

969,399.

J. & A. PERSOONS.
LINER FOR CENTRIFUGAL SEPARATORS.
APPLICATION FILED AUG. 11, 1908.

Patented Sept. 6, 1910.
2 SHEETS—SHEET 1.

Fig. 1.

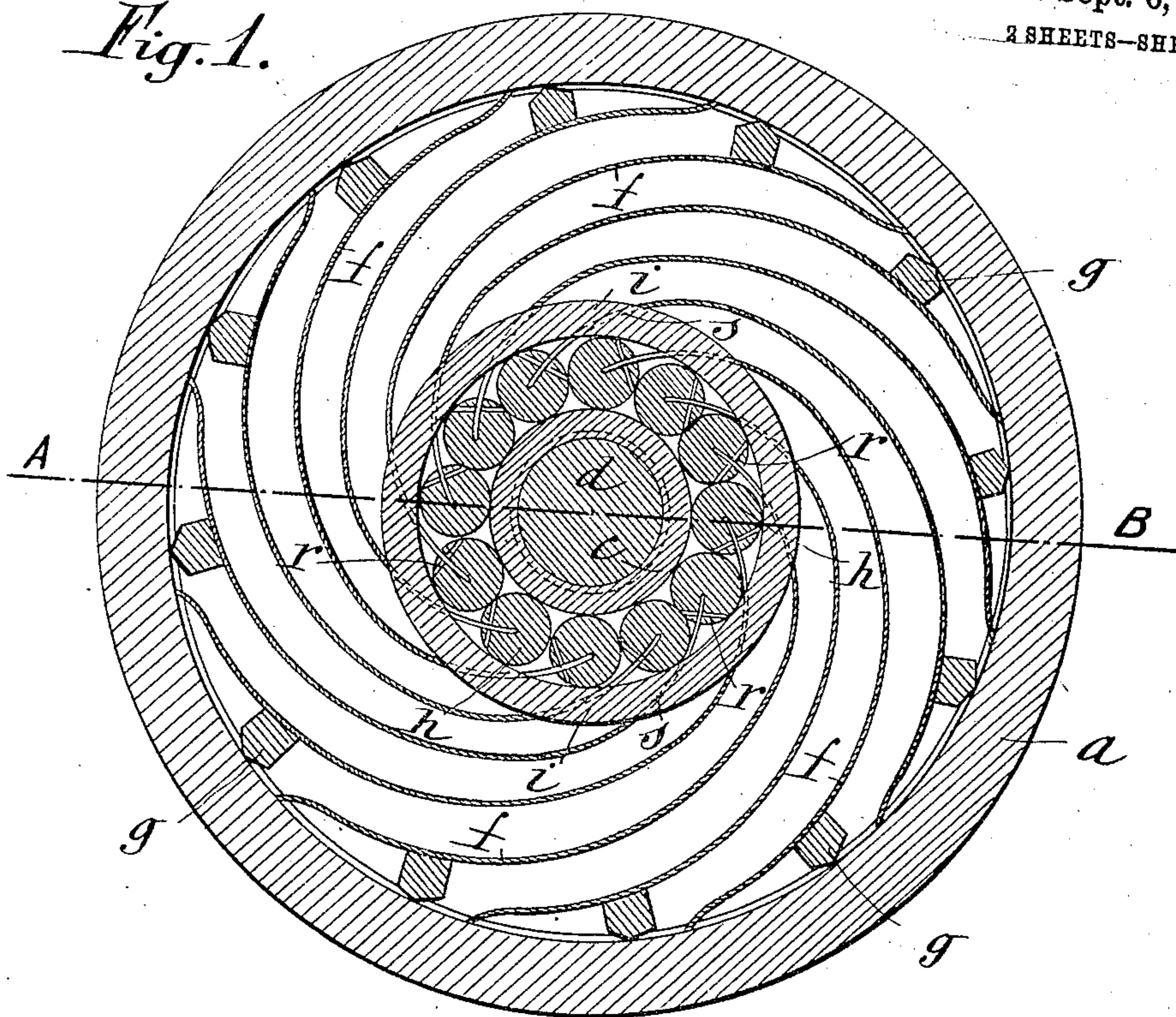
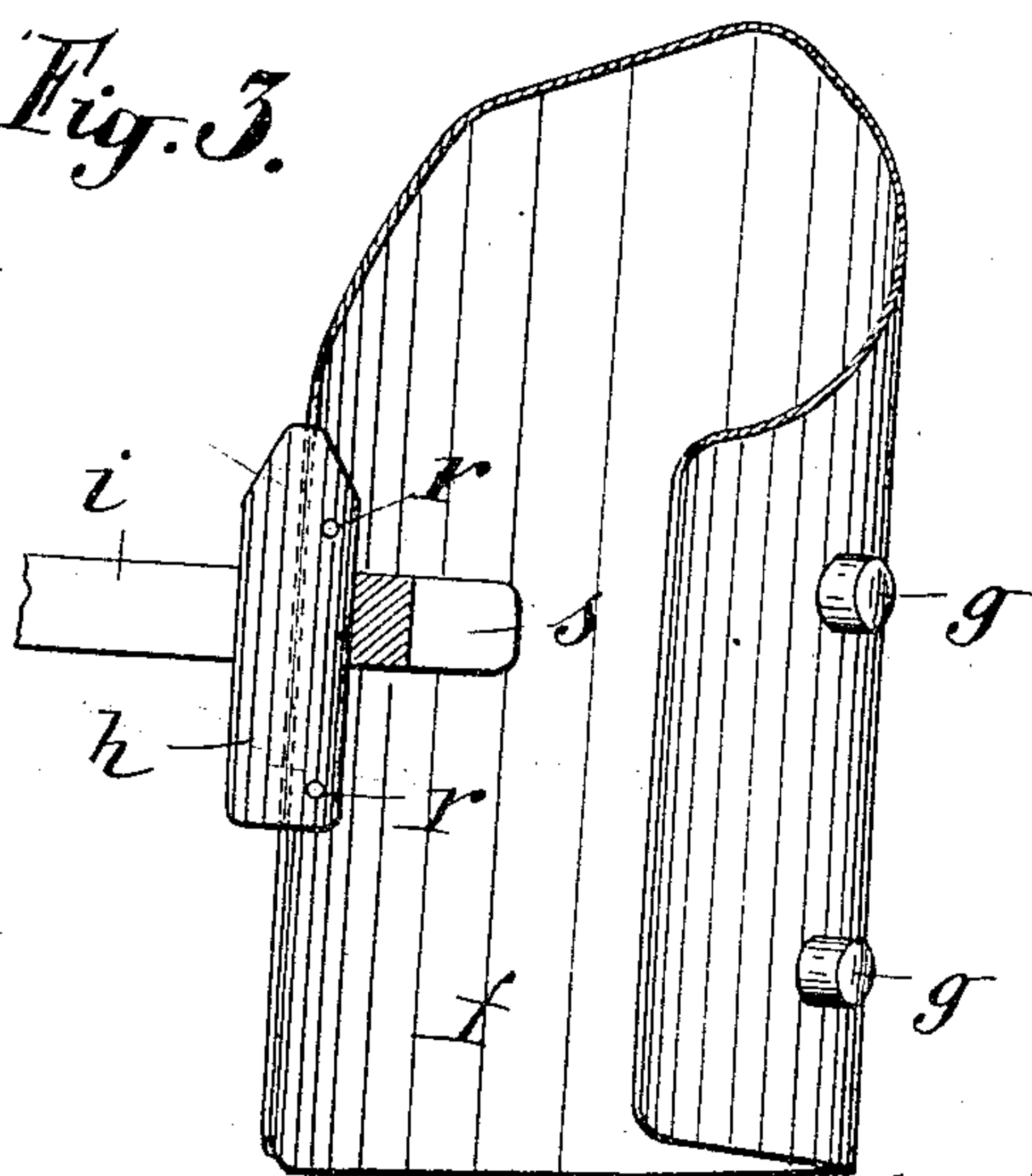


