(No Model.)

R. W. BARTON.

WHEAT STEAMER, HEATER, AND DRIER.

No. 245,602. Patented Aug. 16, 1881.

Fig. 1.

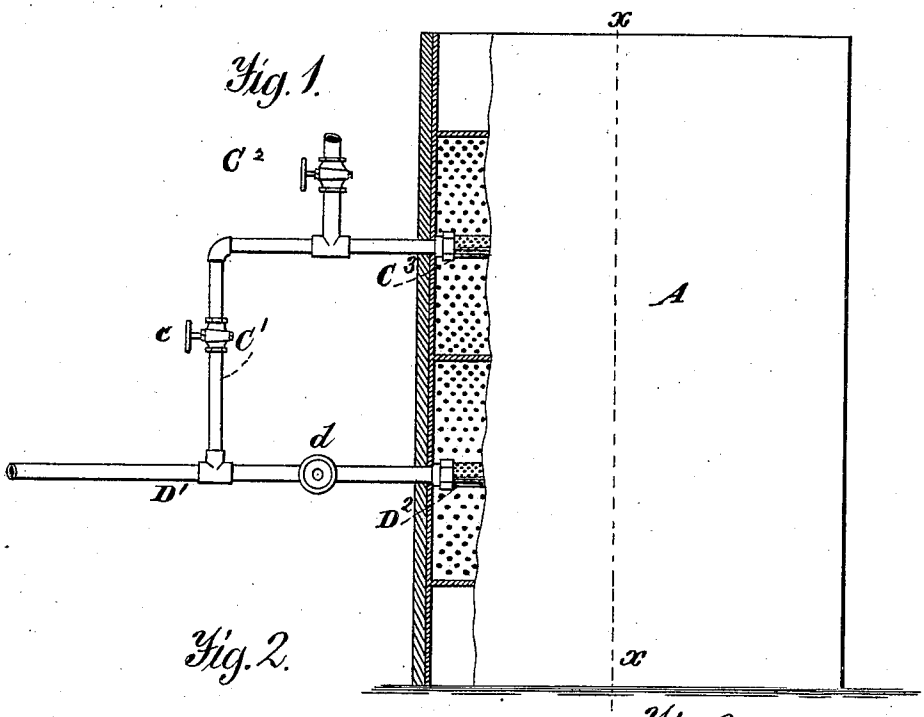


Fig. 2.

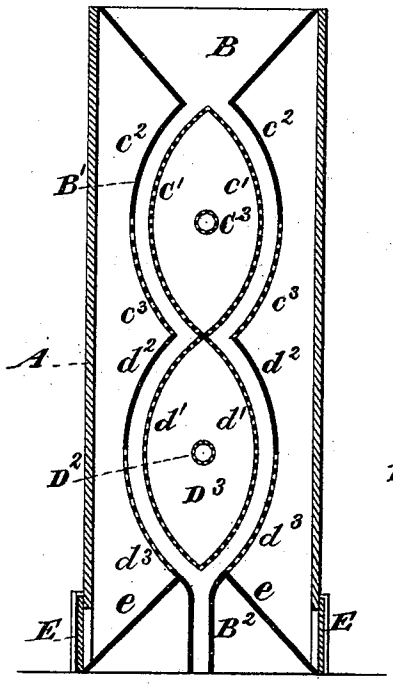
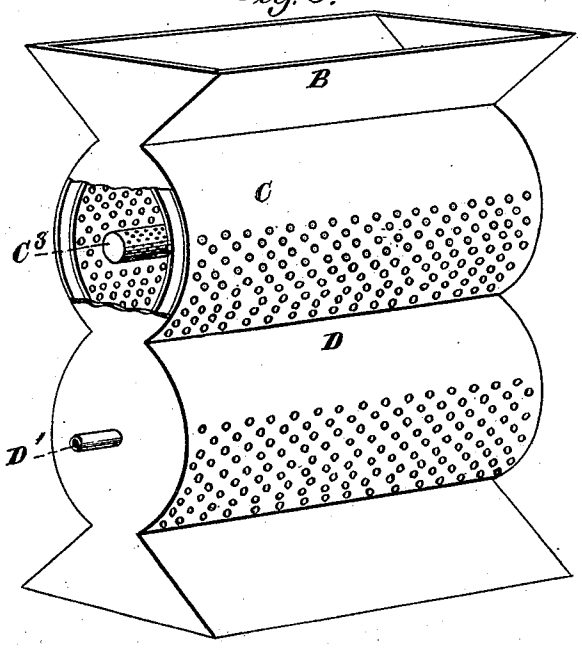


Fig. 3.



