No. 848,690. PATENTED APR. 2, 1907.

H. ROMUNDER.

WOOD COVERING OR FACING.

APPLICATION FILED MAY 27, 1904.

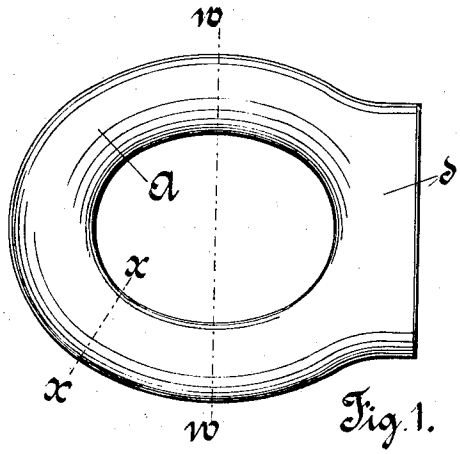

Fig. 1.

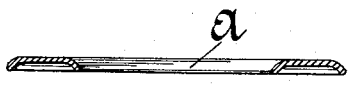

Fig. 2.

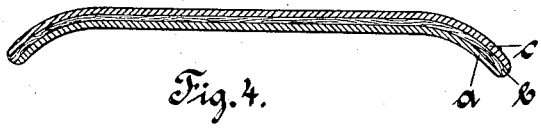

Fig. 4.

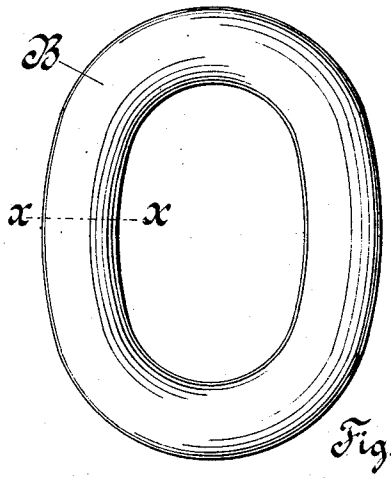

Fig. 3.

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WOOD COVERING OR FACING.

No. 848,690. Specification of Letters Patent. Patented April 2, 1907.

Application filed May 27, 1904. Serial No. 210,126.

To all whom it may concern:

Be it known that I, HERMANN ROMÜNDER, a citizen of the United States, and a resident of Milwaukee, county of Milwaukee, State of Wisconsin, have invented new and useful Improvements in Wood Coverings or Facings, of which the following is a specification.

This invention relates to a novel construction of sheets or plates of material for various purposes, and more particularly to the construction of facings, such as rims for vessels and railings of various kinds.

The objects of my invention are twofold—namely, first, to provide by a novel manner of assembling certain elements a new material for the construction of the aforenamed articles which shall be not only of a strong and durable character, but also impervious to moisture and atmospheric influences, and on the other hand to provide a structure composed of a wood base which shall combine minimum weight and bulk with a maximum of strength and durability. By the accomplishment of these objects I aim to avoid difficulties inherent in the use of ordinary wood for such structures as heretofore practiced, the same being subject to such defects as checking, splitting, warping, shrinking, swelling, and generally disintegrating.

To attain these objects, my invention involves two main features—to wit, first, the combination of thin wooden or fibrous veneers or plates placed in juxtaposition with crossed or reversed grains with a species of waterproofing compound which serves both as an adhesive and a protection against absorption of moisture. The manner in which these are combined will be hereinafter described. The other feature by which I attain my objects resides in the form into which I press the material so produced to produce a maximum of strength and durability.

My invention may best be understood from a consideration of the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a water-closet seat built according to my invention. Fig. 2 is a transverse section thereof on the line *w*. Fig. 3 is a plan view of a bath-tub rim according to my invention. Fig. 4 is a transverse section through one side of either of the forms shown in Figs. 1 and 3 on the line *x* and on an enlarged scale.

