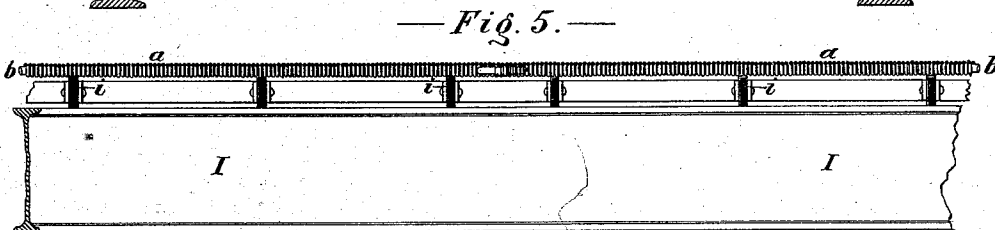
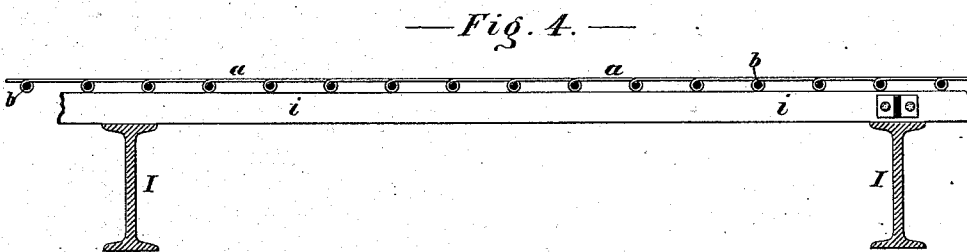
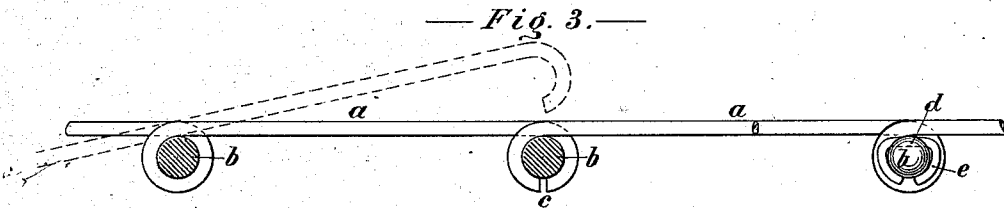
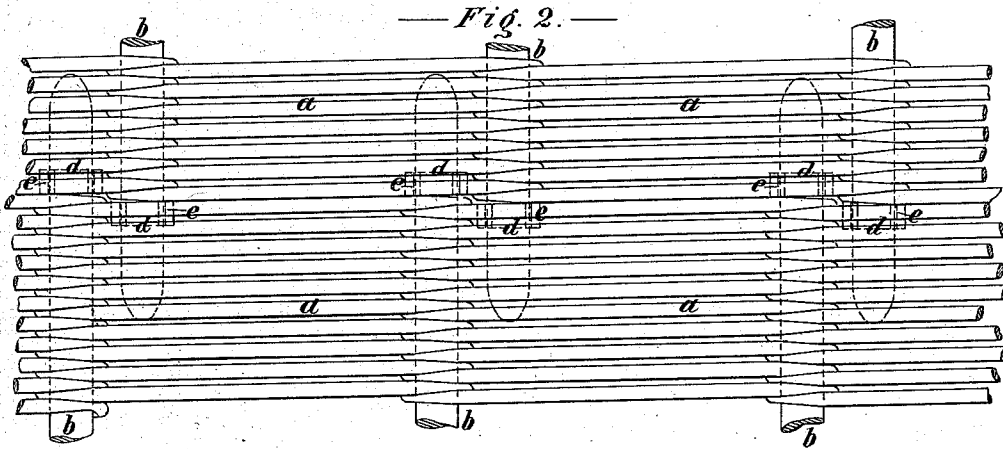
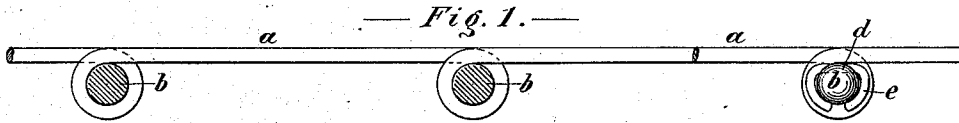


L. HERRMANN.
Floor for Malt-Kiln.

No. 162,748.

Patented May 4, 1875.



Witnesses:
Henry G. Stewart
Thos. J. Callins

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UNITED STATES PATENT OFFICE.

LOUIS HERRMANN, OF DRESDEN, GERMANY.

IMPROVEMENT IN FLOORS FOR MALT-KILNS.

Specification forming part of Letters Patent No. 162,748, dated May 4, 1875; application filed March 3, 1875.

