

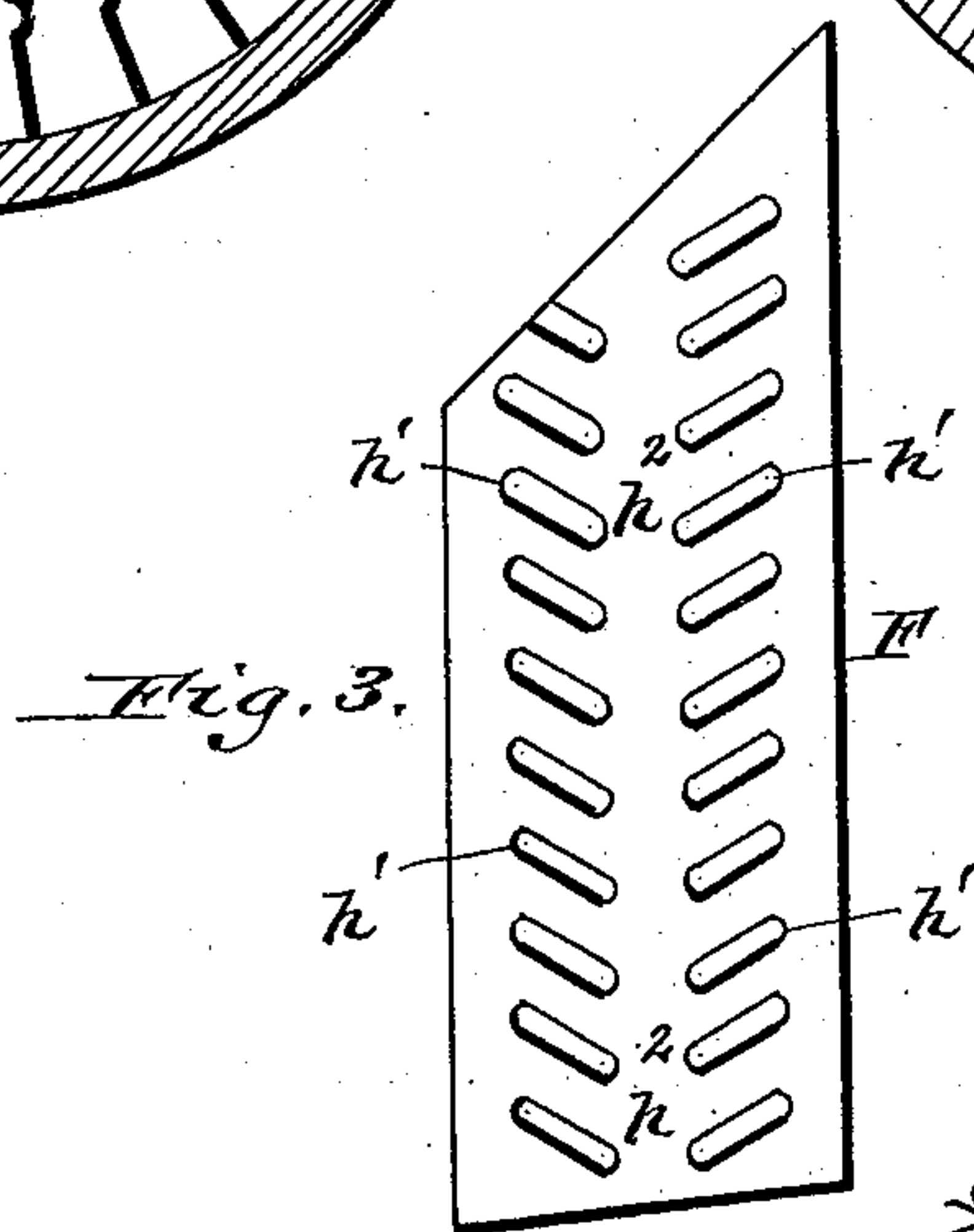
