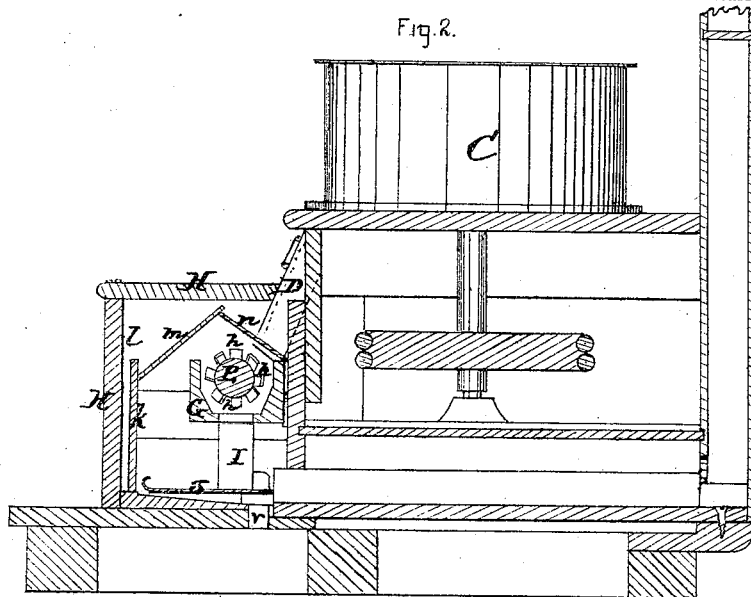
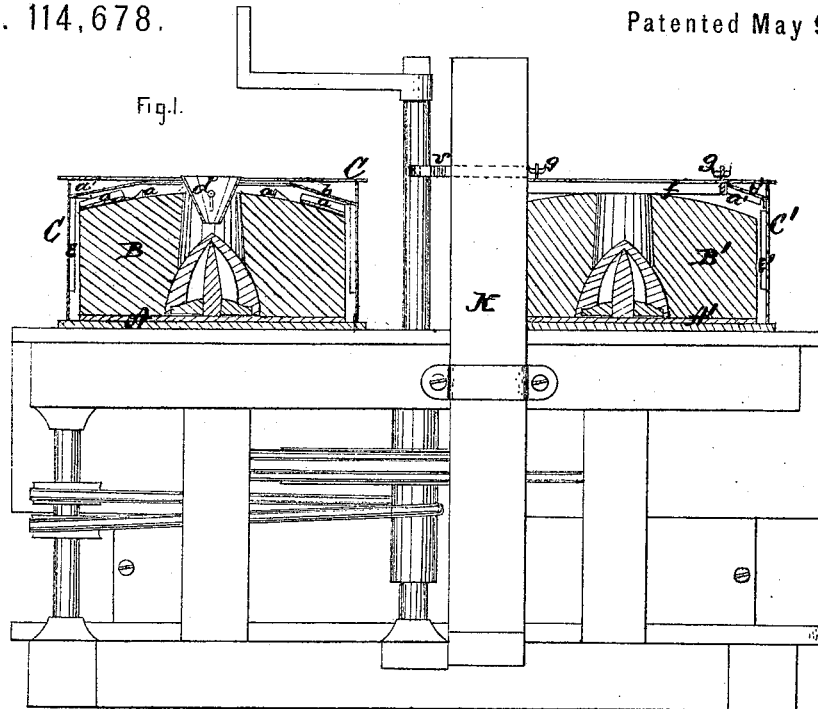


D. HEFFNER.

Improvement in Millstone Condensers and Ventilators.

No. 114,678.

Patented May 9, 1871.



Witnesses.  
Jas. Hutchinson  
C. L. Quest.

Inventor.  
Daniel Heffner  
Geo. Alexander Mason  
Atty.

D. HEFFNER.

Improvement in Millstone Condensers and Ventilators.

No. 114,678.

Patented May 9, 1871.

Fig. 4.

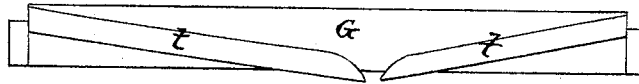


Fig. 6.

