

D. M. NESBIT.
GREASE AND WATER SEPARATOR.

APPLICATION FILED FEB. 10, 1905.

2 SHEETS—SHEET 1.

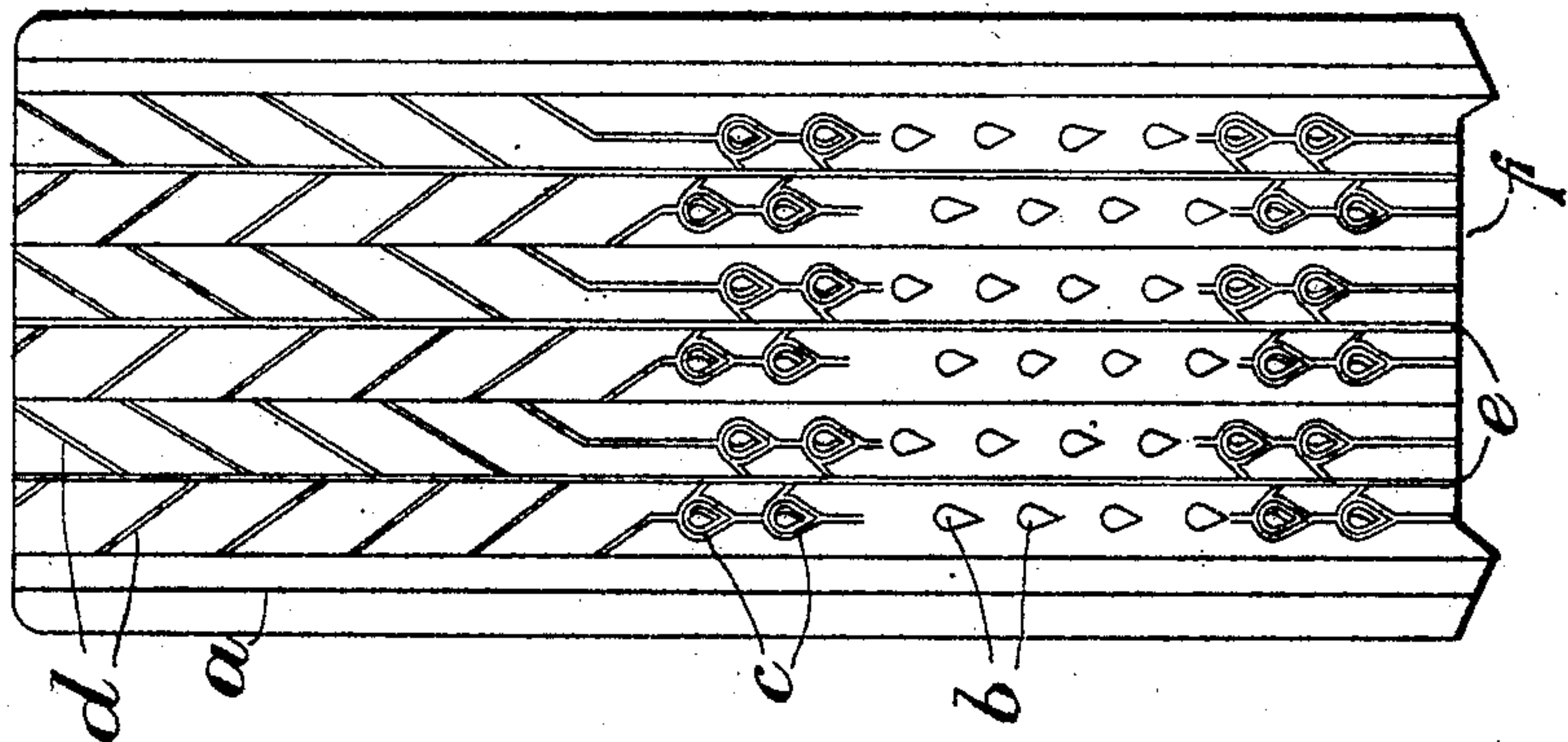


Fig. 3.