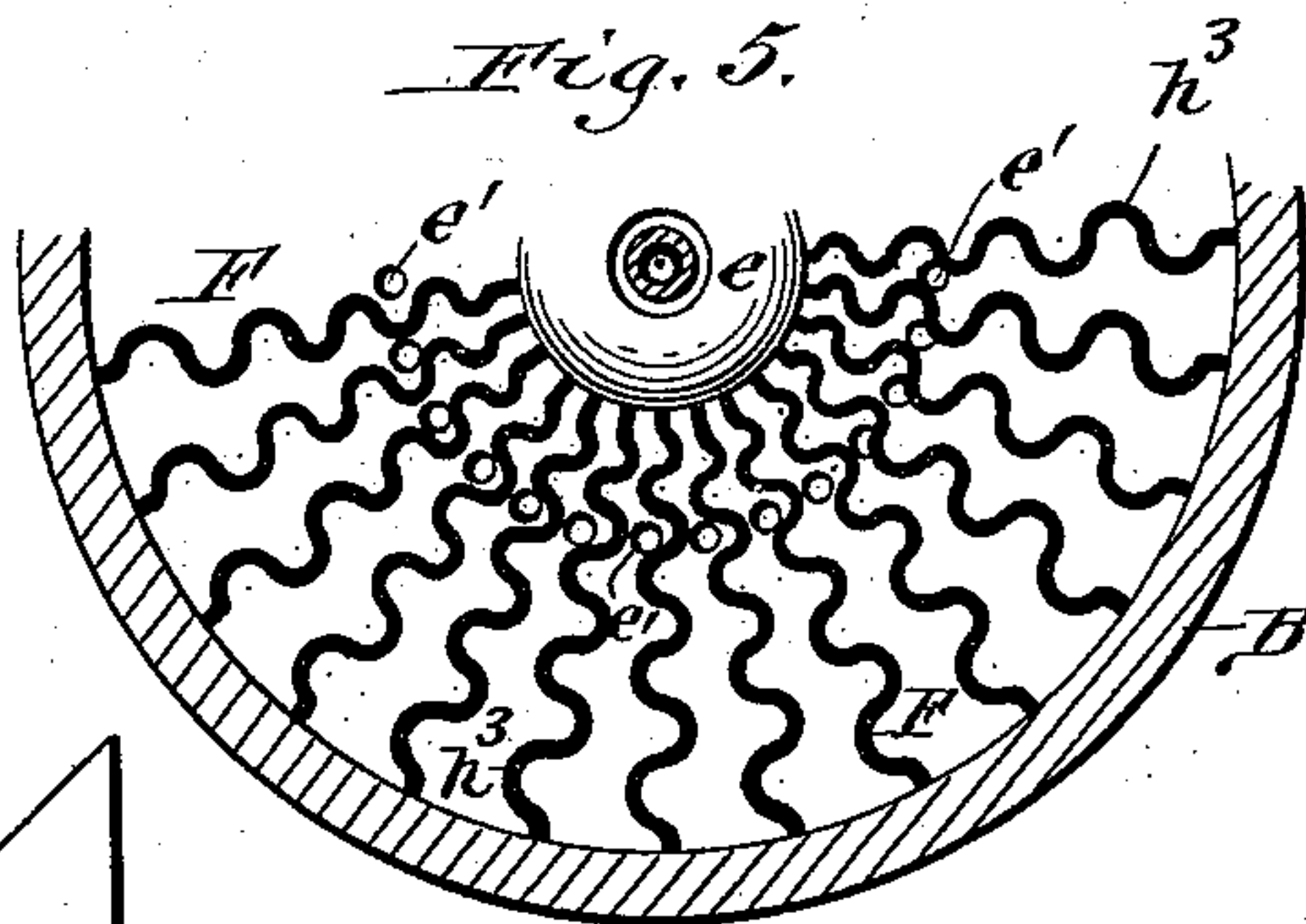
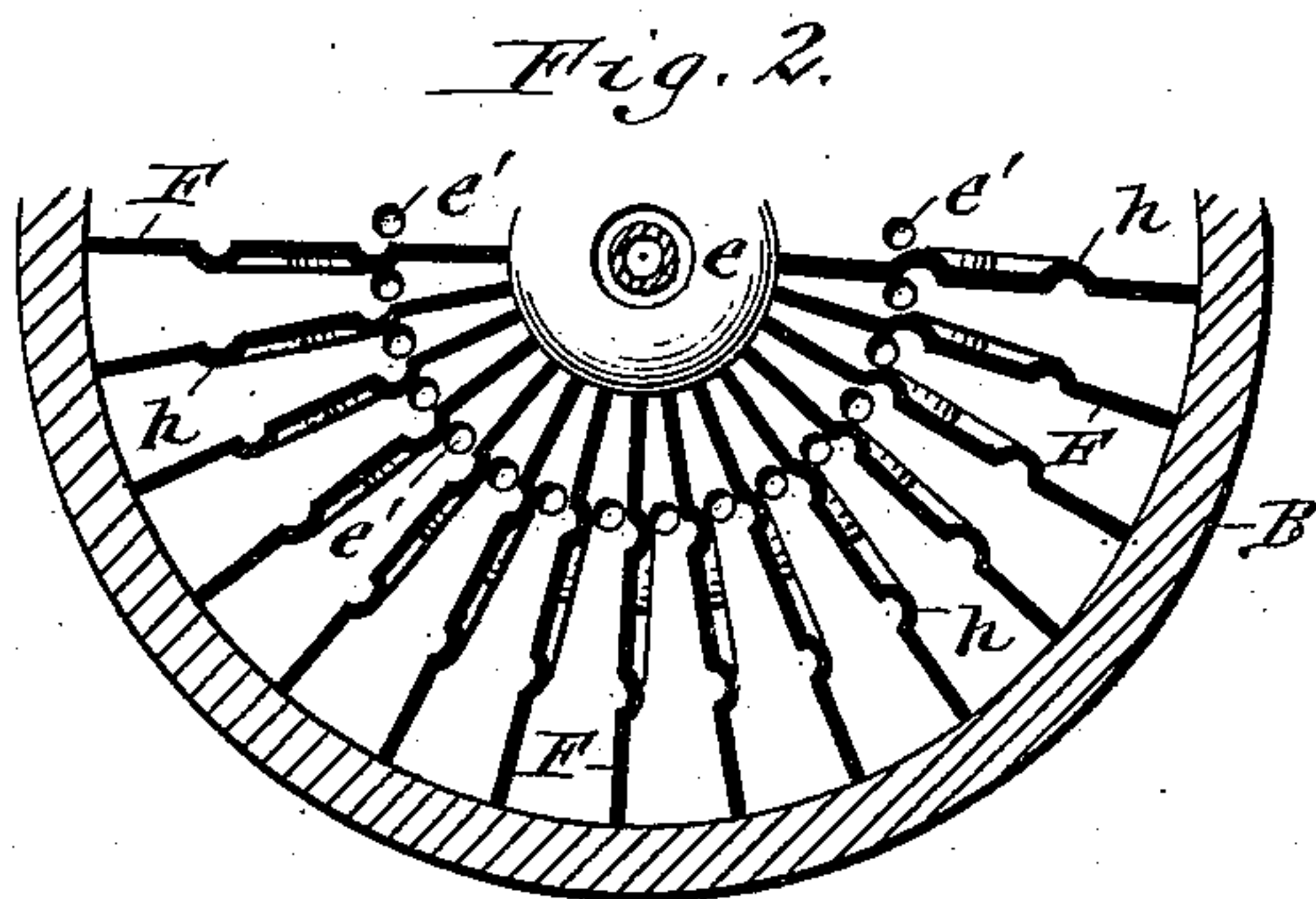
