(No Model.)

C. M. SNYDER.

VENTILATING GRATE FOR OPEN AIR KILNS.

No. 385,581. Patented July 3, 1888.

Fig 1

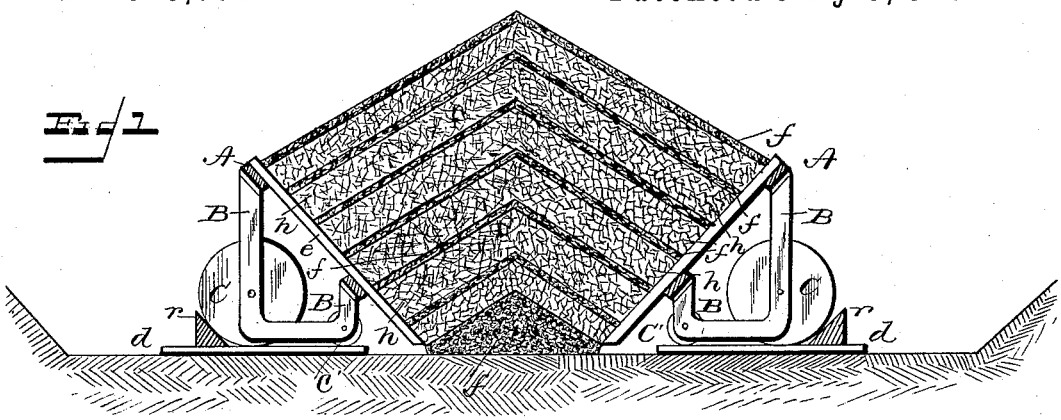


Fig 2

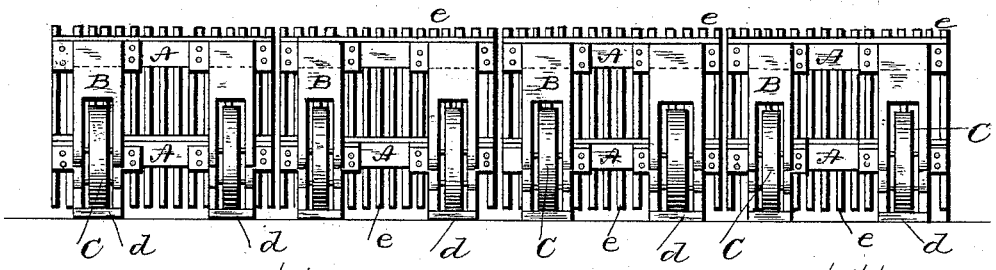


Fig 3

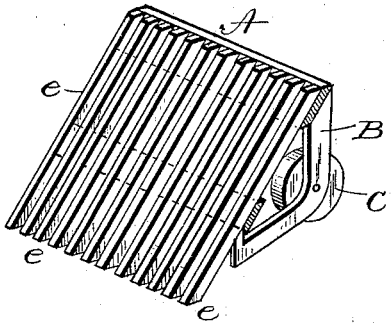
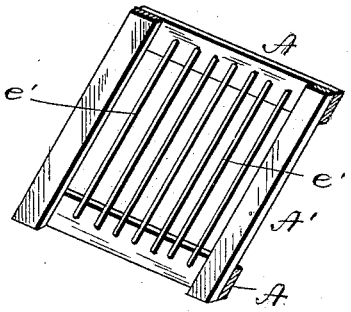


Fig 4



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VENTILATING-GRATE FOR OPEN-AIR KILNS.

SPECIFICATION forming part of Letters Patent No. 385,581, dated July 3, 1888.

Application filed November 19, 1887. Serial No. 255,570. (No model.)

To all whom it may concern:

Be it known that I, CHASTAIN M. SNYDER, a citizen of the United States, residing at Mount Pleasant, in the county of Henry and State of Iowa, have invented a new and useful Improvement in Ventilating-Grates for Burning Conglomerated Masses of Clay in the Open Air, to be used as ballast for roads and other like purposes, of which the following is a specification.

My invention relates to grates mounted upon rollers, so as to hold them in a flaring position at the sides of a heap of alternate layers of fuel and clay, so as to support the overjutting sides of said heap while being constructed and while burning and for promoting ventilation during the burning process, and which are susceptible of being rolled back from said heap for enlarging it by making additional layers thereto at its sides.

