(No Model.)

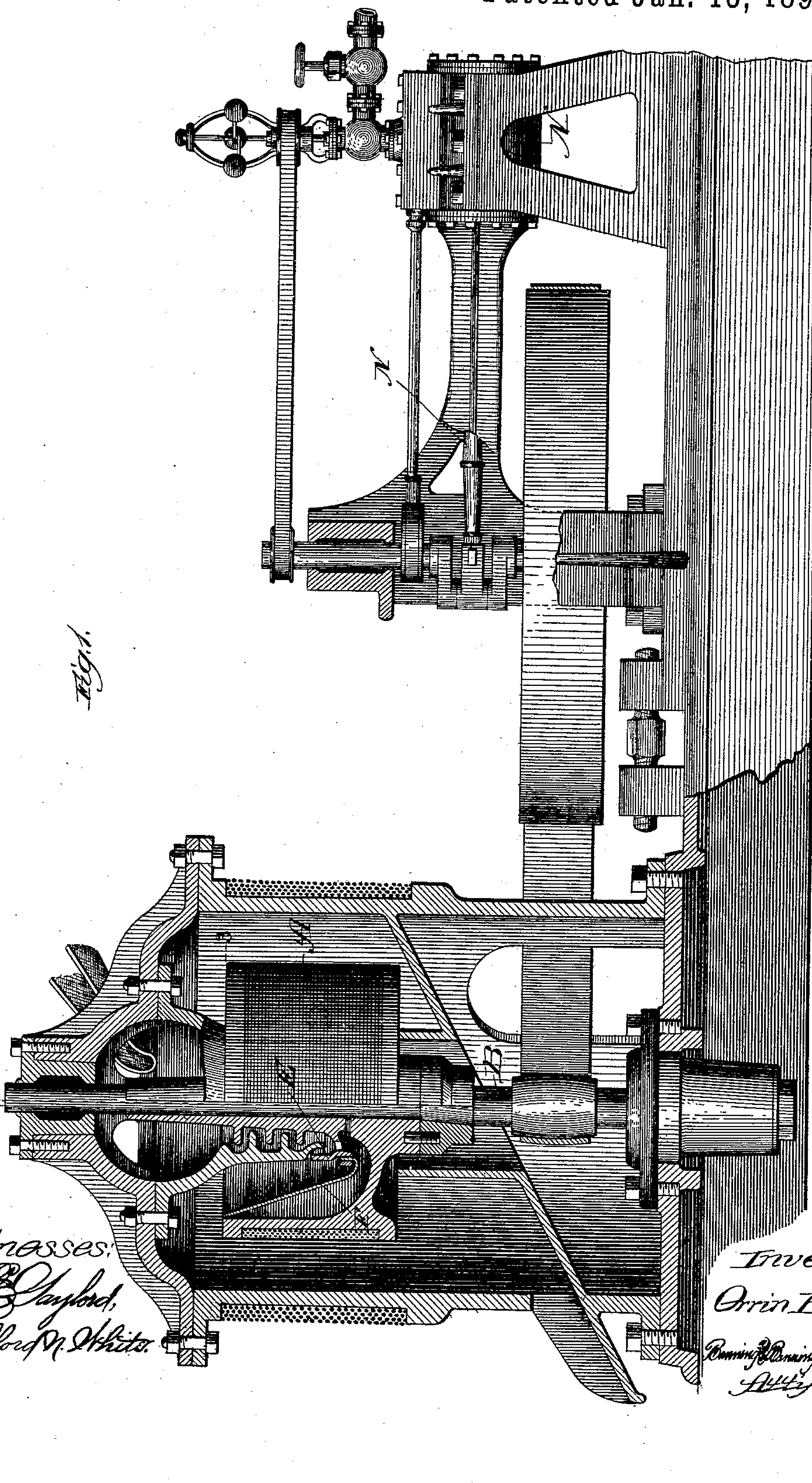
2 Sheets—Sheet 1.

O. B. PECK.

MACHINERY FOR CENTRIFUGALLY TREATING PARTICLES OF METALLIC OR MINERAL BEARING SUBSTANCES.

No. 444,618. Patented Jan. 13, 1891.

