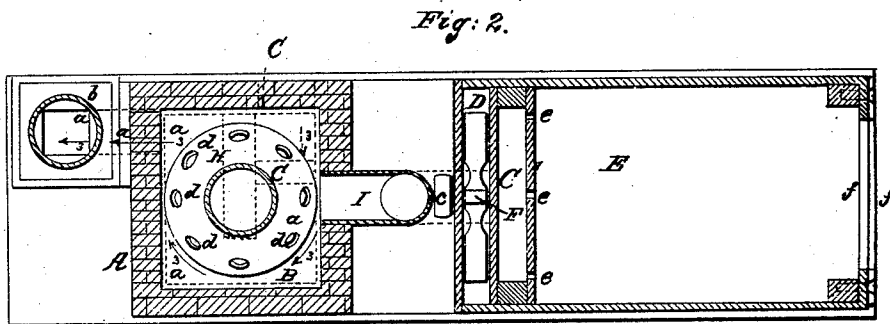
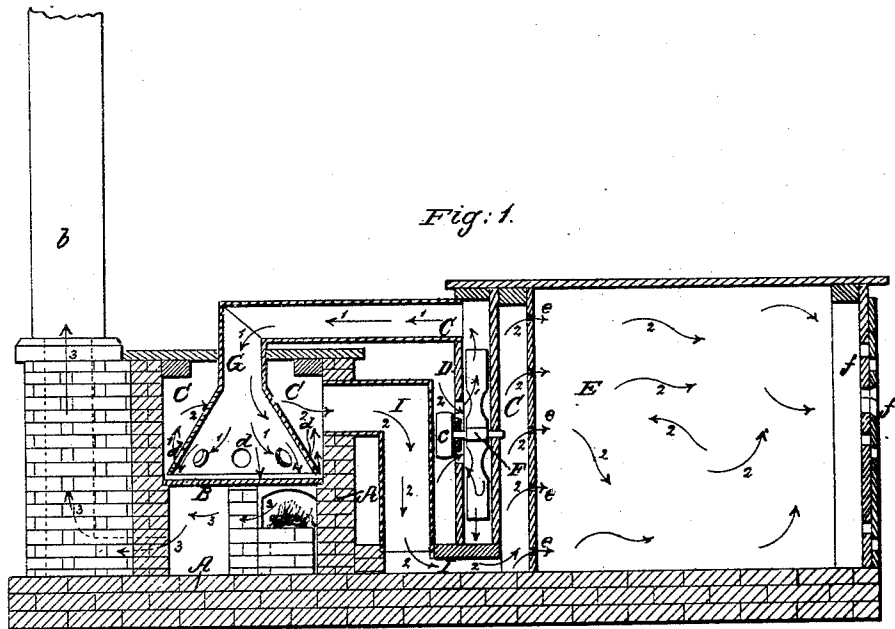


C. W. T. KRAUSCH.

Grain Drier.

No. 38,048.

Patented March 31, 1863.



Witnesses:

Gustave Diderich
Edw F Brown.

Inventor.

C. W. Theodore Krausch
by his Atty
Mason, Fenwick Lawrence.

UNITED STATES PATENT OFFICE.

C. W. THEODORE KRAUSCH, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN GRAIN-DRYING APPARATUS.

Specification forming part of Letters Patent No. 38,048, dated March 31, 1863.

To all whom it may concern:

Be it known that I, C. W. THEODORE KRAUSCH, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Drying Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of a drying apparatus with my improvement applied to it. Fig. 2 is a horizontal section of the same.

The same letters of reference in the figures indicate corresponding parts.

The design of my invention is to render practicable and economical the heating of air for drying purposes by means of a red-hot plate, and in connection therewith another design of my invention is to render practicable and effective the introduction to and discharge from such heating-plate of the drying air by means of a single fan.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A is the furnace, with a flue, *a a*, and a chimney, *b*, as represented.

B is a metal plate placed horizontally upon the partition of the flue and above the fire-box. The space C above this plate is a chamber, into which the air to be heated enters, and from whence, after it is heated, the air is discharged.

D is a fan-case located outside of the furnace and annexed to a distributing-chamber, C', of a drying-chamber, E, as shown. Within the case D a revolving fan, F, is arranged, so as to be revolved by a band applied to a pulley, *c*, on its shaft. The air to the fan is received through one of the bearing ends of the case, the other bearing end being made air-tight.

G is a pipe of angular form for connecting the interior of the fan-case with the interior of the air-chamber C, as shown. On the end of the pipe, where it enters the air-chamber C, a flaring or conical enlargement and extension is formed or applied, as shown at H. This conical part is large enough in diameter to

nearly cover the plate B with its lower extremity, as shown. It also is long enough to nearly reach down to the surface of the plate, as shown. Around its circumference, near the lower edge, a series of small apertures, *d d*, are cut, so that a free circulation of the hot air may be obtained.

I is another pipe, of angular form, leading from the interior of the air-chamber C to the interior of the air-distributing chamber C' of the drying-chamber E, as shown. That end of the distributing-chamber C', which annexes to the drying-chamber, is finely perforated, so that the air may pass in a distributed condition into the drying-chamber, as indicated at *e e*.

The drying-chamber is provided with a ventilator at its opposite end, as indicated at *f f*, so that the heat can be regulated.

It will be observed that the air-induction pipe leads from the fan-case down to the surface of the plate B, and that the air forced through it by the fan is compelled to come in contact with said plate, and consequently it is intensely heated before it has a chance to escape through the apertures *d d*, and under the lower edge of the cone into the air-chamber C. The arrows 1 1 indicate the course of the air from the fan-case to the heating-plate B. After the air is thus heated and discharged, it, by the same fan that forced it in contact with the plate B, is forced out of the chamber C, along the pipe I, into the distributing-chamber C', and therefrom into the drying-chamber E. The arrows 2 2 indicate the course of the heated air from the chamber C into the chamber E. It will be observed from the dotted lines, showing the flue of the furnace that the flame of the fire circulates under the whole surface of the plate B. The arrows 3 3 indicate the course of the flame.

My invention might be performed by a suction-fan by modifying the arrangement of the parts, so that the air is drawn down upon the plate B instead of being forced down upon it.

With my arrangement grain and various articles may be dried in a perfect and expeditious manner.

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

1. Facilitating the heating of air for drying purposes on the surface of a red-hot plate

through the agency of a fan and a pipe with a flaring discharge, or by the equivalents thereof, substantially as described.

2. The combination of means, substantially as herein described, for facilitating the heating of air for drying purposes on the surface of a red-hot plate and discharging and distributing it into a drying-chamber, as set forth.

Witness my hand in the matter of my improved drying apparatus this 19th day of December, A. D. 1862.

C. W. THEO. KRAUSCH.

Witnesses:

W. H. BRERETON,
G. T. ROSS.