In these drawings every reference-letter refers always to the same part.

The structure of the material from which my invention is built is best shown in Fig. 4. In order to form this material, several sheets of fibrous material, generally wood veneer *a b c*, are taken and combined with a waterproof cementing composition in such manner that the composition thoroughly impregnates the grain of the wood and is absorbed by the pores thereof. For this purpose I prefer to use a compound of glue and potash; but I do not confine myself to the use of this compound.

The cementing composition may be caused to impregnate the wood in various ways; but the manner in which the procedure is ordinarily carried out is as follows: The composition being applied to the juxtaposed surfaces of the veneers, these are now subjected to simultaneous heat and pressure while such cement is still moist, and the heat causing it to expand, combined with the pressure which acts to squeeze it away from the surfaces between the layers of veneer, said cement is thus forced to enter the pores or interstices of the wood, completely filling the same. At the same time the wood being thus moistened and rendered pliable it is caused by suitable dies or other means to assume various shapes in accordance with the articles which are to be made from it. Several of these articles are shown in the drawings. In Fig. 1, for example, the seat A is given a double curvature around the rim or annular portion thereof, the edges being bent downwardly, so that it is convex upon its upper surface and concave on its lower surface, the back *d*, however, being left flat for the attachment of hinges. It will be understood that to cause the wood to assume such shape some fibers are necessarily stretched or extended and others compressed and forced together, whereby the original surface of single curvature becomes a surface of double curvature, which being non-developable upon a plane, as is well understood, is one of great strength and rigidity. In particular it is to be noted that the surface of double curvature given to the seat A in Fig. 1 and to the rim B in Fig. 3 is that known geometrically as a "torus-surface"—to wit, one generated by a curved line moving in a curved direction transverse to its own plane—and such surface, as is well understood, is of particularly great rigidity and enables me to accomplish my object of combining a maximum of firmness and strength with a minimum of weight. In a

similar manner the principles of my invention may be applied to all manner of wood trimmings, facings, coverings, and other objects into which the material while in the moist and pliable condition is capable of being bent by the combination of heat and pressure.

After being molded or formed to the proper shape, the heat and pressure being removed, the finished article is allowed to dry and thereafter becomes unchangeable except by actual breakage, being no longer subject to atmospheric influences, because the thorough impregnation of the wood by the cement makes it a substantially integral, homogeneous, and indivisible structure, The waterproof cementing composition binds the whole together, while repelling any moisture Thus it cannot warp or split, to which action compound veneers generally as heretofore made have always been subject. The cement serves not only to hold one veneer to another, but also to hold the fibers of each veneer to each other, thus acting as a cohesive as well as an adhesive.

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

1. A rim for basins and the like comprising a plurality of annular plates of veneer united by cement, and caused by heat and pressure to assume a surface convex on the upper side by the downpressing of the edges thereof.

2. A rim for basins and the like comprising a plurality of annular fibrous plates united by a waterproof cement, and caused by heat and pressure to assume a convex upper surface and to become impregnated throughout with said waterproof cement.

3. An improved closet-seat comprising a plurality of annular fibrous plates united by cement, the edges whereof are pressed downwardly under heat and pressure whereby the whole assumes a convex upper surface.

4. An improved closet-seat comprising a plurality of annular fibrous plates united by a waterproof cement which is caused to thoroughly impregnate said plates from the inner faces thereof by heat and pressure whereby it is rendered impregnable to moisture from the outside, and bent to a convex upper surface.

5. A rim for basins and the like comprising three annular plates of wood veneer having their grains crossed, the whole combined, united and thoroughly impregnated with a waterproof cementing compound whereby they are rendered impregnable to moisture from the outer surface, and the whole caused by heat and pressure to assume a convex upper surface.

Signed at the city and county of Milwaukee, State of Wisconsin, this 23d day of May, 1904.

HERMANN ROMÜNDER.

Witnesses:

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