No. 814,625. PATENTED MAR. 6, 1906.

H. ROMÜNDER.

TUB, TANK, AND OTHER LIKE RECEPTACLE.

APPLICATION FILED NOV. 11, 1904.

2 SHEETS—SHEET 1.

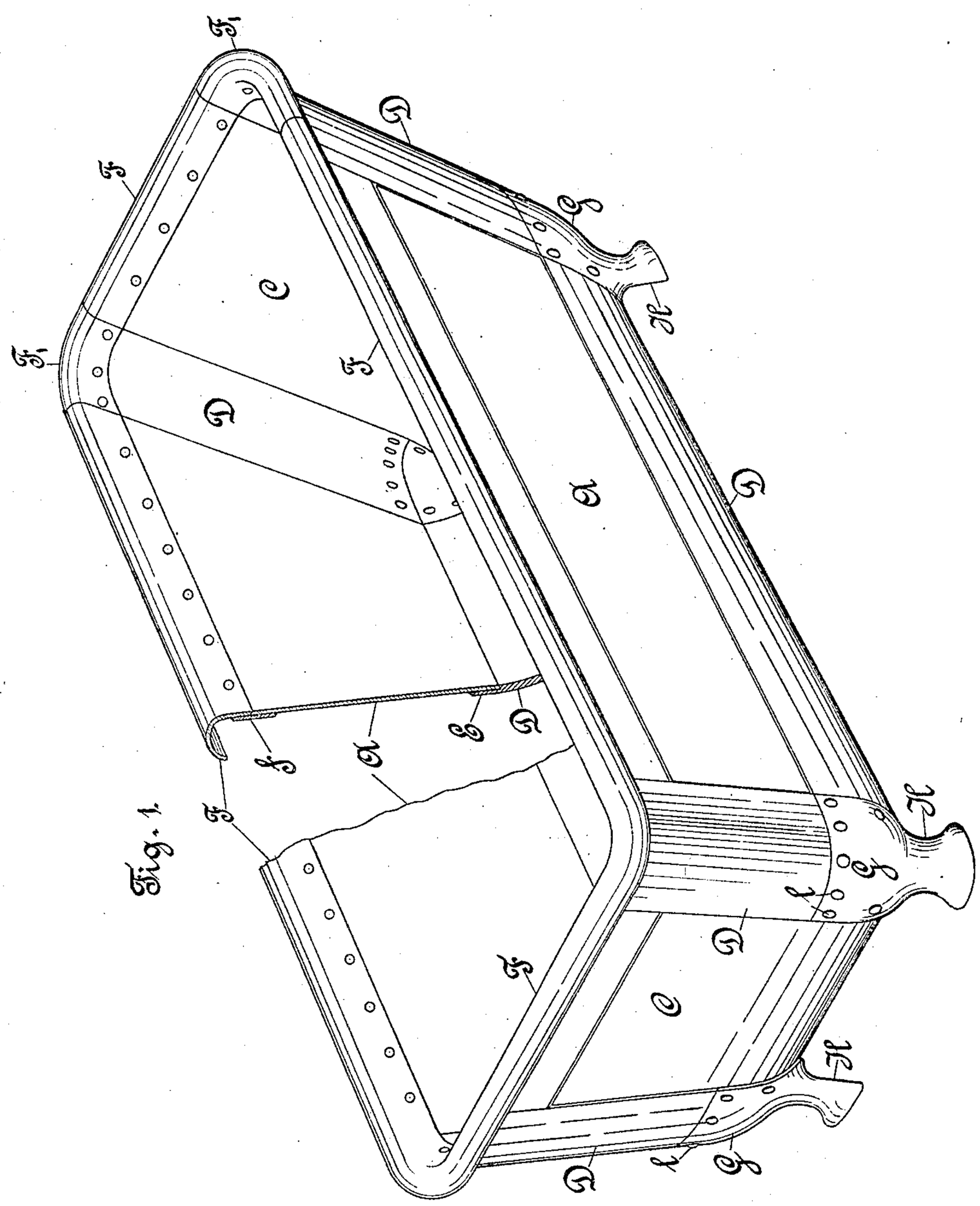


Fig. 1.

Witnesses:
Carl L. Fiedler
Ernst A. Liders.

Inventor:
Hermann Romünder.

