

No. 658,572.

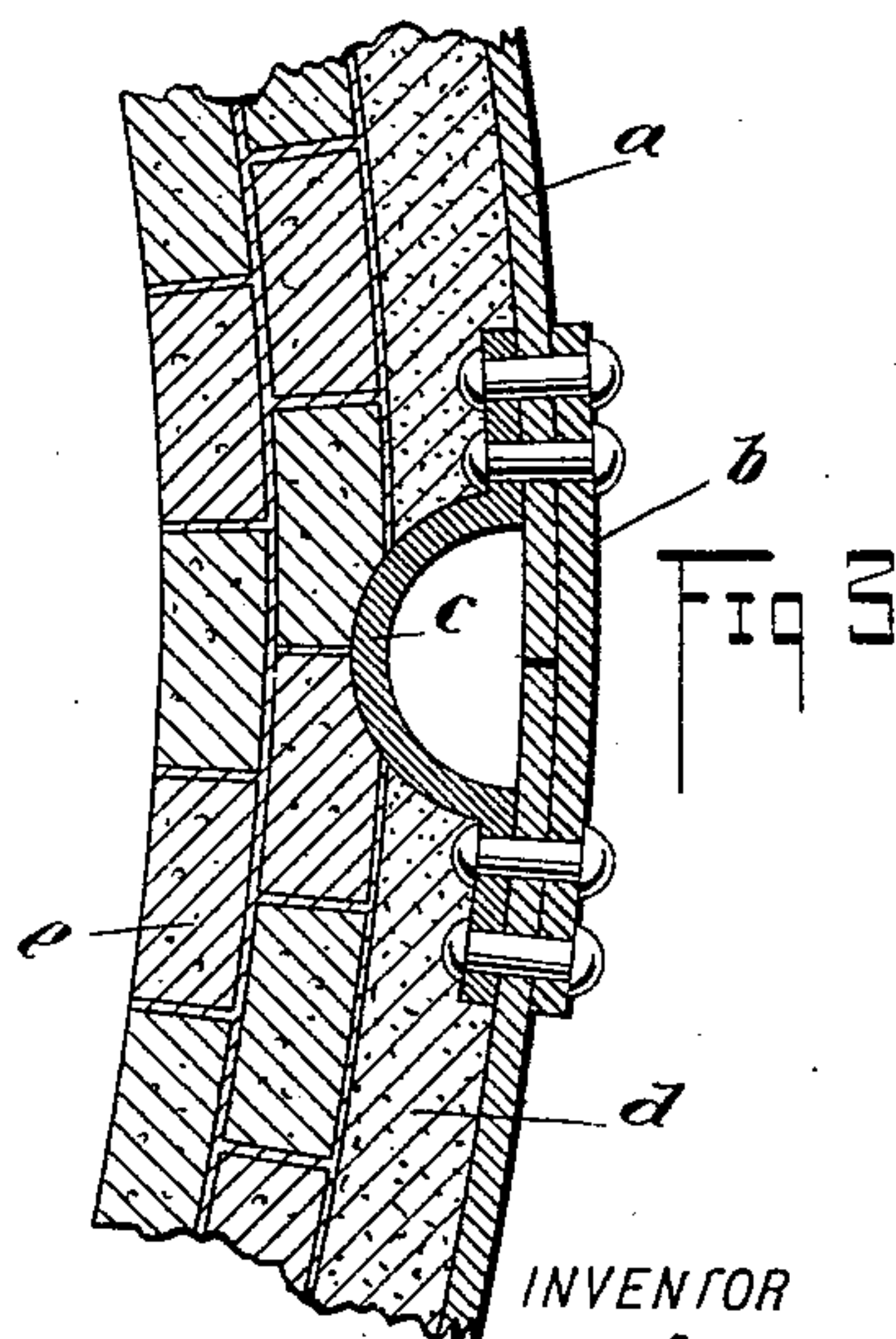
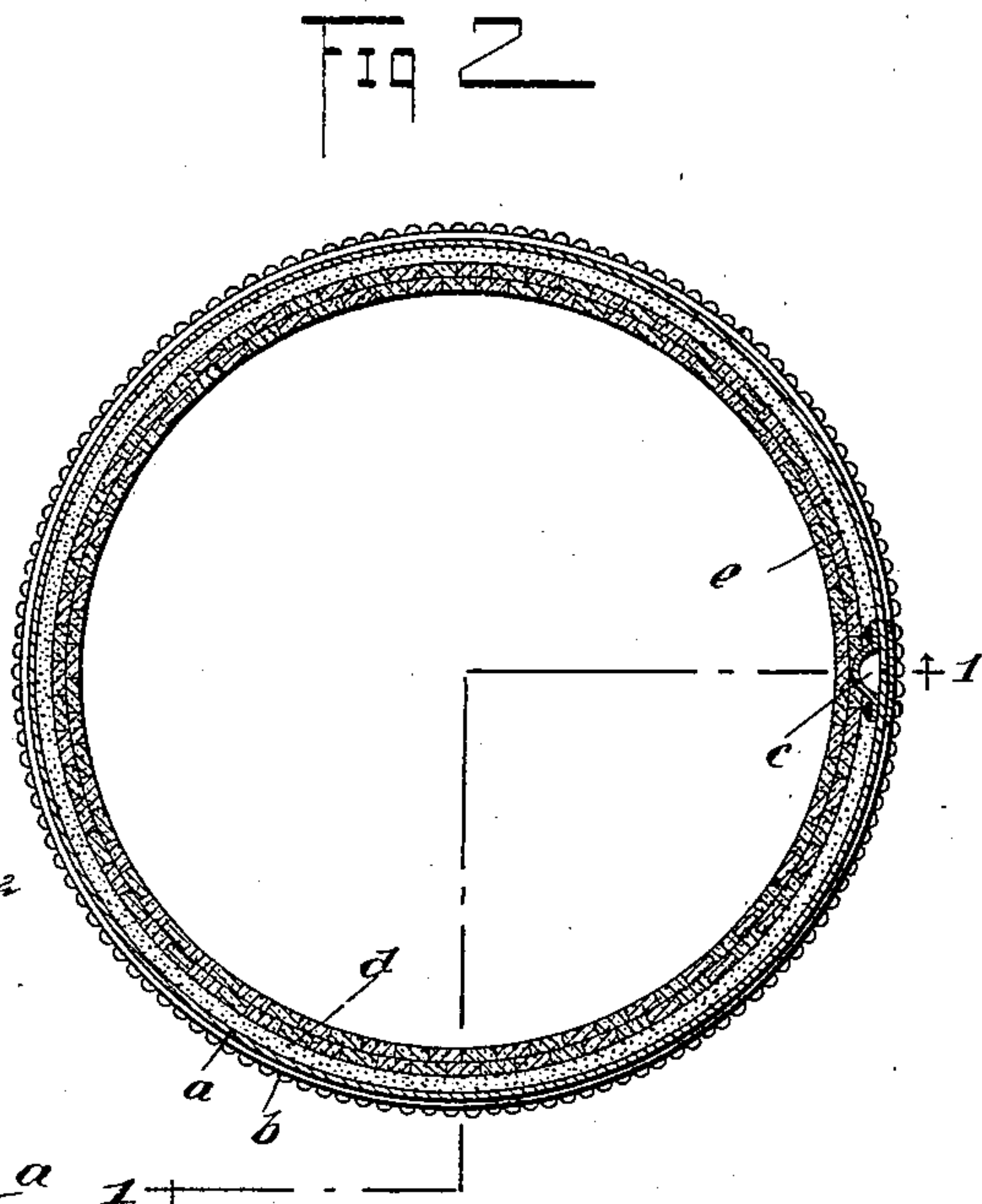
