J. BURKHOLDER.

Wheat-Steaming Apparatus.

No. 199,690. Patented Jan. 29, 1878.

Fig. 1.

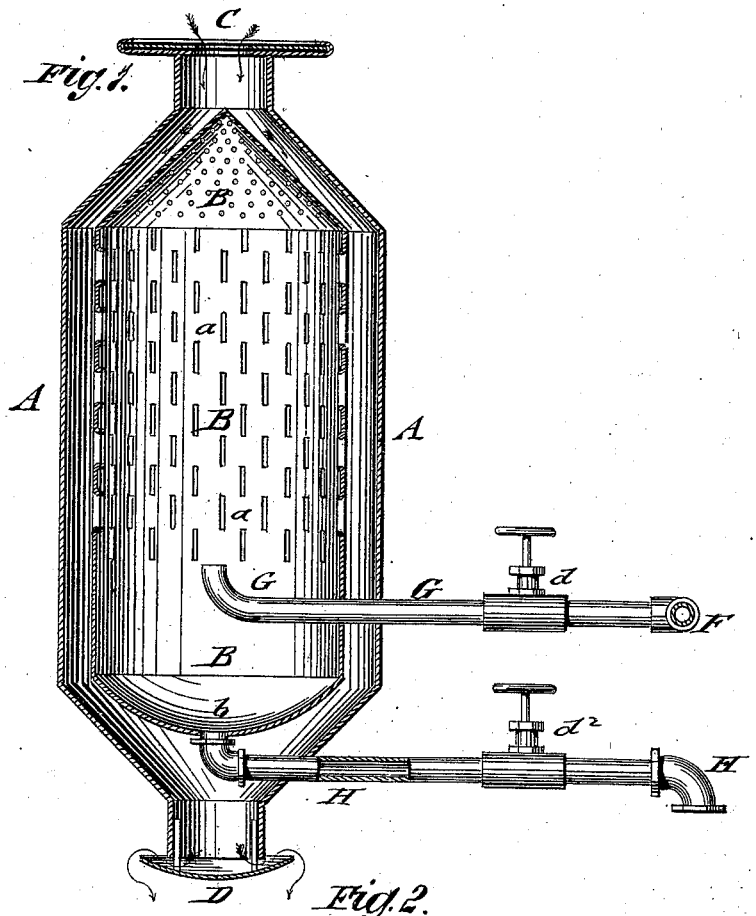
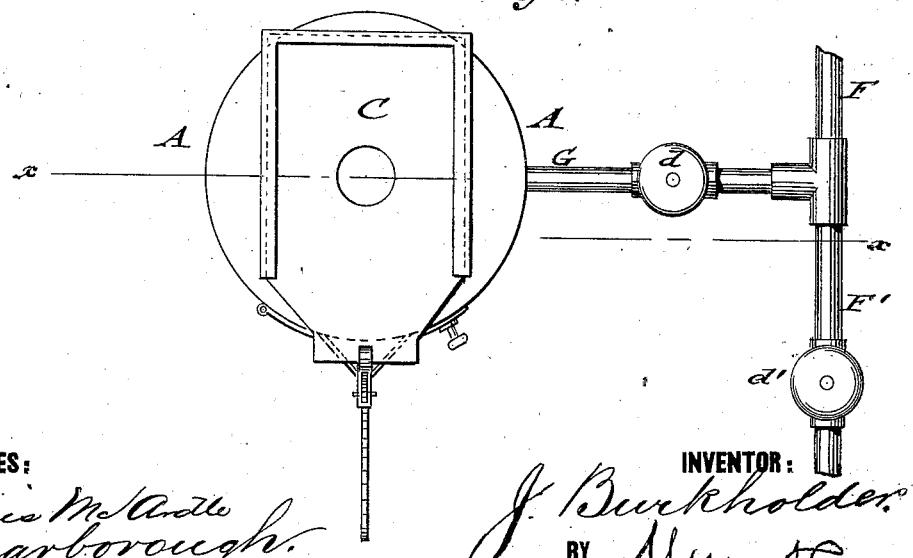


Fig. 2.