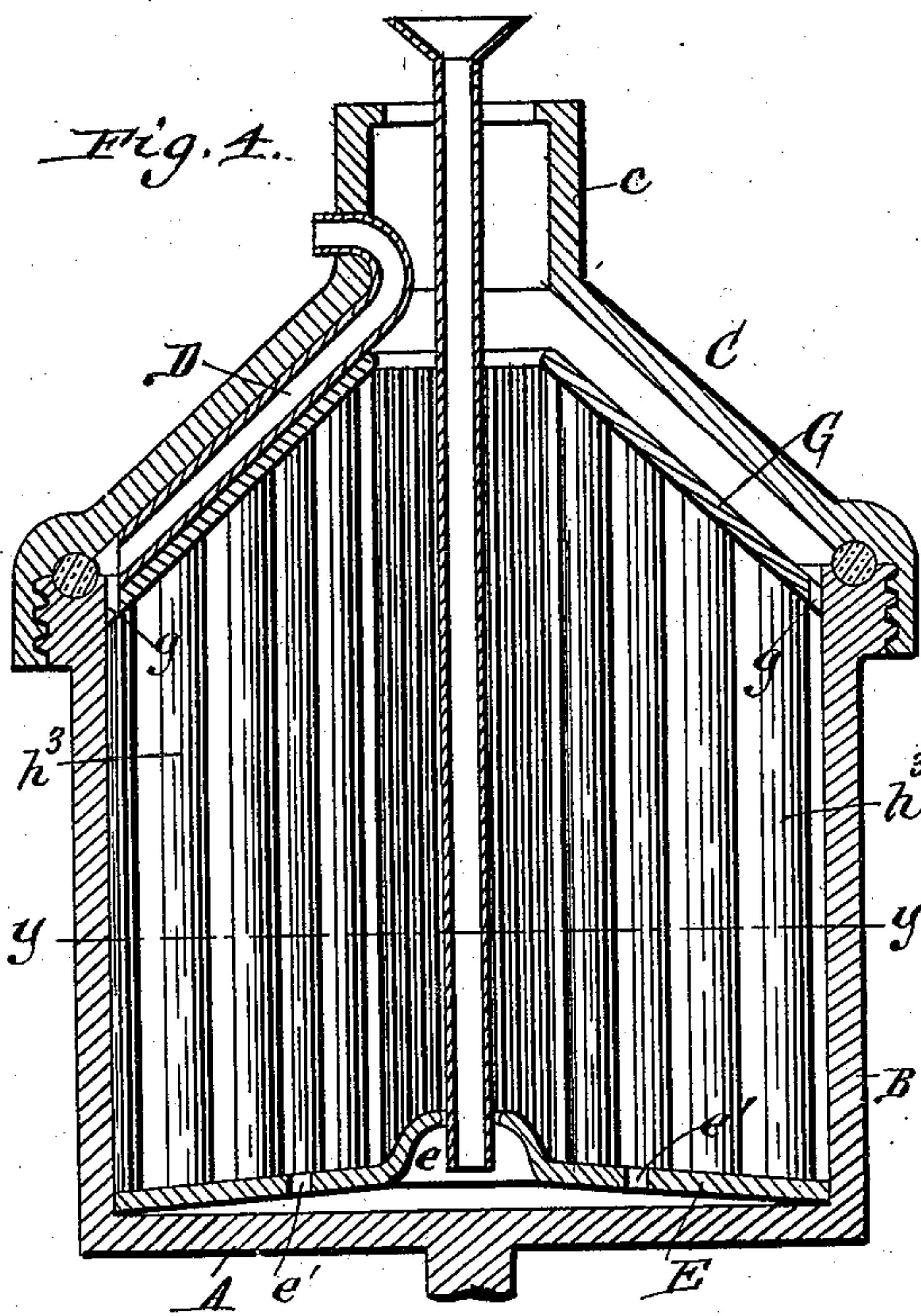
