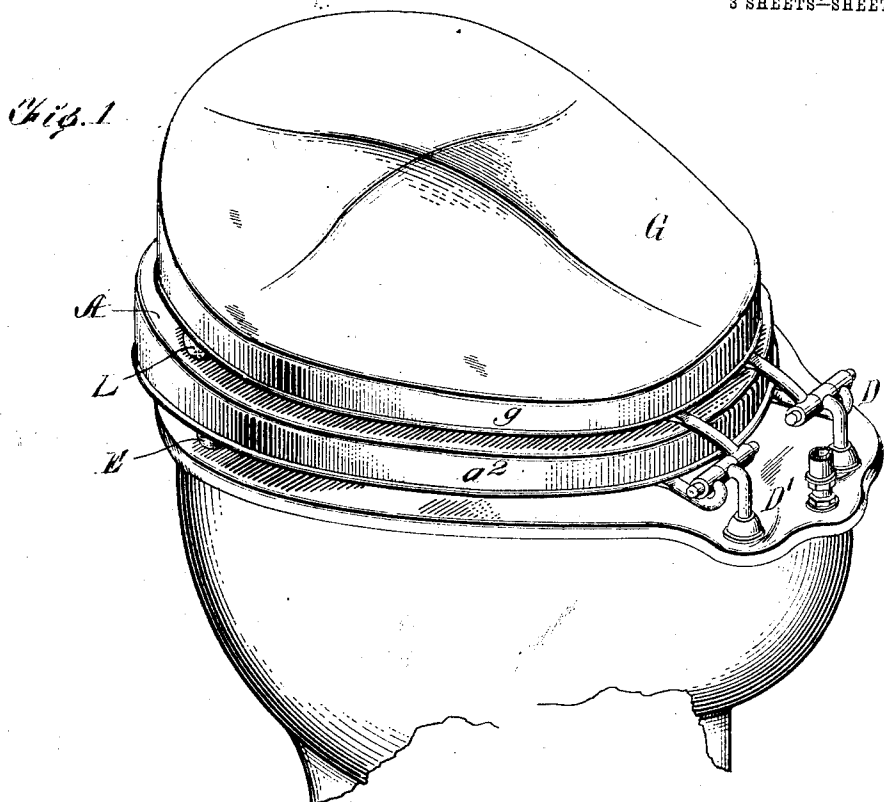
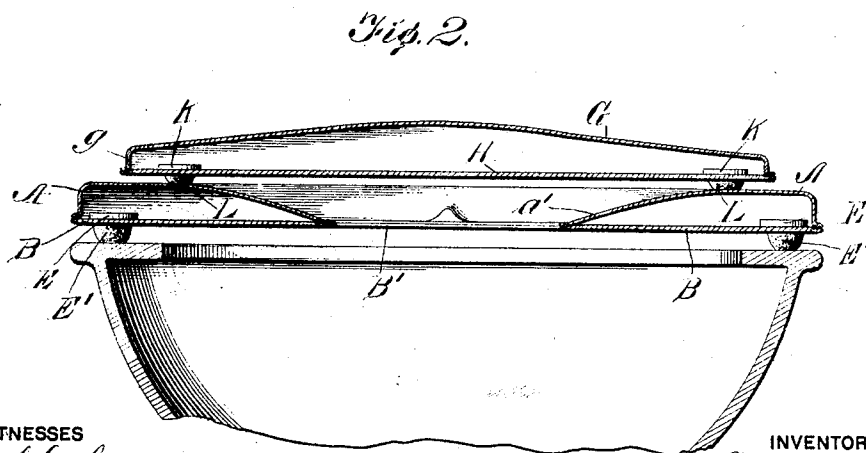


No. 840,032.

PATENTED JAN. 1, 1907.

C. WILLMS.
WATER CLOSET SEAT.
APPLICATION FILED AUG. 30, 1906.

3 SHEETS-SHEET 1.



WITNESSES
Paul Gathmann.

J. H. Finning

INVENTOR
Charles Willms.