No. 814,625. PATENTED MAR. 6, 1906.

H. ROMÜNDER.

TUB, TANK, AND OTHER LIKE RECEPTACLE.

APPLICATION FILED NOV. 11, 1904.

2 SHEETS—SHEET 2.

Fig. 2.

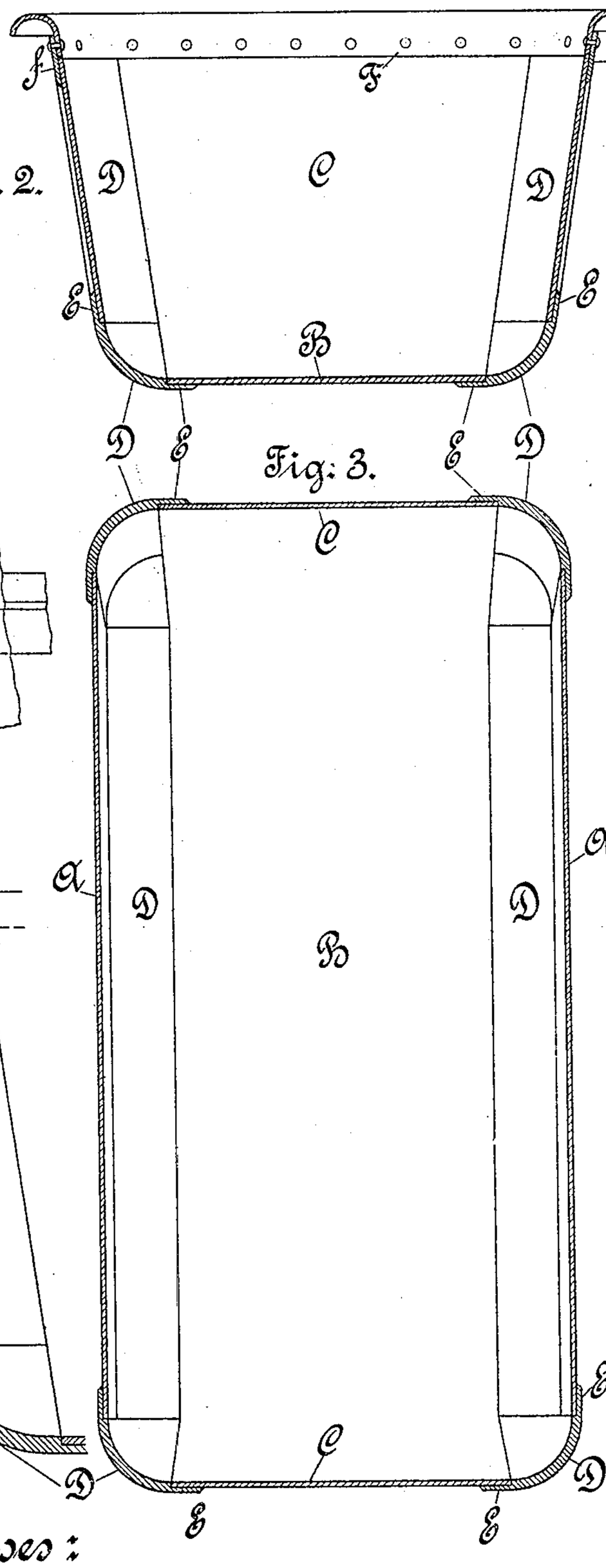


Fig. 3.

Fig. 4.

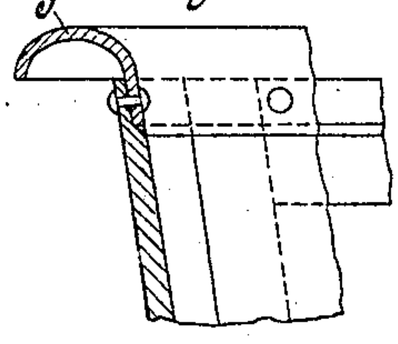


Fig. 5.