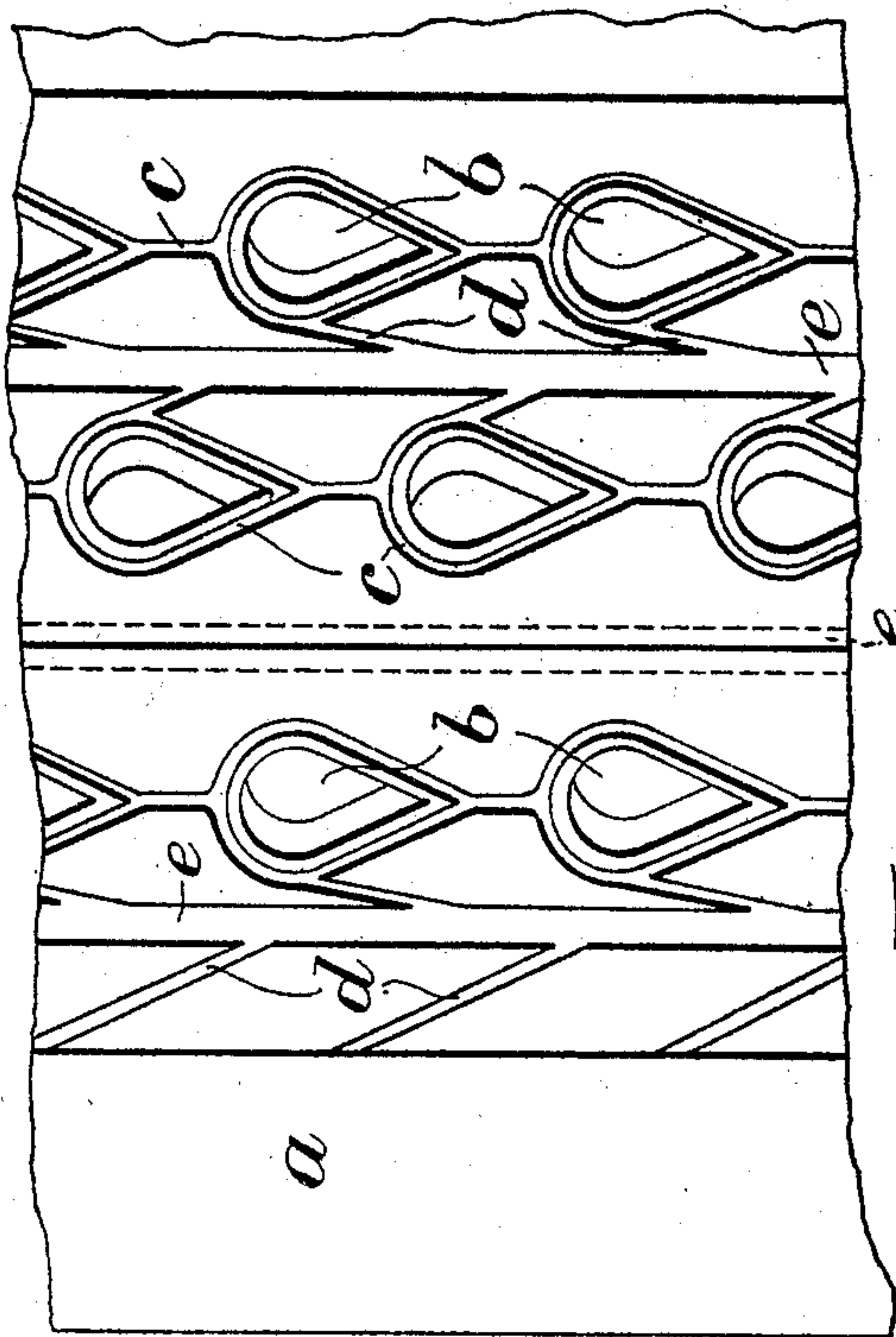


Fig. 1.

