

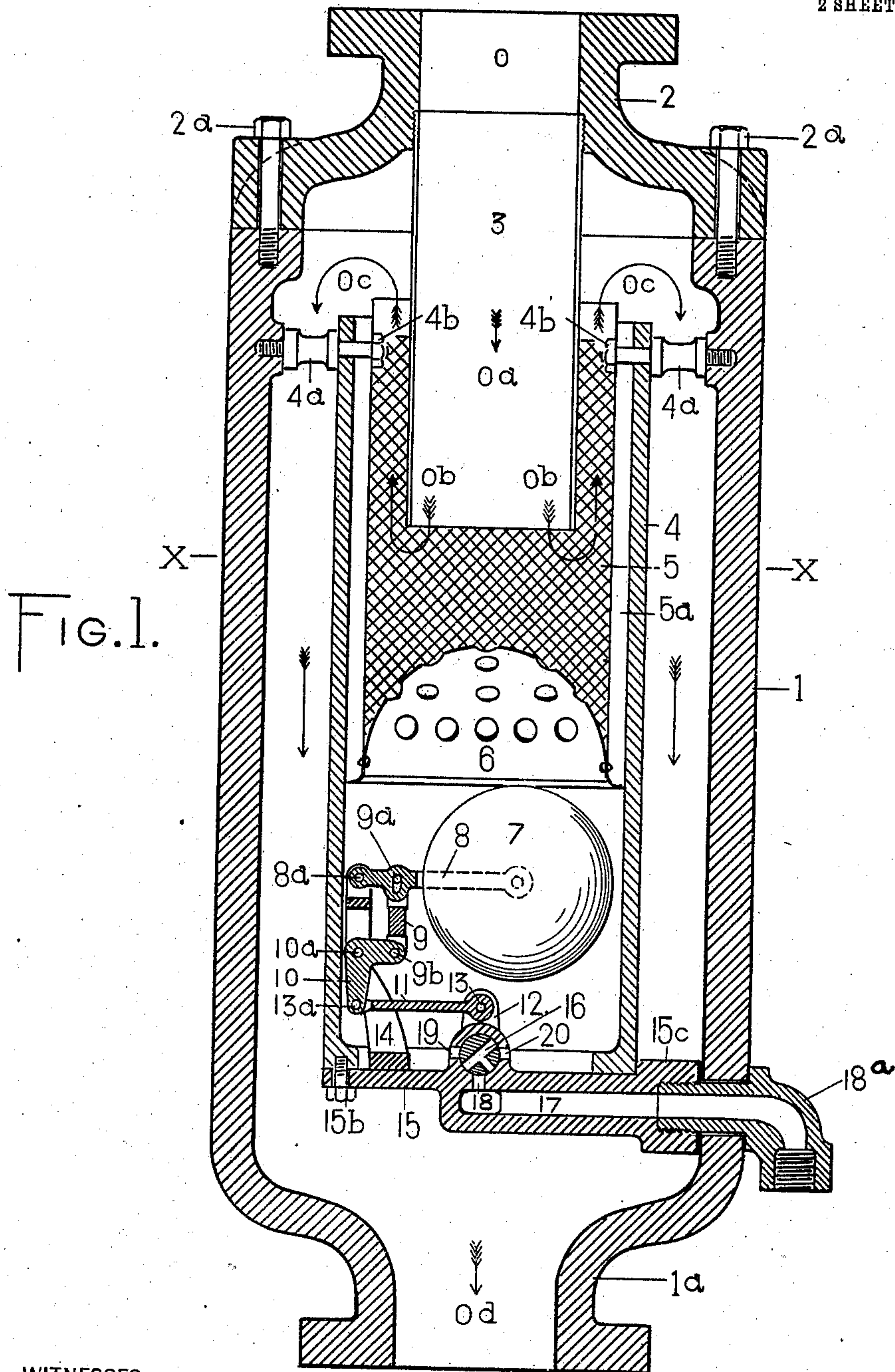
No. 850,417.

PATENTED APR. 16, 1907.

