the foregoing without further description, but obviously, the method may be varied within considerable limits without exceeding the scope of the invention as set forth in the following claims.

I claim:

1. The method of making composition toilet seats and similar articles, which consists in producing a paper pulp, thoroughly mixing therewith a resinous binder in powdered form, compressing the resultant pulp mixture in perforated moulds to extract the water therefrom, subjecting the thus partially formed article to heat whereby the resinous binder is melted and caused to permeate the article, further compressing the article while hot to the desired dimensions, burnishing the surface thereof with a hot tool, and applying a coat of finishing material thereto.

2. The method of making composition toilet seats and similar articles, which consists in mixing a resinous binder in powdered form with paper pulp, subjecting the pulp to pressure and heat to form an article and melt the binder therein, and burnishing the surface of said article with a hot tool.

3. The method of making composition toilet seats and similar articles, which consists in mixing a resinous binder in powdered form with a paper pulp, subjecting the mixture to an initial pressure to produce a partially formed article, melting the resinous binder incorporated in said article by subjecting the same to heat, compressing said article while hot to the desired dimensions, and finishing the surface thereof.

4. The method of making composition toilet seats and similar articles which consists in mixing a resinous binder in powdered form with paper pulp, initially compressing same into rough form, baking said partially formed article to melt the powdered binder, further compressing the article while hot to the desired dimensions, burnishing the surface thereof with a hot tool, and applying a finish to the burnished surface.

5. The method of making composition toilet seats and similar articles, which consists in melting together a fatty acid pitch and a resinous substance to produce a brittle composition, pulverizing said composition, mixing said pulverized composition in powdered form with paper pulp, compressing the resultant mixture into a roughly formed article, subjecting said article to heat to melt said powdered composition, compressing the article while hot to the desired dimensions, and finishing the surface thereof.

6. The method of making composition toilet seats and similar articles, which consists in melting together one part of a fatty acid pitch with two parts of a resinous substance, pulverizing the resultant composition, mixing said composition with paper pulp in substantially the proportions of two parts of pulp to one of composition, partially compressing the resultant mixture into an article of rough form, subjecting the article to heat whereby the resinous composition is melted and caused to permeate the article, subjecting the article while hot to final compression to produce an article of the desired dimensions, burnishing the surface of said article with a hot tool, and applying a finishing coat thereto.

JOHN W. TALBOT.