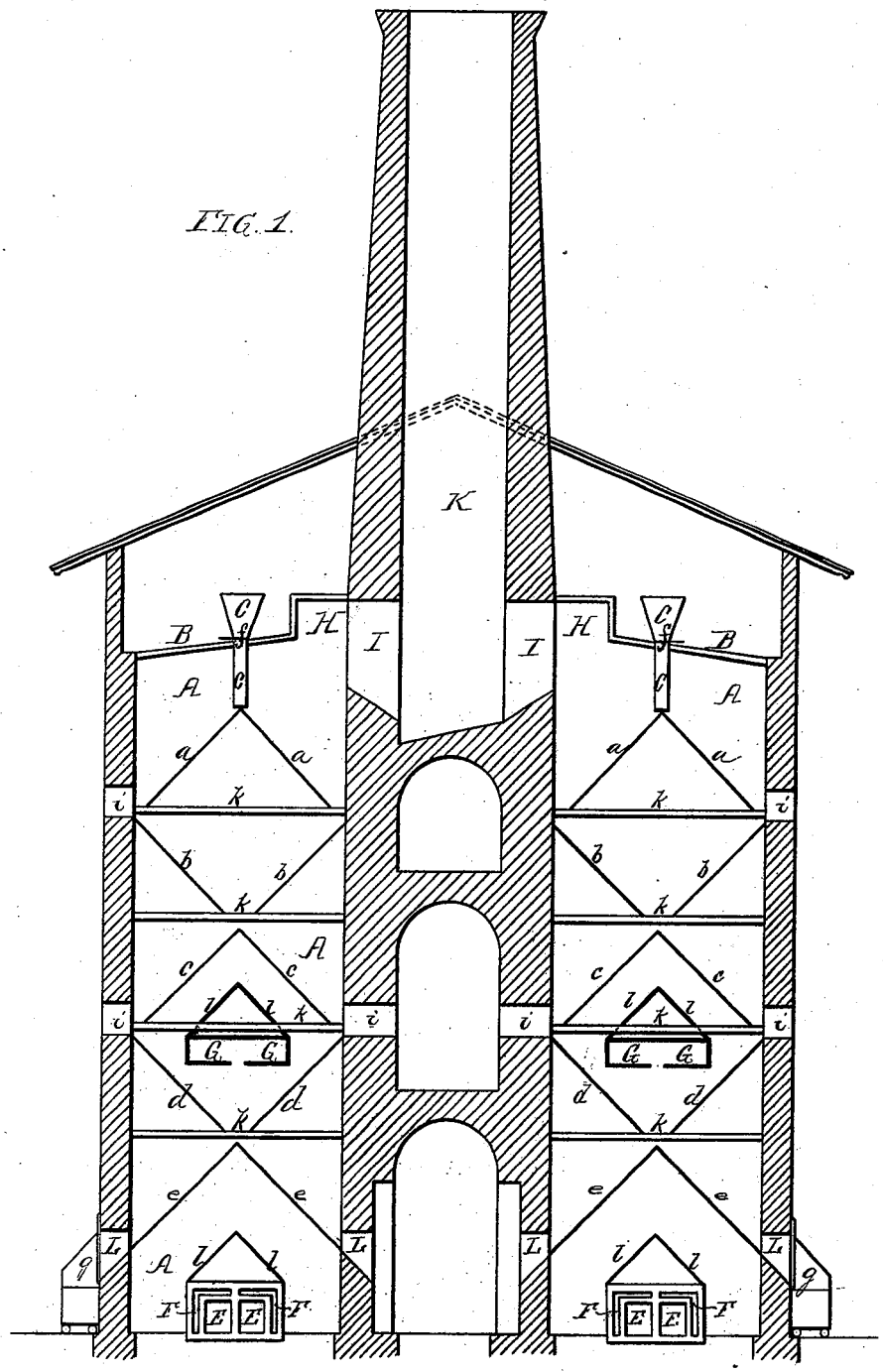
2 Sheets—Sheet 1

E. HUNDHAUSEN.

Kiln for Drying Vegetables, &c.

No. 210,124. Patented Nov. 19, 1878.

FIG. 1.



