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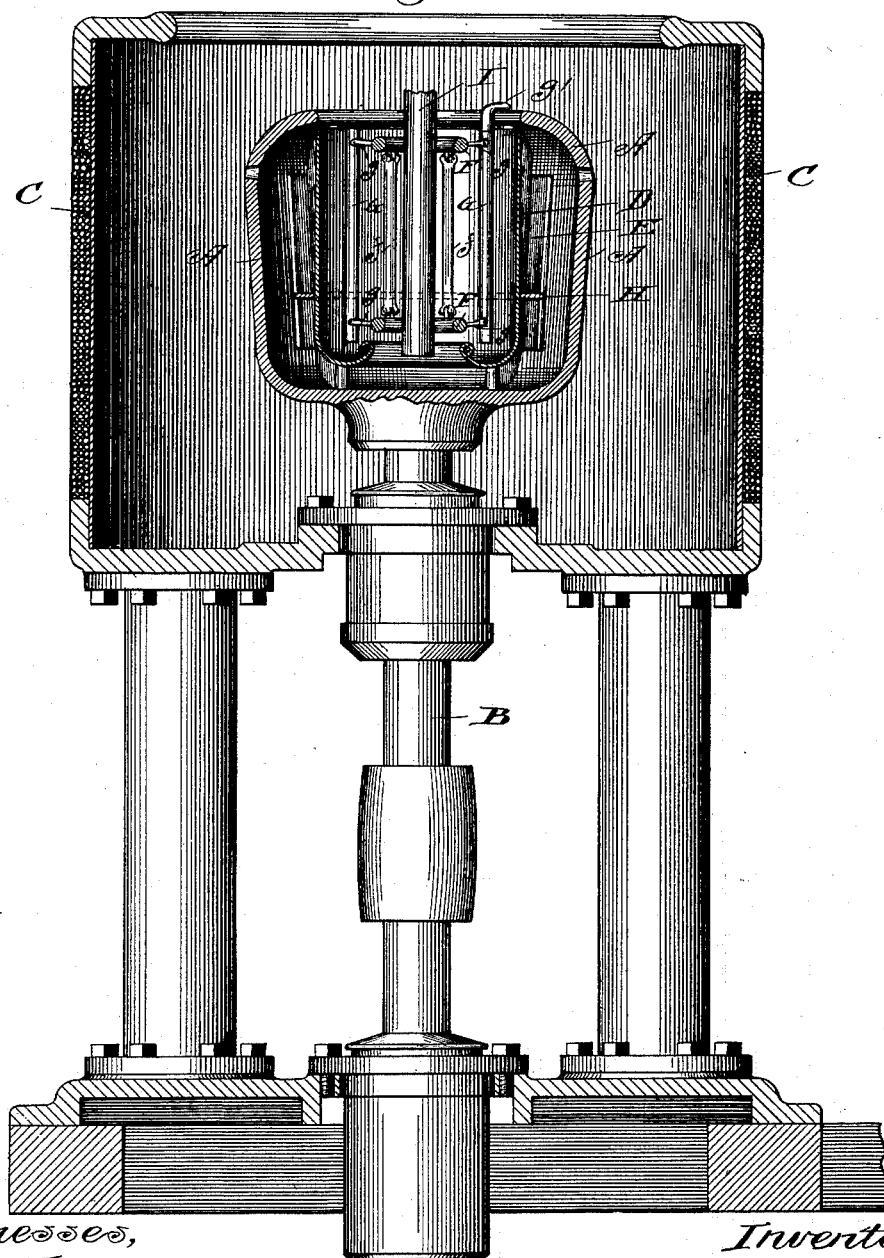
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O. B. PECK.
CENTRIFUGAL ORE SEPARATOR.

No. 489,199.

Patented Jan. 3, 1893.

Fig. 1.



