

C. J. EMERSON.
 HOLDER FOR CALORIMETER BOMBS.
 APPLICATION FILED JULY 9, 1909.

Patented July 5, 1910.

963,426.

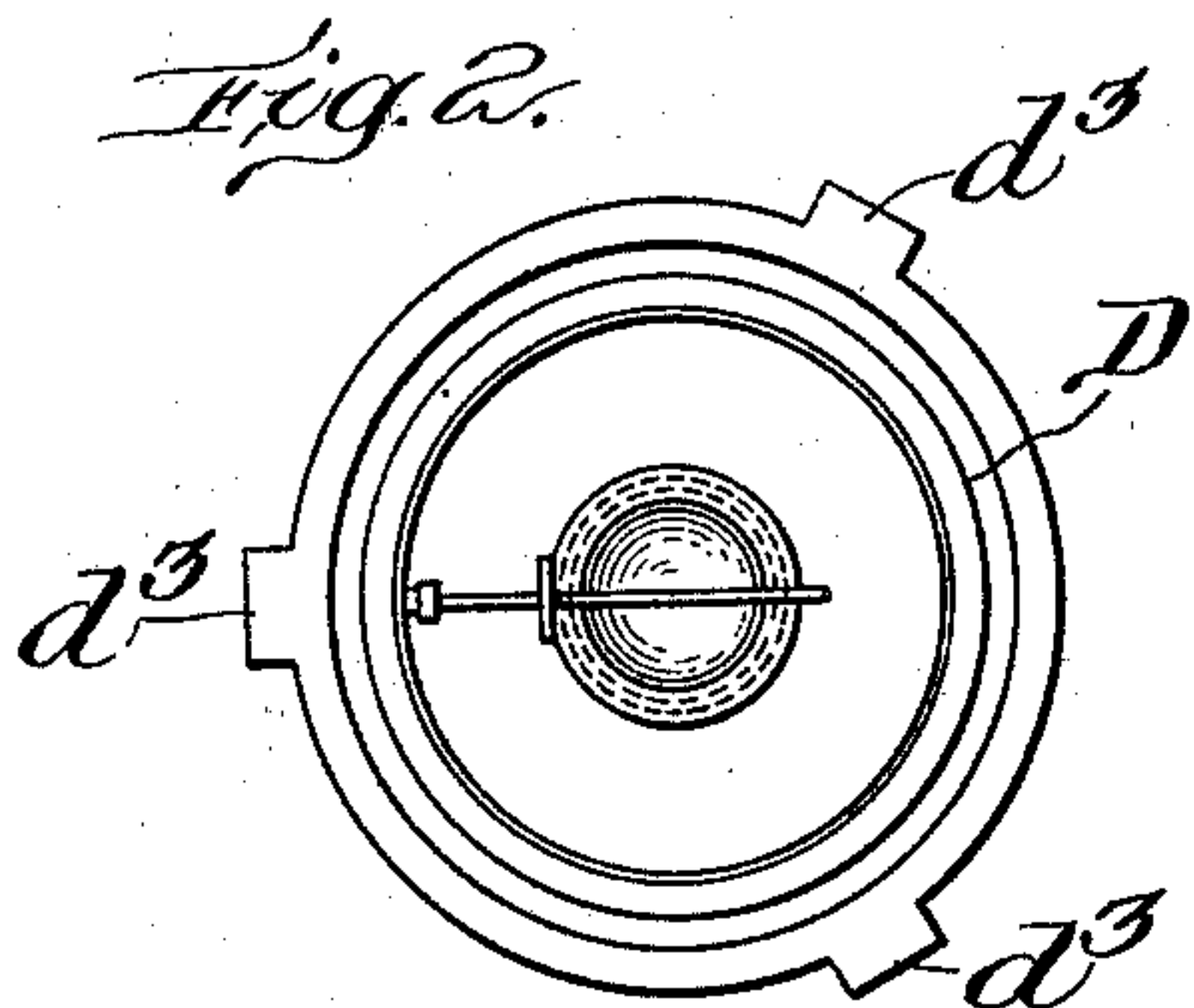
