No. 831,639. PATENTED SEPT. 25, 1906.

C. A. WALDO.

HOLLOW BODY.

APPLICATION FILED NOV. 4, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

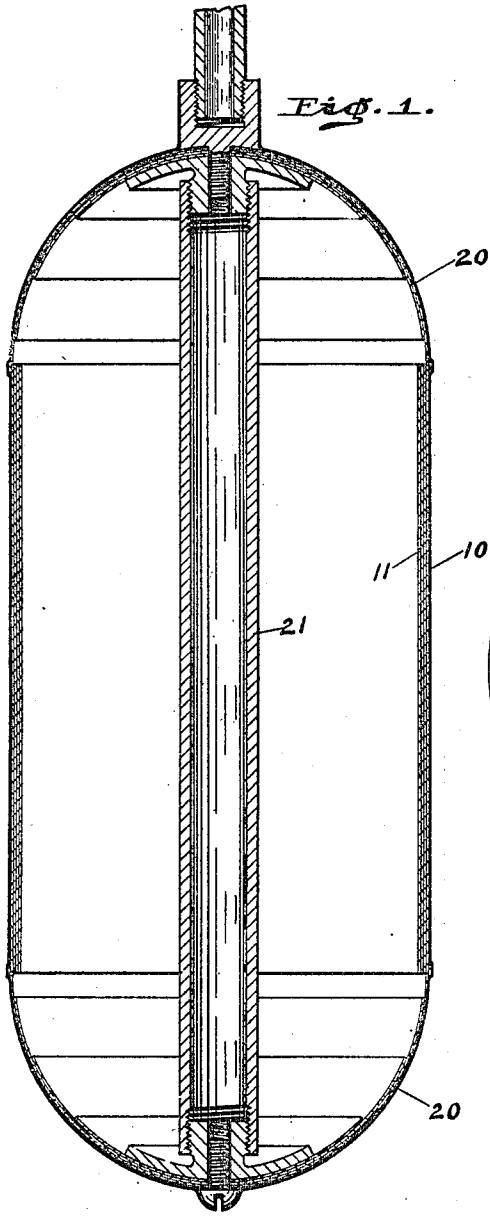
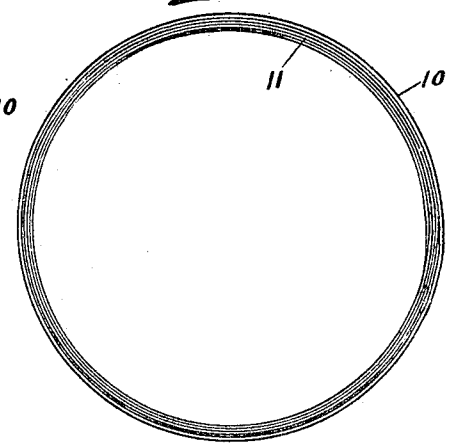


Fig. 2.



