H. F. STINDE.

Millstone-Ventilator.

No. 205,510. Patented July 2, 1878.

FIG. 1.

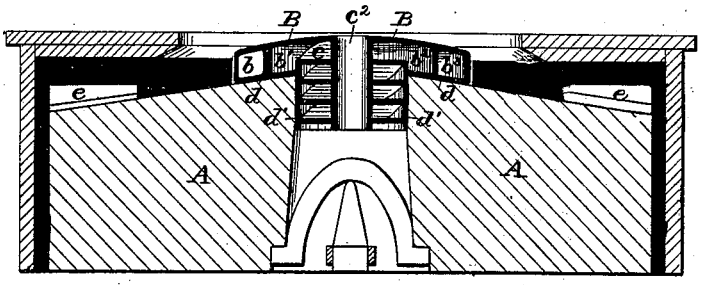


FIG. 2.

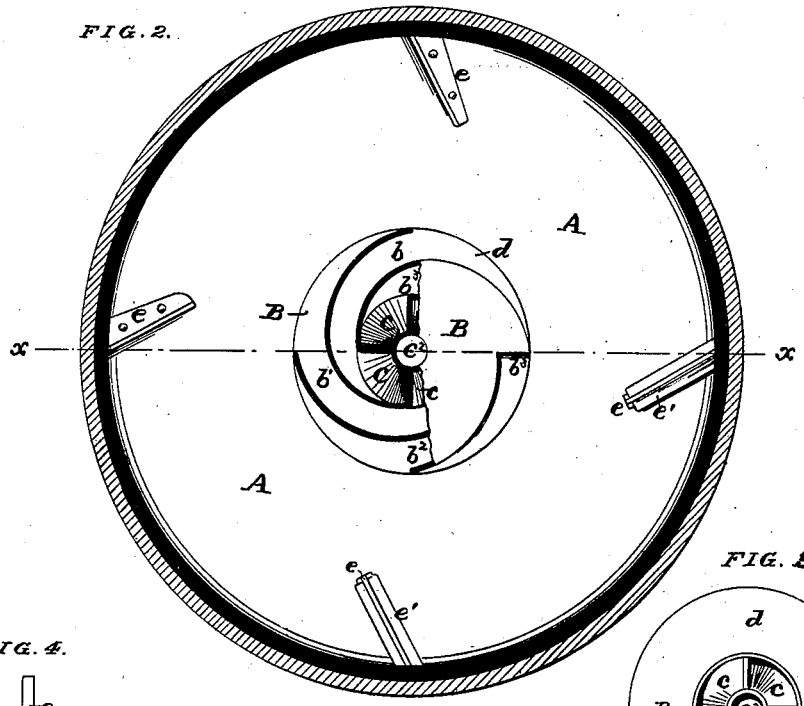


FIG. 5.

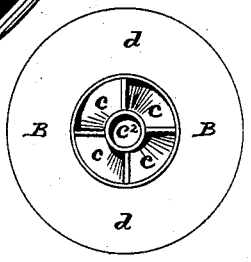


FIG. 4.

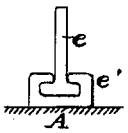
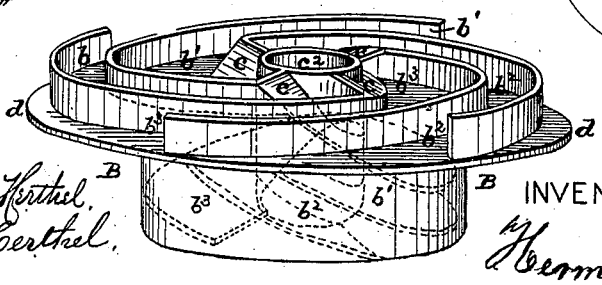


FIG. 3.



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HERMAN F. STINDE, OF STEELEVILLE, ILLINOIS.

IMPROVEMENT IN MILLSTONE-VENTILATORS.

Specification forming part of Letters Patent No. **205,510**, dated July 2, 1878; application filed March 28, 1878.

To all whom it may concern:

Be it known that I, HERMAN F. STINDE, of Steeleville, in the county of Randolph and State of Illinois, have invented an Improved Method for Ventilating Millstones, of which the following is a specification:

The object of this invention is to ventilate millstones, to obviate the heating which usually occurs, so that the stones in operation or during grinding can be kept cooler and a higher speed be maintained; also, to produce a better quality and larger quantity of product.

The nature of this invention consists in certain parts and improvements hereinafter described, and particularly pointed out in the claim.

