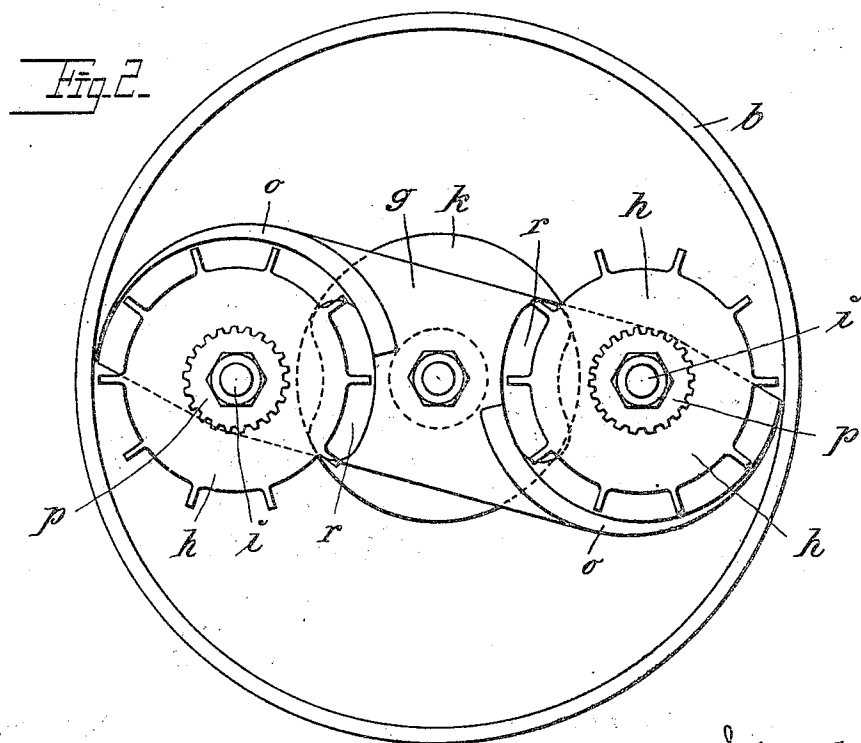
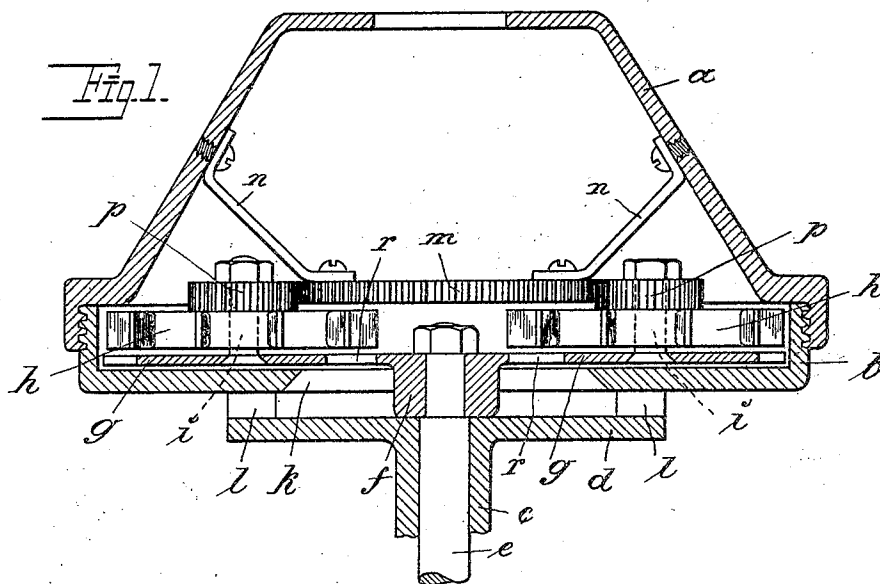


No. 822,196.

PATENTED MAY 29, 1906.

A. J. ERICSSON.  
CENTRIFUGAL MACHINE.  
APPLICATION FILED MAY 19, 1905.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ANDERS JOHAN ERICSSON, OF STOCKHOLM, SWEDEN, ASSIGNOR TO  
AKTIEBOLAGET SEPARATOR, OF STOCKHOLM, SWEDEN.