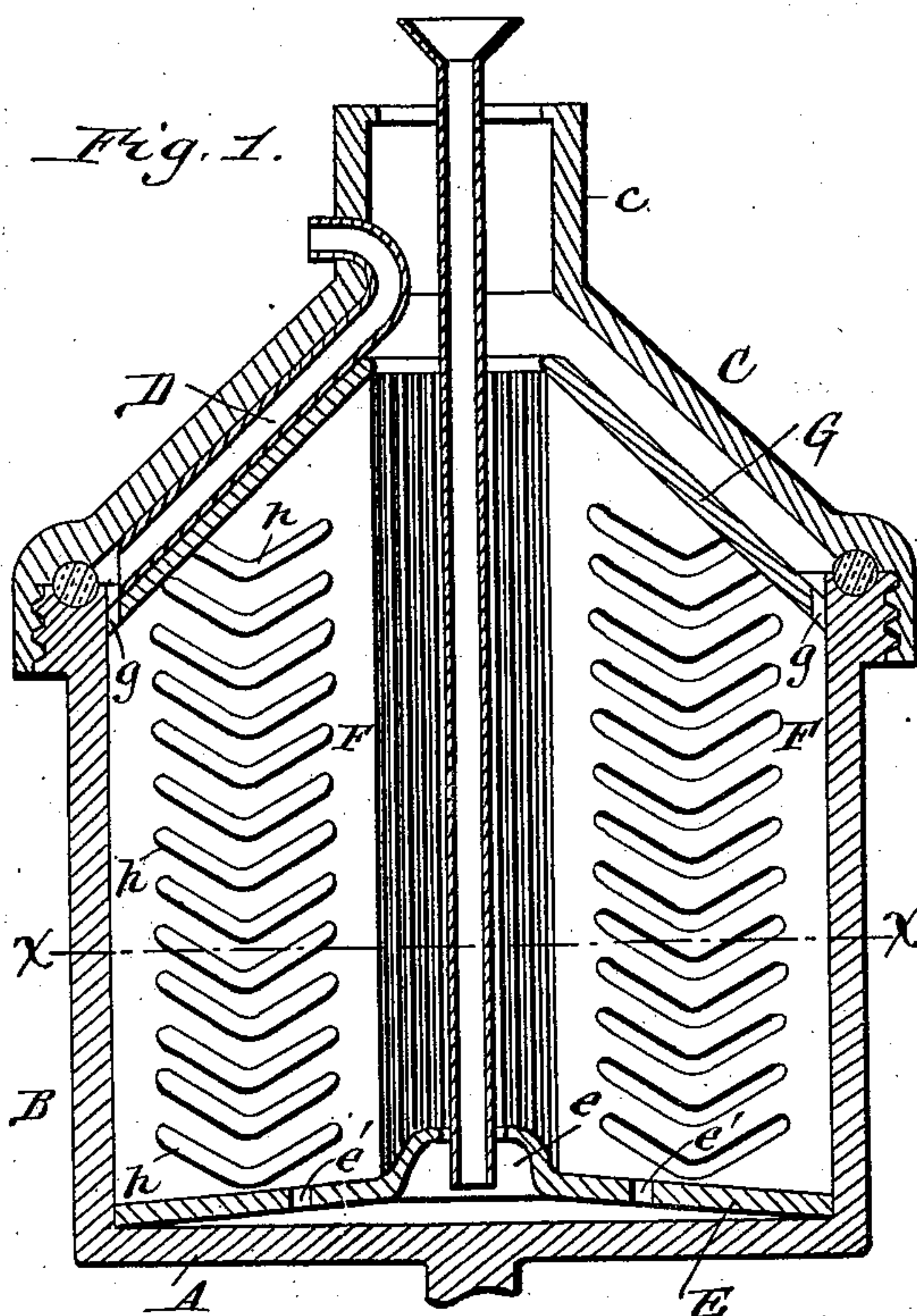
(No Model.)