W. I. BROCK.
SEPARATOR.

APPLICATION FILED JAN. 17, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

Bessie H. Royal
R. F. Washburn

INVENTOR

Walter I. Brock

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2 SHEETS—SHEET 2.

FIG. 2.

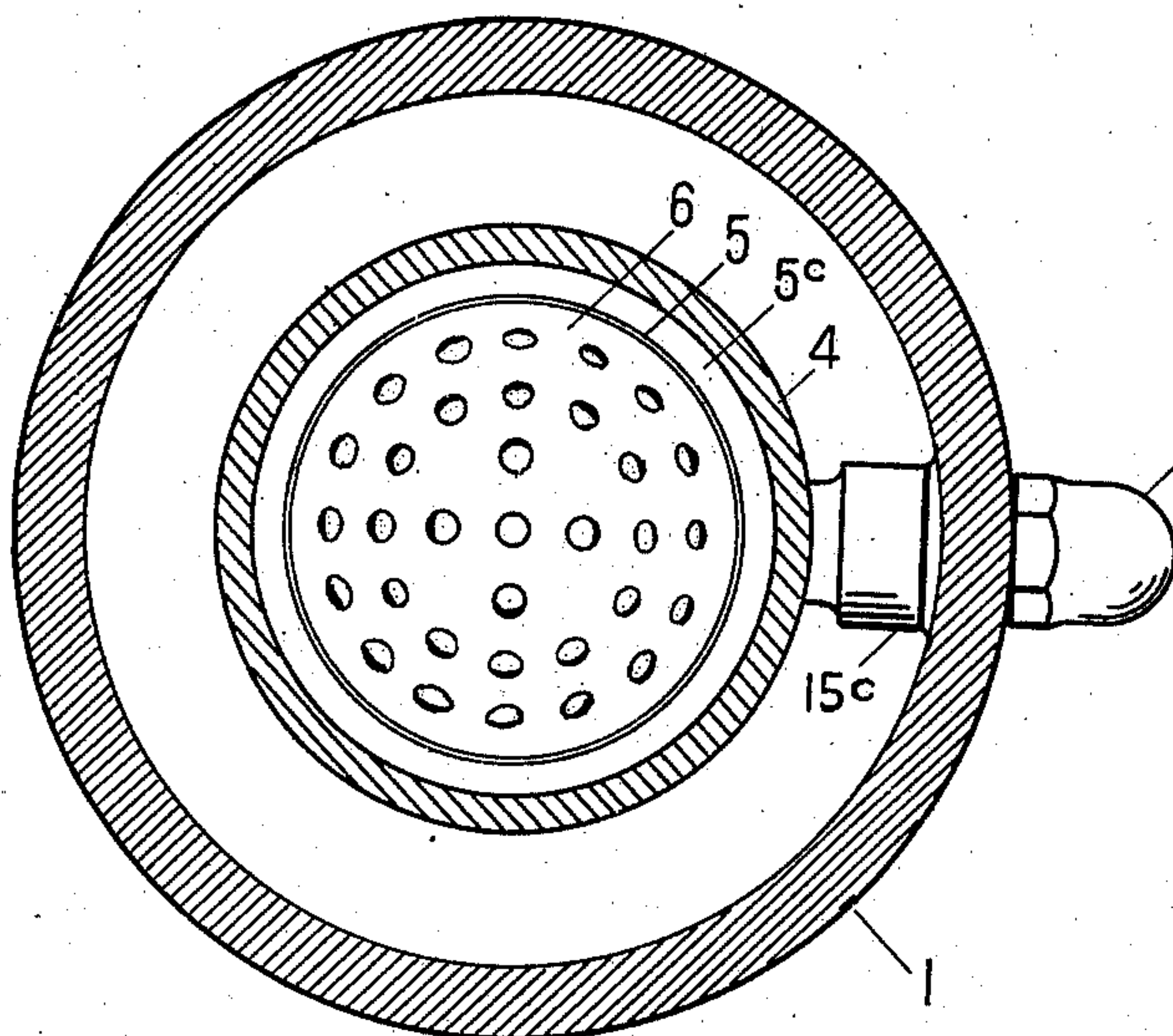


FIG. 6.