## CENTRIFUGAL MACHINE.

No. 822,186.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed May 19, 1905. Serial No. 261,140

*To all whom it may concern:*

Be it known that I, ANDERS JOHAN ERICSSON, a subject of the King of Sweden and Norway, residing at Stockholm, Sweden, have invented certain new and useful Improvements in Centrifugal Machines for Separating Solid Matters from Liquids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in centrifugal separators, such as used for separating liquids from solid matters, and more especially to separators of such art as described in my United States Patent No. 773,489, and it more particularly relates to arrangements for facilitating the continuous carrying away of the solid matters out of the separator. As is more fully described in the said United States Patent No. 773,489, the solid matters that stratify along the inner wall of the bowl are brought outside the bowl by means of scraper-wheels, carrying the solid matters transversely through the layer of liquid to a point within the same nearer the center of the bowl, whence the solid matters are continuously carried away in such a manner that they, immediately before the scrapers of the scraper-wheels occupy their position nearest the center of the bowl, owing to the action of the centrifugal force and their own gravity, are loosened from the scrapers and then thrown downward through a central opening into a partition placed under the scraper-wheels or in the very bottom of the bowl.

My present invention relates to a device, which, combined with such scraper-wheels as indicated in the United States Patent No. 773,489, will increase their catching capacity to a considerable degree.

The device is illustrated on the annexed drawings, wherein—

Figure 1 is a vertical section of a centrifugal bowl with my improvement applied thereto. Fig. 2 represents a plan view with the cover of the bowl removed.

The bowl consists of an upper part or cover *a* and an under part or bottom *b*,

screwed together in the usual manner. The driving-shaft *c* of the bowl is enlarged at the top to a flange *d*, riveted to the bottom of the bowl or integral with it. This driving-shaft *c* is hollow and through it the massive shaft *e* projects, on the top of which a nave *f*, integral with the cross-piece or disk *g*, is mounted, to which the shafts *i i* of the scraper-wheels *h h* are secured. In the bottom *b* of the bowl there is a central opening *k*, that communicates with channels *l* between the bottom *b* of the bowl and the flange *d*.

The scraper-wheels *h h* are secured to cog-wheels *p p*, gearing with a cog-ring on the central disk *m*, which by means of stays *n* or the like is secured to the cover of the bowl. In this way the scraper-wheels *h h* will rotate around their own shafts *i i* when the shafts *c* and *e* rotate relative to each other.

On the cross-piece *g* arc-shaped guides *o* are secured, turning their points in such a direction that the solid matters are caught by these guides *o*. The scraper-wheels *h h* run close to the arc guides *o*, said arc guides embracing the scraper-wheels by half.

The solid matters caught by the arc guides are then carried transversely through the layer of liquid to a point nearer the center of the bowl by means of the scraper-wheels. On arriving at the point nearest the center of the bowl the solid matters fall down from the scrapers through orifices *r* in the cross-piece *g* and are further thrown out through the opening *k* in the bottom of the bowl and the channels *l*.

It is obvious that only the end point of the guide *o* acts as scraper, as the greater part thereof serves as a guide or directrix for the solid matters.

The arrangement of such guides as described above is evidently not limited to such centrifugal machines as shown on the drawings. If the bowl has an elliptical shape, in which case the scraper-wheels do not move along the periphery of the bowl, but only rotate around their own axes, the guides *o* solely serve as guides or directrices for the solid matters. Also if the bowl has partly a cylindrical partly a conical shape, in which case it may be provided with a liner, scrapers in accordance with the present invention may be used.

What I claim is—

1. In a centrifugal machine the combina-

tion with the rotary bowl, having rotating scraper-wheels located therein for conveying the solid matters stratified on the walls to a point nearer the center of the bowl, of  
5 arc-shaped guides for and partly embracing each scraper-wheel said guide having a pointed end located near the wall of the bowl, said arc-shaped guides serving as guides and as catchers for the solid matters stratified on  
10 the walls of the bowl.

2. In a centrifugal machine, in combination, a rotary bowl, a rotating scraper-wheel, a curved guide eccentric to and partially surrounding the scraper-wheel.

15 3. In a centrifugal machine, in combination, a rotary bowl, a rotating scraper-wheel, a curved guide eccentric to and partially surrounding the scraper-wheel, said guide ex-

tending from the periphery of the bowl toward the center of the bowl and diverging 20 from the scraper-wheel toward the center of the bowl.

4. In a centrifugal machine, in combination, a rotary bowl, a rotary scraper-wheel, a curved guide partially surrounding the 25 scraper-wheel, said guide extending from the periphery of the bowl toward the center and having the end contiguous to the wall of the bowl pointed.

In testimony that I claim the foregoing as 30 my invention I have signed my name in presence of two subscribing witnesses.

ANDERS JOHAN ERICSSON.

Witnesses:

K. E. WIBERG,  
HARRY ALBIN.