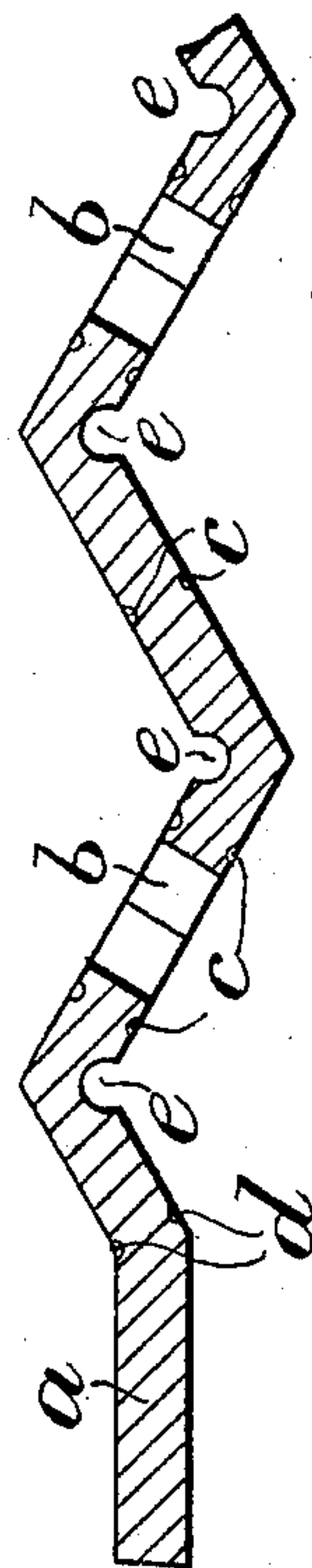


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

