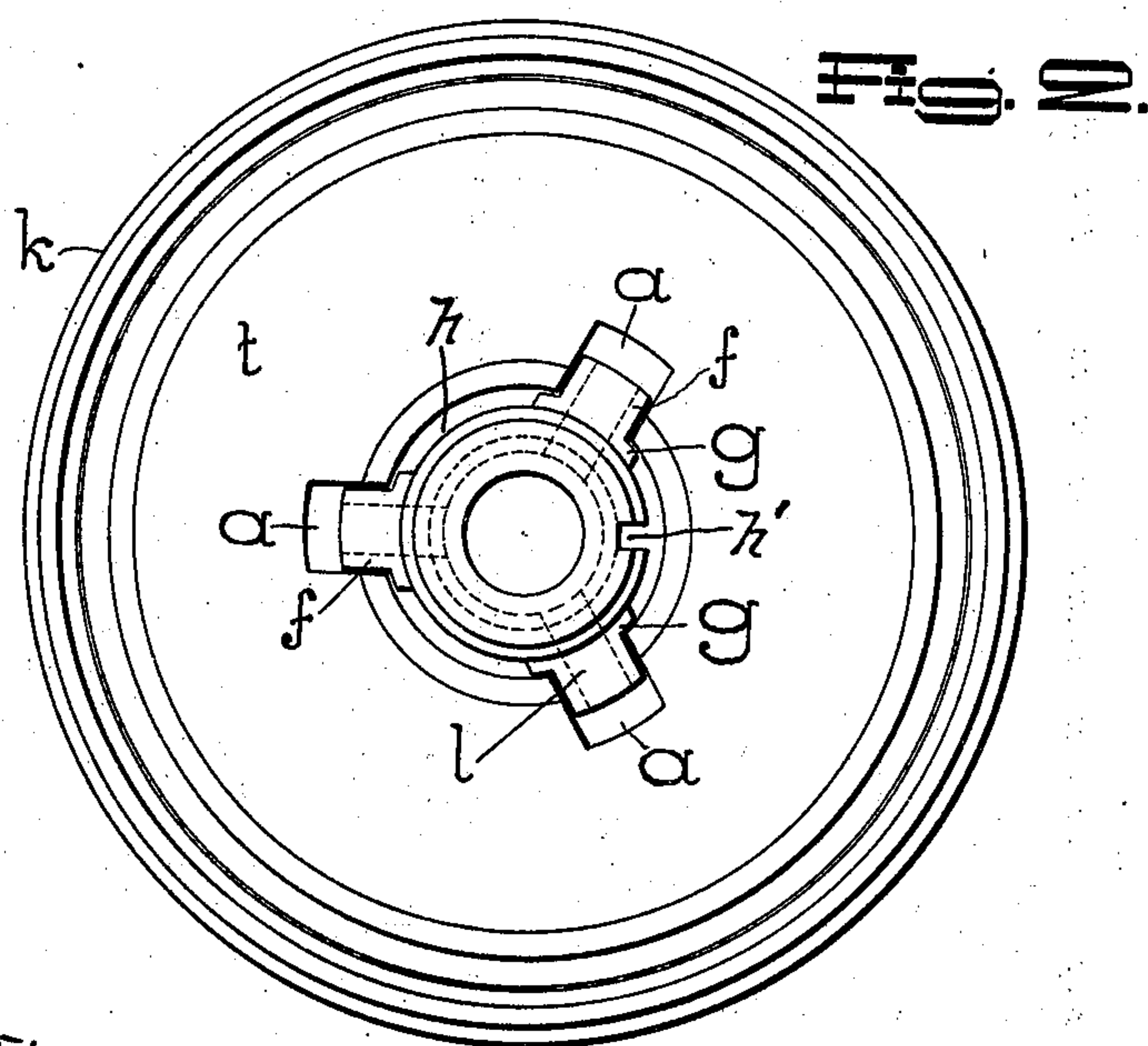
