

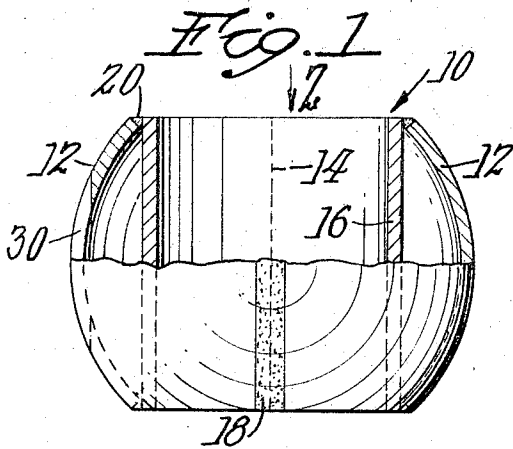
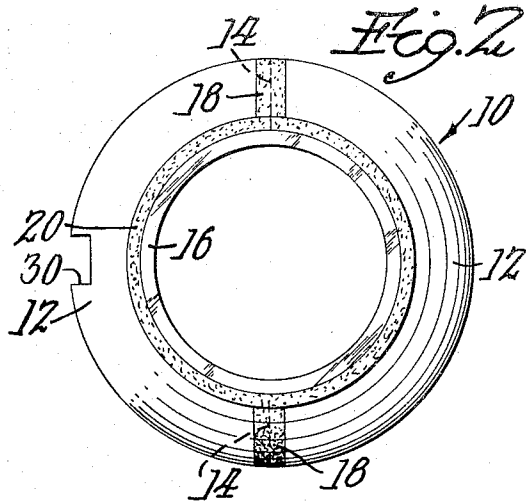
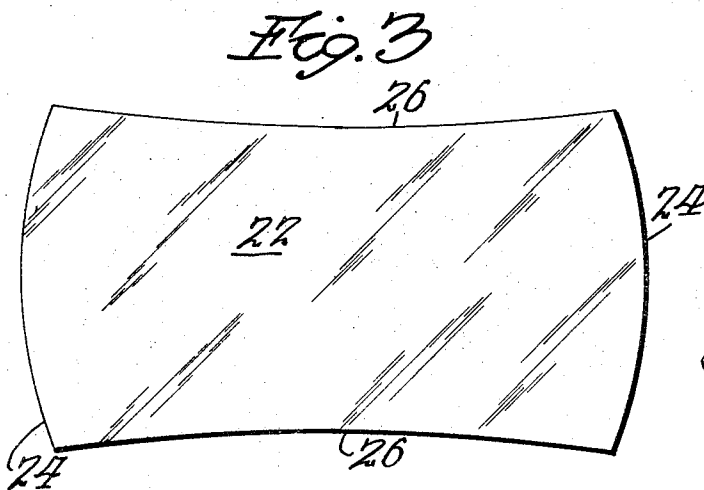
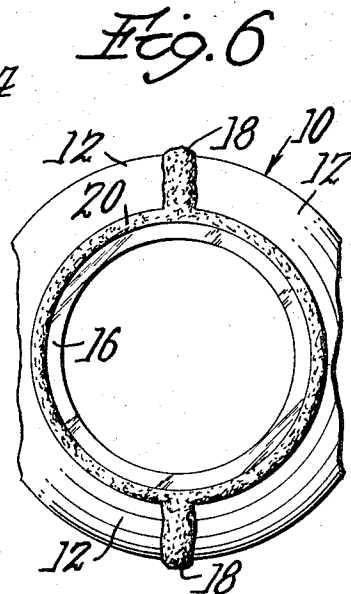
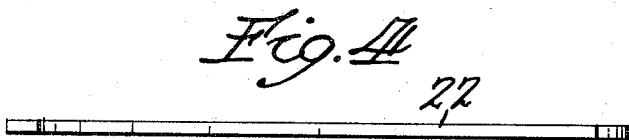
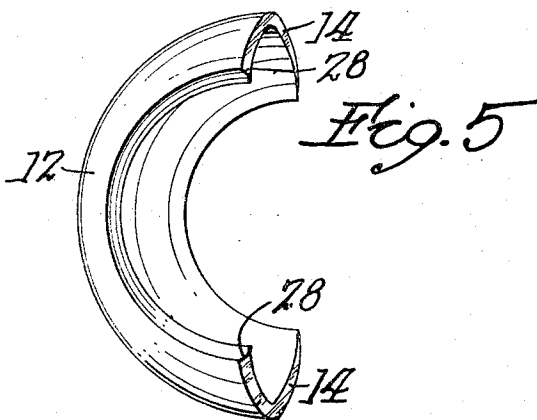
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A. L. JOHNSON

