Feb. 2, 1937. G. W. CARLSON 2,069,301

TOILET SEAT

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Fig. 1.

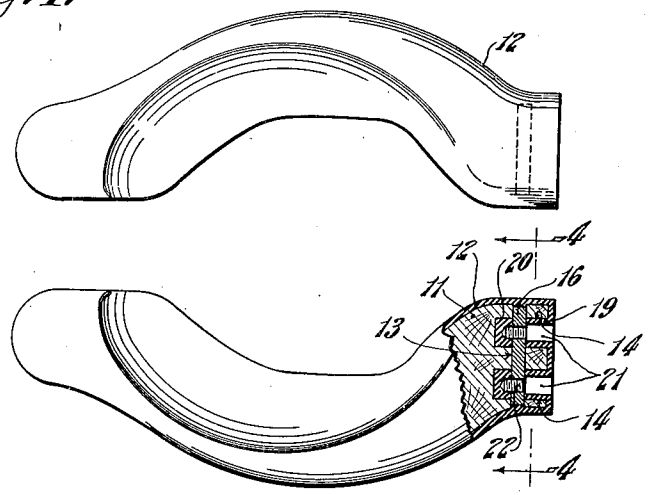

Fig. 2.

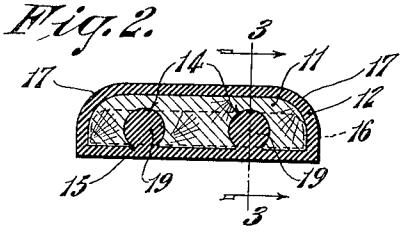

Fig. 3.

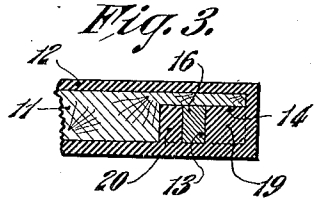

Fig. 4.

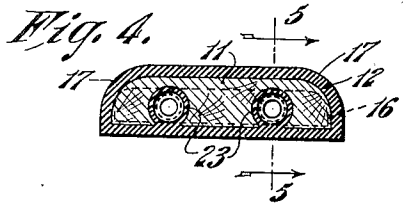

Fig. 5.

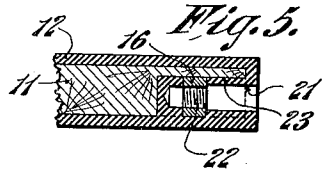

Fig. 6.

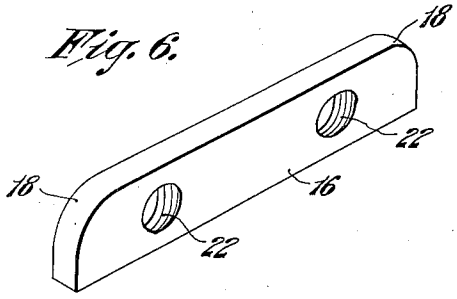

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Fig. 7.

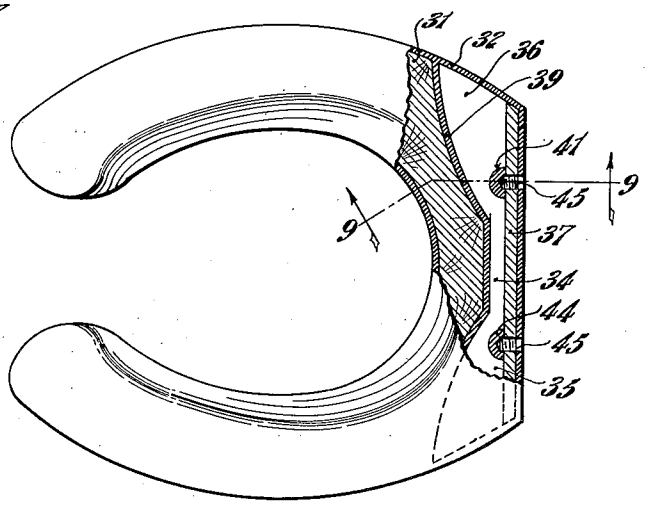

Fig. 8.

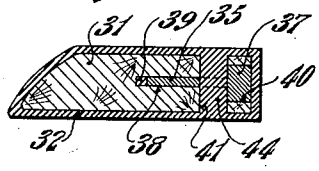

Fig. 9.