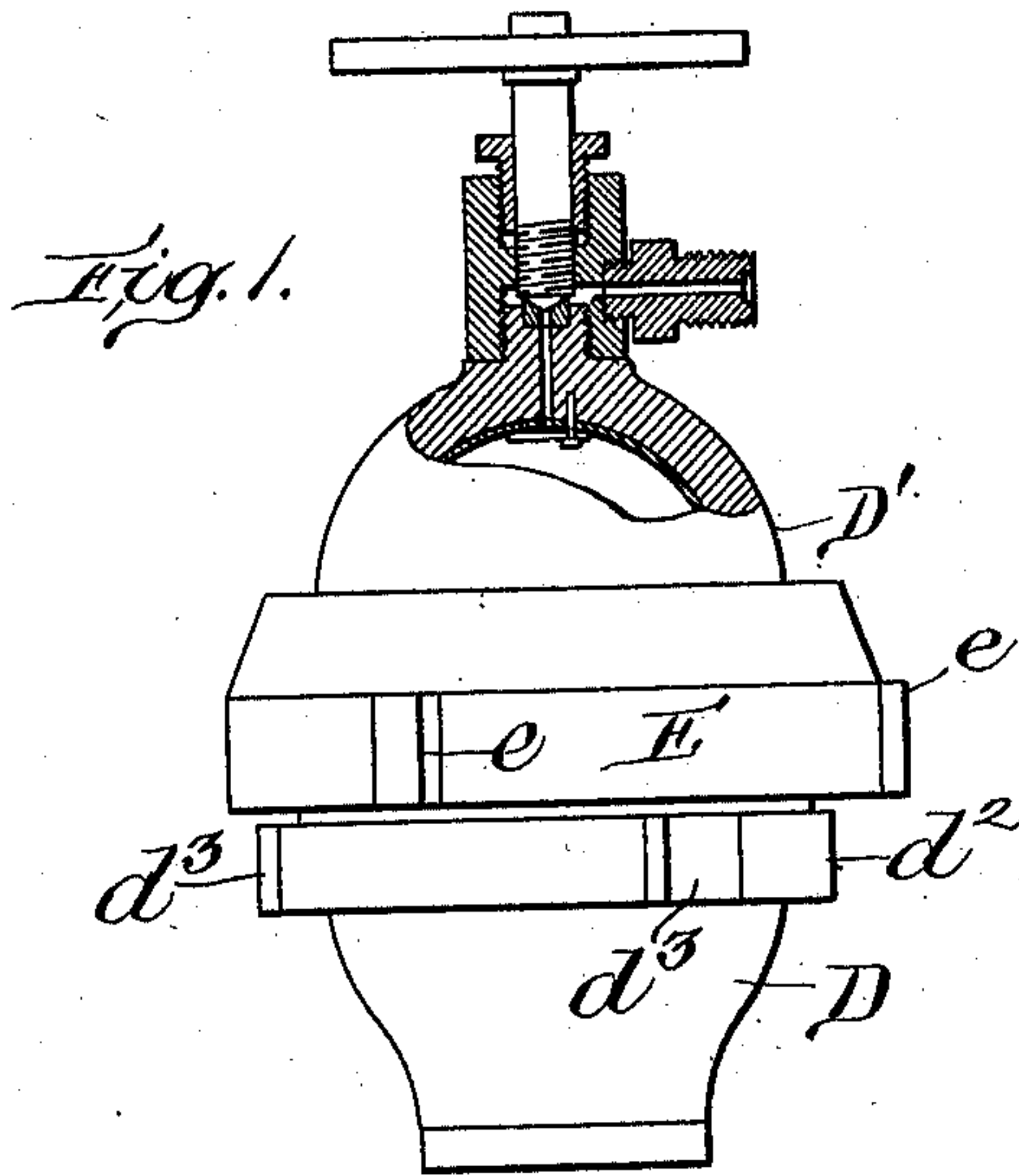