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BALL CONSTRUCTION FOR BALL VALVES

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Inventor
A. L. Johnson
By *Charles R. Fay*
Attorney

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BALL CONSTRUCTION FOR BALL VALVES

Alvin L. Johnson, 337 Park Ave.,

Worcester, Mass. 01610

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1 Claim. (Cl. 29—148.4)

This invention relates to a new and improved construction for ball valves particularly with respect to the manufacture of the ball itself which has a flow passage therethrough, the ball being turned in order to close or open the flow through the passage. The principal object of the invention is to provide a ball which is light weight and inexpensive and this is done by making the ball substantially hollow.

In order to form such a hollow ball, it is proposed to provide a pair of flat blanks properly shaped, bend the same into substantial semicircular concaved members which have coplanar mating end edges, then assemble and weld the two semicircular members to form a ring which is convex on the outside and concave on the inside. A hollow cylindrical member forms the flow passage and is welded to the other parts. This forms a strong inexpensive and very light weight ball for ball valves.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which:

FIG. 1 is a view in elevation showing the completed ball with parts broken away and in section;

FIG. 2 is a plan view looking in the direction of arrow 2 in FIG. 1;

FIG. 3 is a view illustrating one of the blank members;

FIG. 4 is an edge view thereof;

FIG. 5 is a perspective view of one of the formed blanks, and

FIG. 6 is a view similar to FIG. 2 but showing the rough welding prior to the finishing step.

The reference numeral 10 indicates the completed ball for the ball valve and it consists of a pair of semi-spherical members 12, 12 which are welded together along coplanar mating edges at 14, 14 see FIG. 2. Simultaneously or as a separate step, a cylindrical member 16 is welded at its end edges to the edges of the half-spheres, thus forming the complete ball with a minimum of metal and practically no finishing required except for trimming or grinding the rough welds shown at 18 and 20 in FIG. 6 down to the smooth conformation shown in FIG. 2.

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This is carried out by providing two blanks such as shown in FIG. 3. The blanks are indicated at 22 and are provided with slightly concave edges as at 26, 26 along the longer sides thereof, and convex edges 24, 24 at the ends. When this blank is bent on an axis transverse to the long edges 26 and then on a longitudinal axis transverse to the first axis, a kind of half spherical member is formed as is indicated in FIG. 5. Another like member is arranged with the mating edges as for instance at 14 contacting each other as is indicated perhaps most clearly in FIG. 2, and then the welding step in this area as at 18 is performed. This forms the complete outside aspect of the ball but it is to be noted that the degree of bending and the dimensions of the blank depend upon the diameter of the hollow cylindrical member 16.

The reference numeral 28 shows a bevel on the edges for the purpose of the welding step and when the cylindrical member 16 is positioned it can be welded as is indicated in FIGS. 1 to 3 inclusive, thus completing the entire ball.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claim, but what I claim is:

The method of making a substantially hollow ball for a ball valve which comprises the steps of providing a pair of substantially flat but shaped blanks, bending said blanks into similar shapes approximating spheroidal elongated members each having a transverse concave conformation interiorly thereof and a convex conformation exteriorly thereof, joining the two spheroidal members at their adjacent ends forming a ring, and then applying to the inner edges thereof a cylindrical member which closes the concave aspect of said ring and forms the flow passage for the ball valve.

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M. CARY NELSON, *Primary Examiner*.

E. K. FEIN, *Assistant Examiner*.