

B. T. BABBITT.
Centrifugal Machine.

No. 202,135.

Patented April 9, 1878.

Fig. 1.

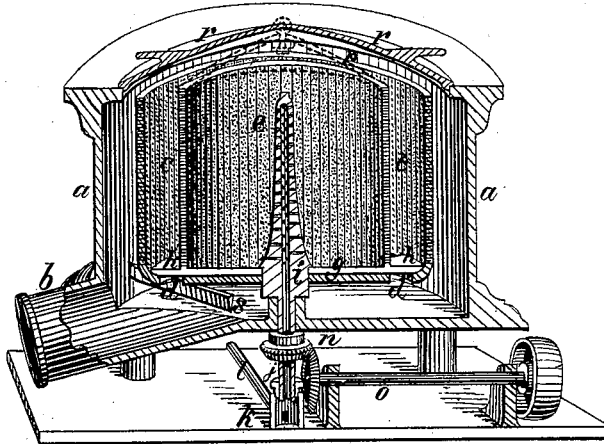
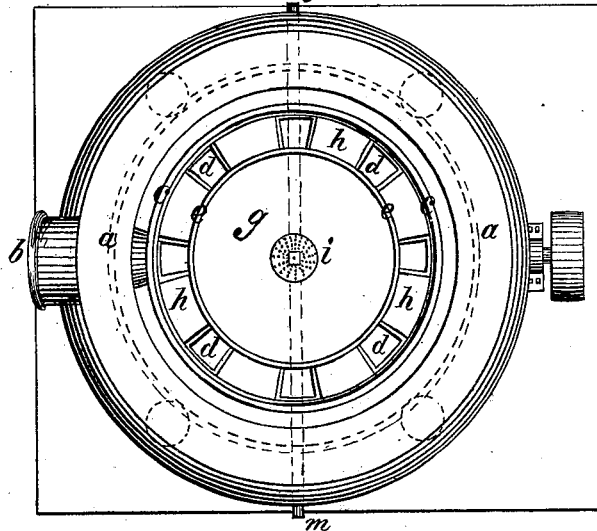


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

BENJAMIN T. BABBITT, OF NEW YORK, N. Y.

IMPROVEMENT IN CENTRIFUGAL MACHINES.

Specification forming part of Letters Patent No. **202,135**, dated April 9, 1878; application filed December 27, 1877.

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of the city, county, and State of New York, have invented certain new and useful Improvements in Centrifugal Washing and Drying Machines, as is fully and clearly set forth in the following specification and the accompanying drawings.

Figure 1 is a vertical section through the center of the apparatus, and Fig. 2 is a plan view with the covers *p* and *r* removed.

My invention relates to cleansing grains, seeds, sugars, crystalline salts, and other divided materials proper for its use and applicability, from dust and other exterior impurities.

The objective feature of my invention is to employ for the purpose above named a centrifugal washer so constructed that the material treated is placed in and taken from the apparatus without handling.

My essential improvements consist in, first, the combined arrangement of parts by which I pass water or air into the machine through the central shaft from the bottom; second, releasing and voiding the solid contents by a capacious sluice extending from the center of the bottom, and extending beyond the side of the machine; third, providing ports in the bottom of one cylinder and sliding valves attached to the bottom of another cylinder, through which means, aided by a scraper, the contents fall into the sluice, or are shut off and retained.

My improvements consist of an apparatus for cleansing grain and other materials, treating such materials in a rotating perforated cylindrical curb or curbs with hot or cold water, or water-solutions of salts, acids, or other properties, with cold or hot air or gases, with steam or other vapors, in every case according to the substance to be acted on and the desired result from the treatment; and my improvements further consist in the apparatus in which the said result is accomplished.

a shows the exterior of the apparatus—a curb closed at the bottom and open at the top. *b* is a delivery-tube or outlet-spout, inclined downward through the bottom from the center and through the side of the curb. *c* represents a rotating cylinder of perforated sheet metal or

other proper material, several inches diameter less than the curb *a*, and between which and the bottom of *c* there is also several inches interval, forming a space, hereinafter referred to. This bottom of *c* is cut away at intervals around its outer part by openings, as delivery-ports *d d*, for the contained material. *e* shows a second perforated or open-worked cylinder, which rotates with *c*, and is of considerably less diameter. Its bottom *g* is extended beyond its sides over the bottom of *c*, and is cut away at intervals, forming plates or valves *h h*, that cover the ports *d d*. This inner cylinder, with the valves, is constructed to be turned by hand, right or left, on its center, its bottom resting and sliding upon the bottom of *c*, which operation moves the valves *h h* to open and close the ports *d*.

i represents a central vertical perforated spindle, to which the bottom of *e*, with its attachments, is strongly secured. At and below the bottom of the curb-bottom this spindle *i* is secured to a hollow rotating shaft, *j*, which, provided with a collar and stuffing-box, forms a step to take and rotate in a cast-iron hollow foot-socket, *k*, which also takes two conduit-pipes, *l* and *m*, the socket being partly cut away in the drawing to show the construction, one pipe being designed for hot or cold water, or otherwise, and the other for hot or cold air, or other media, according to the material treated. *n* shows a miter-wheel, fixed upon the shaft *j* by a collar and set-screw, and takes into a second miter-wheel fixed upon the end of a horizontal rotating shaft, *o*, by which the cylinders are actuated. *p* shows, by dotted lines, a cover for the cylinder *e*; and *r*, a cover for the curb *a* and its contents.

In the operation the cover *r* is removed, and *p* is fixed in its place. The wheat, for instance, turned on by a spout over the center, falls upon the cover *p*, and descends into the annular space between *c* and *e* until filled to a proper height as a charge for the machine. *p* is then removed, the cover *r* laid in its place, and the cylinder set in motion. Water being at the same time admitted, it will wash away dirt and other impurities from the grain, and pass off by the spout *b*. The water being shut off, hot air is admitted by the second pipe, and the grain will be quickly dried. The valves *h* are then

shifted, the ports *d* opened, and the grain will fall into the space between the bottoms of the curb and cylinder *c*, to which a clearing-blade or scraper, *s*, is secured, and will sweep the contents into the delivery-spout to fall into the proper receptacle.

Sugar may be treated in a similar manner with this machine, also salts, gums, and other divided materials, in all cases corresponding with the requirement of the case; and certain such substances may be treated with gums for glazing or preserving them with great advantage.

What I claim, in a centrifugal washing and drying machine for which I desire to secure Letters Patent, is—

1. In combination with the curb *a*, the cylinder *e*, fitting loosely in the cylinder *c*, and having its bottom extended and cut away to form plates or valves, which slide over ports,

and the cylinder *c*, provided with said ports, substantially as described.

2. The curb *a*, provided with a discharge-slucice, *b*, inclined downward through the bottom from the center, as shown, in combination with the scraper *d*, as set forth.

3. The combined washing and drying machine herein described, having rotating cylinders *c* and *e*, provided with covers *p r*, with central perforated hollow shaft and spindle *i j*, arranged to transmit, by centrifugal force and pressure, water and hot air through the materials to be treated, in combination with the conduit-pipes *l* and *m* at the bottom, substantially as described.

B. T. BABBITT.

Witnesses:

J. B. HYDE,

CHAS. G. HEISER.