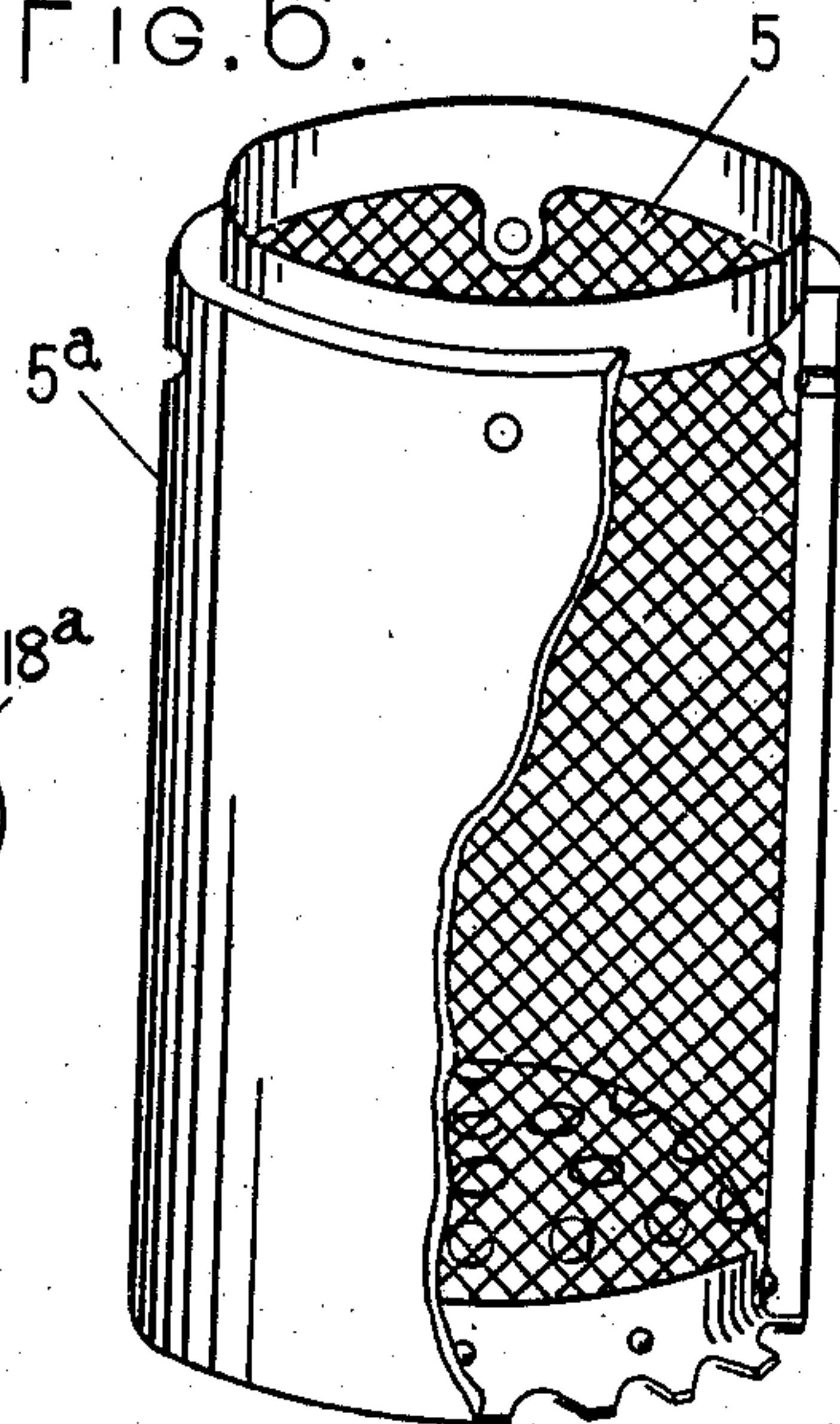


FIG. 4.