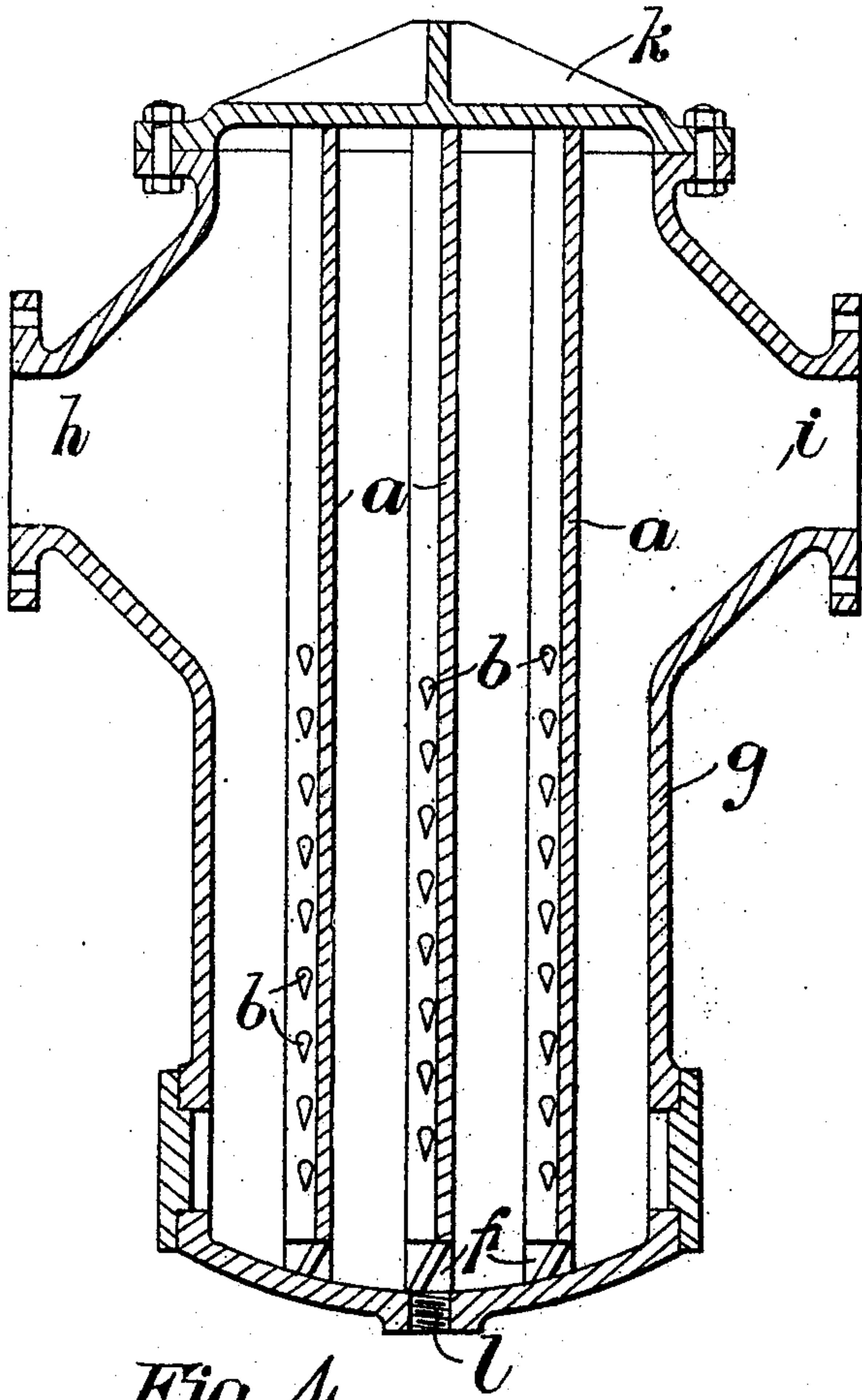


Fig. 4.

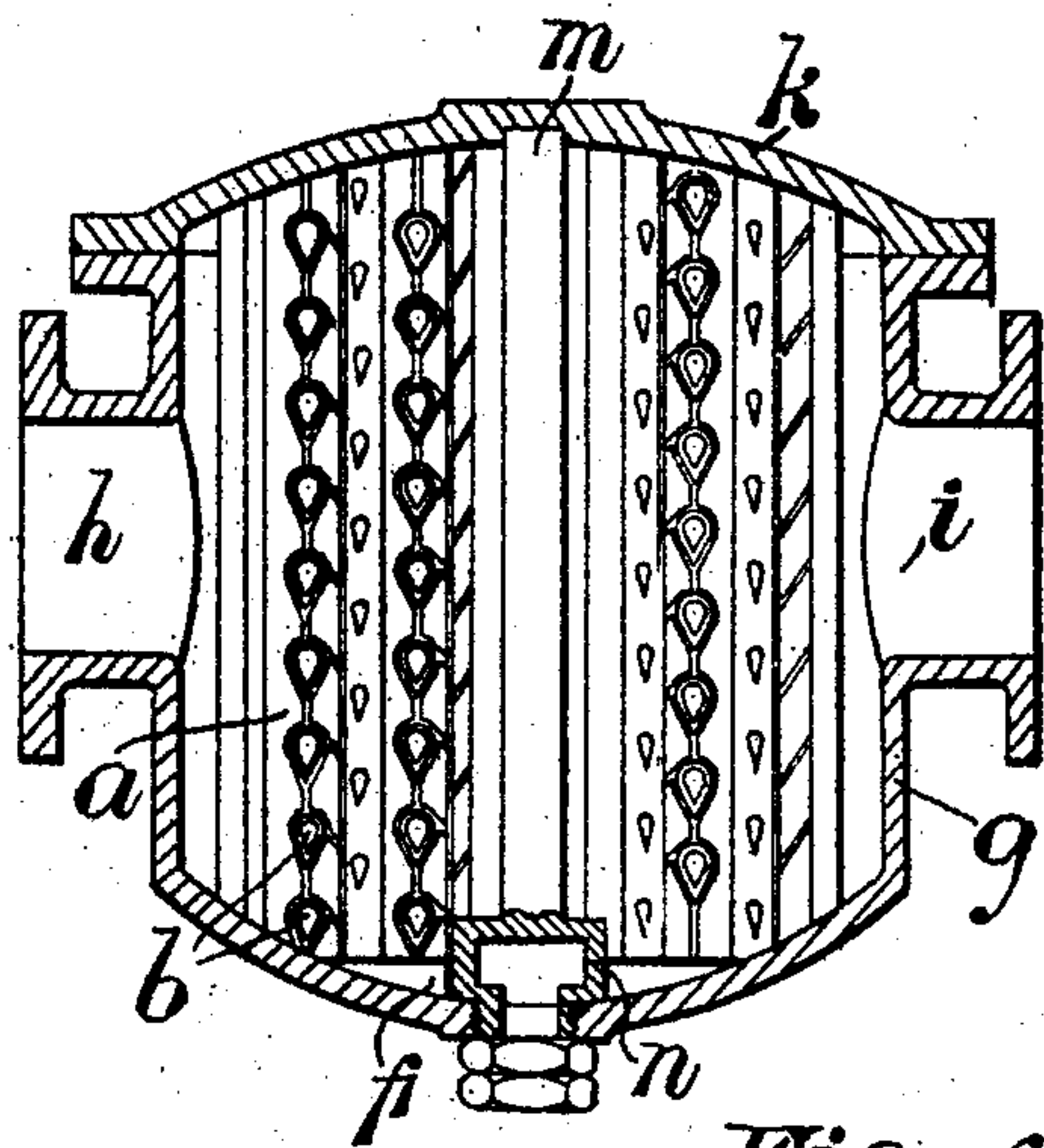


Fig. 6.