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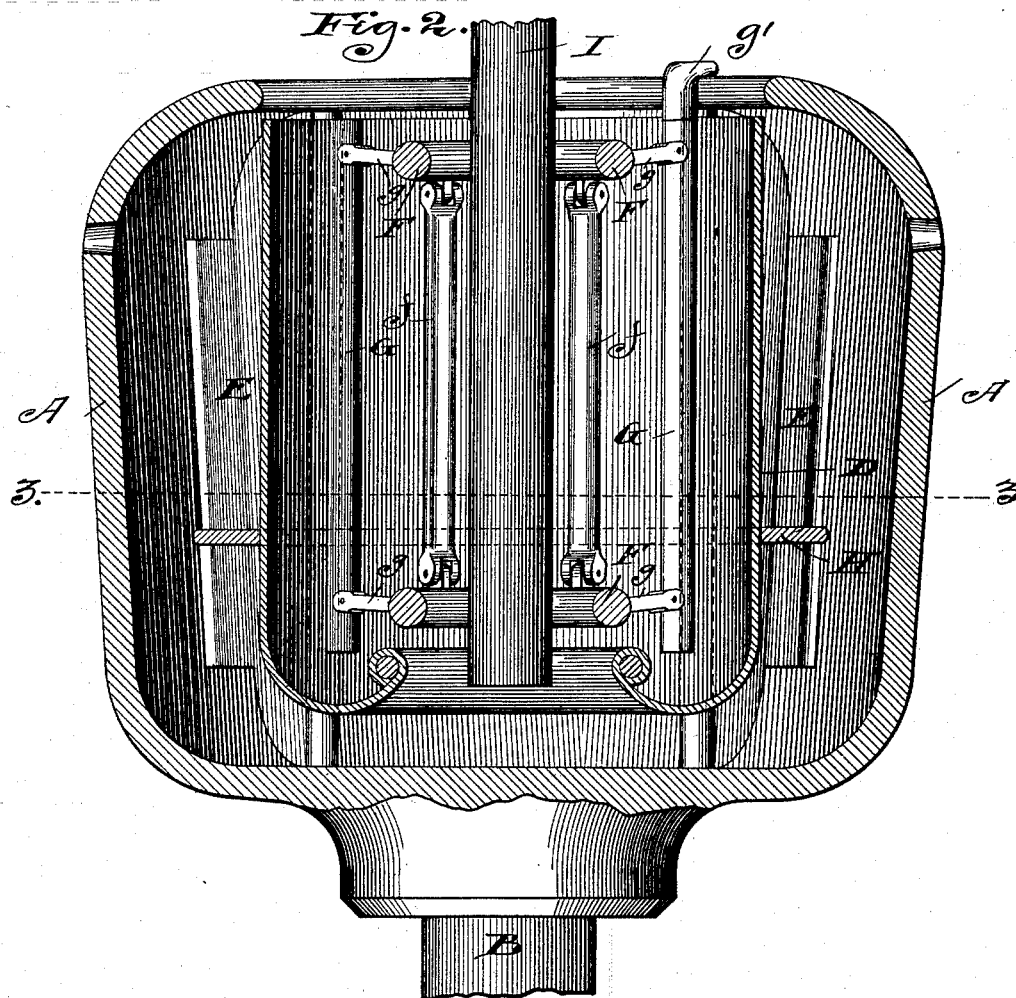
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