

(No Model.)

2 Sheets—Sheet 1.

O. B. PECK.
CENTRIFUGAL ORE SEPARATOR.

No. 499,343.

Patented June 13, 1893.

Fig. 1.

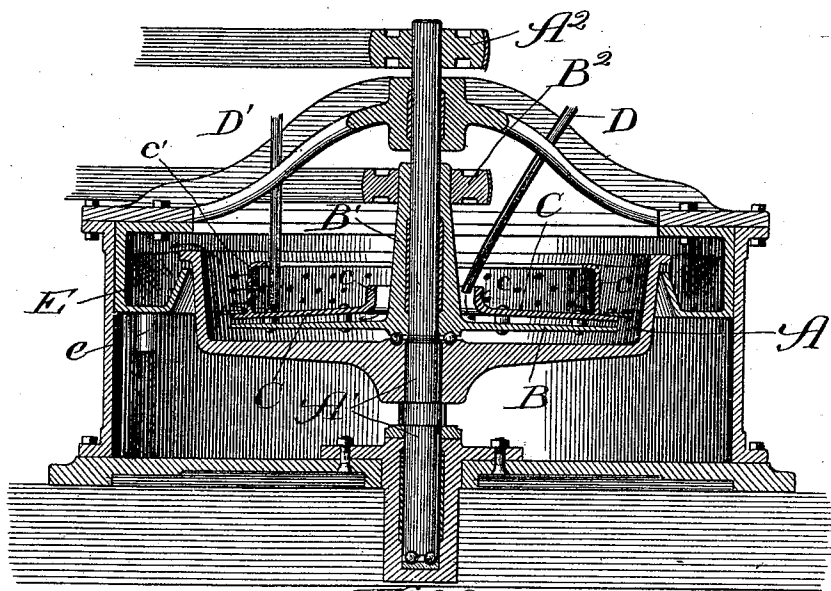
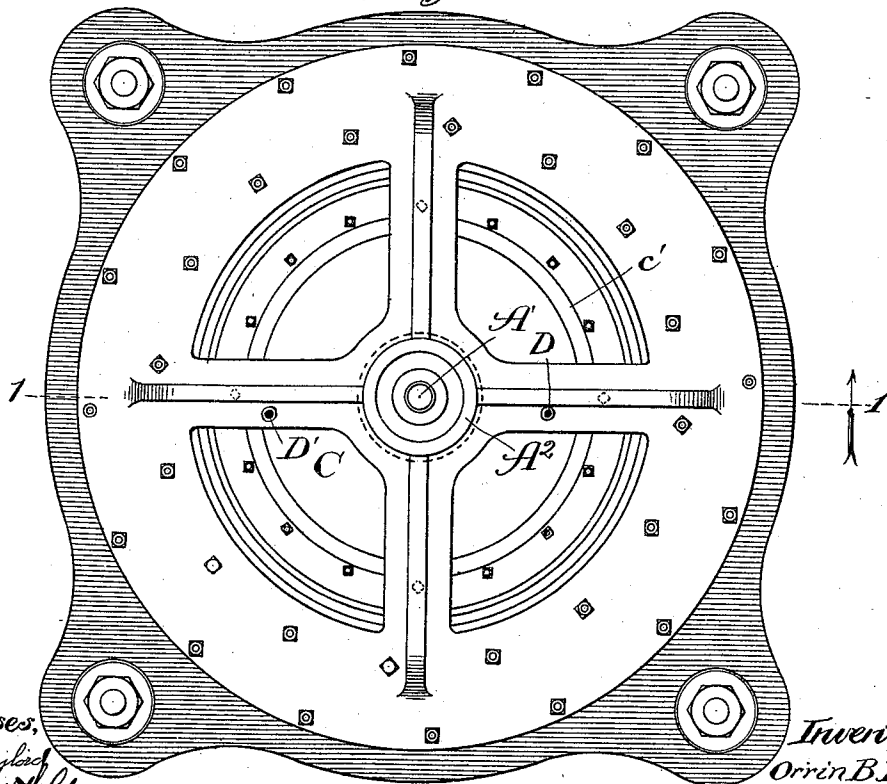


Fig. 2.



Witnesses,
Clifford N. White.

Inventor,
Orrin B. Peck,

By Banning & Banning & Peckson,
Attys.