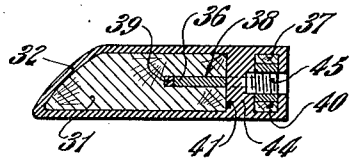

Fig. 10.

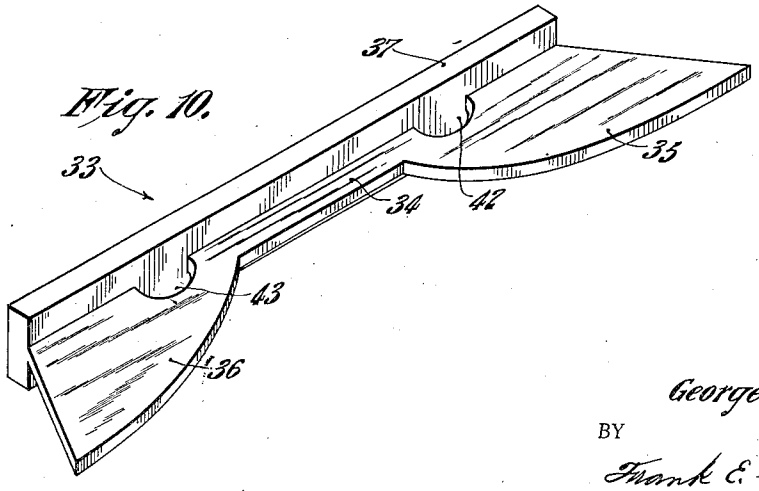

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Fig. 11.

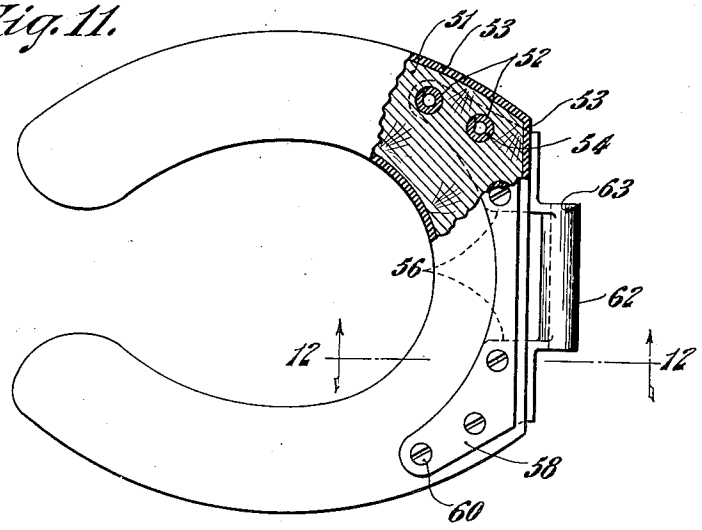
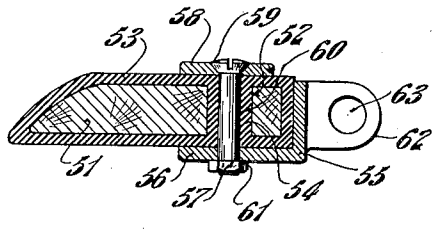


Fig. 12.



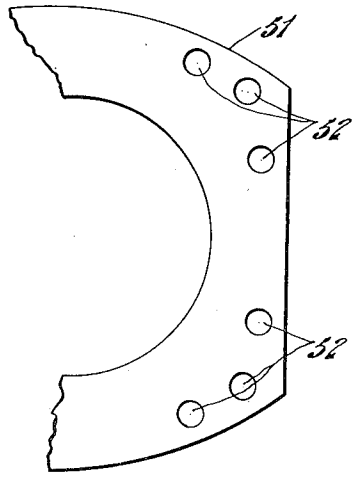


Fig. 13.

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UNITED STATES PATENT OFFICE

2,069,301

TOILET SEAT

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Application September 6, 1933, Serial No. 688,363

13 Claims. (Cl. 4—237)

This invention relates to toilet seats of the type having a core of wood or other similar material chosen because of its lightness but having the property of rapidly decaying or rotting away when exposed to moisture and having a coating or envelope of plastic, decay resistive material such as hard rubber. The invention particularly relates to seats of this type which have hinge members secured thereto, after the seat has been fabricated, by means of machine screws or similar fastening devices. Such hinge members may be either coated with hard rubber like the seat or they may have a metal finish such as nickel plate or chrome plate. The hinge member may be attached to the seat by the seat manufacturer or the seat may be sold by the seat manufacturer to a purchaser who obtains the hinge member from other sources and attaches it himself.