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JOHN BURKHOLDER, OF CENTREBURG, OHIO.

IMPROVEMENT IN WHEAT-STEAMING APPARATUS.

Specification forming part of Letters Patent No. **199,690**, dated January 29, 1878; application filed October 16, 1877.

To all whom it may concern:

Be it known that I, JOHN BURKHOLDER, of Centreburg, in the county of Knox and State of Ohio, have invented a new and Improved Wheat-Steaming Apparatus, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical transverse section on line *x x*, Fig. 2, of my improved wheat-steaming apparatus; and Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

The object of the invention is to provide an apparatus adapted to steam wheat more uniformly than others of its class, and to almost entirely prevent absorption of water of condensation by the wheat.

The apparatus consists of double conical-ended cylinder or vessel having certain peculiarities of construction, as hereinafter described and claimed.

Referring to the drawing, A represents the outer cylindrical vessel, and B the inner cylindrical vessel, which is of less diameter, so as to form an intermediate space or chamber between it and the outer vessel. The outer vessel connects, by a top tube and horizontally-sliding cut-off valve, C, with the stock-hopper, and by a bottom tube and vertically-adjustable discharge-valve, D, with the burr-hopper.

Steam is admitted to the inner vessel B from the boiler by pipes F and G, and thence communicated, through perforations or slots *a* of the inner vessel, to the wheat in its descent through the space formed between the inner and outer vessels. The perforations or slots *a* are located in the upper part of the interior vessel, the lower part being made solid, with a concave bottom, *b*, that serves, with the solid lower walls, for collecting the water of condensation and discharging it through an exit-pipe, H, at the lowermost point of the bottom *b*, to the outside.

The quantity of steam and the pressure in vessel B are regulated by a globe-valve, *d*, arranged in pipe G, between the outer vessel and pipe F. A second globe-valve, d^1, is placed in the steam-discharge pipe F′ to prevent escape of steam, but allow the water from the condensed steam in pipe F to pass off. A globe-valve, d^2, of the discharge-pipe H serves a similar purpose as that of pipe F′.

The interior vessel B is made with a perforated conical top part, whose apex is in line with the center of the supply-pipe, so as to distribute the wheat in its descent equally to all parts of the space between the outer and inner vessels. The discharge-valve D serves to retard or accelerate the motion of the wheat during its descent through the space between the vessels A B, so as to be exposed, for a longer or shorter time, to the action of the steam, according to the nature of the grain. Valve D is made of concave shape, and is held in any vertical adjustment to enlarge or diminish the size of the grain-discharge opening by the friction of spring-arms, which press outward against the inner sides of the mouth of vessel A. The slits in the body of the inner cylinder or vessel B are vertical and very narrow. In forming them the metal is punched inward, thus causing a burr or ragged projection around the slit on the inner side of the vessel. These projections radiate heat more rapidly than the metal forming the concentric portion of the vessel, and serve as points, which will take up the larger part of the easily-condensable moisture of the steam passing out through the slits, and from them the condensed moisture will drip into the concave bottom of the vessel, and thereby escape into the waste-pipe H.

The first advantageous result in the practical use of the apparatus is, that the wheat, entering the steamer through the narrow opening in the valve C, is caused to fall upon the apex of the perforated core, and is distributed evenly over it as it passes downward. The wheat is thus subjected to the uniform and thorough action of the steam, both while passing over the cone and while in contact with the slitted side of vessel B. The next result is, that the easily-condensable moisture of the steam is prevented from entering the space through which the grain passes, and is collected and conducted off as rapidly as condensed, and the grain is also slightly dried while passing in contact with the imperforated but heated lower portion of the vessel B, so that, as the final result, the grain is discharged

from the steamer in the desired and proper condition for grinding.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The improved wheat-steamer composed of the outer conical-ended vessel A, having the centrally-perforated top or slide C, and the inner vessel B, having the perforated conical top, the imperforate conical bottom, and a slitted body, and the pipes G and H, all combined as shown and described, for the purpose specified.

JOHN BURKHOLDER.

Witnesses:
JOHN W. HOPKINS,
JAMES HEADINGTON.