

A. FULTON.  
Wheat-Heater.

No. 209,243.

Patented Oct. 22, 1878.

Fig. 1

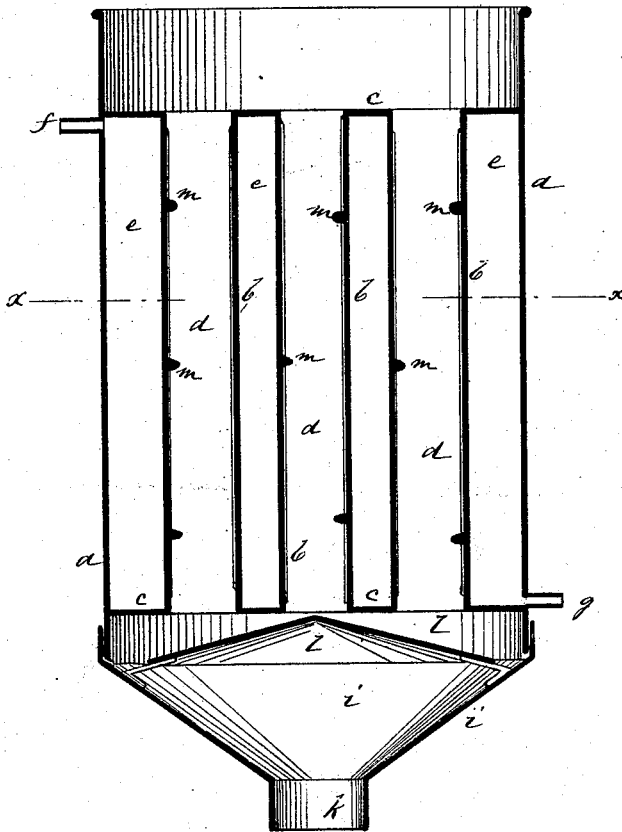
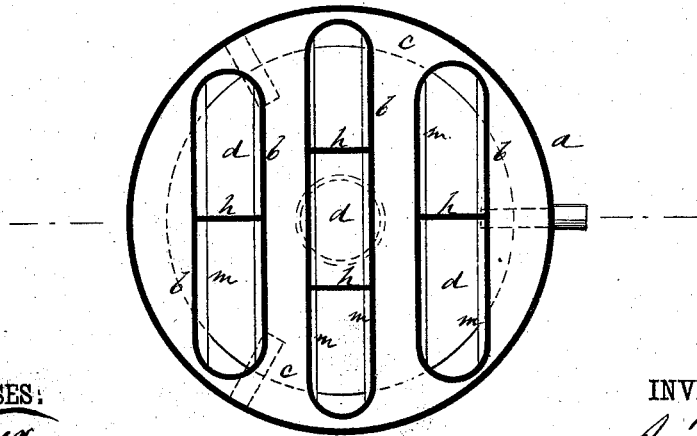


Fig. 2



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ABRAHAM FULTON, OF OLNEY, ILLINOIS.

## IMPROVEMENT IN WHEAT-HEATERS.

Specification forming part of Letters Patent No. **209,243**, dated October 22, 1878; application filed July 10, 1878.

### *To all whom it may concern:*

Be it known that I, ABRAHAM FULTON, of Olney, in the county of Richland and State of Illinois, have invented a new and useful Improvement in Wheat-Heaters, of which the following is a specification:

The object of my invention is to furnish a simple and efficient apparatus for heating wheat immediately before grinding, whereby the grinding is done with greater facility, especially in cold weather.

The heating of the grain to a certain temperature has the effect to draw the moisture to the surface, which not only softens the bran, and thereby prevents it pulverizing when the grain is ground, but the flour of the grain is rendered more dry, and will not adhere to the bolting-cloth.

The nature of my invention consists in the construction of a wheat-heater, as hereinafter more fully set forth and claimed.

In the drawing, Figure 1 is a vertical section of my heater; and Fig. 2 is a sectional plan of the same, taken at the line *x x*.

Similar letters of reference indicate corresponding parts.

*a* is a metal cylinder, of the proper size, according to the amount of grain it is desired to heat in a given time. The cylinder *a* is divided by vertical walls *b* and top and bottom cap-plates, *c*, so as to form vertical flues *d* through the cylinder, and a chamber, *e*, between each flue, which chambers communicate with each other.

*f* is a steam-pipe near the top of the cylinder *a*, passing through the side of the cylinder into the chamber *e*, for the purpose of admitting steam from a boiler. This pipe *f* should have a cock for regulating the amount of steam passing in.

*g* is a pipe from the lower part of the chamber *e*, for the water of condensation to pass away by; and this pipe *g* should also be provided with a valve.

*h h* are braces in the flues or passages *d*, from side to side, to prevent collapsing of the flues.

The bottom of the cylinder *a* is covered by a conical cap, *i*, which terminates in a pipe, *k*, of the usual size.

*l* is a convex plate, held in the cap *i*, adja-

cent to the lower ends of the flues *d*, with its convex side upward. There is a space between the edge of *l* and the inside of the cap *i*, so that the grain may run over the edge as it comes from the flues *d*. The object of the plate *l* is to cause the wheat to run out of all the flues *d* at equal speed.

*m m* are rods or stirrers, passing through the braces *h*, so as to form ribs or projections upon the sides of the flues *d*. These stirrers turn the wheat as it passes down the flues, and cause every portion to come in contact with the heated sides of the flues to warm the mass equally.

The wheat is fed at the upper and open end of the cylinder *a*, and passes down through the flues *d*, filling them, and then passes over the edge of the plate *l* to the pipe *k*, where it passes out and is led directly to the hopper of the millstones.

I prefer to have the cylinder *a* extend above the top of the flue *d*, to form a hopper for the grain; and it is to be understood that the flues and lower portion of the cylinder will be filled by the wheat by reason of the small size, comparatively, of the pipe *k*. The heat is to be regulated by admitting more or less steam, as required.

The flues *d* are oblong in shape, as that form gives a larger heating-surface in proportion to the size of the heater.

I am aware that a grain-drier composed of a cylinder with tubes or flues for steam and passages for the grain is not new; and I do not claim such, broadly, as my invention.

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

The combination of the cylinder *a*, having division-walls *b*, forming the flat oval flues *d*, interior braces *h*, and ribs *n*, and the bottom convex plate *l* in the cap *i*, adjacent to the lower ends of the flues, and of a diameter smaller than that of the cap, and the outlet *k*, substantially as and for the purposes herein set forth.

ABRAHAM FULTON.

Witnesses:

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JOHN H. PACKARD.