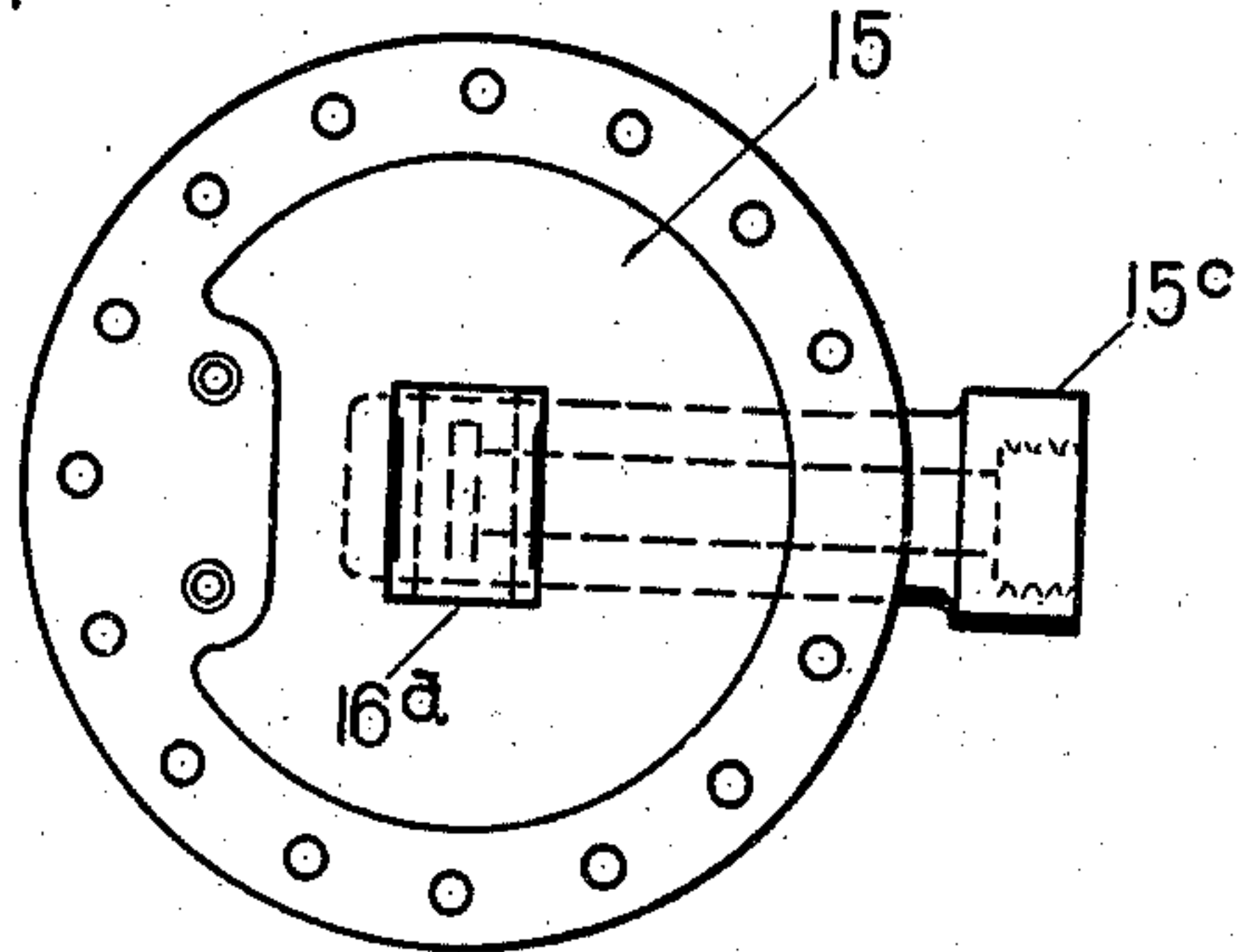


FIG. 3.