I will further describe my invention by referring to the accompanying drawings, which constitute part of this specification, of which—

Figure 1 is a cross-sectional view of a heap of material in position to be burned, showing the grates supporting the overjutting sides of said heap. Fig. 2 is an elevation of a series of said grates viewed from their front. Fig. 3 is a perspective of one of said grate-sections viewed from an inside corner; and Fig. 4 is a frame having wires stretched across it, which may be used instead of the grates, as shown at Fig. 3, by fastening the supporting-brackets having the rollers attached to them to its frame-pieces in like manner as shown at Fig. 3.

Similar reference-letters will indicate like parts throughout, and dotted lines parts hidden from view.

A refers to horizontal supporting-bars upon which the outward-leaning grate-bars *e* rest and to which they are securely fastened. The grates *e* may be of either cast or wrought metal bars or of heavy wires or small rods, as most convenient, or wires may be fastened in a frame, as *e'* at Fig. 4, and have the supporting-brackets fastened to said frame. B are said supporting-brackets, which are fastened to the bars A, respectively, at their ends, in which brackets are pivoted wheels or rollers C and C', thereby constituting the support to the grates. The wheels C are attached to said brackets near their outer angular bend and the rollers C' near the inner end of said brackets, thereby mounting each section of said grates on rollers, so that they can be easily moved back from the sides of a burning heap for enlarging it with fresh material to be burned. Said grates, being on rollers, will tend to move outward from the heap by means of the pressure caused by the material resting on or between them. As a remedy for the same, chocks *r* (shown only at Fig. 1) are provided, which chocks are placed back of and against the wheels C, so as to prevent them rolling until the grates are required to be moved back for enlarging the heap, when said chocks may either be knocked out and other ones placed in position for checking the movement of said grates at the proper place, or they may be moved back in advance of said wheels to the required new position. Trackways *d* (or bits of boards instead thereof) may be laid under said rollers to cause them to roll the more easily; but in reasonably-solid earth said trackways will not be needed. Said combination mounted grates, being made in short sections, as shown at Figs. 2 and 3, may be multiplied, as at Fig. 2, to suit the requirements of any desired length of heap. Said grate-sections being thus mounted on rollers will enable a whole side to be moved back together, thereby preventing the annoyance and trouble caused by portions of clay falling from the heap and lodging back of the end of unmoved sections contiguous to sections that have been moved backward, where said sections are moved one at a time for enlarging a burning heap.

f are layers of slack-coal or other suitable fuel for thus burning clay in a heap, which fuel is properly arranged in place as the heap is being constructed, and *h* are layers of clay, which may be of irregular shapes and in a conglomerated mass. As will be seen, these different layers alternate, so that the heat from the layers of burning fuel will heat and burn respectively the layer of clay above it.

The *modus operandi* of thus burning clay is as follows: A sufficient layer of fuel is placed on the ground to start a fire, (and better for convenience in building the heap to first lower said foundation by making an excavation in which to start said heap, as shown at Fig. 1,)

and after a fire is thus started a layer of clay is spaded on it, when another layer of fuel is placed over said layer of clay, which soon ignites from the fire below, and likewise, successively, additional layers of fuel and clay are made to the heap, overjutting its sides against the grates (they having been placed in proper position for supporting said sides) until a proper height of heap is attained, which will soon become a solid mass of fire and heated clay, when, for enlarging the heap, the grates on one or both sides may be moved back and a portion of said heated and burning mass may be raked out as a foundation for said enlargement of the heap, which will be built up as before, and as many enlargements or additions may be in like manner added as may be desired.

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

1. The inclined grate mounted on rollers, for the purpose set forth, substantially as described.

2. The inclined grate having the brackets B at its outer side and the roller C journaled in said brackets, substantially as described.

3. The inclined grates arranged opposite each other and diverging upwardly, said grates having the supporting-rollers journaled in brackets on their outer sides, substantially as described.

4. The grate-sections comprising the horizontal longitudinal bars A, the incline grate-bars *e*, connecting said bars, the brackets B, secured to the outer sides of the bars A, and the rollers C, journaled in said brackets, substantially as and for the purpose set forth.

CHASTAIN M. SNYDER.

Witnesses:
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