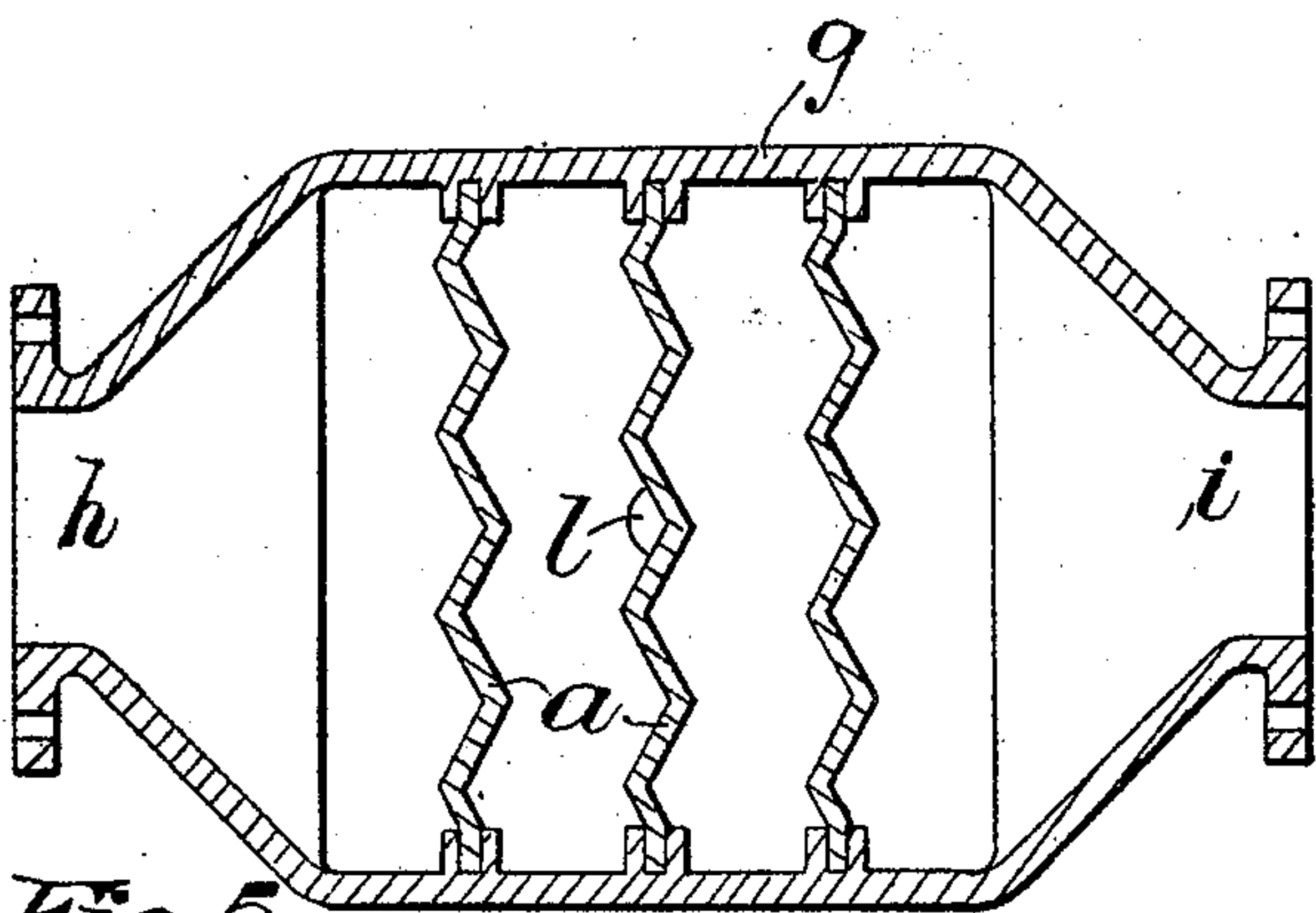


Fig. 5.

