

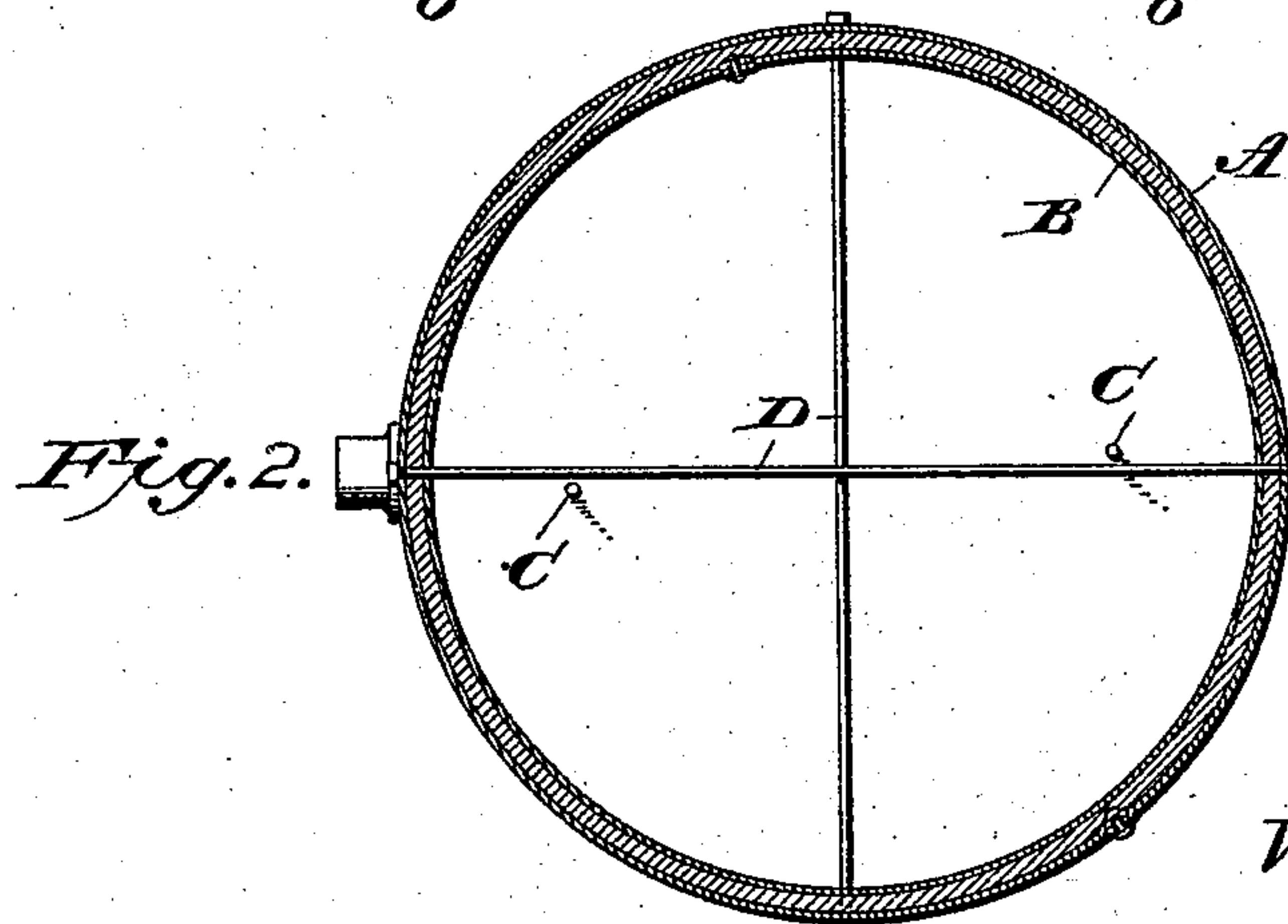
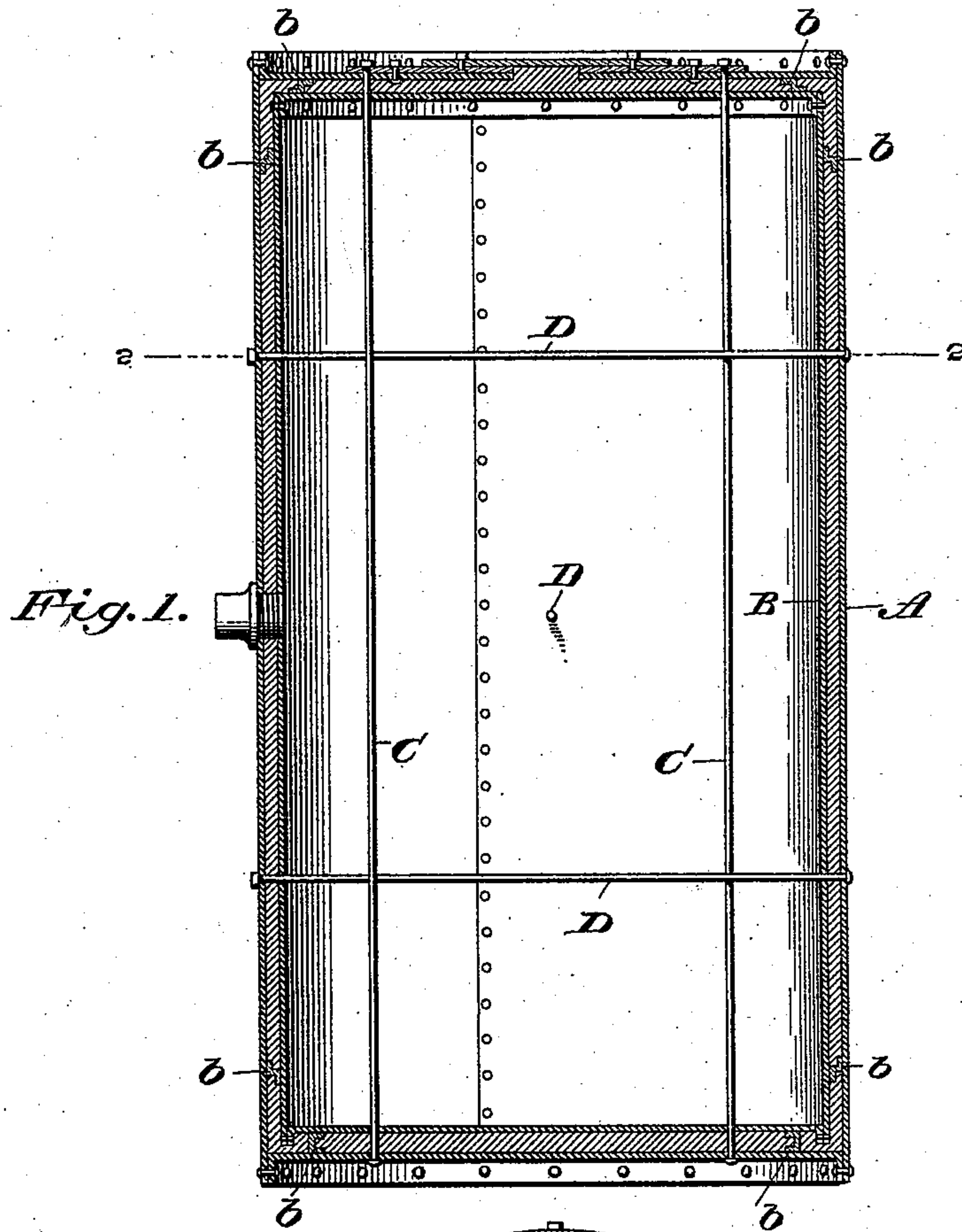
(No Model.)

