H. LINDEBERG.
LINER FOR CENTRIFUGAL SEPARATORS.
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Fig. 1.

Fig. 2.

Fig. 3.

Witnesses:

Inventor:

Theodor Schmidberg

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THE HARRIS FIDGET CO. PRINTED IN ITALY.
To all whom it may concern:

Be it known that I, Hugo Lindeberg, a subject of the King of Sweden, residing at Eskilstuna, in the Kingdom of Sweden, have invented and useful Improvements in Liners for Centrifugal Separators, of which the following is a specification, reference being had to the drawing, accompanying and forming a part hereof.

My invention relates to improvements in such liners for centrifugal separators which consist of vertical, preferably curved plates or blades which are adapted to turn on vertical or nearly vertical axes at their inner edges for the purpose of separating the outer edges of the plates so that the plates may thus be easily accessible for cleaning and drying. In order that a liner of this kind may hold as many plates as possible the plates have been arranged in pairs in such manner that two adjacent plates turn on the same shaft or hinge-pin, the portions of the one plate encircling the pin being introduced between the corresponding portions of the other plate encircling the pin. This arrangement has the disadvantage that the plates of such a pair will stand so close to each other that when the liner is opened up for cleaning they easily remain bearing closely against each other, so that it will often be necessary to separate the plates of the various pairs by hand in order to clean and dry the plates on both sides. This is, of course, a time-wasting and tedious operation which, therefore, very often will be neglected, resulting in a defective cleaning. This disadvantage will be avoided by my invention according to which each plate is provided with a separate axis of turning.

One or more portions of a plate encircling the hinge-pin being at the same time placed intermediate the portions that is opposite the space or spaces between the portions of an adjacent plate, that encircle its hinge-pin.

By this arrangement it is attained that the portions of two adjacent plates encircling the hinge-pins do not come in each other's way, that is to say, they cannot bind, and for this reason the hinge-pins may be placed almost immediately together in the supports or, at any rate, with only as large clearance as is required on account of the thickness of the material in the portions of the plates encircling the hinge-pins. Two adjacent plates may, therefore, stand as close or very nearly as close to each other as when they are secured to a common hinge-pin, but the proneness of two adjacent plates to remain closed to each other also when the liner is opened up, is done away with, on account of the plates being provided with separate axes of turning and hence there being a space between the plates even at these axes of turning, which space continues uniformly outward between the plates.

In the accompanying drawing I have shown two suitable embodiments of my invention.

Figure 1 shows an elevation of two plates arranged according to the one embodiment with hinge-pins and supports for said pins. Fig. 2 is a plan view of the plates and supports shown in Fig. 1. Fig. 3 is an elevation of two plates according to the other embodiment.

The supports for the shafts or hinge-pins consist in known manner of two horizontal rings 1 arranged axially with each other and with the separator bowl. In these rings the shafts or hinge-pins 2, 3 are secured parallel to the axis of the bowl. The one plate 4 is made to turn on the hinge-pin 2 by encircling the pin with a sleeve-like portion 6 entering between the two rings 1, while the other plate 5 is made to turn on its hinge-pin 3 by encircling the two ends of the pin 3 projecting outside the rings with two sleeve-like portions 7 located outside the rings 1. From the drawing it is evident that the sleeve-like portions 6, 7 of the plates will thus not be in each other's way and, consequently, will not bind when the plates are turned, notwithstanding the pins 2, 3 being secured close to each other. For the purpose of making the drawing clear the pins have not been shown quite as close to each other as they will be placed in actual practice. In the drawing the pins 2, 3 have been shown secured in a common circular periphery. It is to be understood, however, that they may be secured in other manner, for instance in a zigzag line, which, however, shall not have longer turns than that the plates shall not obstruct each other when opening up the liner.

The embodiment shown in Fig. 3 differs from the one above described in that the pin 3 is cut away between the rings, forming a free space between them. Hereby not only the advantage of a lighter construction is attained, but also that the sleeve-like portion 6 of the plate 4 is given still
more room for turning and that thus the hinge-pins 2, 3 may be secured still closer to each other, thereby providing room for more plates.

I claim:

1. In a liner for centrifugal separators, the combination of approximately vertical plates adapted to turn on approximately vertical axes at their inner edge, a hinge-pin for each plate, supporting means for said hinge-pins, and portions on said plates adapted to encircle said hinge-pins arranged so that the encircling portions of adjacent plates do not come opposite each other, substantially as and for the purpose set forth.

2. In a liner for centrifugal separators, the combination of approximately vertical plates adapted to turn on approximately vertical axes at their inner edge, rings arranged axially to each other, a hinge-pin for each plate secured in said rings, and portions on said plates adapted to encircle said hinge-pins alternately between and outside of said rings for adjacent plates, substantially as and for the purpose set forth.

3. In a liner for centrifugal separators, the combination of approximately vertical plates adapted to turn on approximately vertical axes at their inner edge, rings arranged axially to each other, a hinge-pin for each plate secured in and extending alternately between and outside of said rings for adjacent hinge-pins, and portions on said plates adapted to encircle said hinge-pins alternately between and outside of said rings for adjacent plates, substantially as and for the purpose set forth.

HUGO LINDEBERG.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."