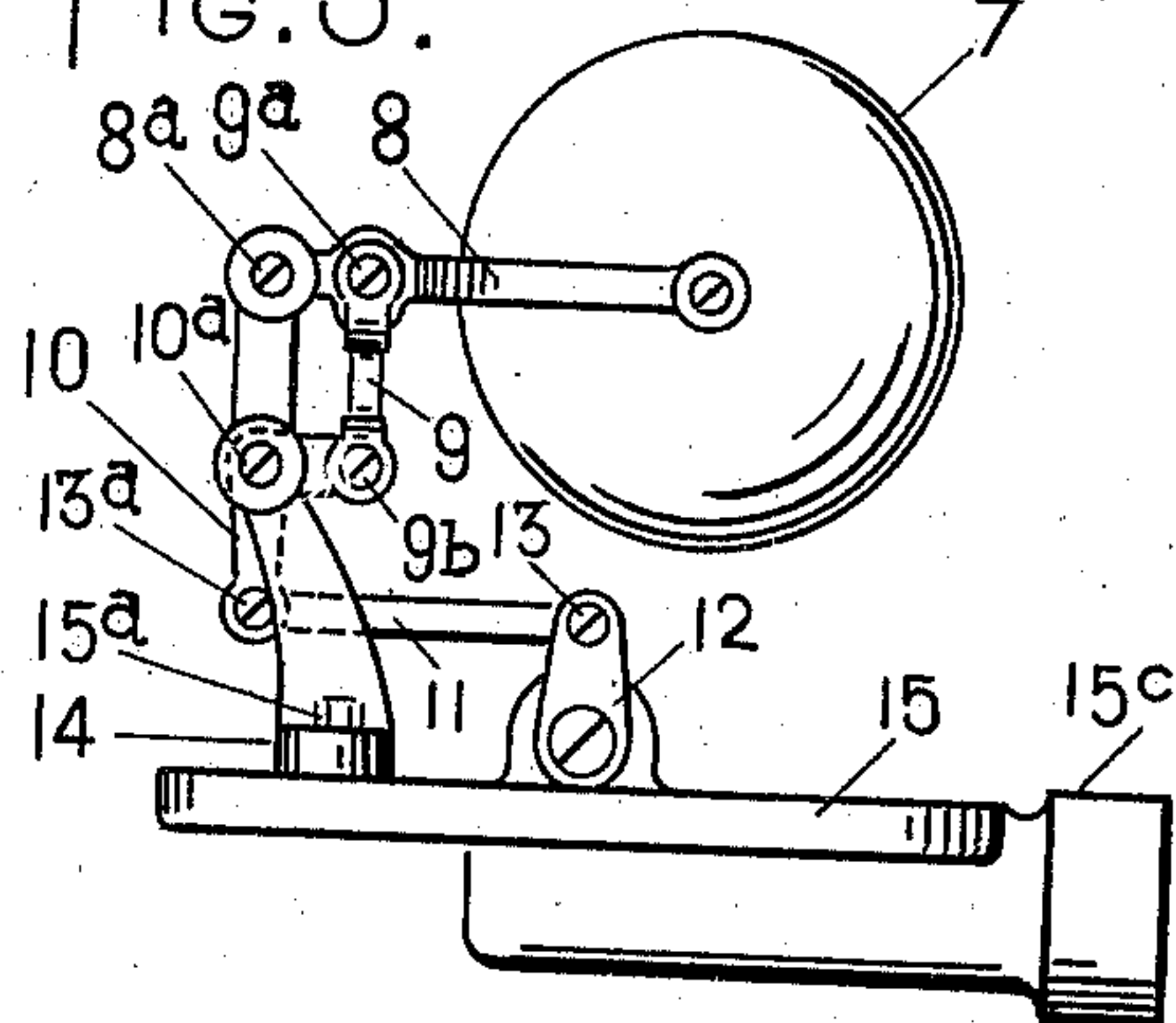
