WEST & CAREY.

Centrifugal Sugar Machine.

No. 54,456. Patented May. 1, 1866.

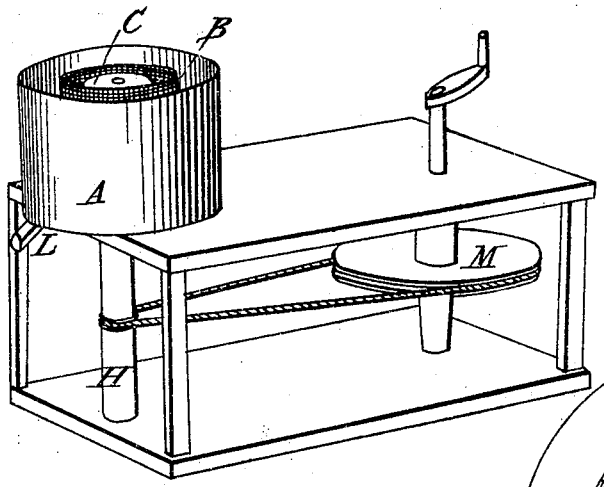


Fig. 3.

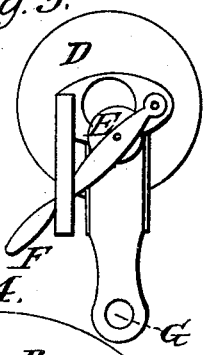


Fig. 4.

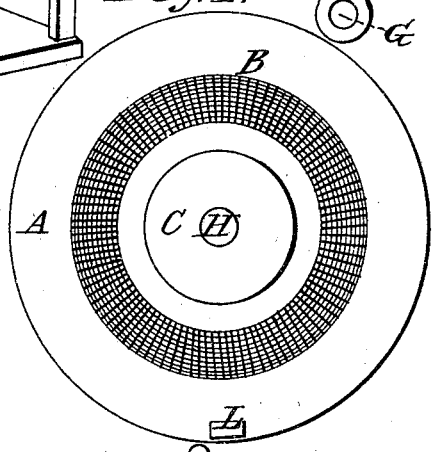
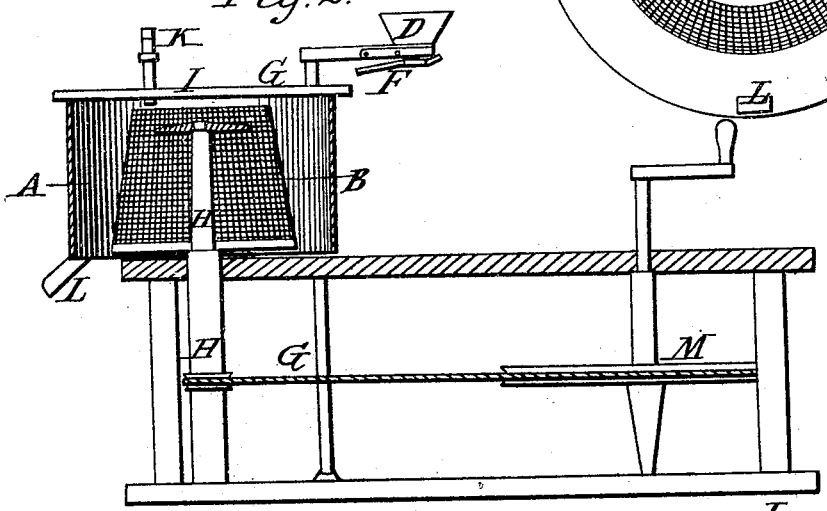


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES O. WEST AND JOHN CAREY, OF MARTINSVILLE, OHIO.

IMPROVED CENTRIFUGAL MACHINE FOR DRAINING AND CLEANSING SUGAR.

Specification forming part of Letters Patent No. **54,456**, dated May 1, 1866.

To all whom it may concern:

Be it known that we, CHARLES O. WEST and JOHN CAREY, of Martinsville, in the county of Clinton and State of Ohio, have invented certain new and useful Improvements in Centrifugal Sugar-Mills; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a longitudinal section. Fig. 3 is a bottom view of the feed-hopper. Fig. 4 is a top view of the mill.

Our improvements relate to the ordinary centrifugal mill for straining sugar or separating it from molasses.

In centrifugal mills as at present constructed the sides of the screen are made cylindrical and the mush is thrown into the bottom. The results are that the lower portion of the screen only is perforated or used as a separator, and that the material is unequally distributed, and the mills frequently burst asunder, rendering them unsafe and unreliable.

Our improvements consist in the novel shape of the screen; in providing the screen with a distributing-head, revolving with it; in the adjustable feed-hopper, and in the introduction of steam into the mill to clarify the sugar.

In each of drawings like letters represent like parts of the machine.

A is the outer cylinder, forming an annular space surrounding the screen for the reception of the molasses or sirup after it is expelled from the mush. It is provided with a spout, L, through which the molasses is discharged.

B is a screen, of wire-cloth or perforated tin, surrounded with wire-cloth, constructed in the form of a frustum of a hollow cone, to prevent the mush from flying out at the top. This screen is provided with a bottom, and is made to fit on a shaft, H, and to revolve therewith or be readily detached and removed therefrom, as may be necessary.

C is a distributing-head, placed on the top of the shaft H, so as to revolve with it and screen B, and so arranged as to be readily removed with the latter. The center of the top of the distributing-head is about two inches below the top of the screen, and it gradually slopes away toward the circumference.

D is a hopper for feeding the mush to the mill, provided with gate E, operated by handle F, and revolving on shaft G, so as to be readily placed over the distributing-head, or turned to one side when the screen is to be removed.

I is a cover, loosely fitting, which is placed over the cylinder A after the screening of the sugar. This cover is provided with a steam-induction pipe, K, for the introduction of a current of steam within the screen B for clarifying the sugar.

M is a driving-pulley, though any means may be employed to drive the screen at a high speed.

The operation of the mill is as follows: The cover I being removed the hopper E is turned upon the shaft G until it comes over the center of the distributing-head C. The shaft H, being put in rapid rotation, carries with it the screen, with its distributing-head. The mush is then introduced through the hopper. It falls upon the head, and is at once thrown upon the sides of the screen, near the top. Thence it gradually descends toward the bottom, the molasses being expelled through the meshes into the space between the screen and outer cylinder, whence it is drawn off through spout L, while the sugar remains upon the inner sides of the screen. As soon as the screen is fairly coated with sugar, and before it begins to accumulate on the bottom, the feeding is stopped, the hopper turned away, the cover put on, and a current of steam introduced through the pipe K, which cleanses the sugar. The mill is then stopped, the cover taken off, the distributing-head unshipped, the screen removed, and the sugar scraped off. The screen-head and hopper are then replaced, and the mill is ready for a new operation.

We do not claim a rapidly-revolving screen, or the separation of sugar from molasses by screening; but

What we do claim as new and of our invention, and desire to secure by Letters Patent, is—

1. Making the screen of a centrifugal sugar-

mill in the form of a frustum of a hollow cone, for the purpose descibed.

2. The distributing-head, in combination with the screen of a centrifugal sugar-mill.

3. The adjustable-hopper, in combination with the screen of a centrifugal sugar-mill.

4. The induction-pipe K, in combination with a centrifugal sugar-mill, for cleaning the sugar by steam.

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