Fig. 3.



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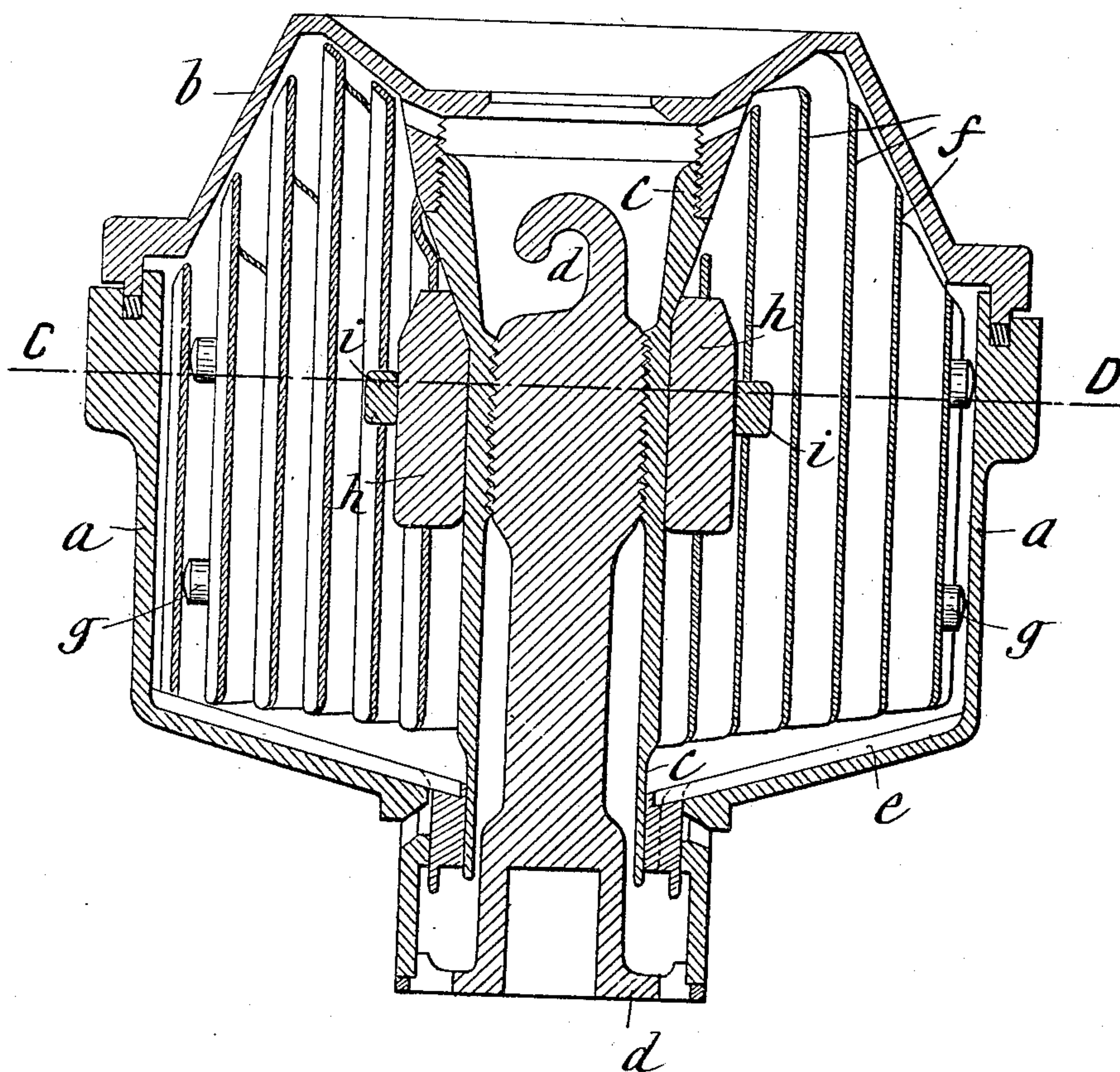
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JULES PERSOONS AND ALPHONSE PERSOONS, OF CHILDONCK, NEAR LOUVAIN, BELGIUM.

LINER FOR CENTRIFUGAL SEPARATORS.

969,399.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed August 11, 1908. Serial No. 448,054.

To all whom it may concern:

Be it known that we, JULES PERSOONS and ALPHONSE PERSOONS, both subjects of Belgium, residing at Cheldonck, near Louvain, Belgium, have invented new and useful Improvements in Liners for Centrifugal Separators, of which the following is a specification.

This invention pertains to centrifugal separators, and relates more particularly to the interior part or liner of centrifugal cream separators of that kind wherein separate articulated liner plates held by supporting rings are arranged concentrically around a tube positioned centrally within the drum of the machine.

The annexed drawing illustrates an example of a construction embodying the invention, in which—

Figure 1 is a horizontal section of a drum or bowl on the line C—D of Fig. 2. Fig. 2 is a vertical section on the line A—B of Fig. 1. Fig. 3 illustrates one of the liner plates.

In the drawing, *a* designates the so-called drum or bowl, the same being provided with a cover, *b*. Said bowl is provided, at its center, with a tube, *c*, fixed to the cover and connected to the drum, *a*, by a bolt, *d*, the latter being provided with a suspension hook. In the drum, *a*, are positioned a false bottom, *e*, of known construction, and a liner composed of separated liner plates, *f*.

