

(No Model.)

F. F. QUITZO.
WHEAT STEAMER.

No. 578,523.

Patented Mar. 9, 1897.

Fig. 1.

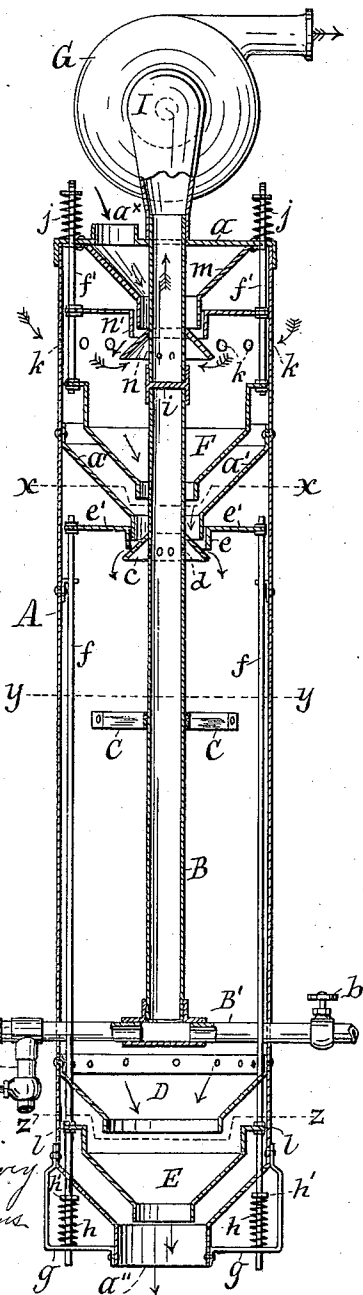


Fig. 2.

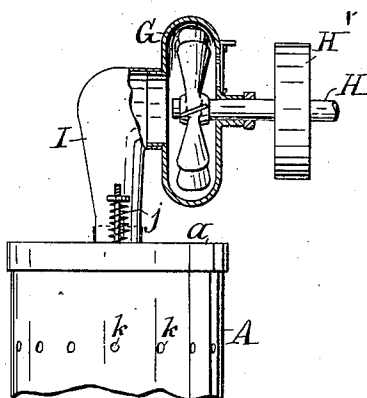


Fig. 3.

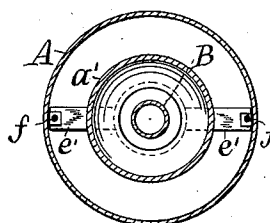


Fig. 4.

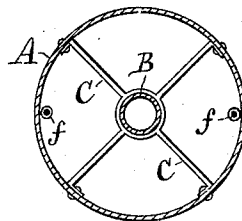
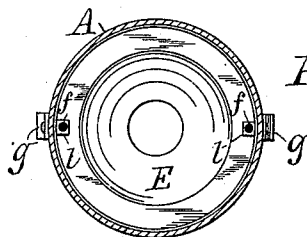


Fig. 5.



Inventor.

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UNITED STATES PATENT OFFICE.

FREDERICK F. QUITZO, OF MINOA, NEW YORK.

WHEAT-STEAMER.

SPECIFICATION forming part of Letters Patent No. 578,523, dated March 9, 1897.

Application filed May 25, 1896. Serial No. 593,009. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK F. QUITZO, of Minoa, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Wheat-Steaming, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to wheat-steaming apparatus; and the object is to provide a wheat-steamer that is automatic in its action or self-regulating in its supply of grain, the same or similar to that shown and described in my prior United States patent, No. 559,603, dated May 5, 1896, with a cleaning apparatus also provided with means to regulate the supply of grain.

To this end my invention consists in the combination, in a wheat-steaming apparatus, of the casing, the vertical and central steam-pipe therein containing perforations, a pocket for the grain near the lower end of the casing having an opening therein, a valve near the upper part of the casing to admit the grain, rods connecting the said pocket with the valve, springs to raise the pocket and valve, a partition in the central pipe, perforations above the partition, a blower connected to the upper end of the pipe, the outer casing having perforations, and means to regulate the supply of grain; and my invention consists in certain other combinations of parts hereinafter described, and specifically set forth in the claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a central vertical cross-sectional view of the apparatus. Fig. 2 is a side elevation of the upper portion of the apparatus, the casing of the blower being shown in section. Fig. 3 is a horizontal sectional view on line xx of Fig. 1. Fig. 4 is a horizontal sectional view on line yy of Fig. 1, and Fig. 5 is a sectional view on line zz of Fig. 1.

Referring specifically to the drawings, A is the outer casing, which is cylindrical and vertical. The upper end is covered by a cap a , having an inlet a^x to one side of its center for the wheat. A central opening in the cap allows the central pipe B to protrude for the purpose hereinafter explained. Below the said cap, about one-third of the length of the

casing below it and secured thereto at its outer edge, is a funnel-shaped piece a' , having its central opening provided with a downwardly-extending circular flange, which is somewhat larger than the steam-pipe extending through the said opening and hereinafter referred to. The lower end of the casing A is contracted and terminates in a short vertical pipe a'' , which forms the outlet for the grain or wheat after being steamed, and beneath which are the rolls (not shown) for grinding the wheat.

Extending vertically and centrally through the casing A is the steam-pipe B, having its lower end joined to a horizontal supply-pipe B', extending through the casing. The latter is provided with a cut-off b for regulating the amount of steam, and a branch pipe B'', containing a cut-off b' , to be opened when the steam-supply is cut off to allow the water to drip from the steam-pipe. The steam-pipe is supported in the casing A by the pipe B' at its lower end and also by one or more braces or arms C, radiating from the pipe to the casing, to which they are secured by bolts or rivets.