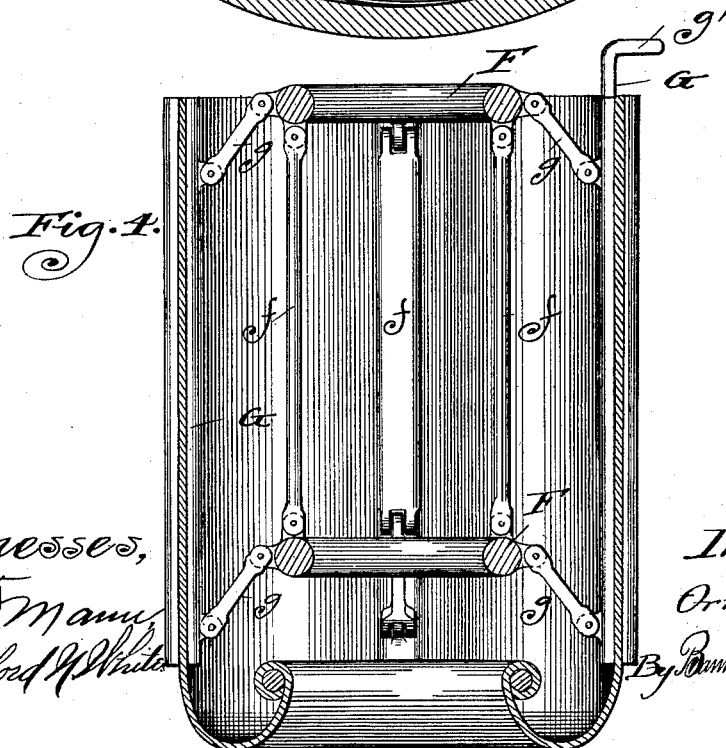
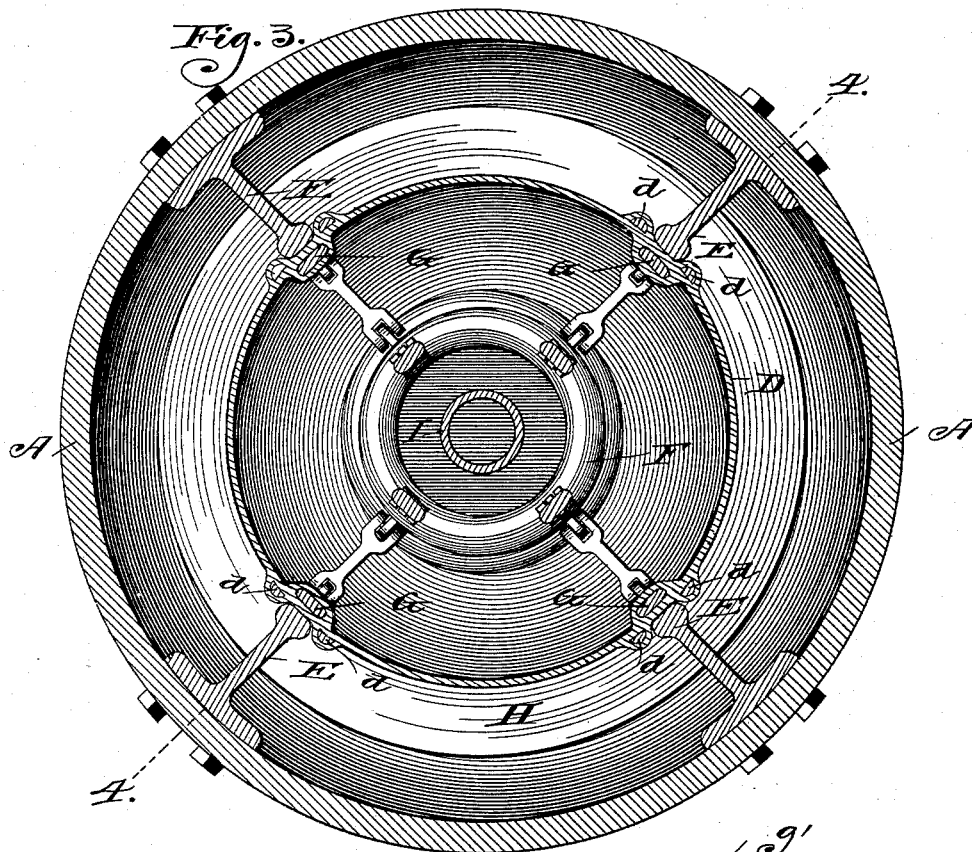
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UNITED STATES PATENT OFFICE.