In seats of the character described in the foregoing paragraph there has been heretofore considerable difficulty experienced in preventing moisture from entering the opening provided for the attaching means and from reaching the wood and eventually causing the decay thereof.

It is one of the objects of the present invention to provide a seat of the character described in which water cannot reach the wood core and cause deterioration and decay.

It is a further object of the invention to provide a seat in which the wood core is completely protected from moisture prior to the attaching of the hinge so that the core will always be moisture proof regardless of any carelessness in workmanship in attaching the hinge member or poor quality of fit in the hinge member.

It is a further object of the invention to provide strong, rugged and durable attaching means for such seats.

It is also an object of the invention to provide a seat of the character described which shall be simple and economical to manufacture, attractive in appearance, and one that shall have a long life in service.

The foregoing and other objects of the invention will appear to those skilled in the art to which it appertains from a consideration of the description of the different embodiments thereof given in the following specification taken in connection with the accompanying drawings in which,

Fig. 1 is a plan view of an open front-and-back toilet seat embodying the invention and having one side thereof partly broken away;

Fig. 2 is an enlarged section, showing a seat as it comes from the mold and before any machine work has been done thereon, taken on the same line as 4—4 of Fig. 1;

Fig. 3 is a section taken on the line 3—3 of Fig. 2;

Fig. 4 is an enlarged section, taken on the line 4—4 of Fig. 1 showing the seat as it appears after the machine work has been completed;

Fig. 5 is a section taken on the line 5—5 of Fig. 4;

Fig. 6 is a perspective view of the metallic insert as it would appear after it had been removed from a completed seat by destroying the rubber in which it had been embedded;

Fig. 7 is a plan view of a closed-back seat, partly broken away, embodying a modified form of the invention;

Fig. 8 is an enlarged section, showing the seat as it comes from the mold and before any machine work has been done thereon, and is taken on the same line as 9—9 of Fig. 7;

Fig. 9 is an enlarged section taken on the line 9—9 of Fig. 7 and is similar to Fig. 8 but shows the parts as they appear after the machine work has been done thereon;

Fig. 10 is an enlarged perspective view of the metallic insert of Fig. 7 as it appears when placed in the seat and before any machine work has been done thereon;

Fig. 11 is another modified form of the invention showing in a plan view a closed-back seat partly broken away;

Fig. 12 is a vertical section taken on the line 12—12 of Fig. 11; and

Fig. 13 is a plan view of the wooden core shown in Figs. 11 and 12 before the enveloping coating has been molded therearound.

Referring to the drawings more in detail, the reference character 11 indicates wing-like cores of wood or similar material which are covered throughout with a coating 12 of rubber or other plastic material to enhance the appearance and increase the durability of the seat. Near the rear of each core 11 a vertical slot 13 is provided which extends upwardly from the under side of the core and also extends transversely substantially the entire width of the core. Each core 11 is also provided with one or more openings 14 which may be conveniently drilled or bored from the rear edge of the core and which extends horizontally through and beyond the slot 13 into the wood of the core on the side of the slot toward the front of the seat. These openings are positioned nearer to the bottom side of the core 11 than to the top side and they are open to the outside of the core on the under side thereof as

indicated at 15. A metallic plate or insert 16 is positioned within the slot 13 and serves as a reinforcing member for the core and as a member to which the hinge member to be presently described may be fastened. It will be noted that the upper side of the seat has both corners 17 rounded and the plate or member 16 has its corresponding corners 18 also rounded so that it may extend substantially across the entire width of the seat without protruding at the corners. It should be stated that the member 16 is not provided with the tapped holes as shown in Fig. 6 when it is first placed in the slot 13 in the core 11.

With the plate or member 16 in place in the core the rubber coating is molded about the core and plate. At the same time the rubber is pressed or flows into the openings 14 on both sides of the plate or insert 16, the cylindrical portion of rubber on the side of the plate toward the rear being indicated at 19 and that portion toward the front being indicated at 20. It will be noted that the rubber flows into the space provided therefor from the rear edge of the seat and also through the opening on the under side of the seat at 15. The appearance of the seat at this stage of manufacture is shown in Figs. 2 and 3. The seat is then drilled from the rear at the center of the cylindrical portions 14 now filled with rubber with the proper size drill for tapping the plate 16 for machine screws, the drill preferably extending into the portion 20 a slight distance so that the machine screws will utilize the full thickness of the metal of the plate 16 for holding purposes. The portion 19 of rubber toward the rear is then drilled or reamed to provide an opening 21 of a diameter which will readily receive the body size of the machine screw. Finally the plate 16 is tapped as indicated at 22.