Witnesses.
A. Ruppert.
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UNITED STATES PATENT OFFICE.

RENSSELAER W. BARTON, OF APPLETON, MINNESOTA.

WHEAT STEAMER, HEATER, AND DRIER.

SPECIFICATION forming part of Letters Patent No. 245,602, dated August 16, 1881.

Application filed June 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, RENSSELAER W. BARTON, a citizen of the United States, residing at Appleton, in the county of Swift and State of Minnesota, have invented certain new and useful Improvements in Steaming, Heating, and Drying Wheat for Grinding; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to wheat or grain heaters, steamers, and driers; and it consists of the following-described devices:

The object of my invention is to enable the operator to heat, steam, and dry the grain preparatory to grinding the same, or to heat and dry it without steaming it, at the will of the operator.

I attain the objects of my invention by means of the devices illustrated in the accompanying drawings, making part of this specification.

Figure 1 is a side elevation of the case containing the heating and steaming chambers, partly in section, and showing the induction-pipes for heated air or steam. Fig. 2 is a vertical section on the line *x* of Fig. 1. Fig. 3 is a perspective of the heating, steaming, and drying chambers, with the external case removed and a portion of the end of the heating and steaming chamber broken away to show interior structure.

The same letters and numerals are employed in all the figures in indication of identical parts.

A is a suitable case, preferably made of metallic plates, which incases the chambers C and D, and is provided with the grain-hopper B and the sliding exhaust-valves E E.

D′ is the pipe conducting a blast of hot air. This pipe is connected with the perforated pipe D^2, which is located centrally and longidinally in the hot-air space D^3 of the chamber D. This pipe is provided with a valve, *d*, by which to regulate the passage of hot air into this chamber.

A branch pipe, C′, is connected with the pipe D′ outside of the valve *d*, and it is provided with a valve, *c*. This branch pipe C′ angles suitably to enter the chamber C centrally, where it forms a connection with the perforated pipe C^3. The other ends of these two pipes C^3 and D^2 are closed and rest in the ends of the casings of their respective chambers.

The chamber C is for hot air or steam, at the will of the operator, and chamber D for hot air alone.

To provide steam for the chamber C, I force a suitable supply of water into the heated air in pipe C′ at the water-pipe connection C^2, which is converted into steam and driven into chamber C. These chambers are separate, elliptical in form, with their greater diameter vertical, and chamber C located above chamber D. The inner walls, *c′ d′*, of each chamber are perforated throughout, and the outer walls, c^2 d^2, are perforated upon their lower sides, c^3 and d^3. These walls are separated, forming a grain-space, B′, between them, which is of uniform size from the hopper B to the exit-pipe B^2. As the grain is passing through the grain-spaces B′ the hot-air blasts may be applied to it in one or both of the chambers, or by admitting water into the induction-pipe C′ the heated air therein would convert it into steam, and thus steam the grain in the passages around the chamber C, while the heated air might or might not be applied to the grain while passing chamber D, at the will of the operator. I regulate the exhaust of the heated air or steam blast by adjusting the exhaust-valves E.

The perforated pipes C^3 and D^2 may be dispensed with, and the blast of heated air or steam be delivered by the pipes D′ and C′ direct into their respective chambers.

There are chutes *c e*, which engage the lower portion of the outer case of chamber D, and extend outside of the case A to deliver the dust and foreign substances separated from the grain by the steam and hot-air blasts, which, in practice, I find is an important feature of my invention.

Having thus described my invention, what I claim as new in grain steamers, heaters, and driers, and for which I desire to obtain Letters Patent, is—

1. The separated chambers C and D, constructed with inner perforated walls, *c′* and *d′*,

and the outer walls, c^2 and d^2, perforated at their lower sides, c^3 and d^3, as and for the purposes substantially as set forth.

2. The steaming-chamber C, in combination with the heating and drying chamber D, provided with the continuous wheat-passages B′, and the induction-pipes C′ and D′, as and for the purposes substantially as set forth.

3. The chutes *e e*, in combination with the chambers C and D, having perforated walls c^3 and d^3, as and for the purposes substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

RENSSELAER W. BARTON.

Witnesses:

C. F. IRELAND,

W. V. LATHROP.