BY HIS ATTORNEYS

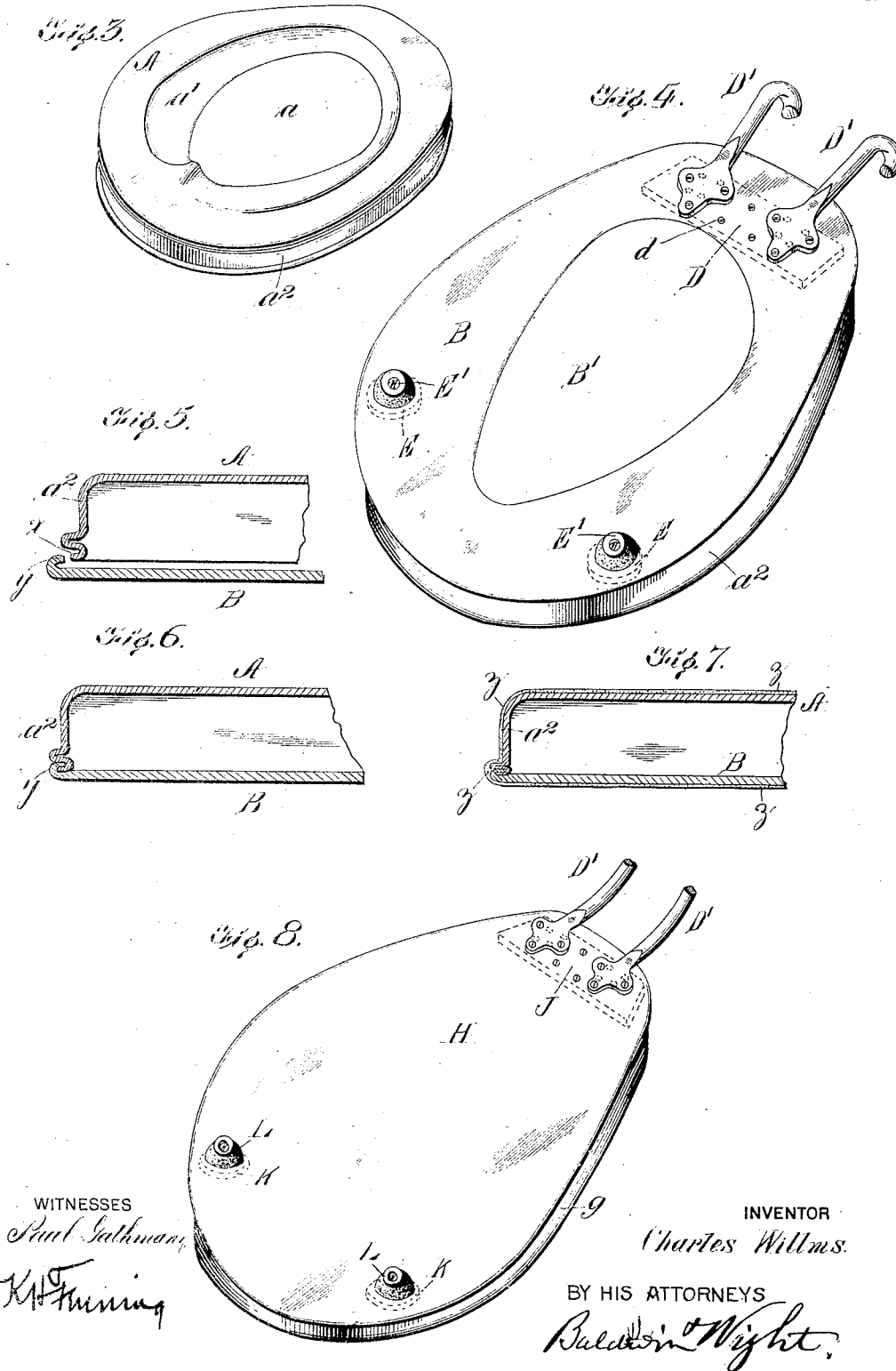
Baldwin Wright.