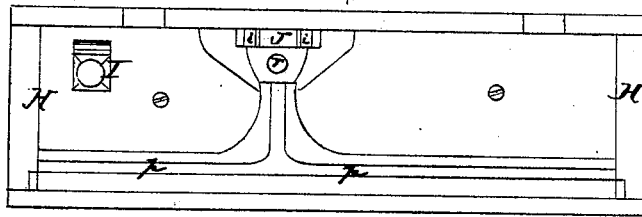


Fig. 5.

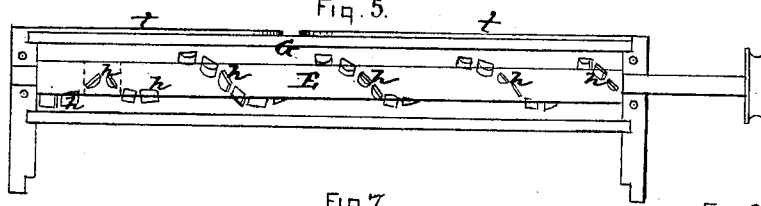


Fig. 7.

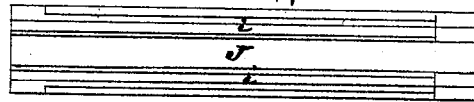
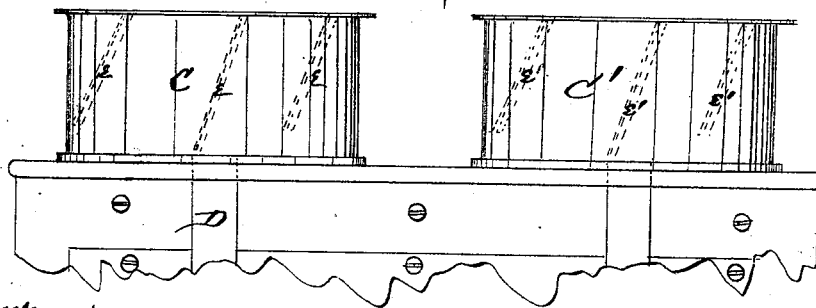


Fig. 8.



Fig. 3.



Witnesses.

Jas. O. Hutchinson  
C. L. Green

Inventor.

Daniel Heffner  
per Alexander Murray  
Atty.

# United States Patent Office.

DANIEL HEFFNER, OF INDEPENDENCE, IOWA.

Letters Patent No. 114,678, dated May 9, 1871.

## IMPROVEMENT IN MILLSTONE-CONDENSERS AND VENTILATORS.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, DANIEL HEFFNER, of Independence, in the county of Buchanan and in the State of Iowa, have invented certain new and useful Improvements in Millstone-Condenser and Ventilator; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a "Millstone-Condenser and Ventilator," as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a rear elevation of my machine, the millstones and curbs being in longitudinal vertical section;

Figure 2 is a transverse vertical section of the same;

Figure 3 is a front view of the millstone-curb;

Figure 4 is a rear view of the conveyer-box; and

Figure 5 is a plan view of the same, with the conveyer in it;

Figure 6 is a plan view of the bottom of the case, underneath the conveyer-box;

Figure 7 is a plan view; and

Figure 8, an end view of a horizontal tube leading to a vertical tube for carrying off foul air, &c.

A and A' represent two stationary millstones;

B B' are the running millstones; and

C C', the curbs over the same.

To the back of the stone B are attached floats *a a*, and an interior ring *b*, in the top of the curb C, which ring comes nearly down to the upper edges of the floats *a a*.

In the center of the curb C is a valve, *d*, suspended by three arms, and projecting into the eye of the stone B for the purpose of governing the draught through the eye of the stone.

On the inner side of the curb C, down the sides thereof, are inclined floats *e e*, as shown.

The curb C' is also provided with floats *e'* down the sides, but the floats *a'* are, in this case, attached to the interior ring *b'*.

Inside, in the top of this curb, is a small circular rim, *f*, with three screws, *g*, passing through the top of the curb, by means of which this rim can be raised or lowered to govern the draught.