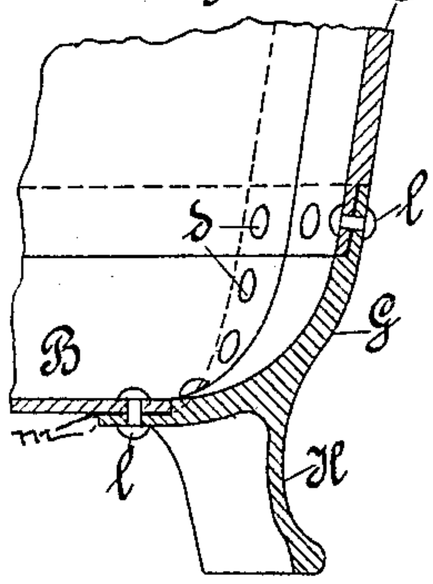


Fig. 7.

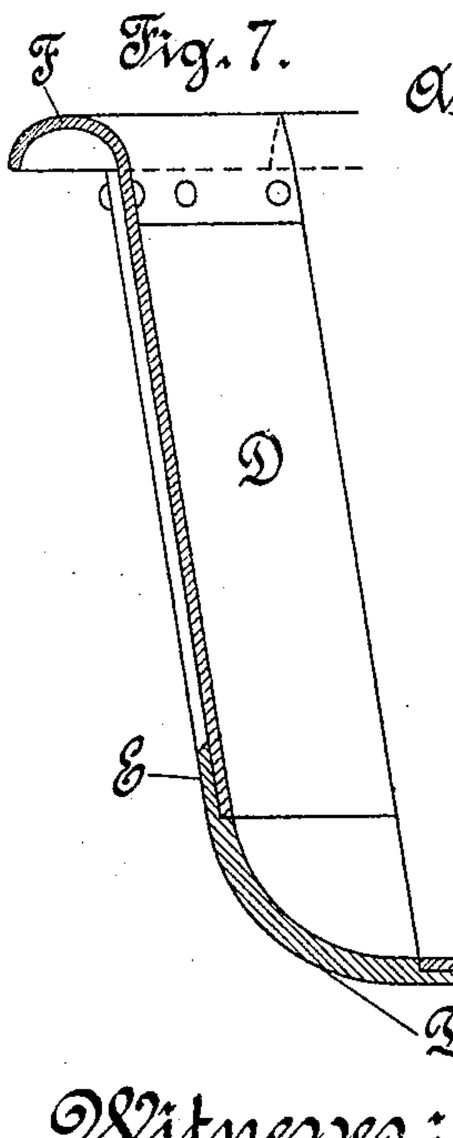
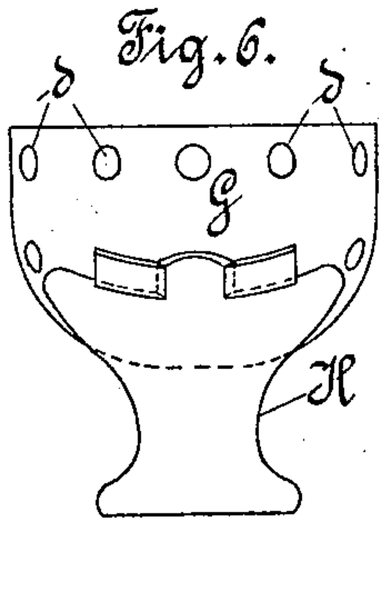


Fig. 6.



Witnesses:
Carl L. Fieder
Ernst Lüders

Inventor:
Hermann Romünder

UNITED STATES PATENT OFFICE.

HERMANN ROMÜNDER, OF MILWAUKEE, WISCONSIN.

TUB, TANK, AND OTHER LIKE RECEPTACLE.

No. 814,625. Specification of Letters Patent. Patented March 6, 1906.

Application filed November 11, 1904. Serial No. 232,349.

To all whom it may concern:

Be it known that I, HERMANN ROMÜNDER, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, State of Wisconsin, have invented new and useful Improvements in and Relating to Tubs, Tanks, and other Like Receptacles, of which the following is a specification.