Of the drawing, Figure 1 is a sectional elevation on line *x x* of Fig. 2. Fig. 2 is a plan view of the runner and part plan view of the air-conveyer, the remaining part of same being shown in section. Fig. 3 is a perspective view, showing the construction and arrangement of one of the ducts, chambers, or passages in the air-conveyer. Fig. 4 is a detail, showing one way of securing the wings to the runner. Fig. 5 is a bottom plan of that part of the air-conveyer that exists in the eye of the runner.

The millstones are supported, arranged, and incased in the usual manner.

A represents the upper stone or runner. B represents the air-conveyer, it being the device, having internal ducts, chambers, or passages, (see *b* b^1 b^2 b^3, Figs. 1, 2,) that during the operation of grinding produces the required ventilation between the stones.

I first cause the air to be caught or drawn into the eye of the runner. This result is secured by the series of ducts that constitute the top part of the air-conveyer B. The air so directed is further to be passed or forced to pass through the eye of the runner, to produce currents of air between the stones. Hence it will be observed that I require ducts or passages that are a continuation from the top of the air-conveyer to the lowest point thereof, or, otherwise stated, a part of the duct being top of the runner, and the continuation of the same duct being in the eye of the runner. *b* represents such a single duct. Its top part is arranged to curve inwardly in a direction approaching the point at *c*. At the said point *c* the duct slopes to enter the top of the eye. The lower part of the duct *b* is made to be the spiral or worm, all of which is clearly shown in Figs. 1, 2, 3, 5. The remaining ducts, b^1 b^2 b^3, are but duplicates in arrangement to that of *b*, so as to form the successive series at top and in the eye of the runner.

That part of the ducts *b* b^1 b^2 b^3 top of the runner are for the purpose of catching, drawing in, or causing the air to enter each of said ducts during the revolution of the runner, and in so doing said air is passed or forced in a direction to enter the eye part.

The ventilating attachment is constructed as a unit, and is adapted to the eye of any ordinary millstone. In its construction, as shown in drawing, the ducts or chambers are covered, so that the air upon entering the periphery of the same is forced downward through the eye of the stone and between the two stones. A scraper or scrapers may be used, by being attached to the runner, to carry the meal to the discharge-spout and prevent the accumulation of the same between the stones and the curb, such arrangement of scrapers being usually employed for such purposes. The spiral part of the ducts *b* b^1 b^2 b^3 deflects the air so entered still farther downward and through the eye, and produces descending currents right in the fall of the grain, and it is said currents passed and existing between the stones that keep the same cool and prevent the heat that is otherwise engendered by friction or grinding.

The air-conveyer B, by its under shell or bearing at *d*, is supported upon the top of the runner, and its cylinder-shell part at *d'* fits in the eye of the runner, and thus said air-conveyer can be made to revolve with and form part of the runner. The air is caught by the air-conveyor when the stone revolves, and, being forced through the eye and between the grinding-faces, there is thus a continued supply of cold air furnished between the millstones.

The feed-tube enters the center opening *c''* in the air-conveyer, so as to properly discharge the grain in and through the eye in the usual manner.

The runner is also provided with the wings

or flanges *e* that project upward from the top face of the stone. (See Figs. 1, 2, 4.) The said wings *e* are placed in a direction tangential to the eye of the runner. (See Fig. 2.) During the use or operation of the stones the wings *e* cause the cold air to be directed, forced, or thrown from the center toward the periphery of the runner, thus supplying cold air between the skirt (periphery) and the inclosing curb or casing.

The wings *e* can be secured in any well-known manner. I simply fasten said wings in the finest of the stones. The wings *e* can also be detachably secured—thus, by forming a socket-bearing, *e'*, making the lower edge of the wings to project laterally on each side, fitted to slide in the socket, and as is indicated in Fig. 4.

The escape for the entered air between the stones, also that between the stones and the curb, discharges or finds its outlet through the usual meal-discharge; but I prefer, by means of an extra spout leading to a settling-chamber, to direct the air-discharge in an upward direction, in order that the flour-dust can settle or be collected in the settling-chamber.

By the use of my improvements the grinding is materially improved, the stones and curbs do not get clogged, nor the grain heated in grinding, and the meal or product is rendered in a better condition or nature for bolting.

What I claim is—

The ventilator or air-conveyer B, herein described, cupped and flanged to fit and close the eye of the runner-stone, provided with the upper series of hood-mouthed spiral air-ducts descending into the eye of the stone, and becoming therein the lower series of spiral air-delivering passages, whereby the air for cooling and ventilating the burrs is gathered and forced between the grinding-surfaces, substantially as set forth.

In testimony of said invention I have hereunto set my hand.

HERMAN F. STINDE.

Witnesses:

WILLIAM W. HERTHEL,

JOHN W. HERTHEL.