

No. 663,832.

Patented Dec. 11, 1900.

M. HENZE.

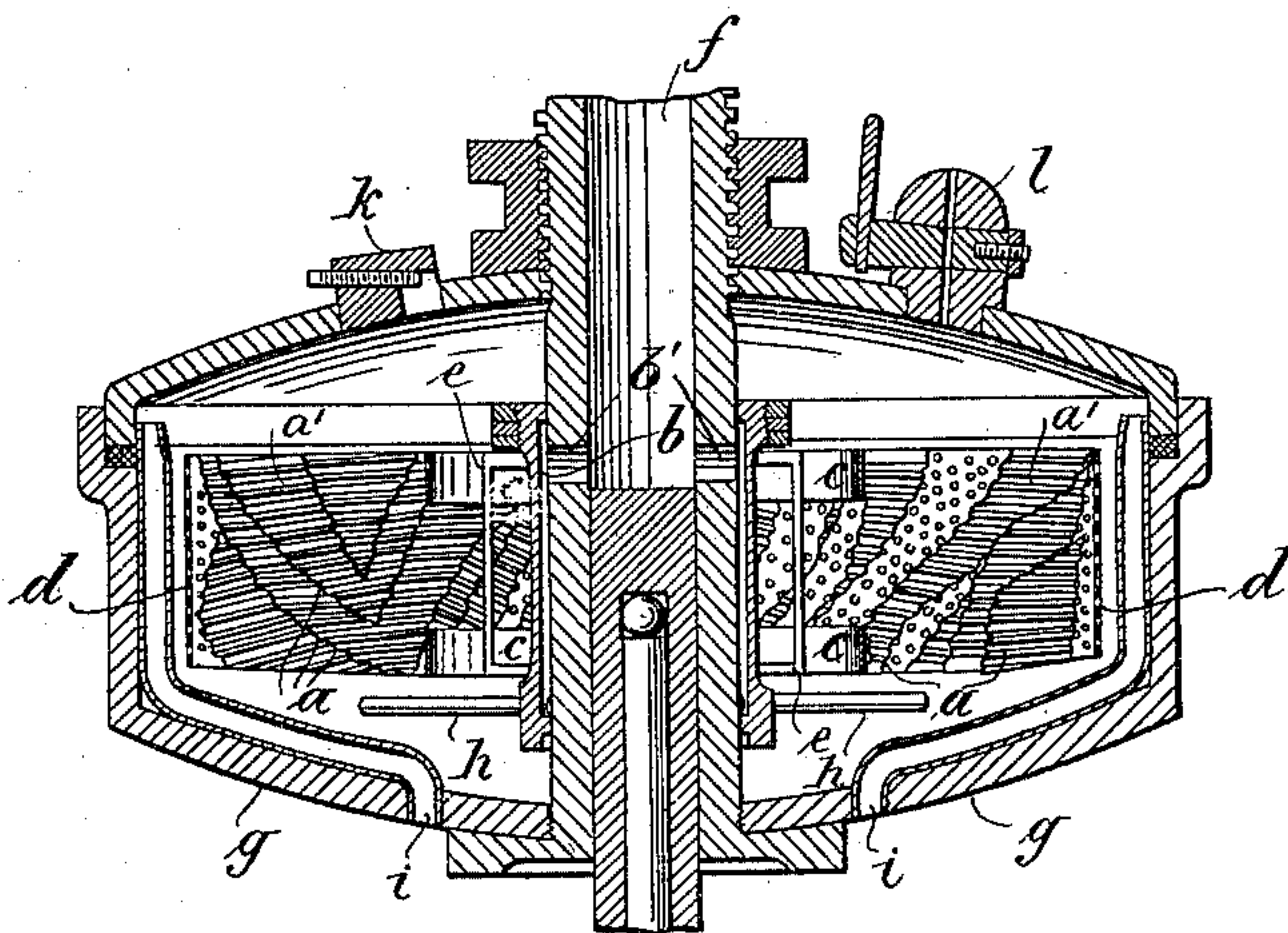
CENTRIFUGAL LIQUID SEPARATOR.