The liner of this invention embodies in its construction a plurality of liner plates, *f*, which are provided with stops, *g*, to hold them apart, and said liner plates are fixedly connected (by means of rivets, *v*, for example) in the central part of the drum to pivotal rods or bars, *h*, the latter being, preferably, cylindrical. These pivotal rods or bars rest against the periphery of the central tube, *c*, and are maintained in position by the ring, *i*, which is introduced in slots, *s*, of the liner plates before said liner plates are fixed to the rods or bars, *h*. Each liner plate is provided, on its inner vertical edge, with one of the slots, *s*, as shown more clearly in Fig. 3, said slot extending longitudinally and to some extent into the body of the liner plate. The ring, *i*, partially fills the slots, *s*, in the series of liner plates, and the liner plates are connected by the ring so as to constitute a liner, all the parts of which are attached together directly. As

will be easily understood, the rods or bars, *h*, operate to space the liner plates equidistant one from the other, and, further, they prevent said liner plates from becoming inclined, for the reason that the bars or rods engage with the central tube, *c*, against which they are held by the ring, *i*. It will be understood, furthermore, that by the construction described, the liner constitutes an inseparable whole, and that it does not require any of its parts to be separately removed for cleaning purposes. The construction is devoid of grooves or recesses in the supporting ring, which would be inaccessible without removing the parts; further, when the rods or bars, *h*, are placed in position on the drum, to which bars the liner plates are fixed, they automatically take their proper place and without leaving any spaces between them, in such a way that the setting of the liner plates is determined in an absolute manner; furthermore, the liner plates cannot become inclined nor become displaced from engagement with the central tube, *c*; during cleaning they can swing sideways with the bars, *h*, as the axes of movement, while being maintained by the ring, *i*, so that the particular plate to be cleaned may be adjusted or shifted on the ring so as to approach the corresponding bar, *h*, to the center of the ring, *i*, thus completely disengaging this particular bar and to render it accessible at all parts for cleaning and drying purposes.

From the foregoing description it will be seen that all the parts of our liner for separating drums are connected so that they may be inserted into, or removed from, the drum while in such connected condition, whereby the user cannot mislay or lose any of the parts, nor are the parts liable to be damaged, when the liner is removed from the drum. When so removed, all the parts of the liner are easily accessible for cleaning them, and no interstices or crevices are provided in any of the parts wherein impurities can lodge. Furthermore, upon the insertion of the liner into the drum, the parts are so positioned that the equilibrium of the drum is assured without difficulty and without the necessity for adjusting or regulating the parts in a particular manner.

What we claim is:

1. In a liner for centrifugal separators, a supporting ring, liner plates adapted to

slide on said ring, and means located in the interior of the supporting ring, whereby the liner plates are maintained in position and are adapted, also, to be rotated independently when the liner is withdrawn from the bowl of the separator.

2. In a liner for centrifugal separators, a supporting ring, liner plates adapted to slide on said ring, a central tube within a separator bowl, and supporting means bodily connected with the liner plates and filling the space between the supporting ring and said central tube.

3. In a liner for centrifugal separators, a supporting ring, liner plates adapted to slide on said ring, a central tube within a separator bowl, and a supporting member for each liner plate, said members being positioned between the supporting ring and said central tube.

4. In a liner for centrifugal separators, a supporting ring, liner plates adapted to slide on said ring, a central tube of the separator bowl, and a supporting member for each liner plate, said supporting members being rigidly connected to the liner plates and engaging the inner face of the supporting ring and the outer face of said central tube.

5. In a liner for centrifugal separators, a supporting ring, liner plates adapted to slide on said ring, a tube positioned within the bowl of the separator, and rods connected to the liner plates and located between the supporting ring and said tube.

6. In a liner for centrifugal separators, a supporting ring, liner plates each pro-

vided with a radial slot, whereby said liner plates are adapted to slide on the supporting ring, and a plurality of rods each connected to one liner plate and positioned within the supporting ring.

7. In combination, a bowl of a centrifugal separator, a tube within said bowl, a supporting ring concentric with said tube, a plurality of rods positioned intermediate the supporting ring and said tube, said rods engaging with the supporting ring and said tube, and liner plates adapted to slide on the supporting ring and each attached to one of said rods.

8. In a centrifugal separator, a liner comprising a supporting member adapted to be positioned substantially centrally within a separator bowl or vessel, a series of plates each curved in the direction of the length thereof, said plates having sliding engagement with said supporting member, means positioned within the supporting member for spacing the inner ends of said curved plates, and a spacing device carried by the outer ends of each curved plate, said plates with the supporting member and the spacing devices being insertible and removable as a unit with respect to the bowl or vessel.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JULES PERSOONS.
ALPHONSE PERSOONS.

Witnesses:

GEORGE BEDE,
GREGORY PHELAN.