My invention relates to new and useful improvements in tubs, tanks, troughs, and similar receptacles, and more particularly to a novel construction of such tubs or like articles consisting in overlapping and uniting under heat and pressure and by means of any suitable waterproof cementing composition sheets or plates of material, generally in the form of wood-veneer plates of any desired thickness, whereby they form a practically seamless, homogeneous product which when thus constructed may be used for bath-tubs, wash-tubs, mixing-tanks, troughs, and a great variety of other purposes; and it has for its objects to provide such articles of strong and durable character, combining simplicity and cheapness of construction with lightness of weight, which will not leak, chip, crack, or break nor swell or warp and which, owing to the character and nature of the material used in their construction, will more readily conform to the surrounding temperature, while the present tubs, especially bath-tubs, being principally constructed of metal or porcelain, much longer retain their ordinary cold temperature and very frequently chill the bather. To accomplish these objects, I form each tub, tank, or like receptacle of a number of angularly-disposed and substantially flat body-plates separated from each other by curved edge plates suitably secured to the adjacent edges of said body-plates and cover the several open corners with suitable caps or corner-plates. By these means the tub or like receptacle is provided with rounded edges and composed of practically homogeneous and integral material and the interior of the article shows an absolutely smooth and practically seamless and continuous surface. These flat body and curved edge plates may be composed of any suitable material; but in practice I preferably use wood-veneer plates, consisting each of two or more layers of veneer of suitable thickness, the grain of alternate layers being reversed and all the layers united by any suitable waterproof cementing composition—such, for example, as a compound of glue and potash—whereby they form practically homogeneous plates of wood which being shaped under heat and pressure into a straight or a curved plate are much stronger and more durable than a considerably thicker board with the grain all running in one direction.

To these ends my invention consists in the features of construction and devices hereinafter described, and more specifically set forth in the appended claims.

The preferred form of the invention is illustrated in the accompanying drawings, forming part of this specification, wherein like characters of reference indicate like parts throughout the several views. These drawings illustrate more particularly my construction as adapted for use as bath-tubs; but I do not, of course, limit myself to this class of articles only, as the same construction may also be used for the production of tubs, tanks, troughs, or receptacles for a great number of other purposes.

Figure 1 is a perspective elevation of a bath-tub embodying my invention, a portion of one side being broken away to show a side wall in sectional view as well as one method of constructing same by joining the body-plates to the curved bottom edge plates and to the curved rim. Fig. 2 is a vertical cross-section. Fig. 3 is a horizontal section showing the body-plates forming the side and end walls and the bottom arranged in position as separated from each other by intervening spaces and showing the said plates as connected at their adjacent edges to the curved edge plates, this view also showing the open corner spaces or interstices between adjacent ends of curved edge plates, the said corner-spaces not being covered in this view by the corner-plates. Fig. 4 is a detail, on an enlarged scale, illustrating another method of joining the curved rim to the body portion of the tub. Fig. 5 is a detail, on an enlarged scale, showing in sectional view a curved edge plate D and a bottom plate B and one method of securing the corner-plate or cap thereto, the leg or foot in this illustration being shown as integral with the cap or corner-plate, while in Fig. 6, which is an elevation of the cap or corner-plate, the foot is shown detachably connected thereto. Fig. 7 shows a further modification of my invention, representing in sectional view, on an enlarged scale, a substantially flat end or side body-plate bent over at its upper edge to form the curved

rim, the bottom edge being connected to a curved edge plate.

A, B, and C comprise the body-plates of the tub or receptacle, A A forming the side walls and B forming the bottom plate, both ends of which are bent up at a suitable angle to form the substantially flat end walls C C of the tub. D D are the curved edge plates which are connected to and overlap the edges of adjacent body-plates. Each of these plates A, B, C, and D may be constructed of any suitable material, as wood-veneer plates, consisting of a number of layers of wood veneer so arranged as to have the grain of adjacent layers reversed, three such layers being ordinarily sufficient, though more may be used, if desired. The different layers may be held together by any suitable waterproof cementing composition—such, for example, as a compound of glue and potash—and kept under heat and pressure until they assume their permanent shape.

The curved edge plates D D are cemented or otherwise suitably secured to the body-plates, the flat portions E E of said edge plates D D overlapping a portion of the body-plates, the overlaps being of sufficient length to produce strong joints.