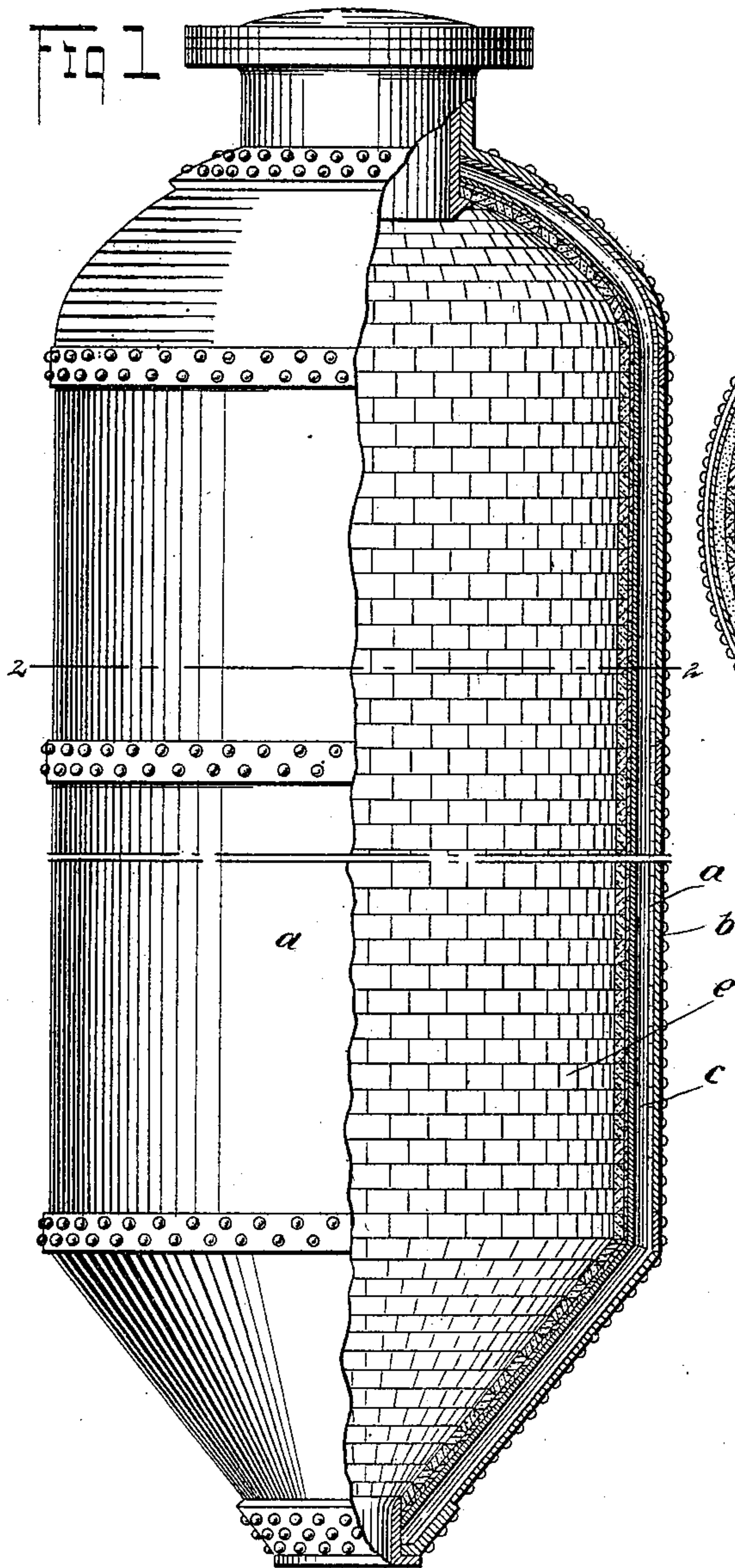
Patented Sept. 25, 1900.