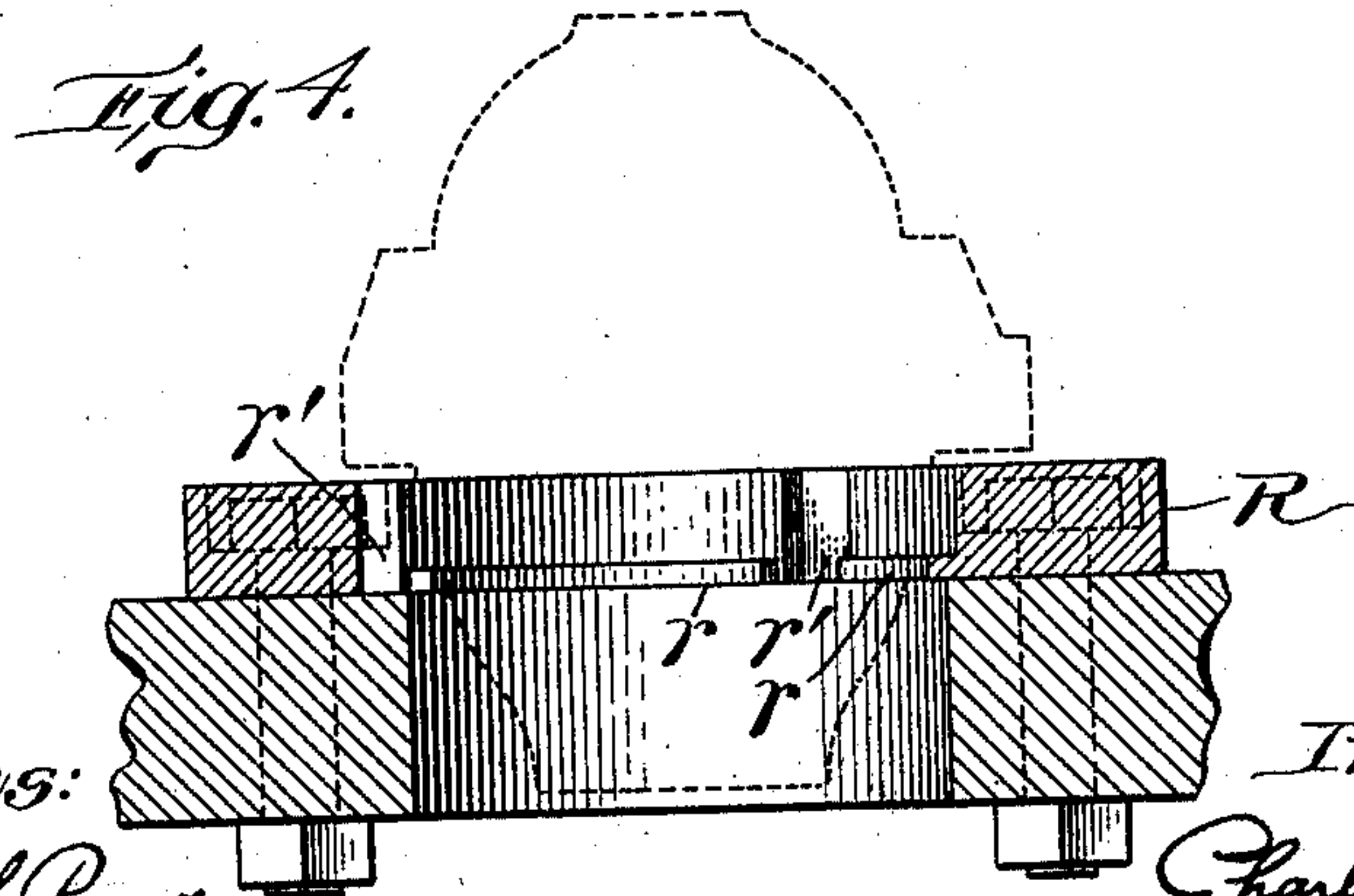
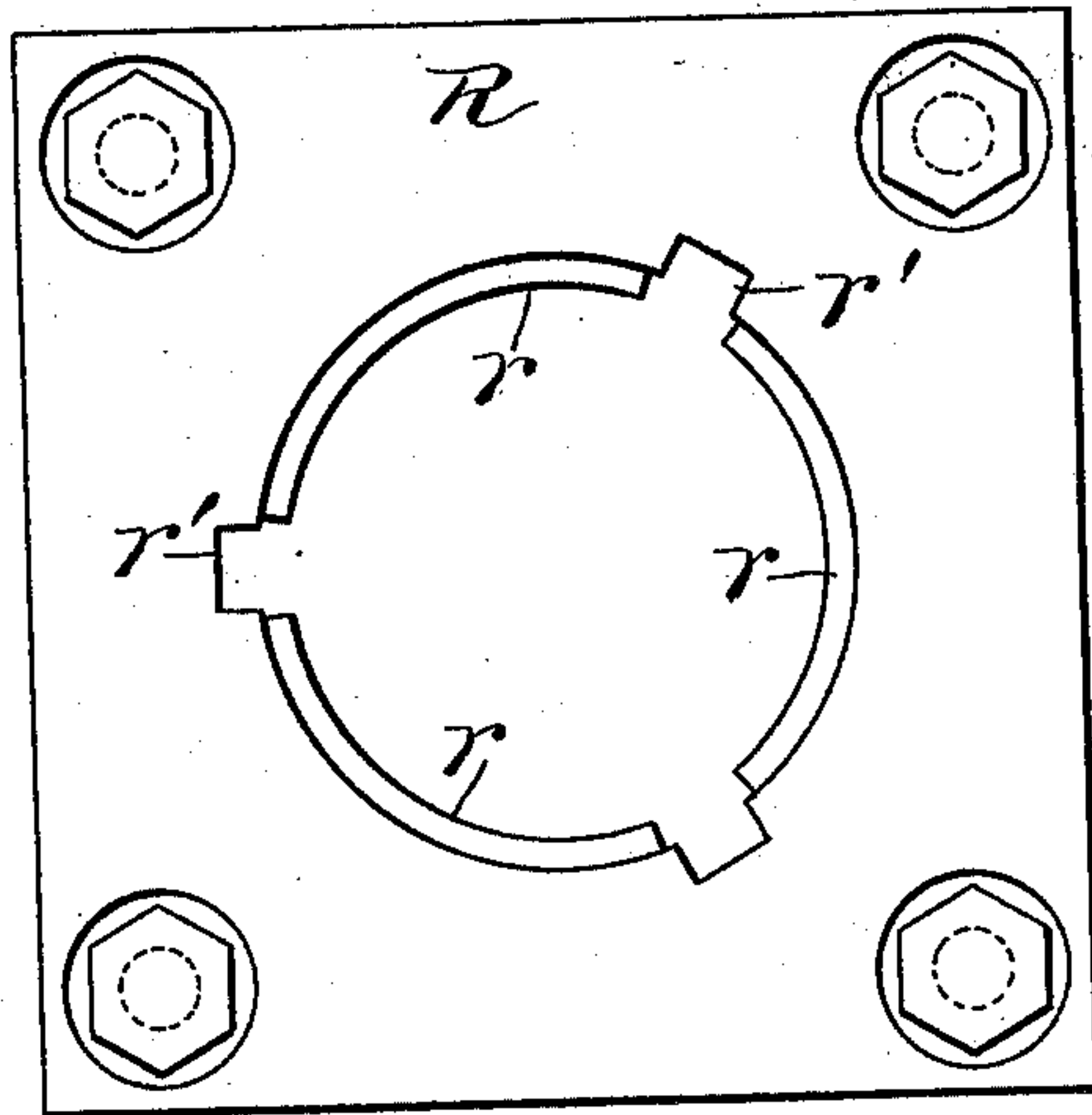