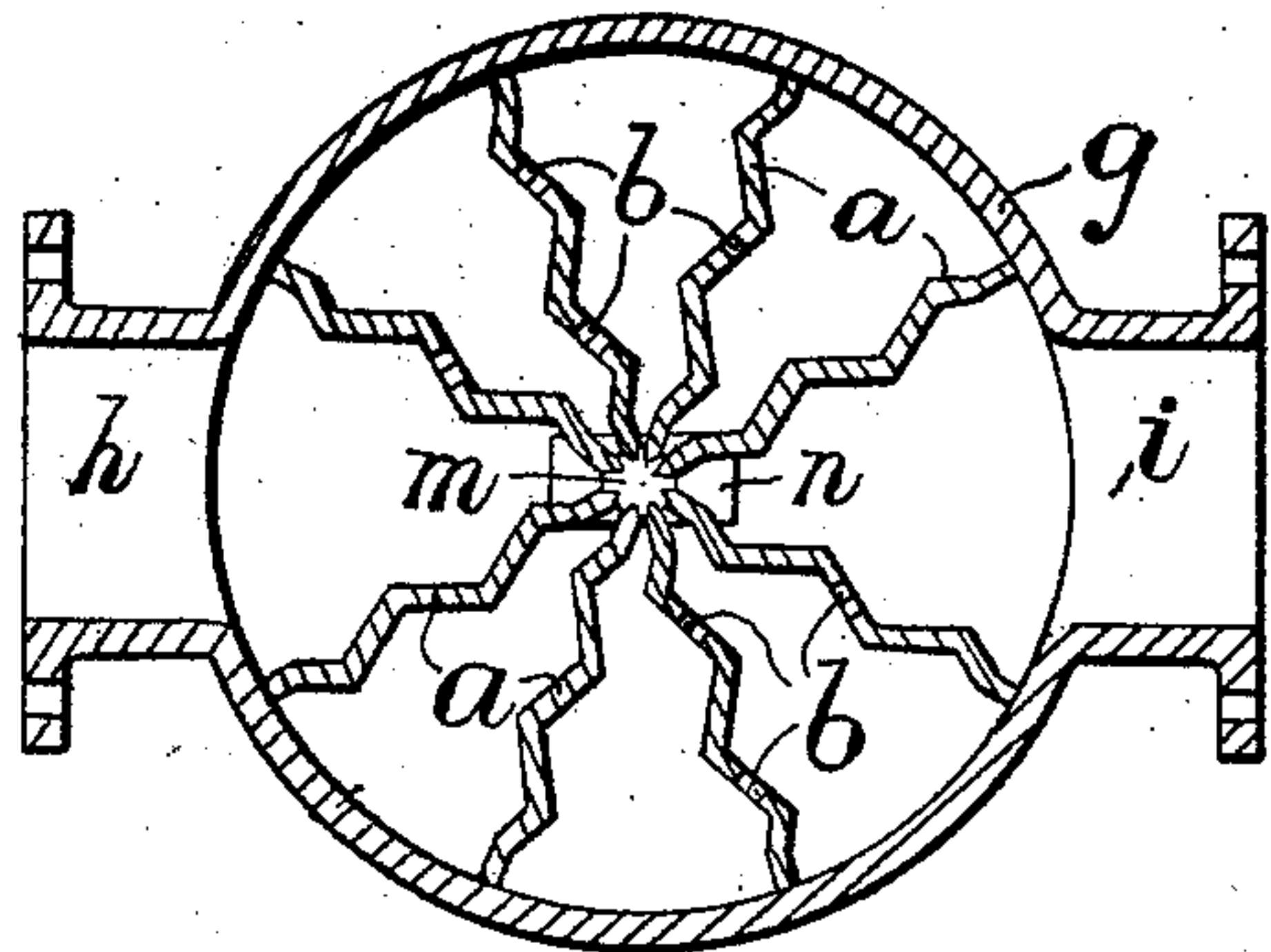


Fig. 7.

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UNITED STATES PATENT OFFICE.

DAVID MEIN NESBIT, OF LONDON, ENGLAND.

GREASE AND WATER SEPARATOR.

No. 795,724.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed February 10, 1905. Serial No. 245,158.

To all whom it may concern:

Be it known that I, DAVID MEIN NESBIT, engineer, a subject of the King of Great Britain and Ireland, residing at 12 Great James street, Bedford Row, London, W. C., England, have invented certain new and useful Improvements in Grease and Water Separators, of which the following is a specification.

