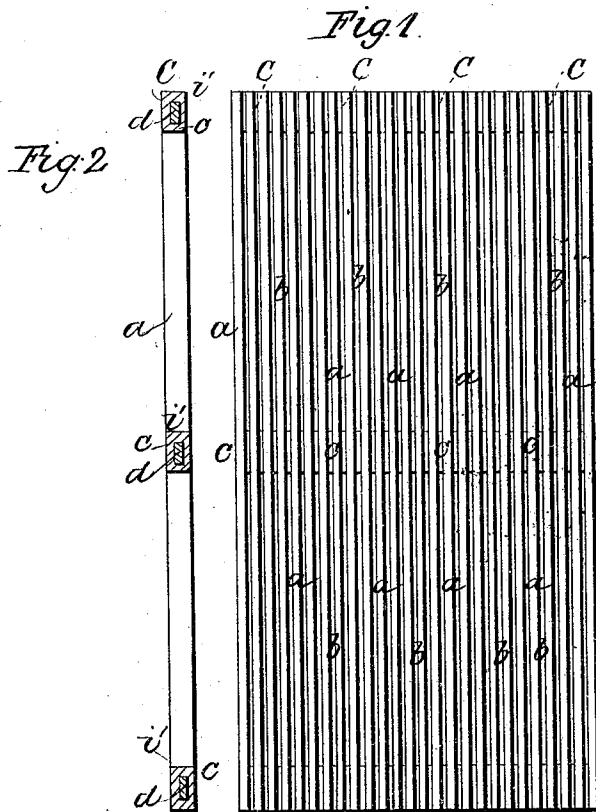


H. FRANZ.

Malt Drier.

No. 30,137.

Patented Sept. 25, 1860.



4 5 6
1 1 1

Witnesses:

Wm. Munson
J. Appelf

Inventor:

Henry Franz

UNITED STATES PATENT OFFICE.

HENRY FRANZ, OF PHILADELPHIA, PENNSYLVANIA.

FLOOR FOR MALT-KILNS.

Specification of Letters Patent No. 30,137, dated September 25, 1860.

To all whom it may concern:

Be it known that I, HENRY FRANZ, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and Improved Malt-Kiln-Floor Plate; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan view of the upper side; Fig. 2, a vertical longitudinal section; and Fig. 3, a vertical transverse section, of the same; like characters, when on the different figures, indicating the same parts.

The nature of my invention consists in making the plates, for malt-kiln floors, of wire rolled or otherwise compressed into rails whose transverse sections are cuneate— or thicker along their upper, than they are along their under edges—and united together with their sides parallel to each other—leaving spaces between—so as to produce a grated plate of the said material, substantially as hereinafter described, whereby I am enabled to produce a floor for malt-kilns, which will safely admit of the application of a much higher degree of heat for drying the malt, than heretofore, and consequently, to reduce the time, fuel, and labor heretofore required in conducting the process, and also, to produce a better malt.

In the drawings, *a—a*, are the wire-rails, and *b—b*, the spaces between them.

To form the rails (*a*) I take iron wire which is about three sixteenths of an inch in diameter, more or less, and roll or otherwise compress or form it, so that its transverse section shall present substantially the cuneate or tapering form shown in either of the Figs. 3, 4, 5, or 6,—though the slightly concave, or "hollow-cut," form shown in Fig. 3, is preferred. I then cut the wire into lengths of, say six feet, straighten, and finally punch a hole, 1, through near each end and one also through the middle, of each rail, as indicated in Figs. 4, 5, and 6. I now take a smaller sized wire, roll it into the same form and cut off from it the numerous short pieces or space-blocks, *c—c*, each about three eighths of an inch long, and make a like hole through their centers; then place the rails (*a—a*) side by side, with their

thicker edges all on the same side, inserting between each pair, three of the spacing-blocks (*c*) with their thinner edges next to the thicker edges of the rails (*a*), and their holes (1') in juxtaposition with the respective holes in the said rails, at the same time inserting, through each series of these holes, a rod or bar, *d*, until I have rails enough, so applied and connected, to form a grated plate of three feet in width, more or less, and then, finally, rivet the ends of the said bolts (*d*) so as to bind the whole together firmly, substantially as is represented in Figs. 1 and 2, the spaces (*b—b*), being about a sixteenth of an inch in width, and the upper edges of the space blocks (*c*) about a sixteenth of an inch below the upper edges of the rails (*a*), for the purpose of preventing the grains of malt from coming in contact with the said blocks (*c*). To form a continuous floor of these plates, it is only necessary that they be laid together horizontally in the same plane and so that they may be supported, upon the usual iron bars or joists, at the parts where the space blocks (*c*) are inserted, and with the side having the thicker edges of the rails, upward.

It will be evident that, from the cuneate form and the relative positions of the bars (*a—a*), and the horizontal position of bars (*a—a*), and the horizontal positions of the plates in the kiln, the hot ascending air will pass intimately between all the grains of malt which may be lying on the plates, and consequently that heat of a higher degree than heretofore may be applied without any danger of charring the malt. A heat of about 40° Réaumur, with the usual, perforated, sheet-iron floor, will burn, or char the malt; whereas, with my said wire-rail plates, the heat may be raised to 60° or 70° Réaumur, without any danger of charring, and consequently the time and fuel, heretofore required for drying, will be proportionately reduced, to say nothing of the reduction of the labor heretofore required in turning the malt. It generally takes about three days and three nights to dry the malt, properly, on the sheet-iron floors; but, with the improved plates herein described, the malt can be dried in six hours, and a better article produced thereby. The strength of these

plates, and their durability in use, are also greater than those of sheet iron, or of woven wire.

Having thus fully described my improved plate, and pointed out its superior utility, 5 what I claim as new of my invention and desire to secure by Letters Patent is—

The wire-rail plate herein described; the same being constructed substantially as described, and for the purpose specified.

HENRY FRANZ.

Witnesses:

BENJ. MORISON,

J. FOPPER.