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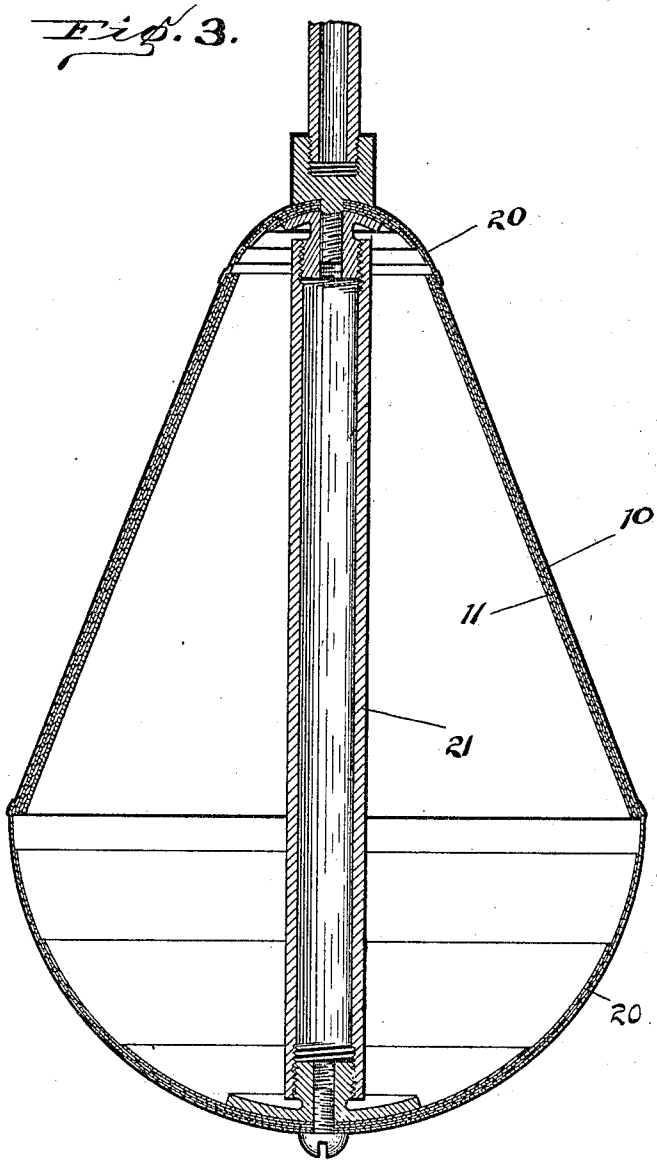
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

CLARENCE ABIATHAR WALDO, OF LA FAYETTE, INDIANA.

HOLLOW BODY.

No. 831,639. Specification of Letters Patent. Patented Sept. 25, 1906.

Application filed November 4, 1905. Serial No. 285,876.

To all whom it may concern:

Be it known that I, CLARENCE ABIATHAR WALDO, a citizen of the United States, residing at La Fayette, in the county of Tippecanoe and State of Indiana, have invented certain new and useful Improvements in Hollow Bodies, of which the following is a specification.

The object of my invention is to produce a cylindrical float capable of withstanding high external pressures, the principal object of my invention being to produce a sufficiently strong but light middle barrel portion of such a float.

The accompanying drawings illustrate my invention.

Figure 1 is an axial section of a float embodying my invention in the form of a float having semicylindrical ends constructed in accordance with my invention as defined in my pending application, Serial No. 285,874. Fig. 2 is an end elevation of the middle barrel portion, and Fig. 3 an axial section of a float the medial portion of which is a conical frustum.

In the drawings, 10 indicates a continuous or seamless hollow body—such, for instance, as a cylinder or conical frustum—formed in any desired manner of any desired material—as, for instance, of copper by electrodeposit. Mounted within shell 10 is a body composed of a volute of thin spring-sheet 11. The volute 11 may be initially of greater diameter than the internal diameter of the shell 10 and introduced by an initial winding of the volute within its elastic limit. The mere expansion of the volute within the cylinder 10 may be sufficient; but, if not, a greater expansive stress may be obtained by a tangential stress applied to the inner end of the volute, the said inner end being thereupon attached to the adjacent layer.

If desired, the outer layer of the volute may be brazed to the shell 10. By this means I am enabled to produce from very light material a body capable of withstanding very high external fluid-pressure.

In the drawings I have shown a float composed of a middle barrel portion formed in the manner described and provided at each end with semicylindrical ends 20, connected by an internal strengthening member 21, constructed in accordance with the invention which forms the subject-matter of my beforementioned pending application.

If the shell 10 is omitted, the two ends of the volute should be attached to the adjacent layer of the volute while the two ends are under stress in opposite directions.

I claim as my invention—

1. A hollow body comprising a hollow container, and a volute of resilient material expanded therein by a force additional to its own expansive force with its inner end attached thereto while under the expanding stress.

2. A hollow body comprising a volute of resilient material placed under an expanding stress in excess of its expansive resilience and the ends secured against displacement.

3. A hollow body comprising a hollow shell, and a volute of resilient material expanded therein by a stress greater than its expansive resilience and its inner end secured against displacement.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 28th day of October, A. D. 1905.

CLARENCE ABIATHAR WALDO. [L. S.]

Witnesses:
ARTHUR M. HOOD,
JAMES A. WALSH.