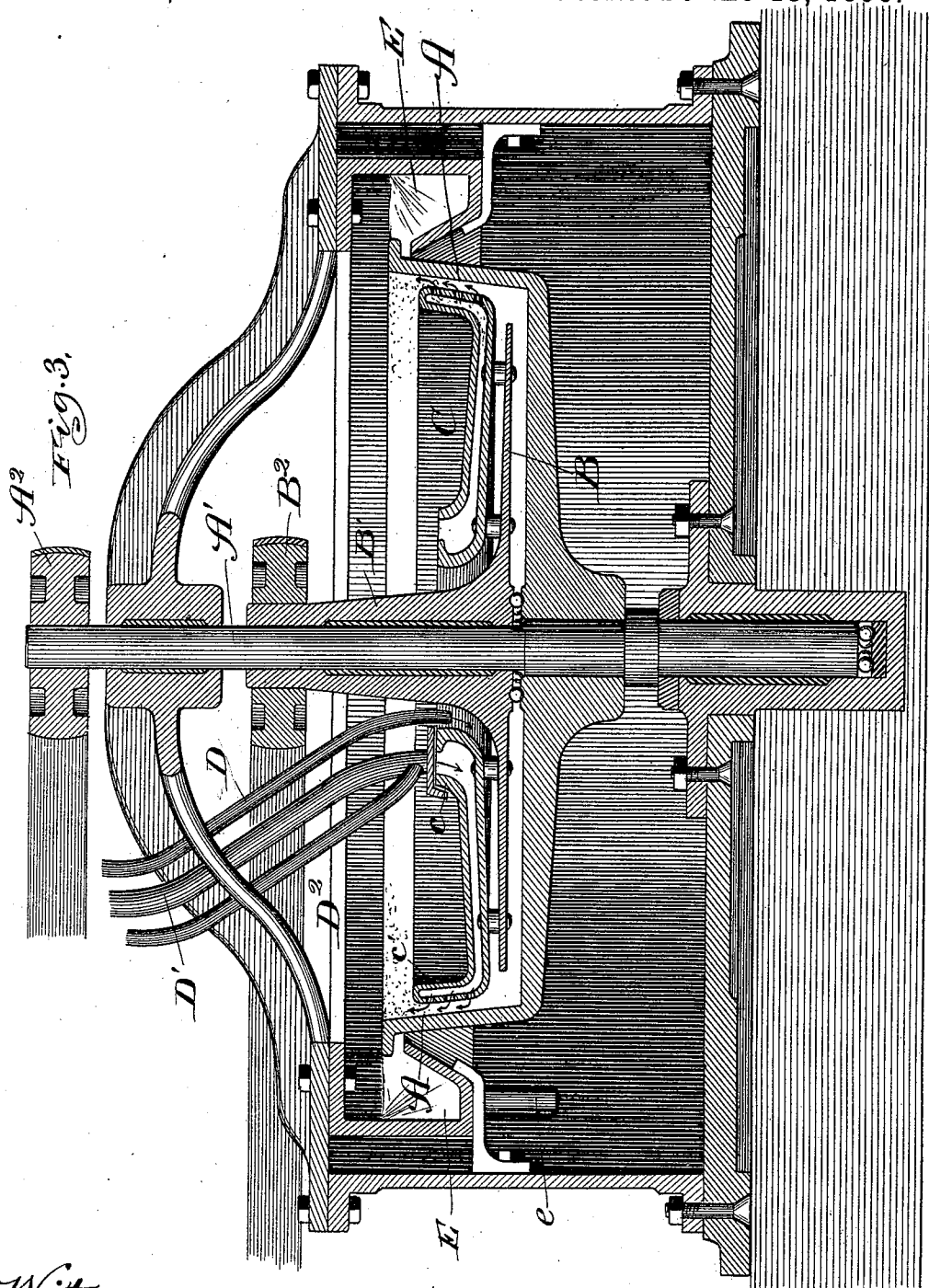
(No Model.)

2 Sheets—Sheet 2.

O. B. PECK.
CENTRIFUGAL ORE SEPARATOR.

No. 499,343.

Patented June 13, 1893.



Witnesses,
E. S. Clayford,
Clifford W. White.

Inventor,
Orrin B. Peck,
By Ranning & Ranning & Rayson
Attys.

UNITED STATES PATENT OFFICE.

ORRIN B. PECK, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE PATENT TITLE COMPANY, OF SAME PLACE.

CENTRIFUGAL ORE-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 499,343, dated June 13, 1893.

Application filed June 14, 1892. Serial No. 436,737. (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, Illinois, have invented certain new and useful
5 Improvements in Centrifugal Ore-Separators, of which the following is a specification.

The object of my improvements have more especial reference to the means or devices, which, for convenience in the specification, I
10 will term disk or disks employed for supplying the fine or powdery material intended to be treated to the rotatable separating surface of a centrifugal ore separator and the water for diluting and washing the same by the ac-
15 tion of centrifugal force; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a central vertical section, taken in the line 1 of Fig. 2, looking in the direction of the arrow. Fig. 2 is a
20 top plan view of the complete apparatus. Fig. 3 is a transverse vertical section of a modified form of the apparatus taken in the line 1 of Fig. 2, with the parts somewhat modified.