It will be seen that this method of manufacture leaves the openings for the machine screws which hold the hinge member to the seat entirely lined with the rubber coating which covers the outside of the seat. There is a lining of rubber 23 around the opening 21 on the side of the plate 16 which is nearest the rear of the seat which lining extends from the outside coating 12 to the plate 16 and completely protects the wood core 11 at this part of the seat. In a similar manner the portion 20 completely surrounds the tapped opening therein and is molded against the plate 16 so as to effectually seal the core 11 from the entrance of any moisture which might enter through the opening for the screw.

In the form of seat shown in Figs. 7 to 10 inclusive, which is of the closed rear type, there is provided a single core 31. This is covered with a coating 32 of rubber. The general form of insert 33 provided in this case is shown in Fig. 10 and comprises a plate 34 having two wings 35 and 36 reinforced by a rib 37 extending across the back and integral with the plate. The wood core 31 is provided with a slot 38 extending inwardly from the rear of the seat to receive the plate 34 with its wings 35 and 36. The slot is preferably cut into the core a little deeper than the corresponding dimension of the plate so that a portion of the rubber can flow into the space thus left as indicated at 39 and bind the insert 33 firmly in place in the core. The rear of the core 31 is also provided with a recess 40 for the rib 37. The core 31 has a pair of vertically extending passages 41 positioned so that they will lie adjacent to the rib 37 when the insert 33 is in place as will be clearly seen from an inspection of Fig. 7. The wing 35 is provided with an aperture 42 and the wing 36 is provided with an aperture 43 so positioned that when the insert 33 is in place in the core the apertures 42 and 43 are in vertical alinement with the respective passages 41 and thus provide a pair of unobstructed openings from the top to the bottom of the core 31.

After the insert 33 has been put in place the rubber is molded around the core and insert filling the passages 41 in the core and the apertures 42 and 43 in the wings 35 and 36 and also filling the space at 39. There is thus provided a bond of rubber 44 in each of the passages 41 between the upper and lower coatings of rubber. The seat after the molding operation appears as shown in Fig. 8. Holes 45 are then drilled and tapped from the rear of the seat which holes extend through the coating 32 at the rear of the seat, through the rib 37 of the insert, and into the bond of rubber 44 behind the rib 37. It will be noted that no matter how carelessly a hinge member may be secured to the rear of the seat there is no possibility of any moisture passing along the screw used for securing the hinge and reaching any part of the wood.

In the modification shown in Figs. 11, 12, and 13 there is a wood core 51 through which there are provided a plurality of vertically disposed apertures 52. During the molding operation which applies a coating 53 of rubber or other material to the outside of the seat there is also molded as a lining to each of the apertures 52 a cylindrical sleeve or lining or coating of rubber 54. A hinge member 55 is provided with a pair of horizontally disposed plates 56 adapted to rest against the under side of the seat and each plate has a plurality of apertures 57 which register with the rubber coated apertures 52. A plate 58 is positioned above the seat and has a plurality of apertures 59 which also register with the apertures 52. The plates 56 of the hinge member and the plate 58 are held rigidly together and to the seat by means of bolts 60 and nuts 61. It will be noted that the lining 54 serves the double purpose of protecting the wood from moisture and also bonds the upper coating of rubber to the lower coating of rubber and greatly reduces the tendency for the rubber coating to break away from the wood core. As shown in the drawings the hinge member 55 is provided with a rearwardly extending portion 62 through which extends a cylindrical opening 63 for the reception of a bearing pintle but the precise form of hinge construction is not part of the present invention as it is obvious that various other forms of hinge construction may be employed as well as the form shown.

While the foregoing description has been particularly directed to toilet seats it is to be understood that the same construction is also applicable to toilet seat covers and it is the intention of the present specification and claims to include toilet seat covers as well as toilet seats wherever the language is not inconsistent with such intention.