2 Sheets—Sheet 1.

J. E. FOLK.
CENTRIFUGAL CREAMER.

No. 504,430.

Patented Sept. 5, 1893.



Witnesses:

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Emil Neuhart

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By Wilhelm Bonner.
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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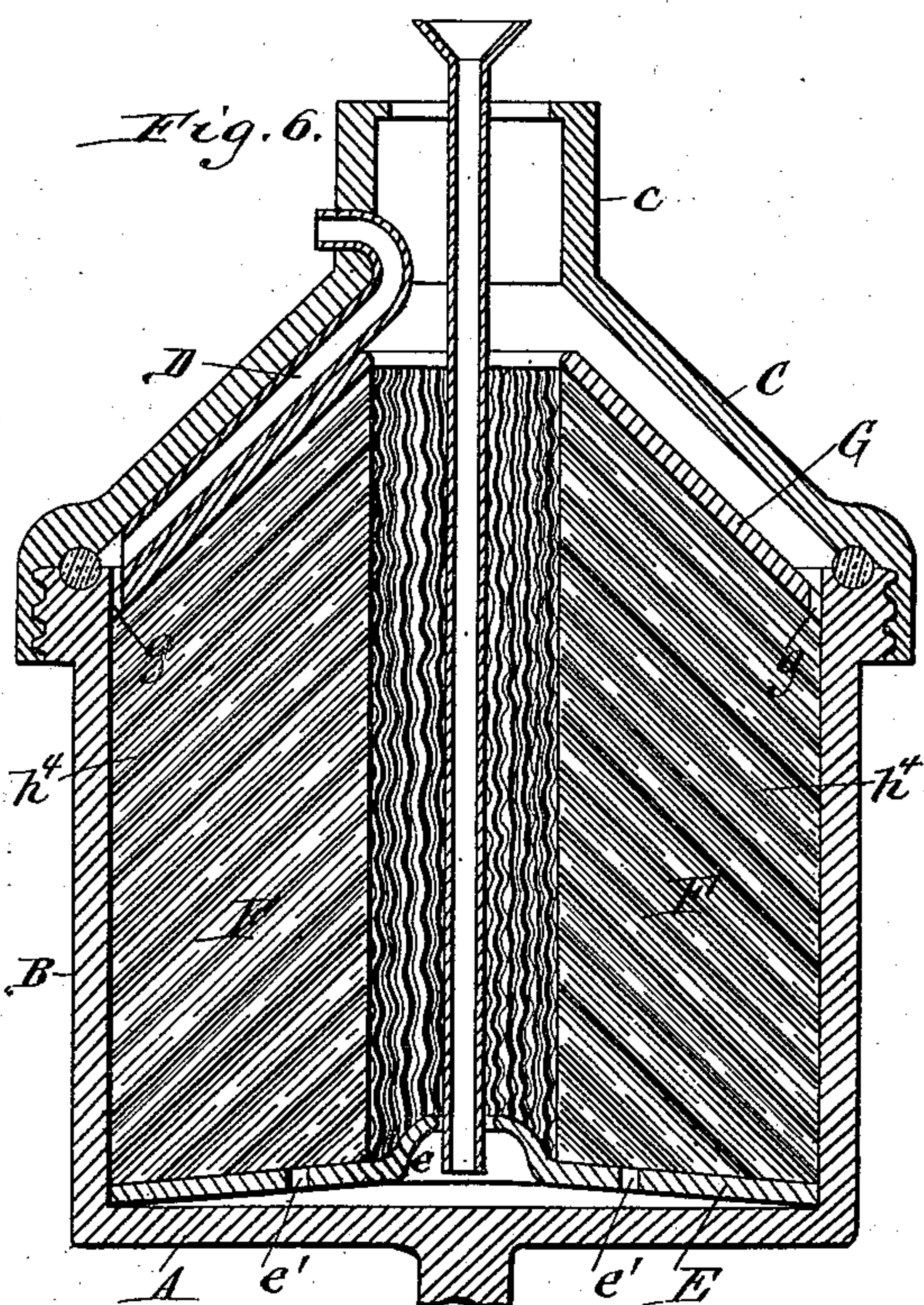


Fig. 6.