The overlapping portions of the edge plates D may be rabbeted sufficiently for the flat body-plates to fit snug therewith and produce a smooth surface on the concave side of the curved edge plates, as shown in Fig. 3, or the overlapping portions of both the body and edge plates may be rabbeted correspondingly to produce smooth inner and outer surfaces, as shown in Fig. 5, it being understood that edge plates D are provided at each of the approximating edges of the separate body-plates, the end and bottom portions B and C in these illustrations being shown as formed of one integral sheet or plate of material, the end portions ofwhich are bent at desired angles without forming a sharp edge and produce a rounded edge similar to that formed by the curved edge plates. These wood-veneer plates, consisting of two or more layers of wood veneer glued together with reversed grain under heat and pressure by means of any suitable waterproof cementing composition—such, for example, as a compound of glue and potash —are water and weather proof and impervious to moisture and atmospheric influences and practically become one homogeneous plate of wood, much stronger and more durable than a considerably thicker board with the grain all running in one direction, it being understood that the gluing together of two or more adjacent layers, the grain of which runs parallel, while the grain of the remaining layers is reversed, does not change the nature of my invention.

It will be noted that the approximating edges of the body members do not meet to form a right-angular joint, but leave an edge space which is filled in with a curved edge member that overlaps the edges of said approximating body members. Thus the complete tub or like receptacle is formed by fitting and suitably uniting substantially flat body and curved edge members of suitable material.

The otherwise open corners are each covered with a cap or corner-plate, as G, which is preferably made of metal and provided with a number of perforations, as *d d*, by which it may be securely screwed, bolted, or riveted, as by the bolts or rivets *l l*, to each of the plates D D adjacent to that corner which is covered by said cap. To make these joints absolutely waterproof, rubber or other suitable waterproof packing material, as *m*, (shown in Fig. 5,) may be placed between these metal caps and the body and edge plates before they are fastened together, thereby producing an impervious joint.

As shown in Fig. 7, the side and end plates A and C may be bent over at their upper edges to form a rim, as F, which is thus integral with said plates A and C, or this rim may be formed of a separate sheet of material and detachably secured in suitable manner to the upper edge of the said body-plates A and C, as shown in Fig. 4. This rim F may be formed of one continuous piece of suitable material or a number of sections. When formed in sections or integral with the body-plates, rim-sections F′, of suitable form and shape, are preferably used and suitably secured to the adjacent rim portions F and to the upper end of the respective curved edge plates at the corners of the tub or like receptacle so as to form a practically seamless and continuous curved rim with a smooth upper surface. When the rim F is formed of one separate plate of material or a number of sections F and F′, the joints of the rim or rim-sections and the side and end plates A and C may be reinforced by an additional strip *f*, suitably connected to the rim and body-plates and covering the joint thereof to insure greatest strength and durability, as well as economy, as shown in Figs. 1 and 2. This rim may be omitted, if desired, and the strip *f* also may be taken off or set flush with the upper ends of the body-plates. Feet H H of any suitable material, such as metal, may be provided on the said caps or corner-plates G G integral therewith, as shown in Fig. 5, or detachably connected thereto in any suitable manner, as shown in Fig. 6.

The tub, tank, or like receptacle may be provided with inlet and outlet fixtures and with all such other fittings and accessories found desirable conforming to the various uses it is intended to be used for.

This invention is susceptible of many modifications, and the details of construction of this tub, tank, trough, or like receptacle may be varied from the above description—for

instance, by making the bottom and end walls of separate plates of material and connecting them also at their adjacent edges to curved edge plates similar to those shown in the illustrations as connecting the side body-plates A to the bottom and end plates B and C by overlapping the adjacent edges thereof, or by making the end walls and one side wall of one continuous plate of material bent at suitable angles and connecting the same, as well as the bottom and the other side wall at their adjacent edges to the curved edge plates, or by giving one or more of the body-plates a bent or curved shape instead of making same substantially flat without changing the nature of my invention, so long as substantially straight or flat separate sheets or plates of material forming the body-plates of the receptacle and being separated from each other by intervening spaces and curved sheets or plates forming the edge plates, and caps or corner plates forming the corners are connected in suitable manner to form a tub, tank, trough, or similarly-shaped receptacle. I do not, therefore, limit this specification and the claims to the precise forms of the invention illustrated in the drawings and hereinbefore described.

I claim—

1. An improved tub, tank or similar receptacle, composed of side and end walls and a bottom, forming the body-plates of the receptacle, and being separated from each other by intervening spaces, and curved edge plates connected to and overlapping the adjacent edges of said body-plates, and caps or corner-plates connected to and forming the corners of the receptacle.

