E. T. GENNERT.

Drying-Kiln.

No. 204,211. **Patented May 28, 1878.**

Fig. 1.

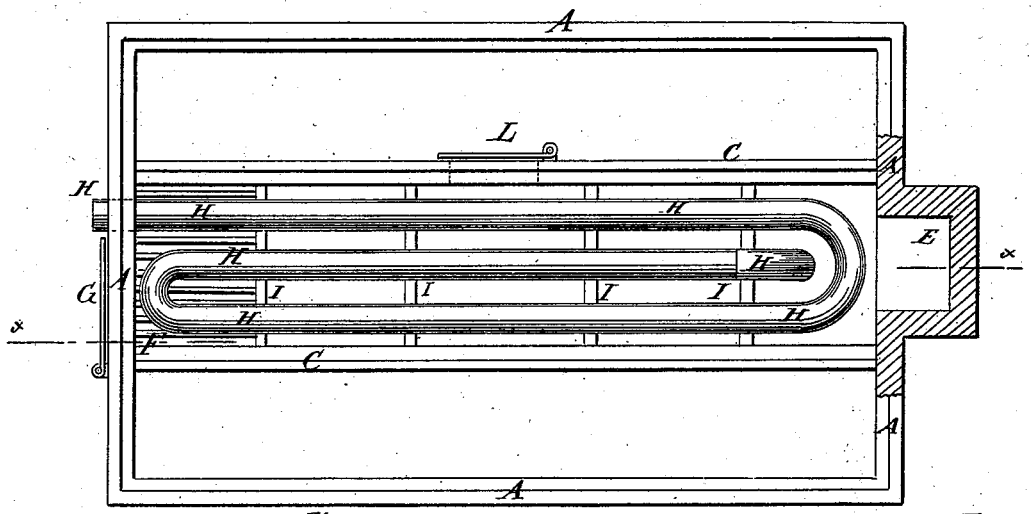


Fig. 2.

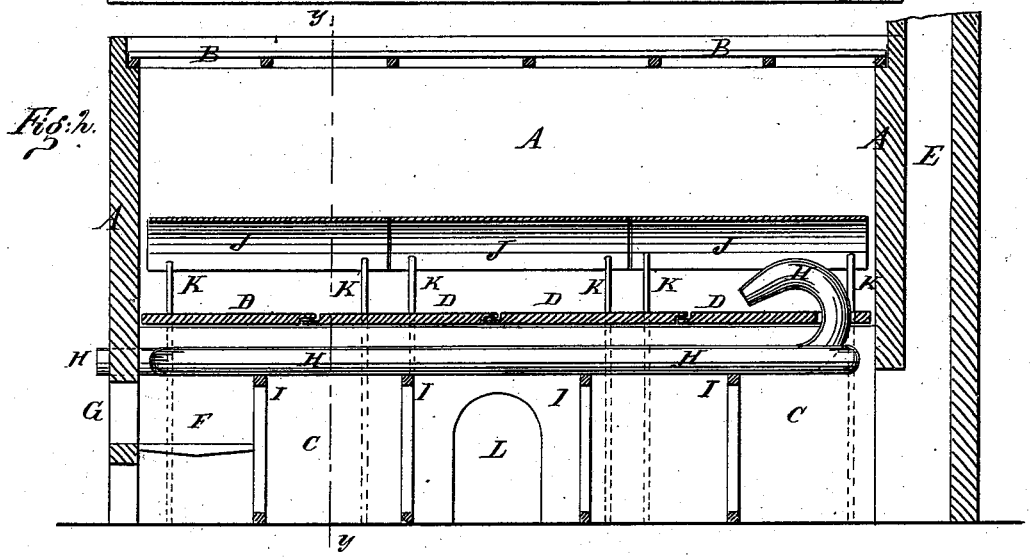
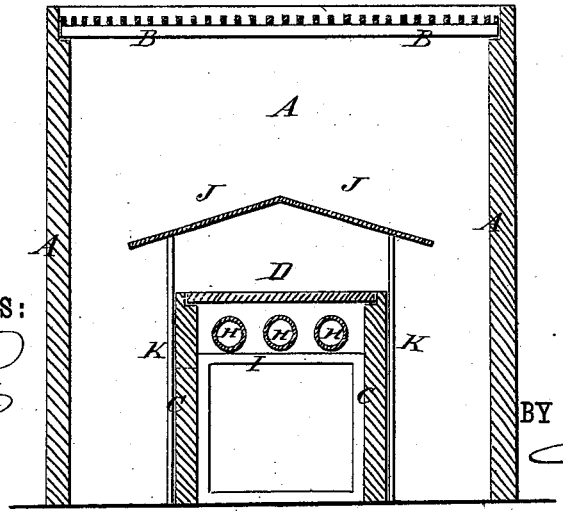


