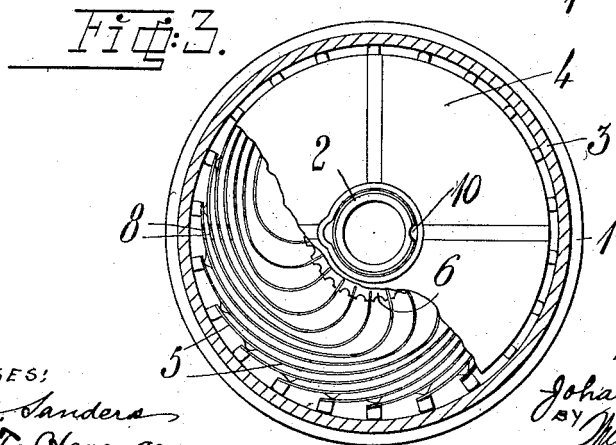
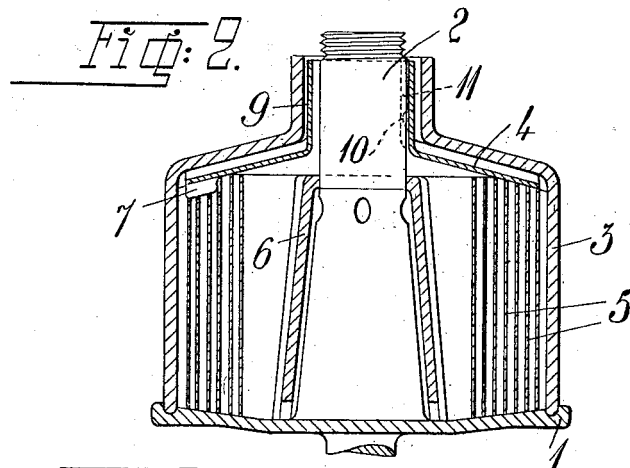
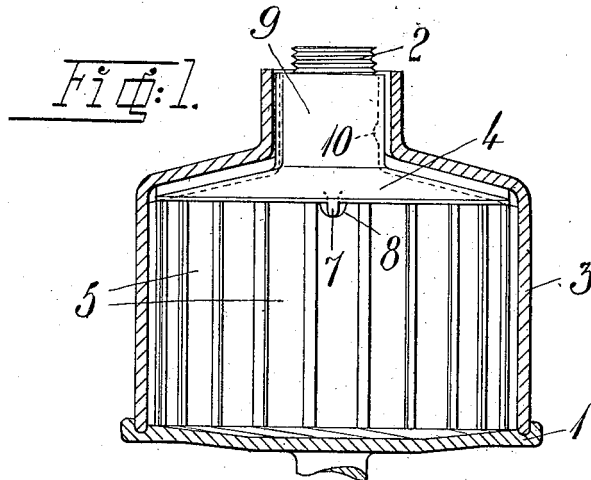


J. P. JOHANSSON.  
 CENTRIFUGAL LIQUID SEPARATOR.  
 APPLICATION FILED SEPT. 28, 1912.

1,115,825.

Patented Nov. 3, 1914.



WITNESSES:  
*John C. Sanders*  
*Albert J. Neuman*

INVENTOR:  
*Johan Petter Johansson*  
 BY *M. Wallace White*

ATTY.

# UNITED STATES PATENT OFFICE.

JOHAN PETTER JOHANSSON, OF EUKÖPING, SWEDEN.

## CENTRIFUGAL LIQUID-SEPARATOR.

1,115,825.

Specification of Letters Patent.

Patented Nov. 3, 1914.

Application filed September 28, 1912. Serial No. 722,826.

*To all whom it may concern:*

Be it known that I, JOHAN PETTER JOHANSSON, a subject of the King of Sweden, residing at Euköping, Sweden, have invented new and useful Improvements in Centrifugal Liquid-Separators, of which the following is a specification.

The usual liners for centrifugal liquid separators with vertical or a little inclined and curved subdivided plates or wings, secured to and radiating from a central tube, hitherto have been connected to the shaft rising from the bottom of the separator drum by means of a projection on the inside of the said tube, which projection rests in a corresponding groove in the shaft. At the rotation of the drum the outer ends of the dividing plates first are forced outward and squeezed against the wall of the drum on account of the centrifugal force, whereupon the inner parts of the same plates, which are situated nearer to the shaft, tend to take new situations, other than those in the position of rest, and to turn the central tube. This turning, however, being prevented by the projection above mentioned, the said projection is exposed to a very great stress and is very easily broken, as also the plates are prevented from placing themselves in the position of balance, determined by the rotation.

The present invention has for its object to avoid this inconvenience by connecting the outer upper part of some of the subdividing plates to the rotating upper plate which is connected to the shaft. For that purpose some of the plates of the liner at their upper outer portions are provided with a notch in which rests a peripheral projection on the upper or covering horizontal plate. This projection transmits the rotating movement to the liner but does not prevent the more central parts of the subdividing plates from placing themselves in a

position, determined by the rotation, because in this case the central tube may turn on the shaft quite freely.

The invention is illustrated in the accompanying drawing.

Figure 1 illustrates a separator drum in a vertical section with a liner in side view, Fig. 2 is a vertical section of these two parts and Fig. 3 is a plan view of the liner with parts of the drum and the upper or covering plate removed.

1 is the bottom of the separator drum or bowl, 2 the shaft, 3 the wall of the drum or bowl, 4 the upper plate, 5 the subdividing plates and 6 the central tube.

7 is the peripheral projection on the upper plate, which projection engages notches 8 in the upper outer portions of some of the plates 5. The upper plate is connected to the shaft 2 by means of a projection 10 on the neck 9 of the upper plate, said projection resting on a groove 11 in the shaft 2.

Having now particularly described the nature of my invention and the manner of its operation, what I claim is:

In a centrifugal liquid separator a shaft, a bowl secured to the same, a central tube loosely surrounding said shaft, vertical curved subdividing plates secured to and radiating from said tube, certain of said plates being provided with notches in their upper outer portions, said notches being in the portions of said certain plates which are adjacent the periphery of said bowl, an upper plate keyed to said shaft, and a projection on said upper plate at the periphery thereof engaging only said notches.

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

JOHAN PETTER JOHANSSON.

Witnesses:

H. HAMMAR,  
JACOB BAGGE.