25 In making my improvements for feeding the material and supplying water to the rotatable separating surface of a centrifugal ore separator, I make a rotatable separating surface, A, mounted upon a shaft, A', in any suitable
30 manner, so as to be rotated thereby through the instrumentality of a pulley A², mounted on the shaft, and connected by a belt to any suitable motive power. As shown in the drawings, the separating surface is the outer rim
35 of a bowl or vessel, but it may be made in any desired way, so as to be properly supported and rotated and so long as it is adapted to or for the treatment of material while it is passing over said surface in a substantially thin
40 layer or sheet. Inside of the separating surface I arrange a material feeding disk, B, mounted upon a collar or sleeve B', loosely surrounding the main shaft. This collar, with the disk, may be rotated independently from
45 the separating surface through means of a pulley, B², connected by a belt to any suitable motive power. I prefer to arrange immediately above the disk B, a shield or cover, C, with a space between them. These parts may be held
50 together, as shown in Figs. 1 and 2, by rivets or bolts, with washers or spacing collars be-

tween them. The inner edge of this shield or cover is preferably turned up into a flange c, as is also the outer edge into a flange c', as shown, though the whole cover, as well as these
55 details of construction, may be omitted, if desired. A material supply pipe, D, leads the material to be treated in to a point near the collar or sleeve B', where it is deposited on the disk B. A water supply pipe D' is also
60 preferably used to carry the water in and supply it to separating surface. Where the shield or cover C is provided with an outer upturned flange, I provide it with perforations, and lead the water supply to the inside of it, so that it
65 will be discharged through the perforations in the flange upon the separating surface. I thus secure a rotatable water supply or spraying means for delivering the water to the separating surface in a finely divided state which
70 effectually washes the substantially thin layer or sheet of material being treated, and very materially assists in its separation.

As shown in the modification in Fig. 3, the shield or cover, C, is made hollow, and the wa-
75 ter is discharged through the pipe, D', into such hollow, whence it escapes through perforations against the separating surface. In this modification, I have also shown a water supply pipe, D², adapted to also deliver water
80 upon the shield and within its upturned outer flange or rim c', to assist, as it escapes over such flange, in diluting the material under treatment, though this pipe may be omitted, if desired. As the separating surface A is
85 driven or rotated through the shaft A' and pulley A², it may be given any desired speed of rotation required for the work, and as the disk B is driven or rotated independently of it through the collar or sleeve B' and pulley
90 B², a lower or higher rate of speed may be imparted to it, as desired. The material delivered upon this disk or device will be carried out with greater or less rapidity, or violence as desired owing to its speed of rotation, and
95 delivered properly distributed or fed in a substantially even, thin layer upon the separating surface A by the action of centrifugal force with the desired degree of violence or force in the manner above stated where it is
100 separated by the action of centrifugal force, and the lighter particles driven across its sur-

face and discharged into a curbing E, whence it may be removed through a pipe, e, to any desired place of deposit.

As the main idea of my invention in this application consists in the employment of a rotatable separating surface and independently rotatable feeding and water spraying means, or devices whereby material and water are fed to the separating surface by the action of centrifugal force as hereinbefore explained, and as desired, I do not desire to limit myself to mere details of construction, and shall permit considerable latitude in the form, location and arrangement of the various parts, so long as these ideas are embodied. Nor do I intend to limit myself to the use of a rotatable feeding means in connection, in all cases, with rotatable water spraying means, as it is obvious that they may either both be used, or one omitted, except in those claims where I specify their use together.

What I regard as new, and desire to secure by Letters Patent, is—

1. In an ore concentrator, the combination with a rotatable vessel having a separating surface, over which the material under treat-

ment is passed in a comparatively thin sheet by the action of centrifugal force, of an independently rotatable device for centrifugally feeding material thereto, substantially as described.

2. In an ore concentrator, the combination with a rotatable vessel, having a separating surface, over which the material under treatment is passed in a comparatively thin sheet, by the action of centrifugal force, of an independently rotatable water feeding device for centrifugally supplying water to the separating surface substantially as described.

3. In an ore concentrator, the combination with a rotatable vessel, having a separating surface, over which the material under treatment is passed, in a comparatively thin sheet, by the action of centrifugal force, of an independently rotatable device for centrifugally feeding material and water thereto, substantially as described.

ORRIN B. PECK.

Witnesses:

THOMAS A. BANNING,
SAMUEL E. HIBBEN.