Fig. 1



Witnesses:
E. E. Gaylord,
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Inventor.
Orrin B. Peck,
Banning & Banning & Payson,
Att'ys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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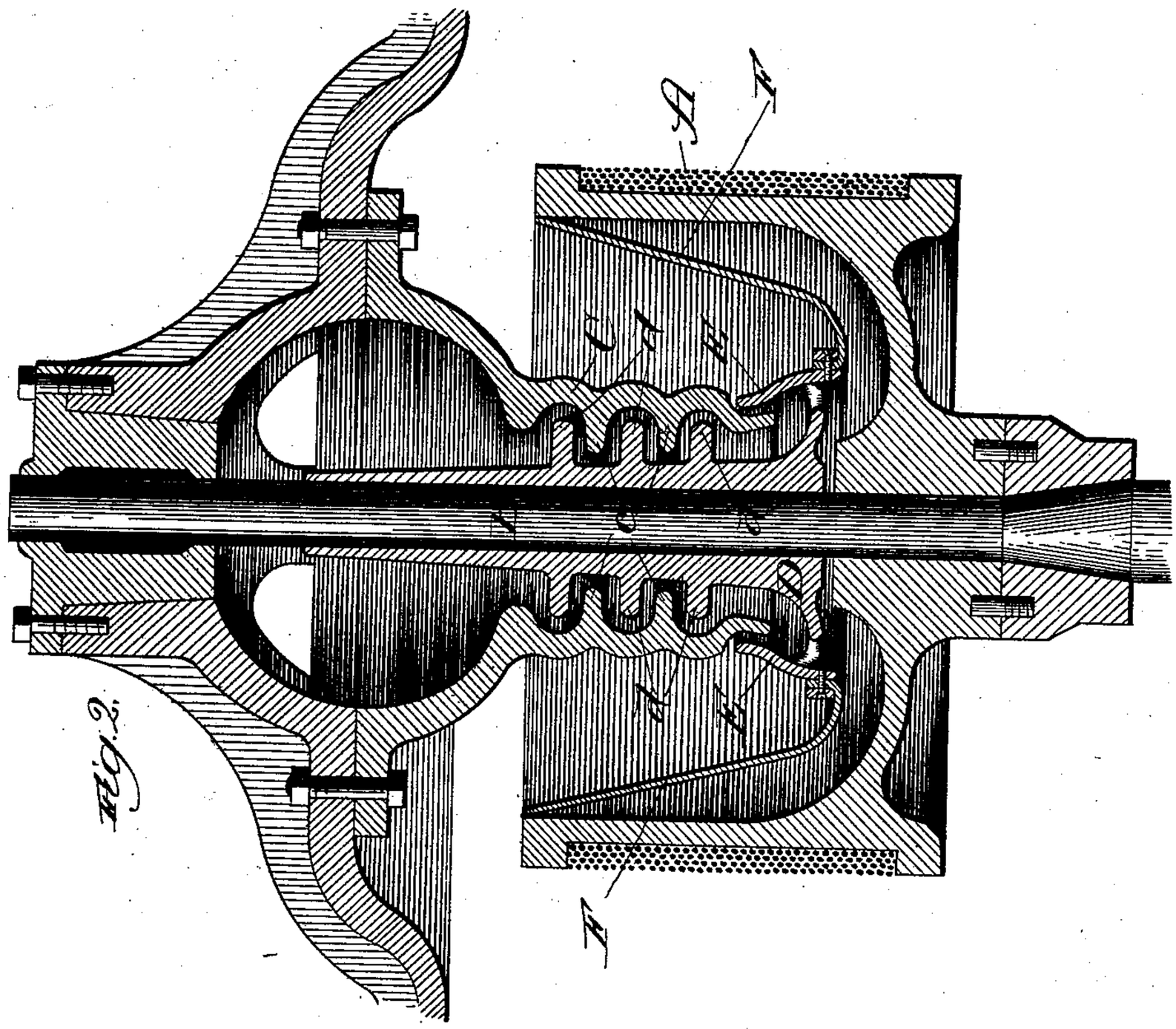

Fig. 2.