No. 840,032.

PATENTED JAN. 1, 1907.

C. WILLMS.
WATER CLOSET SEAT.
APPLICATION FILED AUG. 30, 1905.

3 SHEETS—SHEET 2.



WITNESSES
Paul Gathmann
K. F. Thuring

INVENTOR
Charles Willms.

BY HIS ATTORNEYS
Baldwin & Wright.

No. 840,032

PATENTED JAN. 1, 1907.

C. WILLMS.
WATER CLOSET SEAT.
APPLICATION FILED AUG. 30, 1905.

3 SHEETS—SHEET 3.

Fig. 9.

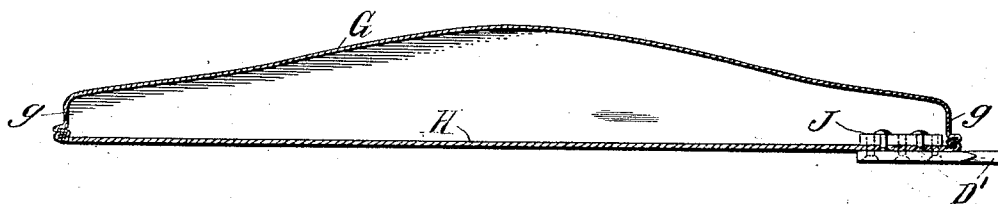


Fig. 10.

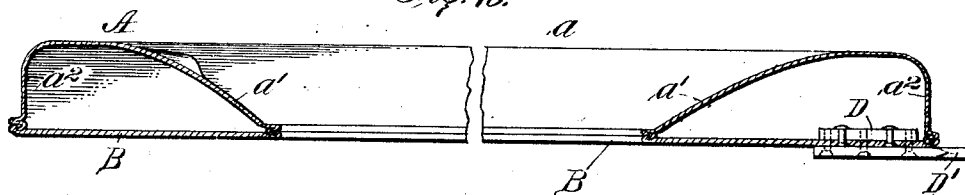


Fig. 11.

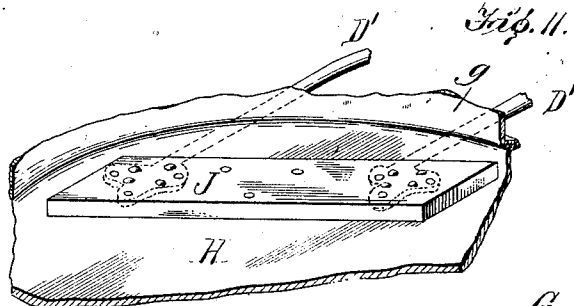
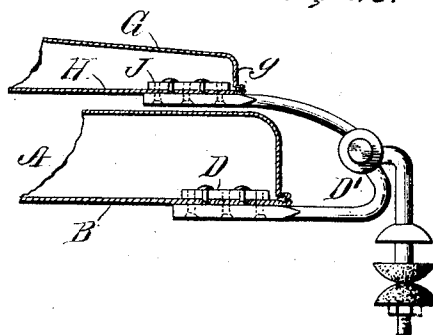


Fig. 12.



WITNESSES

Paul Gathmann.

R. H. Fanning

INVENTOR

Charles Willms.

BY HIS ATTORNEYS.

Baldwin Wright.

UNITED STATES PATENT OFFICE.

CHARLES WILLMS, OF BALTIMORE, MARYLAND.

WATER-CLOSET SEAT.

No. 840,032.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed August 30, 1905. Serial No. 276,369.

To all whom it may concern:

Be it known that I, CHARLES WILLMS, a citizen of the United States, residing in Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Water-Closet Seats, of which the following is a specification.

My invention relates to water-closet seats of the class in which the seat and its lid are hinged to the bowl. Such seats and lids are now usually made of wood and varnished; but they are liable to become broken and also to become stained or to absorb moisture, which renders them unseemly and unsanitary.

