(No Model.)

R. B. PALMER.

CENTRIFUGAL MACHINE FOR TREATING SORGHUM AND OTHER SUGARS.

No. 277,155. Patented May 8, 1883.

Fig. 1.

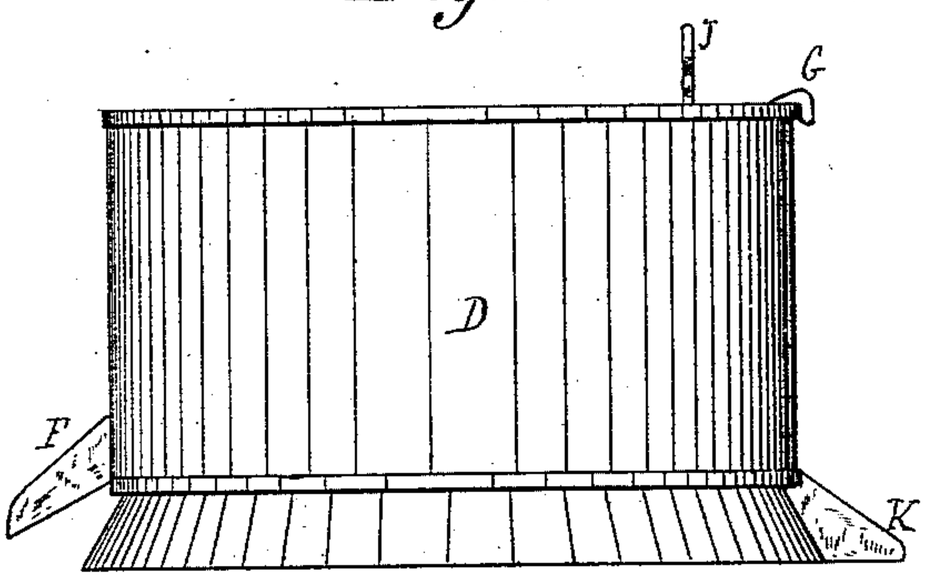


Fig. 2.

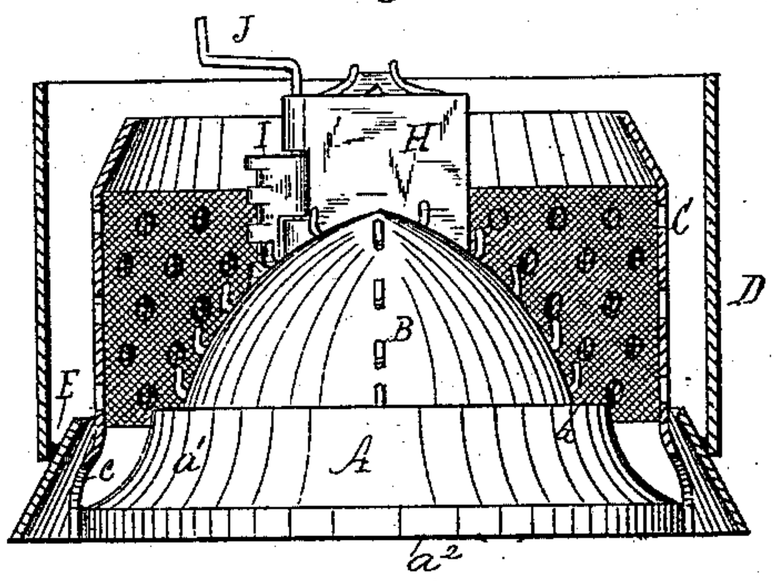
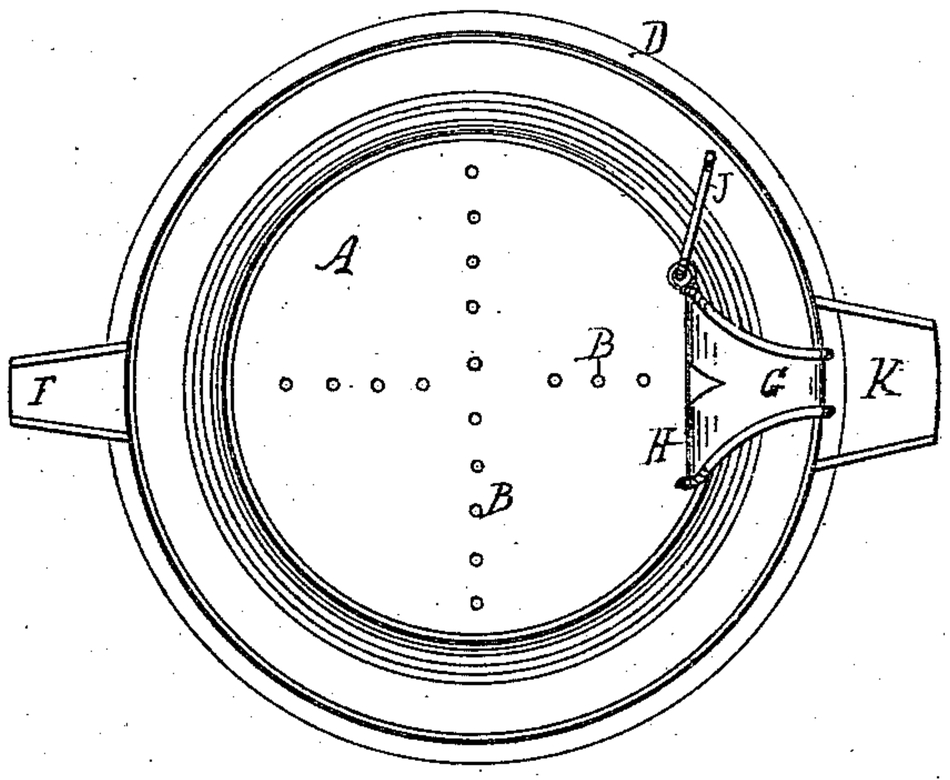


Fig. 3.