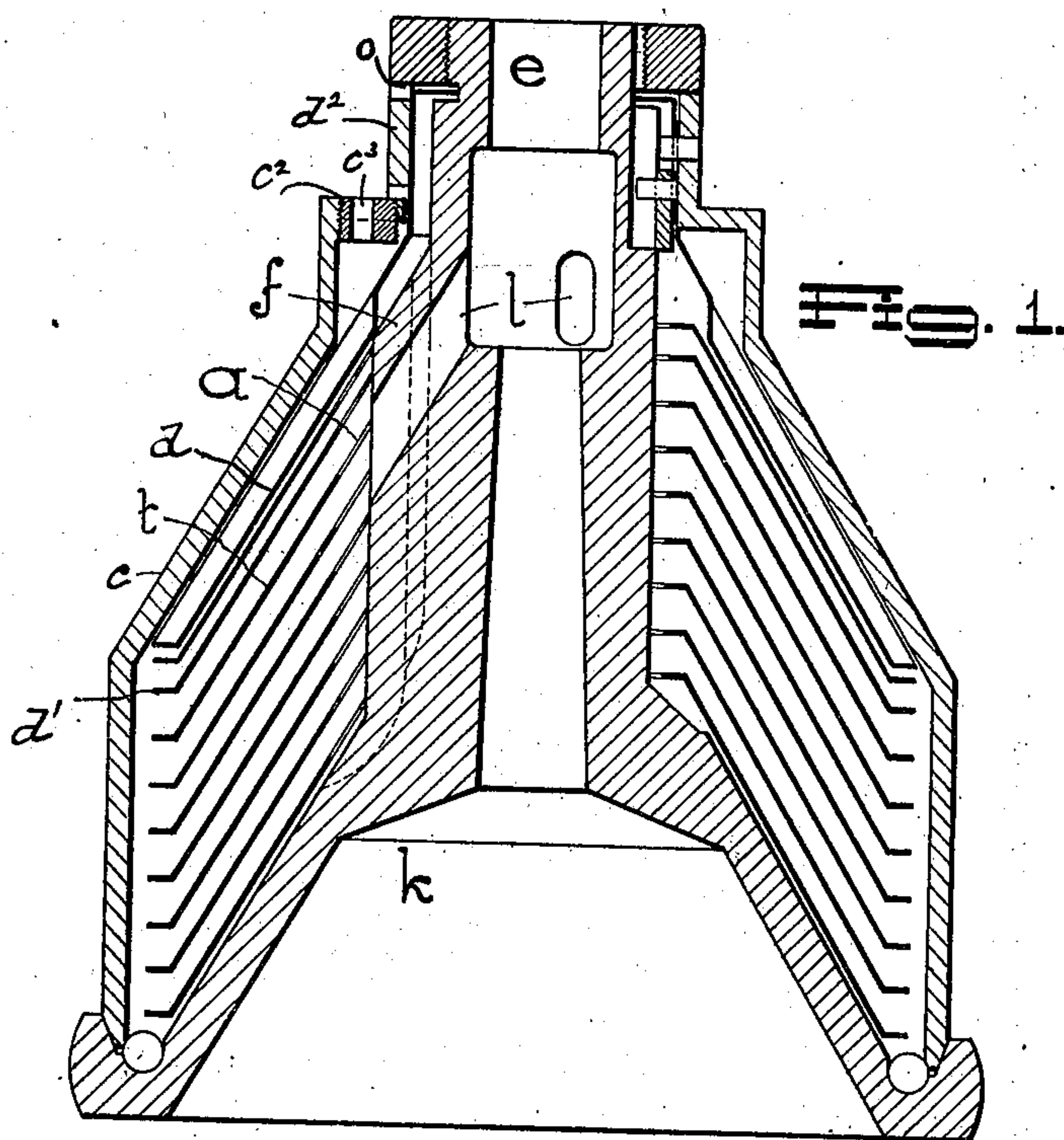