This invention relates to grease and water separators intended to be employed upon steam-pipes, the object being to provide for the efficient separation of the grease and water and the protection of the same from the steam when separated, so as to obviate the flow or rush of steam taking up or carrying over the grease or water previously deposited.

The accompanying drawings illustrate various forms of the invention.

Figure 1 is a fragmentary elevation, and Fig. 2 a cross-section, of one form of separating-plate or baffle. Fig. 3 is an elevation of the complete plate. Figs. 4 and 5 are sectional elevation and sectional plan, respectively, of one form of complete separator with the plates therein, Figs. 6 and 7 being similar views of another form.

In carrying out the invention according to one mode the separator-plates or baffles *a* are cast or otherwise formed with a zigzag cross-section and provided in the lower part with a number of holes *b* of the downwardly-tapering form shown. The holes are preferably arranged in vertical series, those of one series alternating with those of the adjacent series. Around these holes grooves *c* are formed, the grooves conforming to the shape of the holes and being connected with one another vertically. They are also connected by tangential grooves *d* to vertical grooves or ducts *e*, situated in the angles of the plates. There may be no holes *b* in the upper parts of the plates; but the grooves *d* and *e* are continued there, as shown in Fig. 3. The lower edge of each plate is cut away, as at *f*, so as to allow drainage.

The plates are arranged in a casing *g*, provided with an inlet *h*, steam-discharge *i*, oil and water discharge *l*, a cover *k* and any other usual fittings. The plates are shown without grooves in Figs. 4 and 5 merely to save confusion in the drawings, which are of small scale. The plates *a* may be arranged parallel, as in Figs. 4 and 5, or otherwise—for example, radially, as in Figs. 6 and 7, in the latter case a central standard *m* being employed, pro-

vided with a bridge-piece *n*, permitting free egress of oil or water through the outlet *l*.

In operation steam enters at *h* and strikes against the upper parts of the first baffle plate or plates *a*, is deflected downwardly, passes through the holes *b*, strikes the next plate, and so on, finally escaping at *i*. In striking the zigzag plates the steam is deflected laterally and to some extent broken up, a direct flow through the holes *b* being thereby avoided. The deflected currents of steam leave the angles of the plates, where the grooves or ducts *e* are situated, to some extent quiescent, and the oil or water deposited on the plates and flowing down the grooves *c* and *d* passes into the grooves or ducts *e* and is enabled to flow down without any appreciable disturbance from the steam. The oil or water is, at it were, hurried away from the proximity of the holes *b*, where the steam-flow is greatest, and flows away down channels or grooves situated where the steam-flow is least. It is therefore not liable to be carried away by the flow of steam.

It is of course obvious that the holes *b* in one plate are preferably staggered with regard to the holes *b* in the adjacent plate or plates and that in some cases the holes may be formed in the lower part of the first plate, in the upper part of the second, in the lower of the third, and so on, so as to cause the steam to take a more circuitous path.

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

1. In a grease and water separator, a baffle-plate having vertical ducts formed therein, and a series of holes of tapered form arranged between the ducts, grooves surrounding the holes, and connected with one another and additional grooves connecting the surrounding grooves with the vertical ducts, substantially as described.

2. In a grease and water separator a baffle-plate of zigzag cross-section, holes in said plate of downwardly-tapered form, grooves surrounding said holes and connected with each other in vertical series, substantially as and for the purpose hereinbefore set forth.

3. In a grease and water separator a baffle-plate of zigzag cross-section, holes in said plate of downwardly-tapered form, grooves surrounding said holes connected with each other in vertical series and vertical ducts situated in the angles of the plate and connected with the grooves, substantially as and for the purpose hereinbefore set forth.

4. A grease and water separator comprising a casing fitted with inlet and discharge apertures, a number of baffle-plates interposed between said apertures said plates being of zigzag form in cross-section and provided with holes of tapered form surrounded by grooves connected in vertical series, the holes being arranged in different relative positions in adjacent plates to cause the steam to take

a circuitous course, substantially as hereinbefore set forth.

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

DAVID MEIN NESBIT.

Witnesses:

ALBERT E. PARKER,
BERTRAM H. MATTHEWS.