It is to be understood that the hereinbefore described embodiments of the invention are for the purpose of illustration only and various changes may be made therein without departing from the spirit and scope of the invention as defined in the subjoined claims.

I claim:

1. In a toilet seat adapted to have a hinge member secured thereto by means of a plurality of externally threaded metallic members engaging with an internally threaded metallic member,

a wood core for said seat having a plurality of apertures therein in each of which a portion of one of said externally threaded metallic members is adapted to be positioned, and a coating of plastic composition extending over said core and lining the internal walls of said apertures with one continuous unbroken coating.

2. The process of making a toilet seat having a wood core which comprises forming apertures in the wood core to receive screw threaded members for holding a hinge member, and coating said core and lining said apertures, wherever the wood is exposed, prior to the insertion of said screw threaded members into said apertures, with a continuous unbroken coating of plastic material.

3. The process of making toilet seats which comprises forming horizontal apertures in a wood core which enter the core from the rear edge thereof, forming a slot extending upward from the bottom side of the core and cutting across said apertures, positioning an anchoring member in said slot, molding a coating of plastic material around said core and in said apertures, and drilling out said apertures and tapping said anchoring member for the reception of screws for securing a hinge member to said seat.

4. The process of making toilet seats which comprises forming horizontal apertures in a wood core which enter the core from the rear edge thereof and are connected to the outside of the core at the bottom side thereof, forming a slot extending upward from the bottom side of the core and cutting across said apertures, positioning an anchoring member in said slot, molding a coating of plastic material around said core and in said apertures, drilling out said apertures and tapping said anchoring member for the reception of screws for securing a hinge member to said seat.

5. A toilet seat comprising a wood core, an anchoring member positioned within said core a spaced distance from the rear edge thereof, said core having apertures extending from the rear edge thereof to said member, said member having a tapped hole in alinement with each of said apertures, said core being coated with a plastic material which extends into and lines the walls of said apertures.

6. The process of making a toilet seat which comprises forming a horizontal slot in a wood core which extends inwardly from the rear edge of said core, forming a recess in the rear edge of said slot, forming vertical passages in said core which pass through said slot just within said core from said recess, positioning a member having a plate and rib so that the plate is in the slot and the rib in the recess, molding a coating of plastic material around said core and member with the material extending through said passages, and tapping said member for holding screws through said member and into the plastic material in the passages.

7. A toilet seat comprising a wood core having a slot extending into the rear edge thereof and a recess at the rear edge thereof, an insert with a plate positioned in said slot and a rib positioned in said recess, said core having vertical passages and said plate having apertures in register therewith, a plastic coating extending about said core and into said passages and apertures, said rib having tapped holes extending thereinto for holding screws and so positioned that the screws enter into said passages and apertures filled with plastic material.

8. In a toilet seat, a wood core, a coating of plastic composition extending over said core, a metallic insert positioned within said core and having threaded apertures therethrough for the securing thereto of a hinge member, the rubber coating extending around the aperture on both sides of the insert.

9. In a toilet seat, a wood core, a coating of plastic composition extending over said core, a metallic insert positioned within said core and having threaded apertures therein for the securing thereto of a hinge member, the rubber coating extending to the insert at all points where the aperture is entering or emerging from the insert.

10. A toilet seat comprising a wood core having apertures extending from one side of the core to the other side thereof, and a coating of plastic material extending around said core and lining said apertures.

11. In combination, a toilet seat having apertures extending from one side to the other side thereof, a hinge having complementary portions positioned on opposite sides of said seat, screw threaded members extending through said apertures and fastening said complementary members together and to said seat, the seat having a coating and the apertures a lining of plastic material which is continuous and unbroken throughout.

12. A toilet seat comprising a wood core, a hinge member adapted to be secured thereto, screw-threaded members for holding said hinge member to said seat, said core having apertures for the reception of said screw-threaded members, metallic fastening means having tapped openings therein for engagement by said screw-threaded members for holding said hinge member in place, and a plastic composition entirely covering said core and lining said apertures to protect the wood from moisture.

13. A toilet seat comprising a wood core, a hinge member adapted to be secured thereto, screw-threaded members for holding said hinge member to said seat, said core having apertures for the reception of said screw-threaded members, fastening means having tapped openings therein positioned for engagement by said screw-threaded members near the ends thereof, and a plastic composition entirely covering said core and lining said apertures to protect the wood from moisture.

GEORGE W. CARLSON.