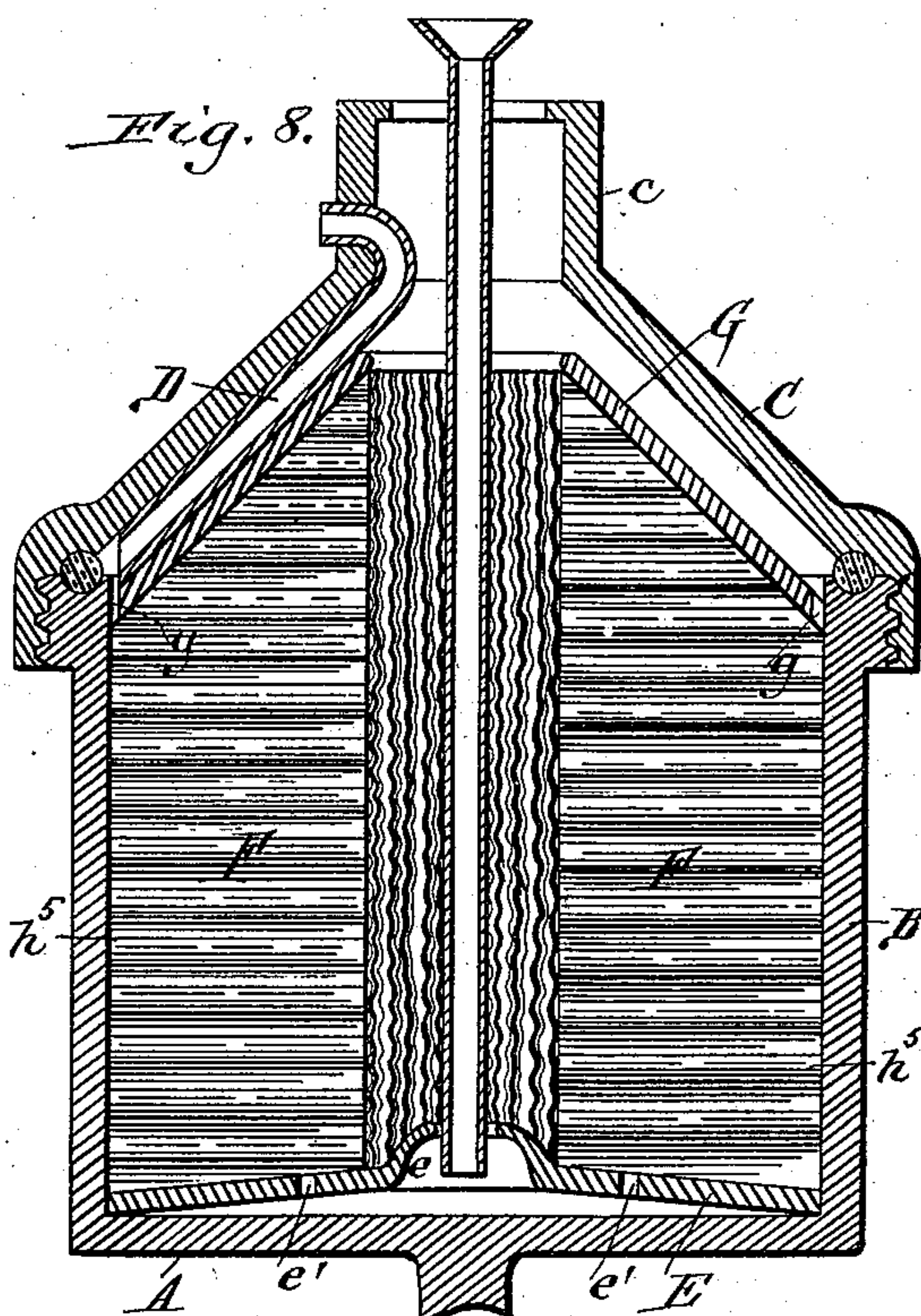


Fig. 8.

