(No Model.)

T. M. BANNISTER.

BRICK KILN.

No. 305,268. Patented Sept. 16, 1884.

Fig. 1.

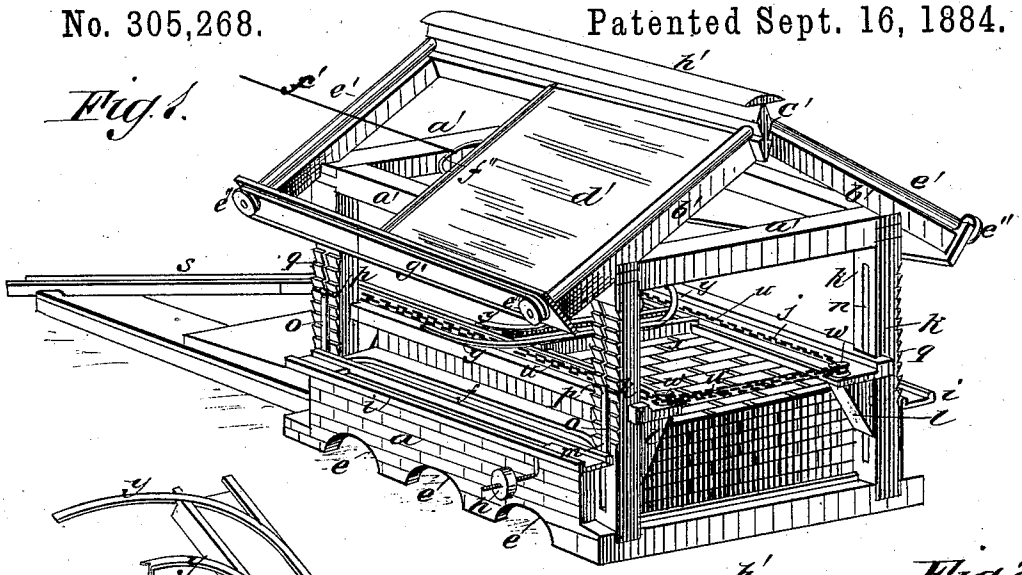


Fig. 4

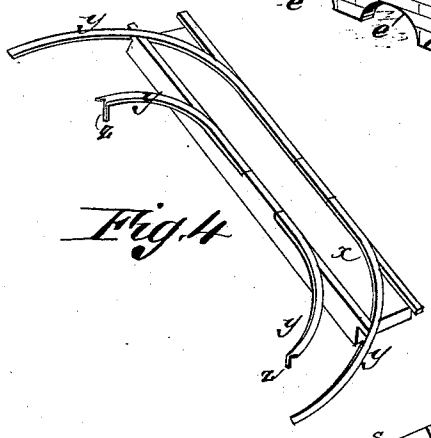
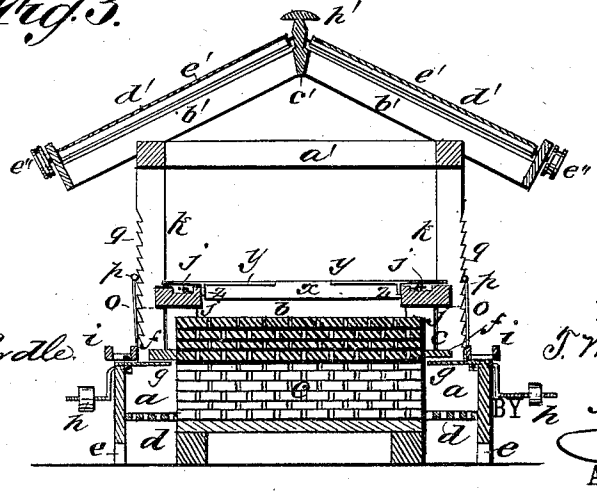


Fig. 2.

Fig. 3.



WITNESSES:

F. McArdle.

C. Sedgwick

INVENTOR:

T. M. Bannister

BY Munn & Co

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

THOMAS M. BANNISTER, OF LONE PINE, CALIFORNIA.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 305,268, dated September 16, 1884.

Application filed January 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. BANNISTER, of Lone Pine, in the county of Inyo and State of California, have invented certain new and useful Improvements in Brick-Kilns, of which the following is a full, clear, and exact description.

This invention comprises improvements in the construction of kilns for burning bricks, tiles, and all other similar articles, whereby it is designed to provide for the better construction and to facilitate the repairs of the furnaces; also, to lessen the labor of supplying the fuel and to regulate the same for greater uniformity of the fires; also, to lessen the labor of charging the kiln with the bricks or other articles to be burned, and of removing the burned articles, and also to provide simple and efficient means for temporarily covering the kiln at any time when necessary for the protection of the green or burned bricks from rain or snow, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a kiln contrived according to my improvements, and representing one section, of which I propose to join any number together in a line, according to the required capacity of the kiln. Fig. 2 is a longitudinal sectional elevation of Fig. 1. Fig. 3 is a transverse section, and Fig. 4 is a perspective view, of a portion of a car-track such as I propose to use for conveying the bricks and other articles to the kiln by means of cars.