In my application for patent filed August 22, 1905, I have shown a seat and lid constructed of sheet metal and enameled. In this way the seat and lid, which may be economically manufactured, are rendered strong and durable, will present an attractive appearance, and can easily be kept perfectly clean and sanitary.

In the specific form of my invention shown in my application above mentioned both the seat and lid are formed with downwardly-projecting flanges which are reinforced by strengthening-strips, and cross-braces are employed to stiffen the structures. The braces are exposed, and both the lid and seat are concaved or dished on their under sides.

The object of my present invention is to form lids and seats of this general kind in which these braces and reinforcing-strips may be dispensed with and in which the bottoms of the seat and lid present flat or smooth surfaces which can be easily cleaned.

In carrying out my invention I form the top of the seat of relatively thin metal with a downwardly-projecting flange around its edge and a downwardly-inclined wall around the hole, and I connect this flange and wall at their lower edges with flanges formed on a bottom piece, preferably of thicker metal. In this way smooth surfaces are formed on both the upper and lower portions of the seat, and the requisite strength is obtained to resist all strains to which it may be subjected. The lid is formed in a somewhat similar way.

Instead of attaching the hinges to the rear portions of the flanges of the seat and lid, as heretofore, I secure reinforcing-plates to the inside of the bottom plates of the seat and lid and apply the hinges to these bottom plates, the attaching-screws passing through

the bottom plates into the reinforcing-plates. Without the use of such reinforcing-plates the hinges could not be securely applied unless the bottom plates were made thicker than is otherwise necessary. I also apply similar plates or disks to the bottom plates of the lid and seat to receive the screws that attach the cushions or buffers.

The seat and lid constructed as above described are before the attachment of the hinges and buffers thoroughly enameled or glazed on all exposed surfaces.

In the drawings, Figure 1 is a perspective view of the water-closet bowl with my improvements applied. Fig. 2 shows a vertical central section thereof. Fig. 3 is a perspective view of the seat looking from above. Fig. 4 is a perspective view of the seat looking from below. Figs. 5, 6, and 7 are detail views in section, showing particularly the manner of joining the two members of the seat. Fig. 8 is a perspective view of the lid looking from below. Fig. 9 is a longitudinal central section of the lid. Fig. 10 shows a longitudinal central section of the seat. Fig. 11 is a detail view in perspective, showing particularly the manner of securing the hinges to the lid. Fig. 12 is a detail view in section, showing the manner of securing the hinges to the lid and seat.

The seat is made in two principal parts, an upper member A and a lower member B. The upper member is made of thin sheet metal pressed, stamped, or otherwise formed into shape. It is made of thin metal in order that it may readily acquire heat, and thus avoid chilling the user. It will be observed that the upper member is shaped around the central opening or hole *a* to conform to the adjacent parts of the user, and it has all around the hole a downwardly-extending inclined wall *a'* and around the outer edge a downturned flange *a''*.

The lower member B is preferably formed of somewhat thicker metal than the upper member. It has a central opening *B'*, corresponding with the hole *a*, and it is joined to the upper member around its outer edge and around the hole by some suitable water-tight connection. Preferably the edges of the upper member around the outside and around the hole are formed with a triple bend, as shown, providing three thicknesses of metal and affording grooves *x* to receive the flanges *y*, formed at the edges of the lower member around the outside and around the hole.

This form of interlocking joint is indicated in Fig. 5, which shows the parts separated. In Fig. 6 the parts are shown interlocked. When thus interlocked, the joint is rolled down tight, so as to be waterproof, in order that when the seat is subjected to the pickling-bath preliminary to enameling none of the pickling liquid may leak to the inside.

As thus constructed the seat has the required shape; is tight and strong, and its joints are secure. If the lower member is made of metal sufficiently thick, the hinges and buffers may be secured to it; but I prefer not to use very heavy metal and to provide the seat with reinforcements where the hinges and buffers are applied. For this purpose I attach to the inside of the lower member near its rear end a reinforcing-plate D, and to the front part thereof I attach plates or disks E. These plates and disks receive the screws which attach the hinges D' and buffers E'.