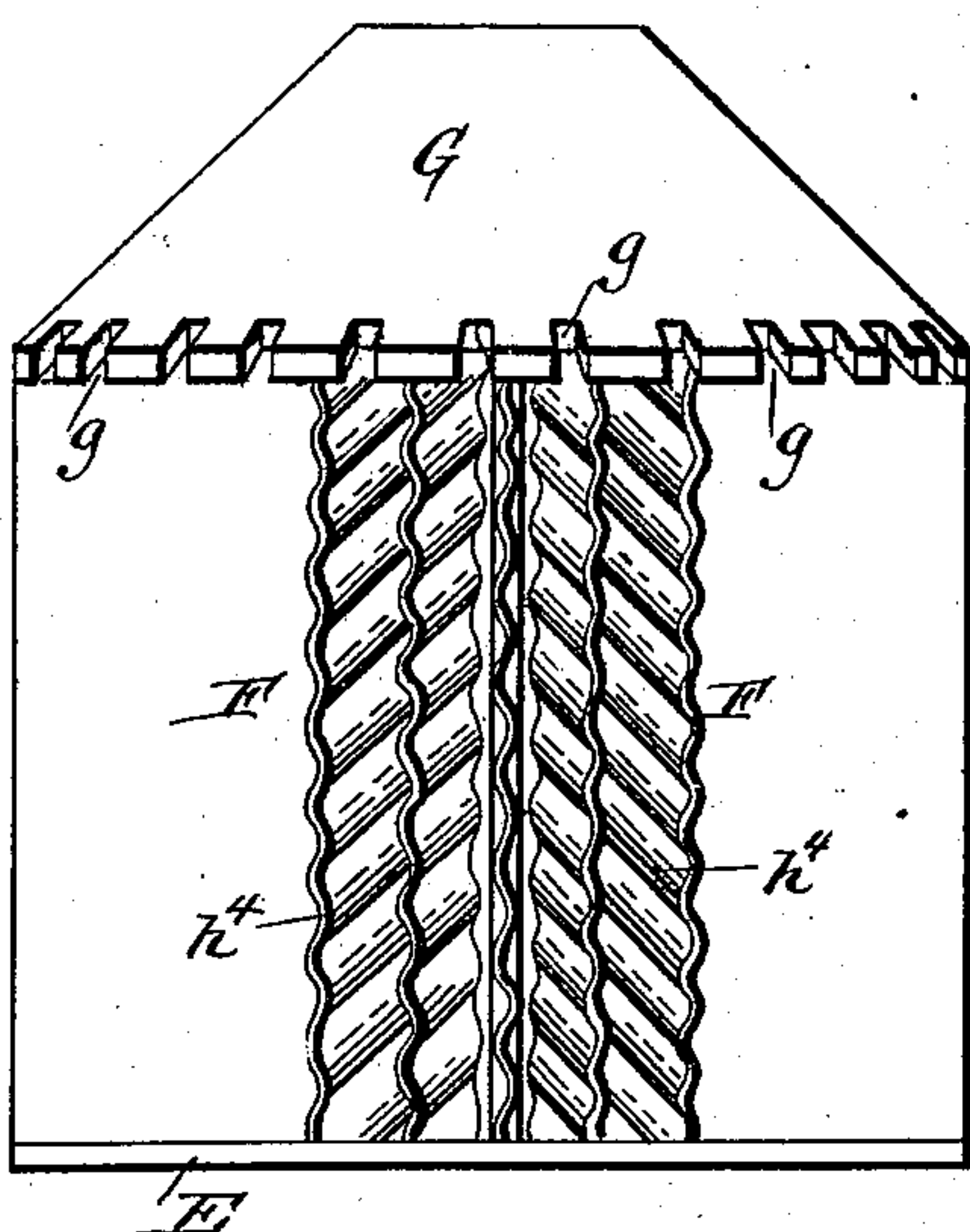


Fig. 7.

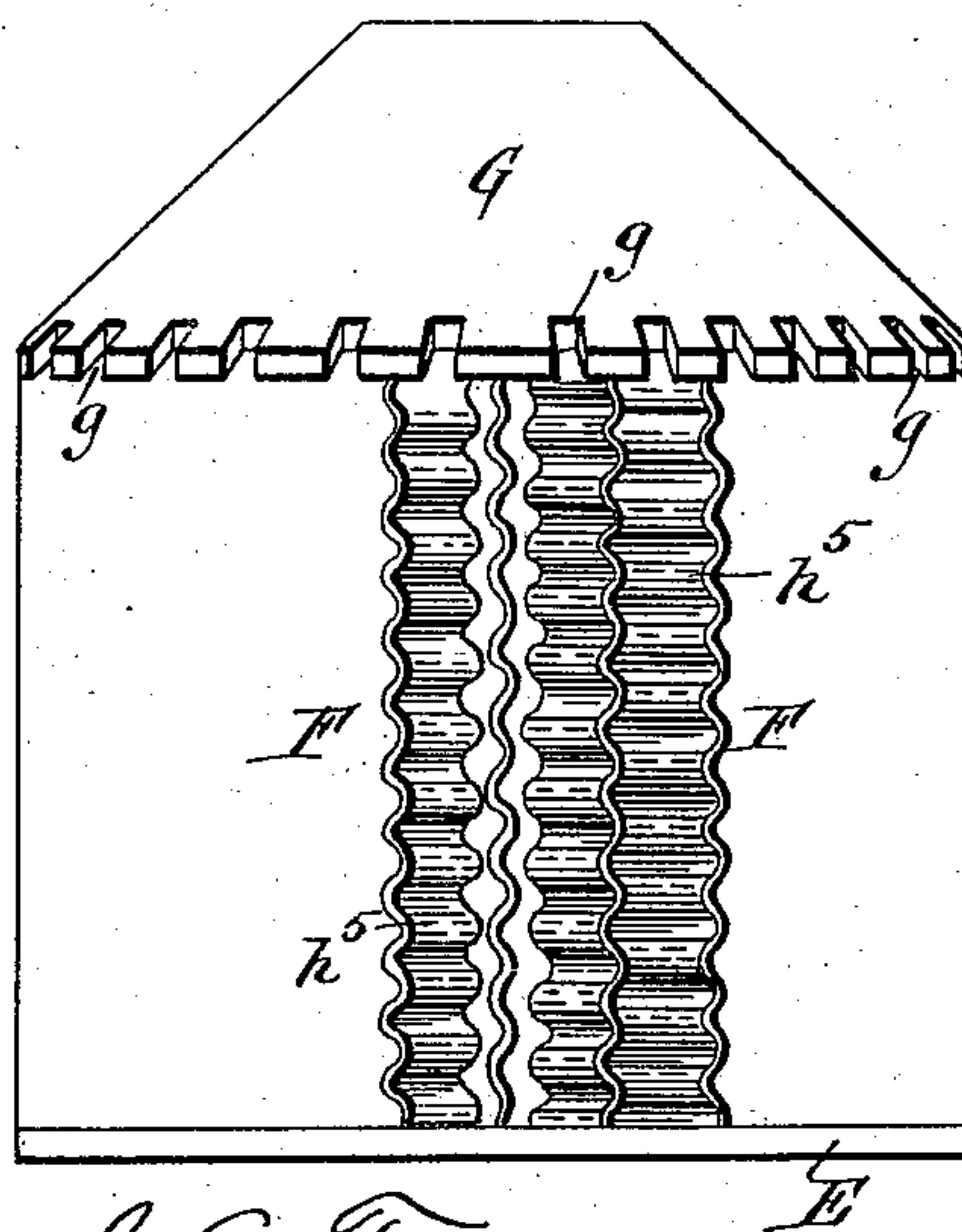


Fig. 9.

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UNITED STATES PATENT OFFICE.

JESSE E. FOLK, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE AKTIEBOLAGET SEPARATOR, OF STOCKHOLM, SWEDEN.

CENTRIFUGAL CREAMER.