2. An improved tub, tank or similar receptacle composed of a number of separate body-plates forming the bottom, end and side walls, and a number of curved edge plates, the said body-plates being spaced apart and suitably secured to the said curved edge plates, the flat portions of the curved edge plates and the adjacent edges of the body-plates overlapping each other, the overlapping parts, of sufficient size to produce strong joints, being suitably secured to one another; and caps or corner-plates suitably secured to and forming the corners of the receptacle.

3. An improved tub, tank or similar receptacle composed of a number of separated body-plates, forming, the bottom and end and side walls, and a number of curved edge plates, the said bottom, end and side walls being spaced apart and connected at their adjacent edges to the said curved edge plates, which overlap and are suitably joined to the adjacent wall-plates, and caps or corner-plates connected to the body and edge plates of the said receptacle at the corners thereof.

4. An improved tub, tank or similar receptacle, consisting of a number of body-plates forming the side and the end walls and the bottom, and being separated from each other by intervening spaces, the said body-plates being suitably connected at their adjacent edges to curved edge plates with flat portions or flanges, the body-plates and flat portions of the edge plates overlapping each other and forming strong impervious joints with a smooth inner surface; a number of caps or corner-plates of suitable form and material secured to and forming the corners of the said receptacle and legs or feet, suitably provided on the said caps or corner-plates.

5. An improved tub, tank or similar receptacle composed of a number of separate body-plates forming the bottom, end and side walls, and being separated from each other by intervening spaces, curved edge plates suitably connected to the adjacent edges of the said body-plates, reinforcing-strips secured to the side and end walls at their upper edges, and a number of caps or corner-plates, suitably connected to and forming the corners of the receptacle, substantially as shown and described.

6. An improved tub, tank or similar receptacle, composed of a number of angularly-disposed and substantially flat body-plates forming the bottom, end and side walls, and a number of curved edge plates, the said body-plates being spaced apart and connected at their adjacent edges to the said edge plates, which partly overlap and are suitably joined to the adjacent bottom and end and side wall plates, reinforcing-strips secured to the side and end walls at their upper edges, and a number of caps or corner-plates connected to and forming the corners of the receptacle, substantially as shown and described.

7. An improved tub, tank or similar receptacle consisting of a number of body-plates spaced apart and forming the side walls and end walls and the bottom, and a number of curved edge plates, the said body-plates being suitably connected at their adjacent edges to the said edge plates, the body-plates and the edge plates partly overlapping each other and forming strong impervious joints with a smooth inner surface; a rim integral with or suitably secured to the body and edge plates, a reinforcing-strip suitably secured to the side and end walls at their upper edge, and caps or corner-plates suitably secured to and forming the corners of the said receptacle and being provided with legs or feet secured in suitable manner to the said caps or corner-plates.

8. An improved tub, tank or similar receptacle composed of a number of separate body-plates forming the bottom and end walls and the side walls, and curved edge plates provided with flat portions, the said body-plates being spaced apart and suitably secured at their adjacent edges to the said

edge plates, the flat portions of the said edge plates overlapping the edges of the body-plates, a rim of suitable form and material secured to the body portion of the said receptacle, a reinforcing-strip secured to the rim and the side and end walls at the outside of the receptacle and covering and reinforcing the joint of the rim and the side and end walls, and caps or corner-plates secured to and forming the corners of the said receptacle and being provided with legs or feet secured in suitable manner to the said caps or corner-plates.

9. An improved tub, tank or similar receptacle, composed of a number of angularly-disposed body-plates forming the bottom, end and side walls and being separated from each other by intervening spaces, a number of curved edge plates overlapping the edges of adjacent body-plates, and a number of caps or corner-plates, all suitably connected to form a receptacle of great strength and durability and of light weight, the overlapping portions of adjacent plates being suitably joined together, a suitable waterproof packing material being placed between the caps or corner-plates and the body and edge plates to produce waterproof joints at the corners of the receptacle, substantially as shown and described.

10. An improved tub, tank or similar receptacle, composed of side and end walls and a bottom, formed by a number of angularly-disposed body-plates, a number of curved edge plates provided at each of the approximating edges of the separate body-plates and overlapping the edges of the said approximating body-plates, and caps or corner-plates suitably provided with legs or feet and secured to and forming the corners of the receptacle.

HERMANN ROMÜNDER.

Witnesses:
CARL L. FIEDLER,
PAULA ROSEMARK.