(Application filed Apr. 20, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses
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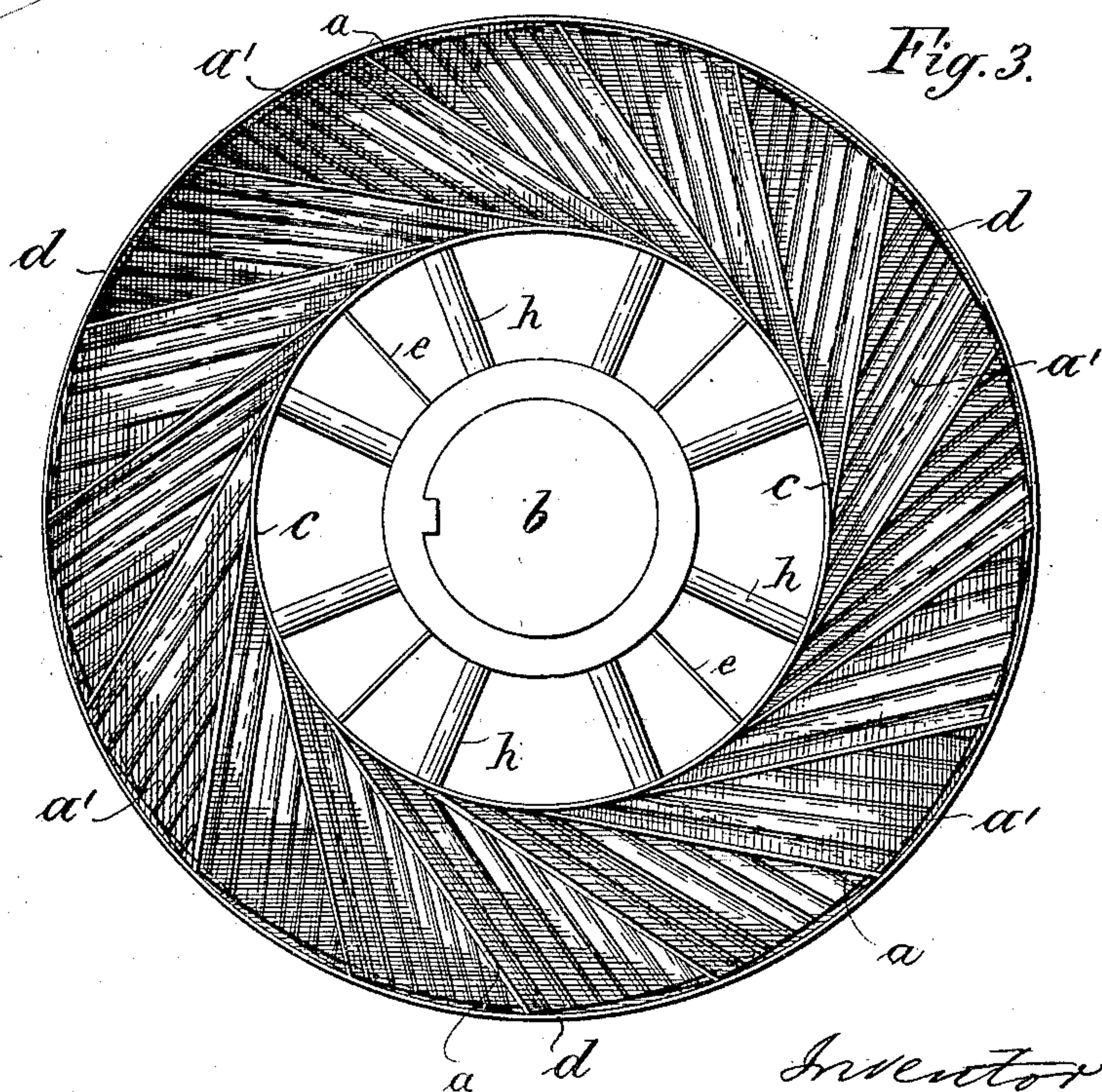
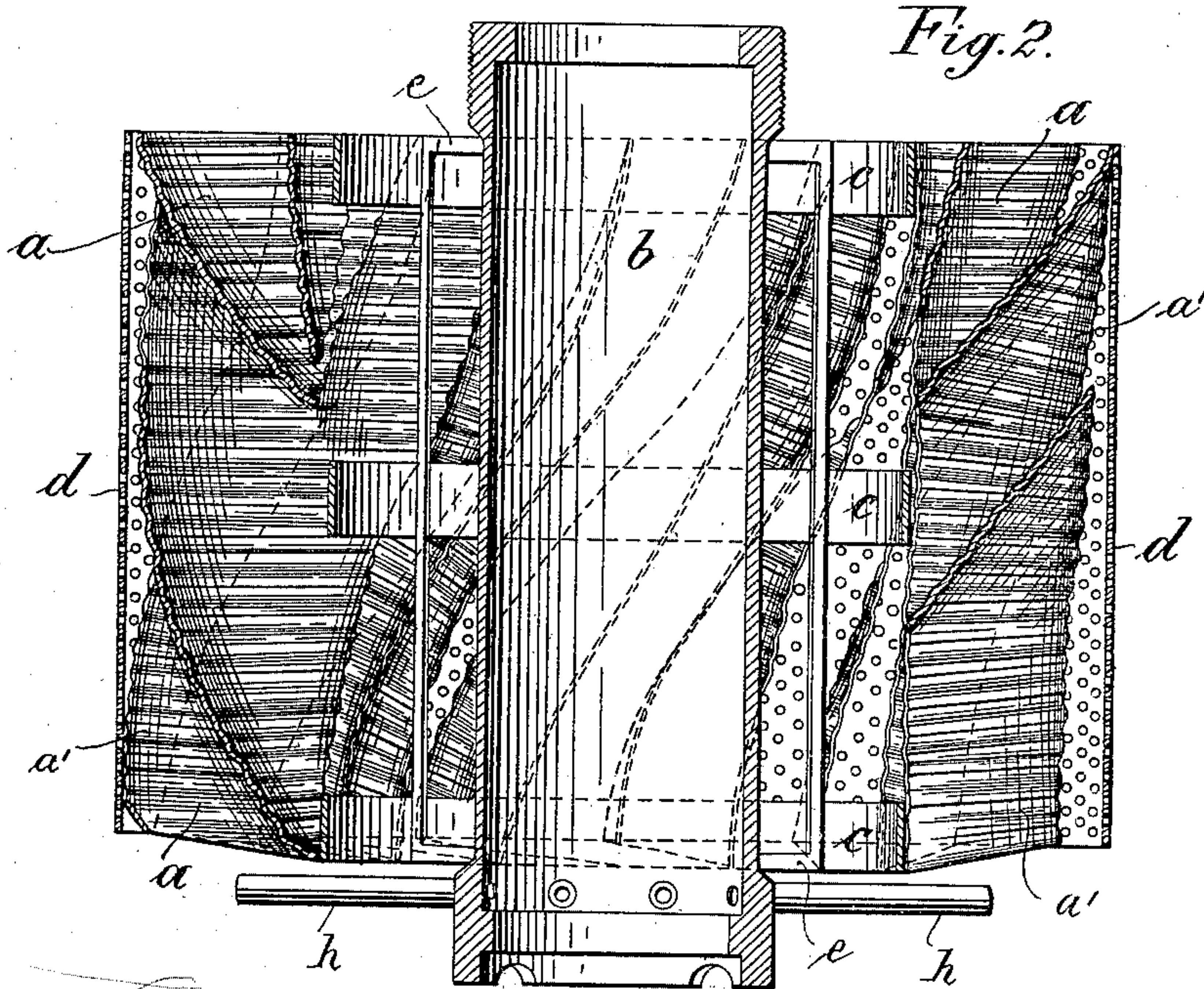
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2 Sheets—Sheet 2.