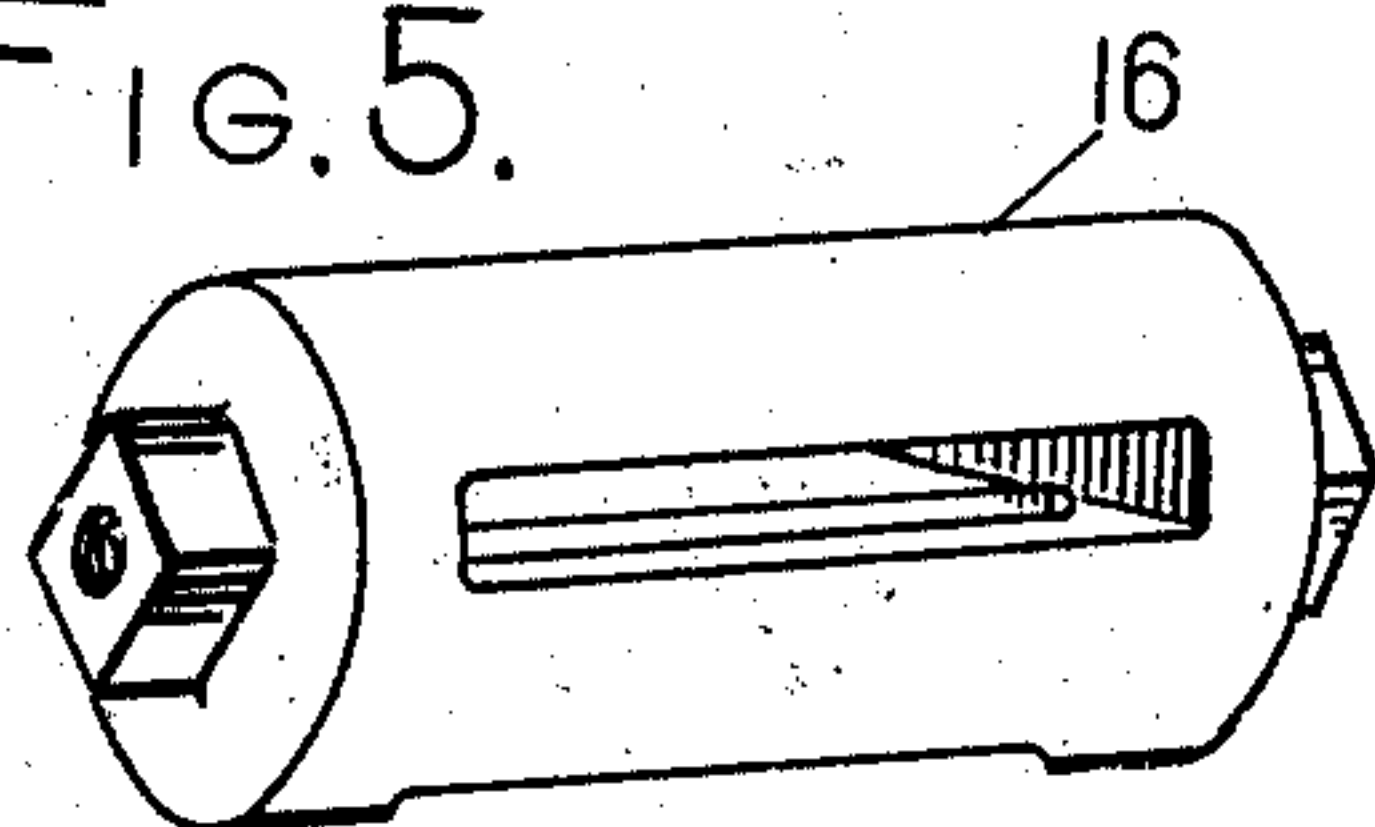