Witnesses.
Henry Howson Jr.
Harry Smith

Inventor,
Eduard Hundhausen
by his Attorneys
Howson and Sons

2 Sheets—Sheet 2.

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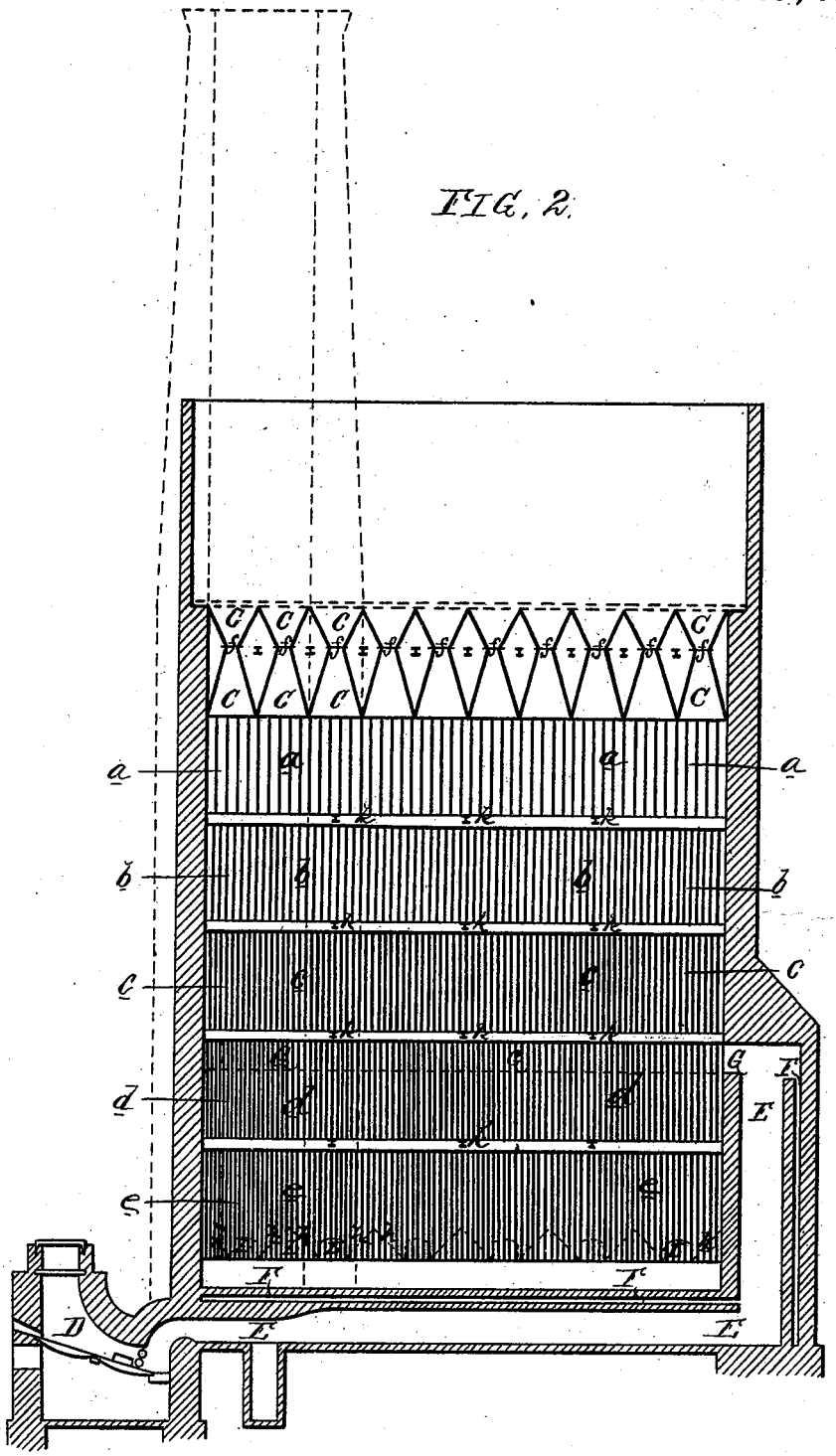
FIG. 2.