Witnesses
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UNITED STATES PATENT OFFICE.

MAX HENZE, OF HANOVER, GERMANY, ASSIGNOR OF ONE-HALF TO GEORG DASEKING, OF SAME PLACE.

CENTRIFUGAL LIQUID-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 663,832, dated December 11, 1900.

Application filed April 20, 1900. Serial No. 13,600. (No model.)

To all whom it may concern:

Be it known that I, MAX HENZE, a subject of the King of Prussia, Emperor of Germany, and a resident of Hanover, in the Kingdom of Prussia and Empire of Germany, have invented new and useful Improvements in Centrifugal Creamers, of which the following is a specification.

Centrifugal creamers in common use for skimming milk require much time in operation if the skimming is done properly and completely.

Experiments have shown that a centrifugal creamer having a liner consisting of a ring of closely-arranged screw-shaped partitions in approximately vertical position inclosed in a perforated casing will skim the milk thoroughly and in a very short time. Such a drum, for instance, will thoroughly skim twenty-five per cent. more milk in a given time than ordinary liners constructed with conical plates. The best success can, however, only be attained if the screw-shaped partitions are combined with a perforated mantle inclosing them entirely and if each of the said screws or spirals has the same height as the mantle.

My improved device consists of a centrifugal creamer having a liner constructed with corrugated spiral partitions closely arranged around the inlet-pipe and surrounded by a perforated mantle.

In the accompanying drawings, Figure 1 is a vertical section of a centrifugal creamer constructed with my improved liner. Fig. 2 is a vertical section of the liner on a larger scale. Fig. 3 is a horizontal section of the same.

The liner consists of any desired number of screw-shaped or spiral-shaped partitions *a*, arranged concentrically around the milk-inlet pipe *b* of the creamer. On the inside the said spiral partitions are fastened to rings *c*, which are held at any desired proximity to the inlet-pipe *b* by suitable supports *e*. The partitions *a*, have, besides, a number of projections, such as corrugations *a'*, causing a friction of the milk, which in consequence thereof is more easily separated.

Around the outside of the partitions *a* is a perforated concentric mantle *d*, which per-

fectly incloses the partitions *a*. The perforations in this mantle *d* can be of any kind desired.

f, Fig. 1, represents the hollow shaft, through which milk is introduced and on which the bowl *g* is mounted. This shaft is driven in customary manner and is surrounded by the inlet-pipe proper, *b*, of the liner, with the interior of which it communicates through radial opening *b'*.

h h are pipes extending horizontally from the lower part of the inlet-pipe *b*.

i represents outlet-pipes for the skimmed milk.

k and *l* represent valves for the discharge of the cream.

In operation the milk is introduced in customary manner through the hollow shaft *f* and passes through the radial openings *b'* to the interior of the inlet-pipe *b* and through the radial pipes *h* to the interior of the bowl, where the separation begins at once. The skimmed milk being driven to the periphery by centrifugal action, escapes over the upper ends of the outlet-pipes *i* and flows through the said pipes at bottom. The separation is greatly facilitated by the spiral form of the partitions *a* and by their corrugated or roughened surfaces and by the vertical mantle *d*, surrounding the said spiral partitions and perforated to provide for the further separation and escape of the skimmed milk toward the periphery of the bowl.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A centrifugal creamer constructed with a liner having spiral-shaped partitions *a*, an inlet-pipe *b*, encircled by the spiral partitions *a*, and a vertical perforated mantle *d* surrounding the spiral partitions *a*, substantially as shown and described.

2. The combination of the inlet-pipe *b*, outlets *h* therefrom, spiral partitions surrounding the inlet-pipe *b*, a vertical perforated mantle *d* surrounding partitions *a* and of about equal height therewith, a suitable containing-bowl *g* and outlet-pipes *i* and *k* for the skimmed milk and cream respectively, substantially as shown and described.

3. The combination of the hollow shaft *f*

having perforations b' , bowl g mounted there-
on, inlet-pipes b surrounding the hollow shaft
 f and communicating with the interior there-
of through the perforations b' , radial pipes h
5 delivering milk from the inlet-pipe b to the
interior of the bowl, corrugated spiral parti-
tions a , arranged around the inlet-pipe b , ver-
tical perforated mantle d surrounding the

spiral partitions a , outlet-conduits i for the
skimmed milk and a suitable outlet-conduit 10
for the cream, substantially as set forth.

MAX HENZE.

Witnesses:

LUDWIG NEBEL,
LEONORE RASCH.