W. TIMMIS.

RECEPTACLE OR TANK FOR THE STORAGE OF COMPRESSED AIR, GAS, &c.

No. 517,777.

Patented Apr. 3, 1894.



WITNESSES

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WILLIAM TIMMIS, OF PITTSBURG, PENNSYLVANIA.

RECEPTACLE OR TANK FOR THE STORAGE OF COMPRESSED AIR, GAS, &c.

SPECIFICATION forming part of Letters Patent No. 517,777, dated April 3, 1894.

Application filed January 25, 1894. Serial No. 498,023. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM TIMMIS, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Receptacles or Tanks for the Storage of Compressed Air, Gases, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in tanks for the reception and storage of air, gas or liquid under heavy pressure, the object of the same being to provide a tank that will be tight and strong.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal sectional view of the improved storage tank, and Fig. 2 is a transverse sectional view.

In carrying out my invention I make use of two cylinders or casings, A and B, placed one within the other and of such relative size that a comparatively small space is left between them which completely surrounds the inner casing.

The inner casing B is provided with lugs *b* which are formed integral therewith or attached thereto in any suitable manner and are adapted to contact at suitable points with the outer cylinder or casing A to properly position the inner cylinder or casing within the same. The cylinders or casings are provided with heads secured thereto in the usual manner, preferably by rivets, the edges of the metal where they join being also connected by rivets.

C and D designate stay-rods which extend through both cylinders or casings.

After the cylinders have been placed one within the other the head of the outer cylinder is secured in place, and this head is provided with an opening around which is riveted a plate having a corresponding opening. After the casing has been assembled they are then placed in a furnace and heated to a very high temperature, and when in this heated

condition molten lead or equivalent soft metal is poured through the opening in the head of the outer casing so as to completely fill the space between the two casings. When the casings cool the walls thereof will contract so as to fill up the pores of the metal and every opening or joint through which leakage might otherwise take place.

It is a well-known fact that gases and air may be compressed to such an extent that the ordinary storage tank made up of sheet steel and joined with rivets is not sufficiently tight to prevent leakage, and consequently with such tanks or receptacles there is a constant diminishing of the pressure, and it is also known that such tanks when they burst from excessive pressure break into many small pieces which are liable to do great injury. With a storage tank constructed in accordance with my invention the leakage is reduced to a minimum and the inner and outer casings being intimately connected to each other by the soft metal are able to withstand great pressure so that in case of an explosion there will be a mere rupture analogous to that which takes place with a copper boiler, thus greatly reducing the danger which accompanies the use of gas or air under heavy pressure.

The tank though especially adapted to receive compressed air may be used for many other purposes. And the inner and outer casings may be made of any shape or configuration, that employed for steam boilers being the preferable form.

I am aware it has been proposed to coat the inner sides of a vessel with vitreous enamel for the purpose of covering the interior seams and joints of the vessel; also that it is not new to make storage vessel of galvanized sheet metal, or to apply molten metal to the exterior of the joints where the heads are connected to the body portion, but

What I claim as new, and desire to secure by Letters Patent, is—

1. A receptacle made up of inner and outer metallic casings placed one within the other so as to leave a space between them, the space being filled by a metal of greater density than the metal of which the casings are made.
2. As an improved article of manufacture, a tank or receptacle made up of two metallic cas-

ings of different sizes one placed within the other to leave a space between them, said space being filled with a ductile metal of greater density than the metal of which the casings are made so as to completely surround the inner casing and connect the same to the outer casing, substantially as shown, and for the purpose set forth.

3. A method of manufacturing metallic receptacles consisting in placing one casing within another, heating the casings and while

they are in a heated condition filling the space between them with molten metal of greater density than the metal of which the casings are made, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM TIMMIS.

Witnesses:

G. S. ELLIOTT,

E. W. JOHNSON.