To all whom it may concern :

Be it known that I, LOUIS HERRMANN, of the city of Dresden, in the Kingdom of Saxony and Empire of Germany, have invented certain new and useful Improvements in Malt-Kilns, of which the following is a specification:

The object of my invention is to combine in the floors of the malt-kilns a high degree of efficiency in their two chief requirements—namely, abundant air-passage, and durability under the weight and manipulations of the attendants in loading and unloading the kiln, and in turning the malt during the process of drying. These two essential conditions for the best results in practice I attain by means of a wire fabric, produced and applied in the shape of hurdles, of peculiar structure, forming the subject of my present invention. It involves the use of two dissimilar sizes of wire, those preferably adopted in the manufacture being known by the trade-designations of No. 12 and No. 2 wire gage. The first of these constitutes, as it were, the warp of the fabric, each such wire being, at regular intervals, bent into the form of an eye, the inner diameter of which equals that of the coarser No. 2 wire. This coarser wire may be termed the weft of the fabric; it consists of straightened rods, upon which the warp-wires of a convenient uniform length are strung, in a manner forming large hurdles. These hurdles are afterward joined laterally and in direction of their length in a peculiar manner, hereinafter fully described, producing a continuous, even surface of any required extent in length or width. The eyes of the warp-wires are, previous to their combination into hurdles, subjected to a lateral pressure, so as to indent and interlock the lapping wires of each eye to the amount required for contracting the spaces between the straight parallel portions of these wires to one-twentieth of an inch, nearly, which is equal to about seventy-five wires and spaces for each lateral foot of hurdle. This amount of space between the wires provides an abundant passage for hot air, and, while permitting the sifting of roots of the grain, the malt-grains will neither jam into nor fall through these rounded spaces.

My invention will be more fully understood

upon reference to the accompanying drawing, in which similar letters refer to like parts in the several views, of which Figure 1 is a sectional view of my improved fabric at natural size. Fig. 2 is a plan of the same, showing also the manner of joining the hurdles in the direction of their length. Fig. 3 illustrates the method of interlocking the ends of hurdles in the direction of their width. Fig. 4 is a sectional side view, and Fig. 5 a sectional end view, representing the manner of resting the improved wire fabric upon the supporting beams and intermediate net-irons.

Having in the foregoing amply described the manner of combining the warp-wires *a a a* with the heavier weft-wires *b b*, to form a hurdle of my improved fabric, I will now proceed to describe my improved methods of joining these hurdles to form a kiln-floor of any required size, without presenting a single obstruction or vulnerable place on the entire surface of the wire structure:

After the operations of bending and pressing the eyes of a series of warp-wires of a uniform length, the ends of these wires are prepared for the final interlocking of two hurdles by shearing through the end eyes, in the manner shown at *c* in Fig. 3. It is readily evident that the remaining halves of eyes on the abutting ends of two hurdles will interlock in the manner of the solid eyes, and, after the insertion of a weft-wire, *v*, present no indication of this joint upon the surface of the fabric, and in no wise impair its great strength. The end hurdles or sections of a series connected in the above manner may be prepared of wires of any suitable number of eyes, to adapt the whole to a given length of kiln, or the ends may be sheared off or trimmed to length in any other convenient manner.

I have, in practice, adopted the use of three hundred and twelve warp-wires, *a a*, for each hurdle, making these of a uniform width of fifty inches and varying only the width of the outside series of hurdles, to make up any required total width of kiln-floor. The straight weft-wires *b b* I cut to a uniform length, exceeding the effective width of the hurdle about two inches; and after forcibly drawing the strung warp-wires *a a* together laterally by means of suitable

clamps, I confine them securely between collars *e e*, held in place upon the projecting ends of the weft-wires *b b* by means of recesses *d d*. The distance between these recesses serves as an accurate gage for uniformity in the lateral compression of the hurdles. Both recesses *d d* in each weft-wire *b*, are in the same plane, and this plane must conform with the top surface of the hurdle, so that when two hurdles or series of hurdles are placed side by side the projecting ends of the weft-wires *b b* may, together with their collars *e e*, be interposed under the warp-wires until the latter are brought into the required level and close contact for perfect uniformity of the surface. The overlapping ends of the weft-wires form a very efficient support for the contiguous edges of the hurdles.

An entire kiln-floor constructed of my improved wire-hurdles, and joined in the manner hereinabove described, is so rigid and self-contained as to require no special means of fastening upon the very simple supporting structure. This consists, preferably, of a series of transverse iron beams, *I I*, Figs. 4 and 5, upon which rest the longitudinal bearers *i i* of flat bar-iron. These bearers run parallel with the warp-wires of the hurdles, and are so divided as to present a narrower space under

every longitudinal joint in the wire fabric, thereby providing increased support for the edges of the several series of hurdles.

I do not broadly claim as my present invention the combination of the bent warp-wires with the straight weft-wires; but

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

1. As an improvement in floors for malt-kilns, the combination of bent warp-wires *a a*, recessed weft-wires *b b*, and collars *e e*, to form hurdles, in the manner and for the purpose described.

2. The combination of the divided and interlocking end eyes of two abutting hurdles with a weft-wire, *b*, as and for the purpose set forth.

3. The combination of the projecting ends of weft-wires *b b* of one hurdle with the outer warp-wires *a a* of the other hurdle, for giving a reciprocal support to the edges of contiguous hurdles, in the manner described.

In testimony whereof I have herenuto subscribed my name.

LOUIS HERMANN.

Witnesses:

MARTIN SCHLOESSMANN,
MAX FREUDENBERG.