I build two long furnaces, *a*, parallel to each other, and as far apart as the width of the pile or stack of bricks *b* or other articles to be burned, which I arrange so as to receive the products of combustion from the furnaces into the arches *c*, the said furnaces having suitable grates, *d*, for burning coal, and air-inlets *e*, for the supply of air for combustion. I propose to partly cover the furnaces with cast-iron or other approved plates or slabs *f*, and partly with drop-valves or gates *g*, to be kept closed by weighted levers *h*, and along over the front portion of said furnaces I arrange a car-track, *i*, with suitable connections or extensions for enabling cars loaded with coal to be run from the coal-yard up over the furnaces and dumped onto the weighted valves or covers *g*, from which the required quantity for a charge will discharge automatically into the furnace by overbalancing the weighted levers *h*, so that by timing the charges and regulating the quantity by shifting the weights the kiln may be fired more or less, according to the heat required, whether for burning hard or soft, or for other conditions.

For the purpose of employing cars and power to work them for conveying the bricks to and from the kilns, I propose to provide vertically-adjustable tracks *j* for the cars by suspending them on the posts *k* by brackets *l*, contrived to be shifted up and down said posts by tongues *m*, sliding in the slots *n*, and fastened at any required height by the suspending-straps *o* and rods *p*, the latter being lodged in the notches *q* of the posts. The straps *o* are either jointed to the tongues of the brackets, or contrived to spring so that the holding-rods *p*, attached to the ends, may be readily shifted into and out of the notches. With these tracks so contrived to be shifted up and down, as the pile of the bricks *b* or other articles is increased or diminished, I propose to connect the inclined tracks *s* at one end by joints *t* to shift with them, and will employ an endless chain, *u*, for drawing the cars up, the cars to be detachably hooked on, so as to be connected and disconnected when required, and the chain passing around the guide-pulleys *w* from the track of one side of the kiln to that of the other side, and along the tracks to the place on the yard, where the power is applied in any approved way.

I propose in practice to include the machine for cutting the cakes of clay delivered from the press onto the cars into bricks in the circuit of the chain, and the press also, if desired, so that the empty cars returning from the kiln will first receive the large cakes of clay from the press, then pass the cutting-machine, when the cakes will be cut into bricks, and then convey the bricks to the place on the kiln, when the bricks are to be laid for burning, so as to effect large economy in the labor of handling the bricks.

For causing the cars to traverse the kiln from

one side to another to deliver the bricks in the middle positions, and to transfer the cars from the up to the down track, I employ the adjustable transverse track x, with curved rails y, adapted to lie on the tracks j anywhere and shift or switch the cars from them to run across from one side to another. The inside or short curved rails, y, are armed with points or hooks z, to drop down between or inside of the rails of tracks j, to keep the transfer-tracks from slipping off the others.

For the purpose of temporarily covering the kiln before or after burning from rain and snow storms, I make a roof-frame of plates a', rafters b', and a ridge-plate, c', or any approved construction, and arrange canvas covers d' on rollers e', to be stretched across by wires or cords f', and be wound thereon again by endless cords g' and pulleys e^2. The ridge-plate c' will have a cap, h', overlapping the upper edges of the canvas covers, to shed the rain over the edges. For small kilns, only one section may be sufficient; but for larger capacity two or more sections will be built together, the tracks j' being extended from along the several sections, and in such case the canvas will be suitably extended for overlapping at the joints of the sections.

It will be seen that by the construction of the furnaces outside of and independently of the pile or stack of bricks to be burned they may be made more permanent and substantial, and may be repaired with greater facility than when made in the stack, and, besides, the arrangement enables the furnaces to be charged from the top in the manner before described, whereby much labor may be saved and the advantage of uniformity and regularity of feeding gained.

I am aware that furnaces arranged in the front and rear walls of a brick-kiln have been provided with top openings having tilting automatically-closing valves, and I therefore do not claim such invention.

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

1. The combination, with a brick-kiln, of furnaces arranged in its front and rear walls, and provided with top openings having tilting automatically-closing valves g, and car-tracks arranged along the front portion of said furnaces, substantially as herein shown and described.

2. In a brick-kiln, the combination, with the frame-work, of the vertically-sliding car-tracks j and the inclined tracks s, substantially as herein shown and described.

3. In a brick-kiln, the combination, with the vertically-adjustable tracks j, arranged on opposite sides of the kiln, of the cross-track x, curved rails y, and means for locking the said cross-track and curved rails to the said adjustable tracks, substantially as herein shown and described.

4. In a brick-kiln, the combination, with the roof-frame a' b' c', of the canvas covers d', the rollers e', the cord f', and means for operating the rollers, substantially as herein shown and described.

5. The combination of vertically-adjustable car-tracks j, inclined tracks s, endless chain u, guide-pulleys w, and suitable car-tracks with a brick-kiln, substantially as described.

6. The combination of vertically-adjustable car-tracks j, inclined tracks s, cross-track x y, guide-pulleys w, chain u, and suitable car-tracks, substantially as described.

7. The combination of vertical slotted and notched posts k, adjusting-brackets l, and the adjustable car-tracks j with a brick-kiln, substantially as described.

8. The combination of the straps o and rods p with the adjusting-brackets l, tracks j, and the notched and slotted posts k of a brick-kiln, substantially as described.

9. The combination of the canvas covers d' and rollers e' with the top frame, a' b', of a brick-kiln, substantially as described.

10. The combination of the overlapping ridge-cap h' with the canvas covers d', substantially as described.

THOMAS MILES BANNISTER.

Witnesses:
W. J. COVINGTON,
JOHN R. HUGHES.