Witnesses
Henry Howson Jr.
Harry Smith

Inventor
Edward Hundhausen
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

EDUARD HUNDHAUSEN, OF BUCKAU, NEAR MAGDEBURG, PRUSSIA.

IMPROVEMENT IN KILNS FOR DRYING VEGETABLES, &c.

Specification forming part of Letters Patent No. **210,124**, dated November 19, 1878; application filed September 30, 1878.

To all whom it may concern:

Be it known that I, EDUARD HUNDHAUSEN, of Buckau, near Magdeburg, Prussia, have invented a new and useful Improvement in Kilns wherein Chicory and other Vegetables are Dried, of which the following is a specification:

The object of my invention is to so construct a kiln for drying beets and similar articles that the materials under treatment, in their passage through the kiln, will be uniformly and thoroughly dried; and this object I attain in the manner which I will proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1, Sheet 1, is a transverse vertical section of the kiln, and Fig. 2, Sheet 2, a longitudinal section.

The kiln, which is built of masonry or brickwork, is separated longitudinally into two drying-chambers by a central double wall, at one end of which is the chimney K. The top of each drying-chamber is inclosed by flooring B, through which pass feed-hoppers C, arranged in a central longitudinal row throughout the length of each chamber.

In the drying-chamber are arranged a number of inclined grated drying-plates, *a b c d*, supported in a series of stages by transverse beams *k k*. The upper ends of the top inclined plates or gratings, *a a*, meet in the center, immediately below the hoppers C, while spaces are left between their lower ends and the walls of the chamber. The upper ends of the next inclined gratings abut against the walls of the chamber, while a space is left between their adjacent lower ends. The drying-plates are thus arranged alternately down to the lowest series, *e*, the surfaces of which communicate with discharge-openings L, provided with sliding doors *g*.

Each drying-chamber has a heating-furnace, D, which communicates, through the horizontal and vertical flue E, with the heat-distributer G, preferably arranged within the second series of gratings, *d d*. This distributer G consists of a flat tube, of rectangular section, extending throughout the length of the chamber, and having a longitudinal slot on its under side, so as to distribute the heat uniformly to all parts of the chamber.

I prefer to form the flue E of smaller section near the fire-place than in its vertical portion. Surrounding the horizontal and vertical portions of this flue are air-conduits F, which discharge the heated air into the flue and distributer G.

The upper part, H, of each chamber communicates, through an opening, I, with the chimney for the exit of the heat and products of combustion.

The bars of the uppermost drying-plates are arranged at a sufficient distance apart from each other to allow the smaller particles of the material to fall through onto the lower plates or gratings, and the bars of each successive set of plates are arranged gradually closer together until the lowermost plates, *d* and *e*, are reached, the bars of these plates being arranged sufficiently close together to prevent the passage of particles of the usual size. By this arrangement the smaller chips, which are sooner dried than the larger ones, pass through the furnace more quickly, and thus particles of all sizes are dried uniformly.

The hoppers C being filled with the materials to be dried, the slides *f* are withdrawn and the material allowed to fall onto the drying plates or gratings, and the slides *f* are then closed to prevent the escape of heat. The materials under treatment pass over the successive series of gratings, the smaller particles falling between the bars of the upper gratings, and thus passing through the drying-chambers more quickly than the larger particles, as above described. The dried materials are withdrawn from the kiln through the apertures L on opening the doors *g*.

In order to prevent an accumulation of material on the gratings E between the discharge-openings L, inclined plates *h*, as shown by dotted lines in Fig. 2, are arranged between said openings. For the same purpose inclined roof-plates *l* are placed on the top of the flues E F and distributer G, Fig. 1.

In order to observe the operation of the kiln, windows *i* are built in the walls of the chambers.

I claim as my invention—

1. A drying-kiln having a series of inclined and grated drying-plates, arranged substantially in the manner described.

2. A drying-kiln having a series of inclined and grated drying-plates, the spaces between the bars of one series being wider than the spaces between the bars of the series of plates below, as set forth.

3. The combination of the kiln, furnace, and flue with the heat-distributer G, having a longitudinal slot on its under side, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDUARD HUNDHAUSEN.

Witnesses:
BERTHOLD ROI,
EDWARD P. MACLEAN.