Surrounding and secured to the pipe B below the funnel a' is a flaring hood c , and in the pipe below this hood is a series of small openings d , forming outlets for the steam, allowing it to escape into the steam-chamber. The hood not only prevents the grain from clogging the openings d , but forms the stationary member of the valve for regulating the supply of grain to the steam-chamber. The movable member of the valve consists of a short pipe e , surrounding the circular flange on the part a' , said pipe e being provided with arms $e' e'$, which extend outward toward and in proximity to the case, where they are secured to the upper ends of vertical and longitudinally-movable rods $f f$. These rods extend downward through holes in the bottom of the case and also through angle-irons $g g$, secured to the case, and are supported upon the latter by coiled springs $h h$, which bear with their upper ends upon threaded nuts $h' h'$, which may be adjusted or raised and lowered on the rods to regulate the tension of the springs. The springs $h h$ serve to raise the rods $f f$ and pipe e , so that its lower end will be raised from the upper side of the hood

c and the valve opened, permitting the wheat to pass downward between the pipe and the hood into the steaming-chamber. The wheat falls into an annular pocket *E*, surrounding the steam-pipe and near the lower end of the case, its outlet being the annular space between it and the pipe *B*.

In order to keep the wheat from clogging and interfering with the action of the valve, an annular converging shield *D* is secured to the interior of the case *A* above the upper horizontal flange *l*, thereby preventing the wheat from lodging on the flange or from working between it and the case. When the steaming-chamber becomes sufficiently filled with wheat, the latter being supported by the pocket *E*, rods *f f*, and springs *h h*, the weight of the wheat causes the pocket, rods, and pipe *e* to drop, closing the valve and cutting off the supply of wheat to the steaming-chamber until some of it has passed out through the bottom, when the pocket is raised and the valve opened to admit more wheat to the chamber.

It will be obvious from the above that the operation is continuous and that the regulation of the supply is automatic or self-controlled.

Above the funnel *a'* is another pocket *F*, substantially the same as the pocket *E*, and supported on the lower ends of a pair of rods *f' f'*, extending upward through the cap *a* of the case, above which and around the rods are coiled springs *j* to support them yieldingly. The pocket *F* operates in the same manner as the other pocket to move cut-off devices above it to regulate the supply of grain. The cut-off devices consist of a flaring hood *n* and a movable short pipe *n'*, connected to the rods *f' f'*. A funnel *m* just below the cap serves to guide the grain to the center of the casing. In the pipe below the flaring hood *n* is a series of holes, forming inlets for air, which enters the casing through the holes *k*, when the blower is operated.

G is the blower or fan in a casing, the center of one side of which is connected by a tapering elbow-shaped pipe *I* with the upper end of the central pipe *B*. *H* is the driving-shaft of the fan, and *H'* is the pulley thereon. The upper portion of the central pipe is divided from the lower part, forming the steam-passage, by a partition *i*.

The unfeathered arrows indicate the direction of movement and path of the grain through the apparatus from top to bottom, and the feathered arrows indicate the direction of movement and path of the air.

By this cleaning apparatus all dirt and dust which is lighter than the grain is removed before it passes into the steaming-compartment below, which greatly improves the wheat.

Both cut-offs are automatic in their action and to a great extent independent of each other. When, however, the lower one is

closed, the upper one generally closes soon after.

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

1. The combination in a wheat-steaming apparatus with the cylindrical casing, the central vertical steam-pipe therein containing perforations, a partition in the central pipe, perforations above the partition to admit air, a blower connected to the upper end of the pipe, and means to automatically regulate the supply of grain passing through the casing, as set forth.

2. The combination in a wheat-steaming apparatus with the cylindrical casing, the central vertical steam-pipe therein containing perforations, a partition in the central pipe, means to automatically regulate the supply of grain, perforations above the partition to admit air, a blower connected to the upper end of the pipe, and means to automatically regulate the supply of grain passing through the casing, as set forth.

3. The combination in a wheat-steaming apparatus with the cylindrical casing, the central vertical steam-pipe therein containing perforations, a partition in the central pipe, perforations above the partition to admit air, the casing also having perforations therein to admit air, a pocket surrounding the pipe having an inclined bottom, a valve near the upper part of the casing, above the said perforations, the stationary part of the valve being a conical hood, rods connecting the said pocket with the movable member of the valve, springs on the rods to raise the valve, the inlet for the grain, and means connected with the upper end of the central pipe to force air through the apparatus, as set forth.

4. The combination in a wheat-steaming apparatus, of a vertical cylindrical casing, a horizontal steam-pipe extending through the lower part of the casing, a vertical central pipe extending upward from the horizontal pipe, and through the upper end of the casing, a horizontal partition in the vertical pipe, holes below the partition for the escape of steam, self-regulating means for the supply of grain passing therethrough, holes above the partition in the pipe for air, self-regulating means for the supply of grain in the upper part of the casing separate from that in the lower part, an inlet in the upper end of the casing for the grain, inlets for air in the sides of the casing, an outlet in the bottom thereof, and a rotary fan provided with a casing connected to the upper end of the central pipe, as set forth.

In testimony whereof I have hereunto signed my name.

FREDERICK F. QUITZO. [L. S.]

Witnesses:

CLARK KRAFFT,
FRANK TURNER.