

No. 764,933.

PATENTED JULY 12, 1904.

F. & F. H. ENGELHARD.

FLOAT.

APPLICATION FILED MAY 12, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

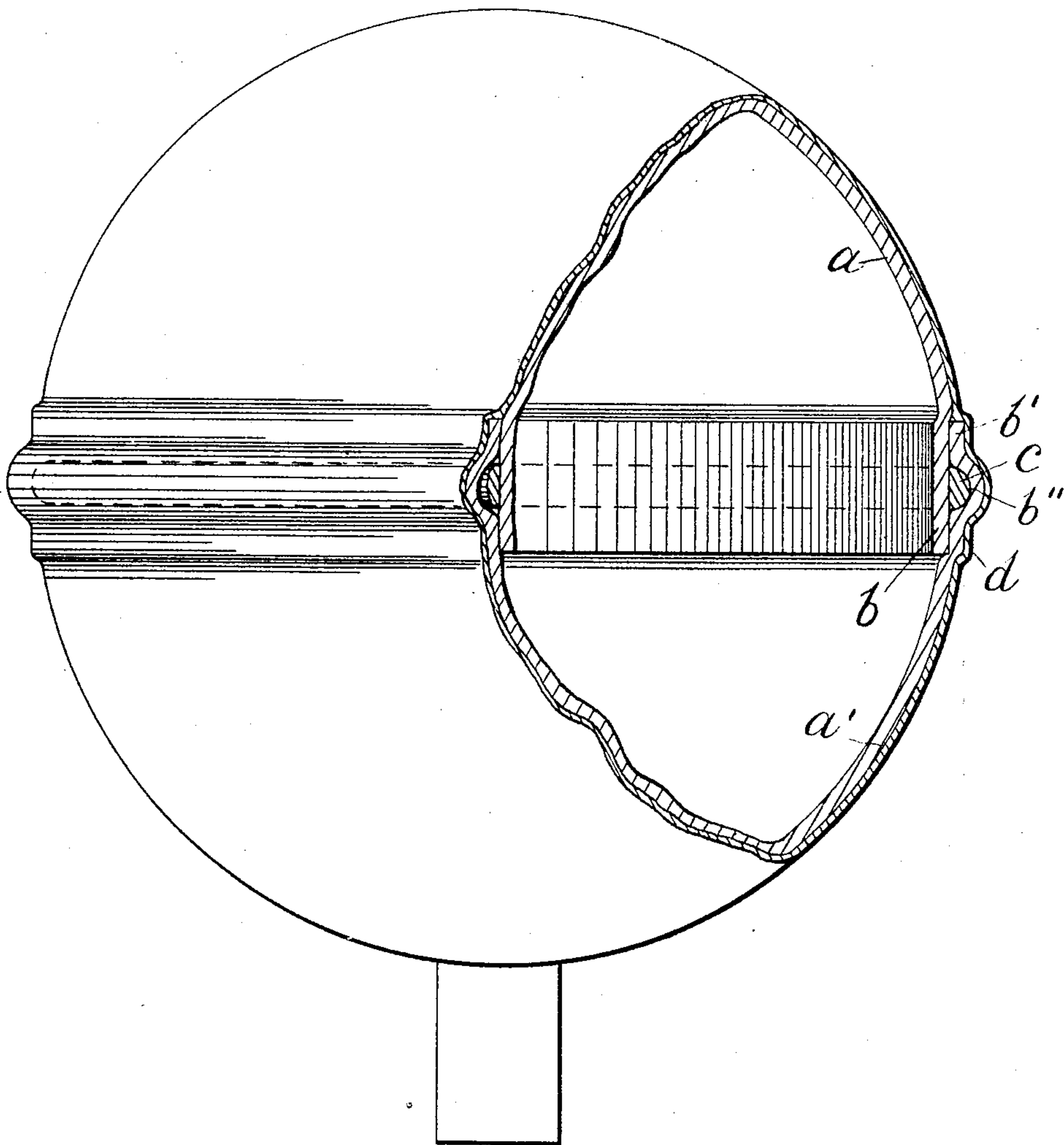


FIG. 1

Witnesses

H. A. Lutter,
A. L. Stevens.

Inventors

Frank Engelhard
Frederick H. Engelhard
By *Allen Webster,* Attorney

No. 764,933.

PATENTED JULY 12, 1904.

F. & F. H. ENGELHARD.

FLOAT.