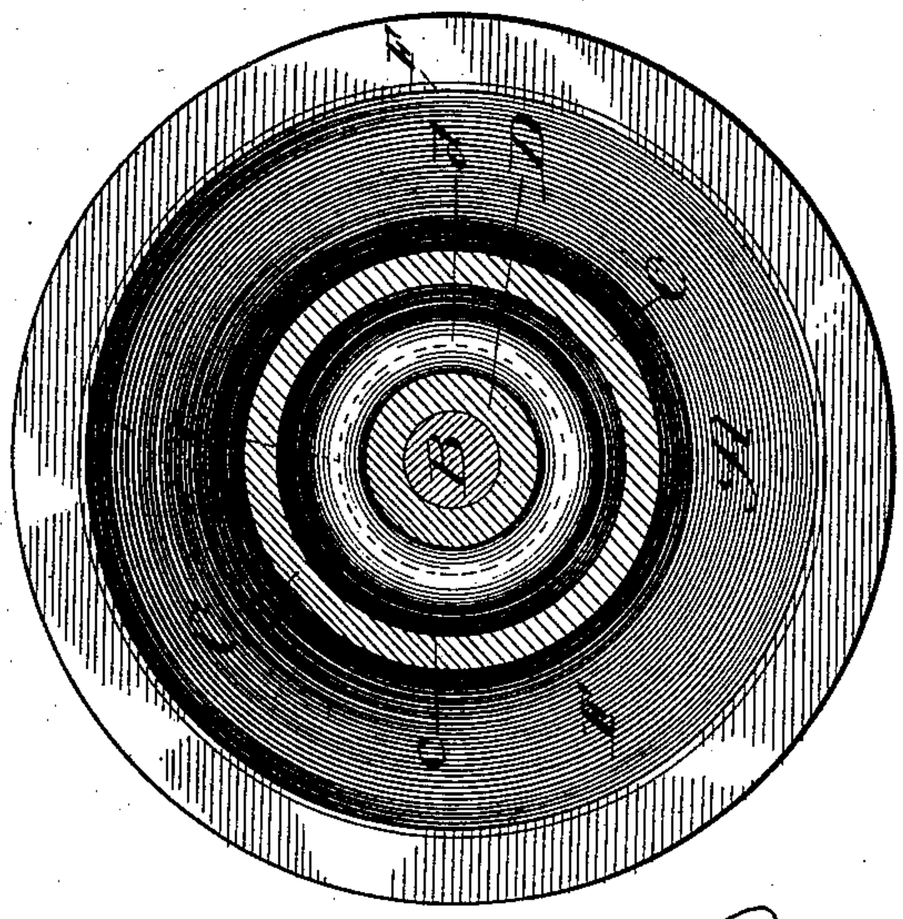

Fig. 3.

Witnesses:
Chas. E. Gaylord,
Clifford Q. White.

Inventor:
Orrin B. Peck,
By Banning & Banning & Payson,
Attys.

UNITED STATES PATENT OFFICE.

ORRIN B. PECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO MELINDA PECK, OF SAME PLACE.

MACHINERY FOR CENTRIFUGALLY TREATING PARTICLES OF METALLIC OR MINERAL-BEARING SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 444,618, dated January 13, 1891.

Application filed May 23, 1890. Serial No. 352,911. (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 Improvements in Machinery for Centrifugally Treating Particles of Metallic or Mineral-Bearing Substances of Different Degrees of Specific Gravity, of which the following is a specification.

The object of my invention is to devise means to prevent the fine and powdery particles treated in the revoluble vessel from escaping until they have been thoroughly subjected to treatment; 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 my improved mechanism. Fig. 2 is a vertical section taken on a line 2 of Fig. 1, looking in the direction of the arrow; and Fig. 3 is a plan view taken on the line 3 of Fig. 1.

In treating the fine and powdery particles of metallic or mineral-bearing substances by the action of centrifugal force in a revoluble vessel the finer and more powdery portion of the material treated is often so light or flaky as to render it difficult to subject it to as complete and thorough treatment as desirable. This is particularly the case where water is introduced into the revoluble vessel in connection with the material to be treated, as in such cases the light powdery particles have a tendency to float on the water and be carried off with it. To prevent this is particularly the object of my present improvement.

In making my improved machinery I make a revoluble vessel A of the proper size, shape, and strength, and mounted on a revoluble shaft B, which may be rotated by an engine N, as shown in Fig. 1, or by any convenient motive power. I also prefer to surround the shaft on the inside of the revoluble vessel with a spout or casing C, in which the material as it is introduced may be agitated and more thoroughly intermixed by the rotation of the sleeve D, fixed upon and rotating with the shaft and provided with pins or extensions *d*, revolving between inwardly-extending flanges *c* on the spout or casing. This feature need not be further described, as I do not make it the subject of claims herein. At the bottom of the sleeve D, however, I provide a collar E, which rotates with the shaft and within the revoluble vessel. At the bottom of this collar I connect a sheet or disk of canvas or other flexible material in any convenient manner, so that it will be firmly and securely held and carried around with the rotation of the shaft. This flexible covering is made of a size and shape to extend up to preferably the top of the revoluble vessel and to incline outwardly from its bottom or lower portion to the top and to lie or rest against the mass or wall of accumulated material in the vessel and adapted to be forced or carried inward by the accumulating material in the vessel. The action of centrifugal force as the shaft is rotated, carrying the flexible covering around with it, will cause such covering to spread or assume a position of tension, so that it will lie or stand out against the sides of the walls of the revoluble vessel.

The material to be treated is intended to be introduced into the vessel beneath the flexible covering, so that as it is acted upon by centrifugal force and is thrown against the walls of the vessel it will only be able to escape at the top by forcing a passage between the wall and the flexible covering through which it may pass. This will cause the material to accumulate and remain in the vessel long enough to be subjected to thorough and complete treatment. It will, however, permit the lighter particles of the material which are necessarily forced toward the interior of the vessel to gradually creep up under the canvas or cover to the top, where they will be thrown off or discharged.

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

In machinery for centrifugally treating particles of metallic or mineral-bearing substances of different degrees of specific gravity, the combination of a revoluble vessel, a revoluble shaft rotating it as it revolves, and a revoluble flexible covering within the vessel free or unconfined at the upper edge, beneath which the material is introduced and treated and from beneath which it forces a way of escape around the free or unconfined upper edge, substantially as described.

ORRIN B. PECK.

Witnesses:
GEORGE S. PAYSON,
THOS. A. BANNING.