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UNITED STATES PATENT OFFICE.

RICHARD B. PALMER, OF PARIS, MISSOURI.

CENTRIFUGAL MACHINE FOR TREATING SORGHUM AND OTHER SUGARS.

SPECIFICATION forming part of Letters Patent No. 277,155, dated May 8, 1883.

Application filed April 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, RICHARD B. PALMER, a citizen of the United States of America, residing at Paris, in the county of Monroe and State of Missouri, have invented certain new and useful Improvements in Centrifugal Machines for Treating Sorghum and other Sugars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to centrifugal machines, and is intended more particularly to fit them for operating on sorghum, which, from its peculiar ropy consistency, is not readily acted on in the ordinary machines.

The invention consists in the peculiar construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 shows an elevation of my machine. Fig. 2 is also an elevation but partly in section, and Fig. 3 is a plan.

A represents a hollow dome, suitably mounted on a rotating shaft, (not shown,) and provided with two rows of pins or spikes B, crossing each other at right angles, and set so as to form a spiral line, starting at or near the apex of the dome and winding down to or near the bottom thereof, so that each pin will describe a different circle in its revolution. Near the base of the dome is a horizontal rim, *a*, from the outer edge of which a curved portion, *a'*, begins and terminates in a cylindrical or nearly cylindrical base, a^2. Attached to this base a^2 is the perforated hood or basket C, whose lower end has openings *c*, for a purpose hereinafter explained.

At D is represented the outer fixed casing, having all around its inner side a gutter, E, and on its outer side a spout, F, communicating with said gutter.

At G is a bracket, fastened at top to the outer casing, and extending over the edge of the hood, to which is secured the fender H, to which is hinged a scraper, I, provided with a handle, J.

When in operation a very rapid motion is given to the dome in any convenient manner, and the sorghum or other material to be dried is fed into the center of the machine, and, dropping upon the dome, is rapidly broken up and disintegrated by the pins and thrown outward against the hood with great force by the rapid motion of the pins and dome, the sugar adhering to the hood, and the liquid passing through its perforations strikes against the casing, drips down into the gutter E, and passes away through the spout F into any suitable vessel. The sugar is removed from the basket by turning the handle I, so as to bring the scraper in contact with the basket, and as the latter revolves the sugar is scraped off and drops down between the fender and the basket upon the curved portion *a'*, below the bottom of the dome proper, and then passes out at the openings *c* at the bottom of the hood into the space at the bottom of the casing, and thence out through the spout K into any suitable receptacle. Should any of the material drop down without coming in contact with the pins, it will be caught by the flange *a* and prevented from passing down into the sugar, and from the extremely rapid motion at this point, owing to the enlarged circumference, the centrifugal force is so great that anything dropping thereon is sure to be thrown against the basket.

By the construction of the dome in the manner shown, and in the arrangement of the spikes or pins in rows running from top to bottom, and in a spiral form in the other direction, the following advantages are obtained: Sorghum passes into the machine in a ropy, adherent mass, that requires to be well broken up, which is accomplished by the pins striking it as it descends into the machine. The arrangement of the spikes in rows running from top to bottom leaves a space between the rows, which allows of the sorghum falling into said space, in order that it may be struck by the spikes, and thus be thoroughly broken up, and then driven off to the hood by centrifugal force, while the arrangement in a spiral insures the thorough breaking up of the sorghum, because no two of them describes the same circle, and hence the ropy adherent mass is more thoroughly broken up than can be accomplished by any other means. The arrangement of the spikes in a ring on a comparatively flat plate, as has heretofore been done, will not accomplish this purpose when sorghum is being fed into the machine, as in that case the ropy mass

will be driven by centrifugal force to the ring of spikes, where it is broken up into large lumps of the size of the space between the spikes, and then said lumps are thrown against the basket in an unbroken condition, rendering it much more difficult to separate the liquid from them than when the mass is thoroughly broken up and disintegrated.

The fender will be found particularly useful in connection with the scraper, as it prevents the sugar being thrown back upon its dome, and compels it to fall down upon the curved portion a^2, where it is discharged by centrifugal force through the holes in the bottom of the basket.

What I claim as new is—

1. In a centrifugal machine, the combination of a dome and a perforated hood, the two being connected at their bases, substantially as described.

2. In a centrifugal machine, the combination of a dome and a perforated hood, the two being firmly united at their bases, and provided with openings at the junction of said bases for the discharge of the solids, substantially as described.

3. In a centrifugal machine, the combination of a perforated hood and a spiked dome, substantially as described.

4. The combination, in a centrifugal machine, of a perforated hood and a dome, the latter having spikes or pins arranged in rows from the top downward, substantially as described.

5. The combination, in a centrifugal machine, of a perforated hood and a dome, the latter having the spikes arranged in a spiral running down and around it, substantially as described.

6. The combination, in a centrifugal machine, of a perforated hood and a spiked dome, the two being firmly united at their bases, and with openings at the junction of said bases, substantially as described, and for the purpose set forth.

7. The combination, in a centrifugal machine, of a perforated hood and a dome having a horizontal rim near its base, substantially as and for the purpose specified.

8. The combination, in a centrifugal machine, of a perforated hood having openings at its base, and a dome provided with a horizontal rim near its base, and a curved portion below said rim to discharge solids through the openings in the base of the hood, substantially as described.

9. The combination, in a centrifugal machine, of the basket, the fender, and the hinged scraper, substantially as and for the purpose specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 14th day of April, 1883.

RICHARD B. PALMER.

Witnesses:
T. J. W. ROBERTSON,
W. E. CHAFFEE.