ORRIN B. PECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO MELINDA PECK, OF
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CENTRIFUGAL ORE-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 489,199, dated January 3, 1893.

Application filed April 24, 1891. Serial No. 390,331. (No model.)

To all whom it may concern:

Be it known that I, ORRIN B. PECK, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Centrifugal Ore-Separators, of which the following is a specification.

The object of my invention is to provide means for increasing the capacity and efficiency of the revoluble vessel, and to insure the immediate and positive revolution of the water and material at the speed of the vessel, without relying merely upon the friction on the side of the vessel, and further, to decrease the agitation of the water on its surface; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, of an apparatus containing my improvements; Fig. 2 a vertical central section of the revoluble vessel; Fig. 3 a section on line 3 3 of Fig. 2, looking in the direction of the arrows; and Fig. 4 a detail view of the removable lining; the last three views are on an enlarged scale.

The vessel A, is supported upon and rotated by a shaft B, inclosed by a curb C. I then provide a flexible, cylindrical partition D made of canvas, rubber sheeting, or other fibrous material of about the same diameter when expanded as the opening in the top of the vessel, and preferably contracted, as shown, at its lower end.

To the inside of the revoluble vessel I fasten wings or partitions E. These are attached in a vertical position to the vessel, and extend up and down therein for the greater portion of its length, extending out into the same to about the line of the opening in the top of the vessel. There may be as many of these wings as desired, but I prefer to use four, as shown in Fig. 3. The flexible partition when inserted into the vessel rests between these wings, and is securely held thereby from moving sidewise: in this way the partition or wings together with the lining form compartments in the vessel in which the material being treated is carried. This partition is preferably provided with rods or strips *d*, ar-

ranged in pairs and adapted to engage, as shown, with the wings E.

Within the flexible partition I provide one or more rings F, such rings being connected, when more than one are used, by means of the rods or links *f*. These rings are also connected by means of links *g*, and ribs G with the flexible partition, the ribs being attached to such partition, one or more of such ribs being preferably hooked, as shown at *g'*, in such manner as to engage with the vessel A, in order to suspend the partition therein. When it is desired to remove the flexible partition from the vessel, it may be lifted out by means of the ring F. As such ring is raised the sides of the partition will be drawn in or contracted through the connection between the rings and the ribs G. When the partition is inserted into the vessel the rings may be moved downward in the partition, thereby expanding the same through the links *g* and the ribs G. I also provide a ring or horizontal partition H, which is attached to the wings and extends from the flexible partition a portion of the distance toward the interior surface of the revoluble vessel; the purpose of this partition being to prevent the water and material introduced by means of the pipe I, from flowing upward immediately next to the outside of the flexible partition, such water and material being diverted by the horizontal partition and sent back, passing up in the vessel at some little distance from the partition.

By means of this construction, as the vessel is revolved, the wings E force or carry the water and material around, communicating the motion of the vessel thereto as soon as they come in contact with the wings, thereby starting the water and material more rapidly than the friction with the sides of the vessel alone would do, and precipitating the particles more rapidly at a point nearer the bottom of the vessel than would be the case were the wings not employed. Since the separation of the particles is accomplished after they are precipitated from the water, the lower the point at which such particles are precipitated, the more effectual and thorough will be their separation, and therefore these partitions

which cause the precipitation of the particles at a point near the bottom of the vessel effectually aid in the subsequent separation. The flexible partition in connection with the wings forms a series of chambers extending for the greater portion of the depth of the vessel, whereby the water is prevented from flowing over the inner edges of the wings, or from becoming agitated upon the surface.

I claim:

1. In a vessel for the centrifugal treatment of powdered or finely divided substances for the separation of metallic or mineral-bearing particles, an inner contractible lining, rings and links for effecting the expansion and con-

traction of the lining and means for supporting the same, substantially as described.

2. In a vessel for the centrifugal treatment of powdered or finely divided substances for the separation of metallic or mineral-bearing particles, an inner lining, and wings or partitions extending therefrom to the outer wall separating the space between the lining and wall into compartments for carrying the material around as the vessel revolves, substantially as described.

ORRIN B. PECK.

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