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ERNEST T. GENNERT, OF NEW YORK, N. Y.

IMPROVEMENT IN DRYING-KILNS.

Specification forming part of Letters Patent No. **204,211**, dated May 28, 1878; application filed March 27, 1878.

To all whom it may concern:

Be it known that I, ERNEST THEODOR GENNERT, of New York city, in the county and State of New York, have invented a new and useful Improvement in Drying-Kilns, of which the following is a specification:

Figure 1 is a top view of my improved kiln, the grate, the guard-plates, and the heating-plates being removed. Fig. 2 is a vertical longitudinal section of the same, taken through the broken line *x x*, Fig. 1. Fig. 3 is a vertical cross-section of the same, taken through the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved apparatus designed especially for drying beets for sugar-making, but which may be used with equal advantage for drying various other substances, and which shall be simple in its construction and rapid and effective in its operation.

The invention consists in the combination of the angular plates with the furnace, the heating-plates, the air-heating pipe, the kiln, and its grate, as hereinafter fully described.

A is the kiln, which is built with an open top, and with the edges of its side and end walls rabbeted to form a seat for the grate B. The grate B may be formed of slats, of woven wire, or of perforated plates, as may be desired.

Within the kiln A is built the furnace C, which is made of the same length as the kiln A, but narrower and lower. The upper edges of the side walls of the furnace C are rabbeted to form seats for the covering-plates D, which are made of iron or other suitable heat-conducting material that will stand the fire. The adjacent edges of the covering-plates D are halved to each other, so that they may expand and contract without being warped or otherwise injured, and without opening the joints. The rear end of the furnace C opens into the chimney E, which is built upon the outer side of the rear end of the kiln A.

F is the fire-grate, which is placed in the forward end of the furnace C, and access is had to it through doors G in the forward end wall of the kiln A.

In the upper part of the furnace C, just below the covering-plates D, is placed a horizontal coil of pipe, H, one end of which passes out through the front wall of the kiln A, and is designed to be connected with a fan-blower or other blast-producing apparatus. The other end of the pipe H passes up through the rear plate D, and is curved forward and downward, so as to discharge the blast of heated air upon the plates D, to be further heated. The coil of pipe H is supported upon bars or frames I, attached to the walls of the furnace C.

J are angular or V-shaped plates interposed between the heating-plates D and the grate B, for the double purpose of distributing the heated air and preventing anything that may fall through the grate B from falling upon the heating-plates D. The plates J are supported upon legs K, attached to their edges, and which pass down upon the opposite sides of the furnace C.

In one or both the side walls of the furnace C are formed openings, closed by doors L, for convenience in removing the ashes that may settle upon the bottom of the said furnace.

With this construction the air is heated as it passes through the pipe H, is discharged hot upon the heating-plates D, to be more intensely heated, and passes up through grate B, carrying off the moisture that may be in the substance spread upon the said grate B, and thoroughly drying the said substance in a very short time.

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

1. The combination of the furnace C, the heating-plates D, and the air-heating pipe H with the kiln A and the grate B, substantially as herein shown and described.

2. The combination of the angular plates J with the furnace C, the heating-plates D, the air-heating pipe H, the kiln A, and the grate B, substantially as herein shown and described.

ERNEST THEODOR GENNERT.

Witnesses:
JAMES T. GRAHAM,
C. SEDGWICK.