APPLICATION FILED MAY 12, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

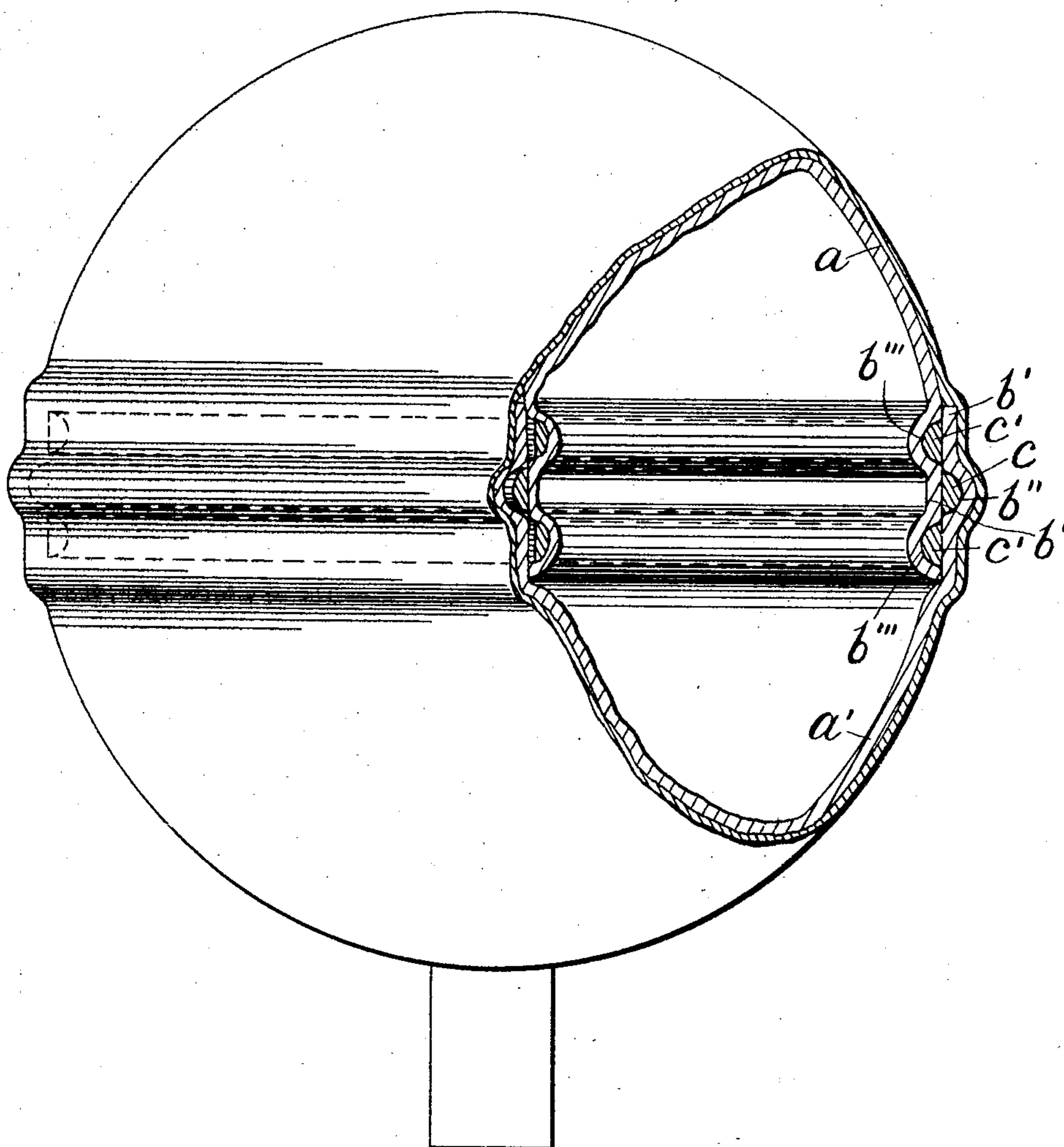


FIG. 2.

Witnesses

H. A. Lutter,
A. L. Stevens.

Inventors

Frank Engelhard
Fredrick H. Engelhard
By *Allen Webster* Attorney

UNITED STATES PATENT OFFICE.

FRANK ENGELHARD AND FREDERICK H. ENGELHARD, OF SPRINGFIELD,
MASSACHUSETTS.

FLOAT.

SPECIFICATION forming part of Letters Patent No. 764,933, dated July 12, 1904.

Application filed May 12, 1904. Serial No. 207,594. (No model.)

To all whom it may concern:

Be it known that we, FRANK ENGELHARD and FREDERICK H. ENGELHARD, both citizens of the United States of America, and residents of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Float, of which the following is a specification.

Our invention relates to improvements in floats for valves in which sheet-metal sections are joined by certain peculiar means, as hereinafter set forth; and the objects of our invention are, first, to provide a comparatively inexpensive, light, and durable float made in two sections, which are semispherical or otherwise, according to the kind of float—that is, whether a float-ball, a column-float, or the like, a float which is symmetrical, of proper and uniform weight, seamless, and of such strength as to resist the pressure or heat to which it is likely to be subjected without collapsing or having the efficiency of its joint impaired; second, to provide such a float with a joint which possesses the necessary degree of strength and durability and is simple and easy to construct, and, third, to augment and reinforce the float, so that it is capable of resisting wear and shock to a greater degree than heretofore. Owing to the peculiar construction of this float, it can generally be made lighter than heretofore without endangering the efficiency or durability of the same.

We attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a float-ball embodying our invention, the same being partially broken away to show the construction to better advantage and afford a partial view of the interior; and Fig. 2, a similar view showing a modified construction.

Similar letters refer to similar parts throughout both views.

The float consists, essentially, of sections, generally two in number, the edge of one overlapping the edge of the other, a hoop or hoops between the inside and outside lapped portions, and plating material deposited upon

the outside over all. The float and its joint are protected externally from wear and shock by the construction which provides a thickened portion of great strength surrounding the float at its horizontal center. The sections may be spun out of sheet-copper in the usual and well-known manner, the hoop or hoops and deposit then being of the same metal.

Referring to the drawings, a ball-float is shown consisting of two semispherical sections a and a' , the former being provided with an edge portion b , which may be more or less offset inwardly, and the latter with an edge portion b' , which may be correspondingly offset outwardly, the two edge portions lapping one upon the other in substantially the manner illustrated. Instead of being curved in a meridional direction the edge portions b and b' may be straight except where offset to form a groove or grooves for the hoop or hoops, and it is believed that this straight formation permits the joint between the sections a and a' to be more readily constructed and insures a stronger and better joint than if such portions were curved. A groove b'' is formed in the edge portion b' , into which a band or hoop c is sprung or forced, and grooves b''' b''' are formed in the edge portion b , into which additional bands or hoops c' c' are introduced when greater strength is required or desired, or the hoops c and c' may be first soldered or otherwise securely attached to the edge portions b and b' , respectively, and said edge portions forced into place over said hoops until they occupy the spaces provided for them by the grooves b'' and b''' . At the time of assembling contacting surfaces of the edge portions b and b' are soldered or otherwise securely united, and contacting surfaces of the portion b and hoop c and of the portion b' and hoops c' should be similarly united. The hoops c and c' may or may not be attached to the edge portion b' and b by other means than that afforded by the nature of the construction of these parts. After being assembled as above explained the joint and float are completed by depositing a coating d over the outside of the sections a and a' , including the

edge portion b' . A float having an absolutely tight joint of great strength is produced as the result of the construction above set forth, one which possesses all of the advantages here-
 5 in before enumerated, in fact. Very thin metal for the sections a and a' may be used with this means of connection, and the external plating or coating not only unites the parts
 10 into a homogeneous mass, as it were, but serves to even up inequalities in the outside surface and to bring the float up to the required weight. The process by which the coating is deposited on the sections in reality
 15 incorporates the parts one with another, the deposit or coating entering the pores of the sections, including the edge portion b' , of course, resulting in an externally-seamless float which possesses the power of resistance in
 20 a marked degree. Furthermore, the coating binds the sections so firmly and securely together as to prevent the opening of the joint, holding the same against a tendency to break
 25 apart on account of the expansion due to inside air-pressure. The hoop or hoops, together with the peculiar formation of the edge portions of the sections, are also potent factors to be considered with the coating along the lines of strength, durability, &c.

For many purposes the construction shown
 30 in Fig. 1, wherein a single hoop on the outside of the section b is employed, is entirely adequate; but in order to meet any and all requirements the Fig. 2 construction, in which the three hoops appear between the lapped
 35 edge portions, is provided, and we do not wish to be limited in this matter.

When in use, the exterior bulging belt forming part of the augmented portion of the float, such belt comprising the overlapping
 40 edge portion with its offset for the hoop, receives whatever wear the float is subjected to by being rubbed against the side of a tank or other receptacle in which said float is located or any blow which the latter may sustain.

45 The hoops shown are half-round in cross-

section; but we do not desire to be confined to this particular shape.

We do not wish to be restricted to any particular shape of float, but seek to include within the scope of our invention and claims 50 any jointed sheet-metal float or similar device.

Copper is probably the most practical metal of which to make our float throughout.

What we claim as our invention, and desire to secure by Letters Patent, is— 55

1. As a new article of manufacture, a float comprising sections having lapped portions with a hoop between such portions.

2. As a new article of manufacture, a float comprising sections having lapped portions, 60 which are meridionally straight, and a hoop between such portions.

3. As a new article of manufacture, a float comprising sections having lapped portions with a hoop between, and a coating or deposit 65 over the outside of all.

4. As a new article of manufacture, a float comprising sections having lapped portions, a groove being formed in one of such portions, and a hoop between such portions in said 70 groove.

5. As a new article of manufacture, a float comprising sections having lapped portions, a groove being formed in the outer of such portions, a hoop between said portions in said 75 groove, and a coating or deposit over the outside of all.

6. The combination, in a float, with sections having lapped edge portions with inwardly and outwardly directed grooves there- 80 in, of hoops in said grooves.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FRANK ENGELHARD.
 FREDERICK H. ENGELHARD.

Witnesses:
 WM. A. FLITTNER,
 F. A. CUTTER.