As thus constructed the seat is ready for the pickling-bath, after which it is enameled in any well-known way, care being taken that all exposed surfaces and all joints are completely covered, as indicated at z in Fig. 7. After the enameling the seat is ready to receive the buffers and hinges, which are applied in the manner indicated, and for additional security screws d may be inserted from the outside to connect the plate D with the member B.

The lid or cover is formed in a somewhat similar manner. The upper member G is concavo-convex in contour in order to afford greater strength and to render it unsuitable for supporting water-pitchers and other vessels which domestics sometimes improperly leave standing on the lids of water-closets. Furthermore, the lid when thus shaped will easily shed water which may be spilled on it. The downwardly-projecting flange g of the lid is suitably formed all around its lower edge to connect with the edge of the lower member H. Preferably it is formed with a triple bend similar to that on the upper member of the seat, and the lower member is formed with a single bend or flange adapted to interlock with the bends on the upper member. In this way a secure water-tight connection may be obtained, and when the joint is compressed or rolled down sufficient strength is afforded to resist all strains. Preferably the lower member of the lid is made of thicker or stouter metal than the upper member.

In order to reinforce the lid at that portion to which the hinges are attached, I employ a reinforcing-plate J, which is riveted to the lower member H before it is attached to the upper member. The screws which attach the hinges to the lid pass through the lower member into the plate J, as shown in Figs. 11 and 12. Reinforcing plates or disks K are

also employed to receive the screws which attach the cushions or buffers L.

It will be understood that the lid is enameled after the plates J and K are attached and the two members joined before the hinge or buffers are applied.

I claim as my invention—

1. A water-closet seat constructed of sheet metal, comprising an upper member and a lower member with their edges securely joined, and enameled, substantially as specified.

2. A water-closet seat constructed of sheet metal, comprising an upper member and a lower member with their edges around the outside and around the hole securely joined, and enameled, substantially as specified.

3. A water-closet seat constructed of sheet metal, comprising an upper member and a lower member with their edges around the outside and around the hole interlocked and compressed, and enameled, substantially as specified.

4. A water-closet seat, comprising an upper member formed of thin sheet metal, and a lower member of thicker metal joined to the upper member, and enameled, substantially as specified.

5. A water-closet seat constructed of sheet metal, comprising an upper member and a lower member with their edges securely joined and a reinforcing-plate attached to the lower member to receive the hinge-attaching screws.

6. A water-closet seat constructed of sheet metal, comprising an upper member and a lower member with their edges securely joined, and reinforcing-plates secured to the lower member to receive the screws which attach the buffers.

7. A water-closet seat constructed of sheet metal, comprising an upper member of relatively thin metal having a downwardly-inclined wall around the hole and a downwardly-projecting flange around its edge, and a lower member of relatively thick metal joined to the edges of the downwardly-inclined wall, and the downwardly-projecting flange.

8. A lid for a water-closet constructed of sheet metal, comprising an upper and a lower member joined at their edges and enameled, substantially as specified.

9. A lid for a water-closet constructed of sheet metal, comprising an upper member formed with a downwardly-projecting flange around its edge, and a lower member joined at its edge to the downwardly-projecting flange of the upper member and enameled, substantially as specified.

10. A lid for a water-closet constructed of sheet metal, comprising a concavo-convex upper member, and a flat lower member joined at its edge to the upper member and enameled substantially as specified.

11. A lid for a water-closet, comprising an upper member formed with a downwardly-projecting flange around its edge and a lower member of relatively thick metal joined at its edge to the upper member and enameled, substantially as specified.

12. A lid for a water-closet formed of sheet metal, comprising a flanged upper member, a lower member joined at its edge to said flange

and a reinforcing-plate applied to the lower member to receive the hinge-attaching screws.

In testimony whereof I have hereunto subscribed my name.

CHARLES WILLMS.

Witnesses:

WM. A. MILLER,
EDW. H. LITZER.