The floats *a a*, on the back of the stone B, are intended to blow fresh air in between the curb and millstone when running or grinding.

After the air leaves these floats it is drawn downward by the floats *e e* in the curb, and by this means

draws fresh air through the eye of the stone upon the face of the millstone, and keeps it cool while grinding.

The floats *a' a'* in the curb C' perform the same operation as the floats *a a* on the back of the stone B, the only difference being that one set is stationary while the other revolves.

The float in each curb which sits over the discharge-spout D, as shown in fig. 3, comes clear down to the bottom to prevent all foul air and ground meal or flour from passing the discharge-spout; and by this means it discharges all foul air, steam, or moisture which wheat contains, and prevents said steam or moisture from condensing on the inside of the curb.

These floats may be made of any shape or form to apply on different-sized stones, and to suit any kind of mill.

D D are the conductors or discharge-spouts from the bed-stones A A' to the conveyer E.

This conveyer is placed and revolves within a trough or box, G, which is placed within and a suitable distance above the bottom of an outer box or casing, H.

The conveyer E consists of a roller of any suitable diameter, with wings or paddles *h h* set spirally, as shown in fig. 5, from one end to near the other.

At this end are, however, a few of said wings or paddles set in the opposite direction, so that, when the flour is carried from one end of the conveyer-box G to near the other, it will, by the wings which it meets, be forced down into a spout, I, and be discharged, said spout passing from the bottom of the conveyer-box through the bottom of the casing H.

Inside of the front side of the casing H is placed a plate, *k*, the entire length of the casing, said plate being held in place by wood keys *l*, as shown in fig. 2.

Upon inclined flanges in the ends of the casing H rest a plate, *m*, and metal plate, *n*, forming a peaked roof over the conveyer-box G.

The lower edge of the plate *m* rests against the perpendicular plate *k*, while the lower edge of the plate *n* is just above and beyond the rear edge of the conveyer-box.

The object of this covering over the conveyer is to condense all steam or moisture that escapes from the meal or flour after it is ground and discharged from the stones to the conveyer, and by this means the water or steam that is condensed may be carried off to any point desired.

The plates *k m n* may be of glass, brass, copper, iron, or any other metal that may be desired.

The water from the plate *k* passes into a groove, *p*, in the bottom of the casing H, which groove leads to an opening, *r*, through which the water is discharged.

In the bottom, below the conveyer-box, is placed a plate, *s*, to keep flour and dust from falling into the groove or gutter *p*.

On the back of the conveyer-box G are placed in-

clined pieces *t t* to form grooves or gutters for carrying the water from the plate *n* to the opening *r*.

A horizontal tube, *J*, leads from the side of the casing *H* to a perpendicular tube, *K*, to convey all foul air to any place desired, the tube *K* being provided with a slide, *v*, for regulating the draught.

The horizontal tube *J* is covered with plates *w w* to condense the steam or moisture which might leave the conveyer-covering without being condensed, the water from said plates *w w* passing into grooves *i i* or gutters in the sides of the tube *J*, and from thence into the opening *r* in the bottom of the casing *H*.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The conveyer-covering *m n*, in combination with the perpendicular plate *k*, and suitable gutters *p t*, and aperture *r*, all substantially as and for the purposes herein set forth.

2. The inclined covering *w w* over the tube *J*, in combination with the gutters *i i* and aperture *r*, substantially as and for the purposes herein set forth.

3. The arrangement, under the condenser-box *G* in the case *H*, of the plate *s* placed over the gutter *p*, substantially as and for the purposes herein set forth.

4. The combination of the stone *B* having floats *a*, and the curb *C* having floats *e a'*, substantially as and for the purposes herein set forth.

5. The combination of the stone *B'* and the curb *C'* having floats *a'* and *e'*, and ring *f*, substantially as and for the purposes herein set forth.

6. The arrangement of the horizontal tube *J* provided with gutters *i i*, and the perpendicular tube *K* with slide *v*, when constructed and operating substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 10th day of February, 1871.

DANIEL HEFFNER. [L. S.]

Witnesses:

S. SHERWOOD,  
WM. B. YOUNG.