No. 847,524.

PATENTED MAR. 19, 1907.

P. T. SUNDBERG.
CENTRIFUGAL SEPARATOR.
APPLICATION FILED JUNE 17, 1905.



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UNITED STATES PATENT OFFICE

PER T. SUNDBERG, OF STOCKHOLM, SWEDEN.

CENTRIFUGAL SEPARATOR.

No. 847,524.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed June 17, 1905. Serial No. 265,772.

To all whom it may concern:

Be it known that I, PER THEODOR SUNDBERG, a subject of the Kingdom of Sweden, residing at Sibyllegatan 46/48, in the city of Stockholm and Kingdom of Sweden, have invented a new and useful Centrifugal Separator, of which the following is a specification.

My invention relates to improvements in centrifugal bowls for separating fluids of different specific gravity; and the object of my invention is, first, to increase the capacity of the bowl; second, to afford a stable suspension of the same, and, third, to simplify the construction. How I attain these objects will be described with reference to the accompanying drawing, in which—

Figure 1 is a vertical section of a centrifugal bowl constructed according to this invention. Fig. 2 is a top view of the same as it appears after removal of the nut, cover, and cover-plate.

The bowl *k* may, as usually, have the shape of an inverted funnel, the upper part of which forms an inlet *e* for the liquid which is to be treated, while the lower part of the center of the bowl forms a conic socket for the upper end of the spindle. This socket extends above the center of gravity of the bowl, so as to afford a stable suspension of the latter on said spindle.

The outer face of that part of the tubular shaft which corresponds to the pile of insertion-plates *t* is cylindrical and has two or more (in the drawing three) vertical ribs *f*, which engage corresponding slots in the inner edge of the plates. These slots are enlarged in radial direction, so that holes *a*, limited inward by the ribs *f*, are formed in the plates, and as said holes lie above each other vertical channels are formed in the pile of plates *t*. Each of these vertical channels communicates with the inlet *e* by means of a radial or inclined channel *l*, formed in the upper part of the rib *f*, so that the liquid from the inlet *e* will flow through the radial or inclined ways *l* directly to the vertical channels formed by the holes *a*, from where it is distributed between the plates.

The centering of the plates *t* is effected by their resting upon the conical bottom of the bowl. Meanwhile the ribs *f*, having shoulders *g*, form other vertical channels *h*, in which the lighter fluid can ascend to the outlet, or such channels may be formed by

grooves *h'* on the tubular shaft or by slots in the inner edge of the plates.

The outlets for the separated fluids may be arranged in any known or other suitable manner. In the form shown in the drawing the cover *c* has a shoulder on the neck and a hole with screw-plug *c'* in said shoulder, the plug having an eccentric discharge-opening *c''*. The heavy part of the fluid ascends inside the cover *c*, between that and the cover-plate *d*, which is distanced therefrom by radial ribs *d'*, so that the fluid can reach the outlet *c''*. The light fluid ascends inside the neck *d''* of the cover-plate *d* and is discharged at *o*.

It should be understood that the form shown in the drawing is only an example, the essential feature of my invention being that the holes *a* consist of slots in the inner edge of the plates, limited inwardly by the ribs *f*, and that the vertical distribution-channels formed by said holes *a* communicate directly with the inlet *e* by short radial or inclined ways *l*, formed in the upper part only of said ribs, so that the socket for the spindle can reach above the center of gravity of the bowl without interfering with the channels or necessitating any enlargement of the tubular shaft. I thus can use a slender tubular shaft and increase the capacity of the bowl without increasing its height or diameter.

I am aware that prior to my invention holes in the plates have been used for forming vertical distributing-channels. I therefore do not claim such holes broadly; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a centrifugal bowl provided with a liner, a plurality of superposed conical plates, the tubular shaft of said bowl being provided with vertical ribs engaging corresponding slots in said plates, said slots being enlarged in radial direction and said ribs having shoulders engaging the inner edges of the plates to form vertical channels.

2. In a centrifugal bowl provided with a liner, a plurality of superposed conical plates, the tubular shaft of said bowl being provided with vertical ribs engaging corresponding slots in said plates, said slots being enlarged in radial direction, and said ribs having shoulders engaging the inner edges of the plates to form vertical channels the upper part of said ribs being formed with radial channels, 1, affording communication be-

tween the inlet and each of said vertical channels.

3. In a centrifugal bowl provided with a liner a plurality of superposed conical plates, the tubular shaft of said bowl being provided with vertical ribs engaging corresponding slots in said plates, said slots being enlarged in radial direction, and said ribs having shoulders engaging the inner edges of the plates to form vertical channels, the upper part of said ribs being formed each with a ra-

dial channel 1, which channels communicate directly with the inlet and with the vertical channels.

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

P. T. SUNDBERG.

Witnesses:

L. RAMELL,
BERTIL NYMAN.