Fig. 3.



Witnesses:
 Joseph H. Ryan
 Charles D. Woodbury

Inventor:
 Charles J. Emerson,
 by Roberts, Roberts & Dulmus,
 attys.

UNITED STATES PATENT OFFICE.

CHARLES J. EMERSON, OF PROVIDENCE, RHODE ISLAND.

HOLDER FOR CALORIMETER-BOMBS.

963,426.

Specification of Letters Patent.

Patented July 5, 1910.

Original application filed August 20, 1908, Serial No. 449,445. Divided and this application filed July 9, 1909. Serial No. 506,732.

To all whom it may concern:

Be it known that I, CHARLES J. EMERSON, a citizen of the United States, and resident of Providence, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Holders for Calorimeter-Bombs, of which the following is a specification.

My invention relates to the manipulation of the combustion chambers or receptacles known as bombs, which are employed as component parts of calorimeters used for determining the calorific value of combustible materials. Bombs of this character are constructed of metal having high tensile strength, and are in two parts which have to be firmly secured together after the specimen of combustible material and the electrical igniting devices have been placed in position in the bomb. The fuel holder in the bomb and the electrical devices for igniting the fuel are necessarily light and somewhat fragile, and they are extremely liable to disturbance and displacement unless the bomb is handled with great care. As considerable force has to be applied in securing the two parts of such a bomb tightly together, the disturbance of the contents has heretofore been a frequent source of failure in the calorimetric tests made with such apparatus.

My invention consists in a construction of a bomb and a holder therefor which will enable the two parts of the bomb to be securely united without in any respect endangering the adjustment of the contents.

In the accompanying drawings which illustrate an example of my invention—Figure 1 is a vertical elevation of a calorimeter bomb; Fig. 2 is a plan view of the lower half thereof; Fig. 3 is a plan view of the holder or support; and Fig. 4 is a vertical cross-section of the said holder or support showing by dotted lines the position of the calorimeter bomb therein.

The calorimeter bomb itself represented in Fig. 1 is constructed according to sundry inventions and improvements made by me which are the subject-matter of an application for patent heretofore filed by me in the United States Patent Office on or about August 20, 1908 and serially numbered 449,445, of which application the present application for a patent is a division.

This calorimeter bomb is spheroidal in its

general form, and comprises two semi-spheroidal members or cups D, D¹, which are united by means of the nut or collar E, which engages with cup D by a screw thread and with the upper cup D¹ by means of a suitable flange thereon, the relationship between the cups D and D¹ and the nut E being in general the same as that between the two members of a pipe coupling united by the nut thereof. The nut E is provided with means for engagement with a wrench or spanner, such as the radially projecting lugs e, and the lower cup D of the bomb has formed upon and integral with it an annular projection d², and is also provided with means for engagement with a holder which are represented in the specific form shown in the drawings by radially projecting lugs d³ which are formed upon the annulus d².

The holder with which the above-mentioned parts coöperate consists of an apertured plate R which may preferably be composed of cast iron, the aperture of which is suited to the reception of and engagement with the calorimeter bomb; in the case shown for illustration the plate R is formed with a ledge r around the borders of the aperture therein and with recesses r¹ which are suited to receive and engage the lugs d³ upon the lower cup D of the calorimeter bomb when the latter is placed in the aperture of the plate R with the annulus d² resting upon the ledge r. The annulus d² and the aperture of the plate R should be of such dimensions that they allow the bomb to slip into the holder plate with a fairly close sliding fit. The recesses r¹ should also be of such proportions that there is little or no chance for rotative play on the part of the bomb cup D.

The holder plate R being secured as indicated in Fig. 4 to a suitable rigid support, and the combustible material and igniting devices having been properly placed and adjusted in the lower cup D, the cup is gently lowered into the aperture in the holder plate, the upper member or cup D¹ then placed upon the lower cup, and the nut E screwed down. A powerful wrench or spanner may then be applied to the nut E for the purpose of drawing the two halves of the calorimeter bomb tightly together to make a hermetical joint, and in the application of the force required no particular care need be taken since the holder plate above described holds

the calorimeter bomb and its delicately adjusted contents in perfect security.

What I claim and desire to secure by Letters Patent is:—

- 5 A holder for bombs of the character described, comprising a plate adapted to be securely fastened to a rigid support and formed with a central circular aperture therethrough, a plurality of radial recesses
10 extending outwardly from the periphery of said opening, and ledges projecting from the

bottom of said plate into the aperture to support the bomb, said recesses serving to engage the lugs on the bomb and prevent rotation thereof.

Signed by me at Boston, Massachusetts
this first day of July 1909.

15

CHARLES J. EMERSON.

Witnesses:

ROBERT CUSHMAN,
CHARLES D. WOODBERRY.