FIG. 5.



WITNESSES:

Bessie H. Royal
R. F. Washburn

INVENTOR

Walter I. Brock

UNITED STATES PATENT OFFICE.

WALTER I. BROCK, OF ERIE, PENNSYLVANIA.

SEPARATOR.

No. 850,417.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed January 17, 1907. Serial No. 352,828.

To all whom it may concern:

Be it known that I, WALTER IRVING BROCK, a citizen of the United States, and a resident of Erie, in the county of Erie and State of Pennsylvania, have invented an Improved Separator, of which the following is a full, clear, and exact description.

My invention relates to separators designed to precipitate, eliminate, and separate from steam such moisture, oil, or grease as may be held in suspension by the steam or condensed from the steam, and my object is to provide a separator capable of performing these offices successfully.

Other objects accomplished by my invention are hereinafter more particularly set forth.

Such objects I accomplish by the means illustrated in the accompanying drawings, in which drawings like characters of reference indicate like parts throughout the several views, and in which—

Figure 1 is a vertical section of separator on a line through its center; Fig. 2, a horizontal section plan view through $x x$; Fig. 3, a vertical side elevation of the float, levers, bracket, and valve assembled and mounted upon the bottom plate of the collecting-chamber; Fig. 4, a plan view of the bottom plate of the collecting-chamber; Fig. 5, a perspective view of the rotary discharge-valve; Fig. 6, a perspective view of a wire form containing and holding the absorbent material in position, showing the absorbent partially cut away.

As illustrated in the drawings, 1 represents the body of separator, having bottom outlet-nozzle 1^a integral, an inlet and top nozzle 2 separate, but bolted to the separator-body by bolts 2^a , an inlet-pipe 3 screwed into nozzle 2, these forming the outer portion or body of separator.

The collecting-chamber 4 is held in position centrally by the studs 4^a , which are screwed into the body 1 and extend through the walls of the collecting-chamber 4, also through the absorbent material 5^a and the form 5, which holds the absorbent material in position, these being held against the shoulders of the studs by the nuts 4^b .

The perforated dome-shaped baffle 6 is located at the lower end of the form 5, and secured thereto by rivets.

The lower edge of the form 5 is flared out to fit the inside of the collecting-chamber 4.

This flared edge is partially cut away, as shown in Fig. 6, to permit the moisture collected by the absorbent material to run out by gravity into the lower part of the collecting-chamber.

The elbow 18^a is provided with a threaded extension which projects through the body 1 and screws into a threaded projection 15^c of the bottom plate 15, in this manner forming a continuation of the discharge-passage 17 and also supporting and bracing the lower part of the collecting-chamber from movement.

In service the steam containing or carrying moisture, oil, or products of condensation enters the separator at O, passing down through inlet-pipe in the direction of arrow O^a . The heavier particles of water, oil, &c., impinge on the baffle through velocity and drop down into the lower part of the collecting-chamber through the openings in the baffle. The steam carrying the lighter particles of moisture reverses direction, as shown by arrows O^b and in its upward passage comes in contact with the absorbent material located around the inner walls of the upper part of the collecting-chamber, which absorbs a greater portion of the remaining moisture in the steam, the dry steam passing downward, as shown by arrows O^c and out through opening O^d .

The moisture collected by the absorbent material is carried downward by gravity and capillary attraction through the openings in the flared flange to the lower part of the collecting-chamber.

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

1. The combination, in a separator, of a vertical cylindrical outer body having a removable top nozzle bolted thereto, an axially-located inlet-pipe extending downward from said nozzle, a vertical cylindrical inner separating and collecting chamber axially and centrally located with a removable bottom containing as a part thereof an extended hollow radial projection forming a drain, a hollow connection extending inward through the outer body and coupling to said radial projection to form a continuous drain from the bottom of said collecting-chamber to the outer atmosphere also to support and brace the lower end of said chamber, substantially as shown and described.

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2. The combination, in a separator, of a vertical cylindrical outer body, a vertical cylindrical inner separating and collecting chamber, a vertical cylindrical perforated sheet-metal or woven-wire guard with a flared and serrated lower edge secured on the inner wall of said chamber, a moisture-absorbing material surrounding said guard on its circumference, substantially as shown and described.

3. The combination, in a separator, of a vertical cylindrical outer body, a vertical cylindrical inner separating and collecting chamber, a vertical cylindrical perforated sheet-metal or woven-wire guard with a

flared and serrated lower edge secured on the inner wall of said chamber, a moisture-absorbing material surrounding said guard on its circumference, a perforated dome-shaped baffle filling the lower end of said cylindrical guard and being firmly secured thereto, substantially as shown and described.

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

WALTER I. BROCK.

Witnesses:

BESSIE N. ROYAL,

R. F. WASHBURN.