E. G. MURPHY.

DIGESTER.

(Application filed Jan. 22, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDGAR GUILLOW MURPHY, OF SANDY HILL, NEW YORK.

DIGESTER.

SPECIFICATION forming part of Letters Patent No. 658,572, dated September 25, 1900.

Application filed January 22, 1900. Serial No. 2,389. (No model.)

To all whom it may concern:

Be it known that I, EDGAR GUILLOW MURPHY, a citizen of the United States, and a resident of Sandy Hill, in the county of Washington and State of New York, have invented a new and Improved Digester, of which the following is a full, clear, and exact description.

The purpose of this invention is to construct a cement-lined digester the lining of which will not be influenced—that is to say, cracked and broken—by the contraction and expansion of the digester-shell due to the alternate heating and cooling thereof.

This specification is the disclosure of one form of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a view of the digester with parts broken away on the line 1 1 of Fig. 2. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is an enlarged detail section taken horizontally through one of the seams of the digester.

The digester-shell *a* is constructed in the usual manner—that is to say, of a number of sections of sheet metal fastened together to form the complete shell. These sections have their meeting edges sealed to form the seams by means of exterior butt-straps *b* and interior inwardly-arched straps *c*, the three parts *a*, *b*, and *c* being riveted together, as shown. The arched butt-straps *c* extend inwardly to inclose the space surrounding the seam, and thus the seam is protected from the action of the contents of the digester, which tend in many cases to destroy the calking of the seam. The shell is now lined with cement, as indicated at *d*, the cement being laid directly against the inner walls of the shell and extending to the sides of the arched portions of the interior butt-straps *c*, such straps serving to break the continuity of the cement lining, which, as shown best in Fig. 3, is of a thickness less than the height of the arched portions of the straps *c*. The result of this is that the cement is not placed in the shell in the form of a continuous and unbroken layer, but is divided into a number of separate pieces which are independent of each other. With this arrangement contraction and expansion of the metallic shell will not tend to fracture the cement and de-

stroy the lining. Inward of the cement one or more layers of brick *e* are placed, as shown, such brick completely covering the butt-straps *c*, as shown.

I am aware that previous to my invention 60 digesters have been constructed with cement linings; but these linings are invariably in the form of an unbroken layer of cement extending continuously throughout the interior of the digester, and such linings are known 65 to be disadvantageous in that the expansion and contraction of the digester-shell readily fracture the cement and destroy the lining. The essential feature of my invention is therefore building the shell with the butt- 70 straps *c* having inwardly-projected portions, at the sides of which the cement lining is placed in separate and independent sections, the butt-straps *c* performing the double function of protecting the seam in the shell and 75 of breaking the continuity of the cement.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A digester, the shell of which is constructed of a section or sections of sheet metal, meeting edges of which are provided with an interior butt-strap, a portion of which is arched or bowed inward away from the same, to protect the seam, and a cement lining for the digester, the same being placed in separate and independent masses at the sides of the arched or bowed portions of the said butt-strap, such portions of the butt-strap projecting completely through the cement, to break the continuity thereof. 80 85 90

2. A digester, the shell of which is constructed of a metallic plate or plates, meeting edges of which are joined by a butt strap or straps, portions of which are projected inward from the shell, and a cement lining laid against the shell, the said inwardly-projected portions of the butt strap or straps passing completely through the lining, the butt-straps serving to protect the seam in the digester-shell and also to break the continuity of the cement, which is thus formed into a number of separate and independent masses. 95 100

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 105

EDGAR GUILLOW MURPHY.

Witnesses:

GUY R. CLARK,
FRED. E. EARLE.