SPECIFICATION forming part of Letters Patent No. 504,430, dated September 5, 1893.

Application filed April 25, 1892. Serial No. 430,577. (No model.)

To all whom it may concern:

Be it known that I, JESSE E. FOLK, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Centrifugal Creamers, of which the following is a specification.

My invention relates to that class of centrifugal separators which are used for separating a compound liquid into its constituent liquids of different specific gravities, particularly for separating milk into cream and skim milk, and which are provided with upright partitions or division plates in the liquid space of the bowl, whereby the liquid is divided into thin layers.

The object of my invention is to improve the construction of these partitions or division plates in such manner as to increase the separating capacity of the bowl.

In the accompanying drawings consisting of two sheets:—Figure 1 is a vertical section of a centrifugal separator provided with my improvements and having the corrugations of each division plate arranged obliquely in opposite directions. Fig. 2 is a fragmentary horizontal section in line $x-x$, Fig. 1. Fig. 3 is an elevation of one of the division plates having its two oblique sets of corrugations separated by a plane surface. Fig. 4 is a vertical section of a centrifugal separator having the division plates provided with vertical corrugations. Fig. 5 is a fragmentary horizontal section in line $y-y$, Fig. 4. Fig. 6 is a vertical section of a centrifugal separator having the division plates provided with oblique corrugations. Fig. 7 is a fragmentary elevation of the division plates represented in Fig. 6. Fig. 8 is a vertical section of a centrifugal separator having the division plates provided with horizontal corrugations. Fig. 9 is a fragmentary elevation of the division plates represented in Fig. 8.

Like letters of reference refer to like parts in the several figures.

A represents the bottom of the bowl, B the side or peripheral wall thereof, and C the cover provided with a contracted neck c and secured to the peripheral wall by a screw-threaded flange or other suitable means.

D represents one of the skim milk pipes

secured to the cover on the inner side thereof and opening with its lower end near the peripheral wall and penetrating with its upper end the contracted neck.

E represents a false bottom resting with its peripheral portion on the bottom of the bowl and provided with a raised central feed cup e .

F represents the upright division plates secured with their lower ends to the false bottom and with their upper ends to an internal cover G, so that the internal division contrivance composed of the false bottom, the division plates and the internal cover can be inserted and removed as a whole. The internal cover is provided at its center or apex with an opening of about the same size as the internal opening or bore of the neck, and in its periphery or outer edge with notches g through which the skim milk passes upwardly. The false bottom is provided between its inner and outer edges with a circular row of openings e' through which the milk enters the spaces between the upright division plates. The division plates may be arranged radially or tangentially, as may be preferred, but in either case they are arranged substantially parallel with the axial line of the bowl, and upright when the axis of the bowl is arranged vertically.

In the construction of the division plates represented in Figs. 1 and 2, the plates are provided with corrugations h which are arranged in the upright middle portion of each plate or between the inner and outer edges thereof. This middle portion of each plate is located in that zone of the liquid space which is occupied by the full or whole milk and in which the principal part of the separation of the milk into cream and skim milk takes place while the inner and outer plane portions of each plate are located respectively in the zones which are occupied by the separated cream and skim milk. The corrugations h ascend from the middle of each plate inwardly and outwardly, whereby the currents of separated cream and skim milk are conducted not only inwardly and outwardly, but also at the same time upwardly or toward the discharge end of the bowl, whereby the delivery of the separated particles into the cream and skim milk zones and the progress-

ive movement of the separated constituents toward the outlets is greatly expedited. The corrugations themselves form troughs in which the particles of each constituent liquid accumulate and by which these accumulations are conducted to their respective zones, thereby avoiding conflict of the currents passing in one direction with those passing in an opposite direction and increasing the separating capacity of the bowl accordingly.

In the construction of the plate represented in Fig. 3, the two sets of oblique corrugations h' h' in the same plate are separated by an intervening plane portion h^2 of the plate. In the construction of the plates represented in Figs. 4 and 5, the plates are provided with vertical corrugations h^3 , and these corrugations increase in size toward the periphery of the bowl. In the construction of the plates represented in Figs. 6 and 7, the corrugations h^4 are arranged obliquely in the same direction over the entire surface of each plate. In the construction of the plates represented in Figs. 8 and 9, the corrugations h^5 are arranged horizontally in each plate.

I do not wish to claim in this application

the construction of the division contrivance composed of the false bottom, the division plates and the internal cover, because that subject matter is claimed in another application filed April 25, 1892, Serial No. 430,576.

I claim as my invention—

1. The combination with a separator bowl, of corrugated division plates arranged vertically within the bowl, substantially as set forth.

2. The combination with a separator bowl, of vertical division plates provided each with two rows of corrugations inclined in opposite directions, substantially as set forth.

3. The combination with a separator bowl having a closed bottom and a contracted discharge neck at its top, of vertical division plates each provided with two rows of corrugations inclined toward the neck of the bowl, substantially as set forth.

Witness my hand this 18th day of April, 1892.

JESSE E. FOLK.

Witnesses:

M. E. HATCH,

GEO. W. OAKLEY.