

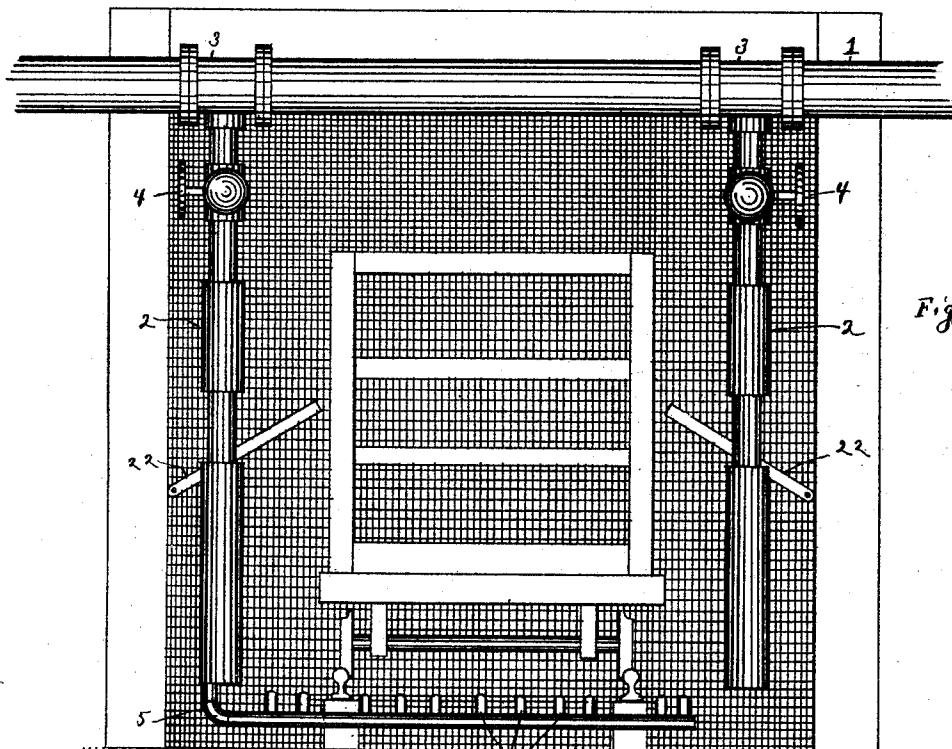
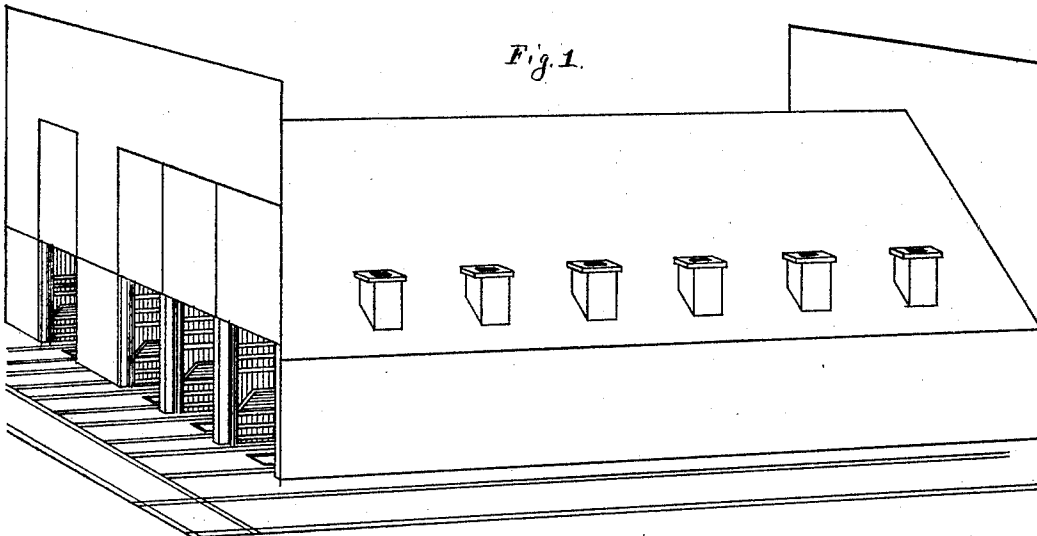
(No Model.)

3 Sheets—Sheet 1.

F. E. McELFRESH.  
BRICK DRIER.

No. 482,690.

Patented Sept. 13, 1892.



WITNESSES:

A. E. Glascock.  
J. E. Pywell.

INVENTOR

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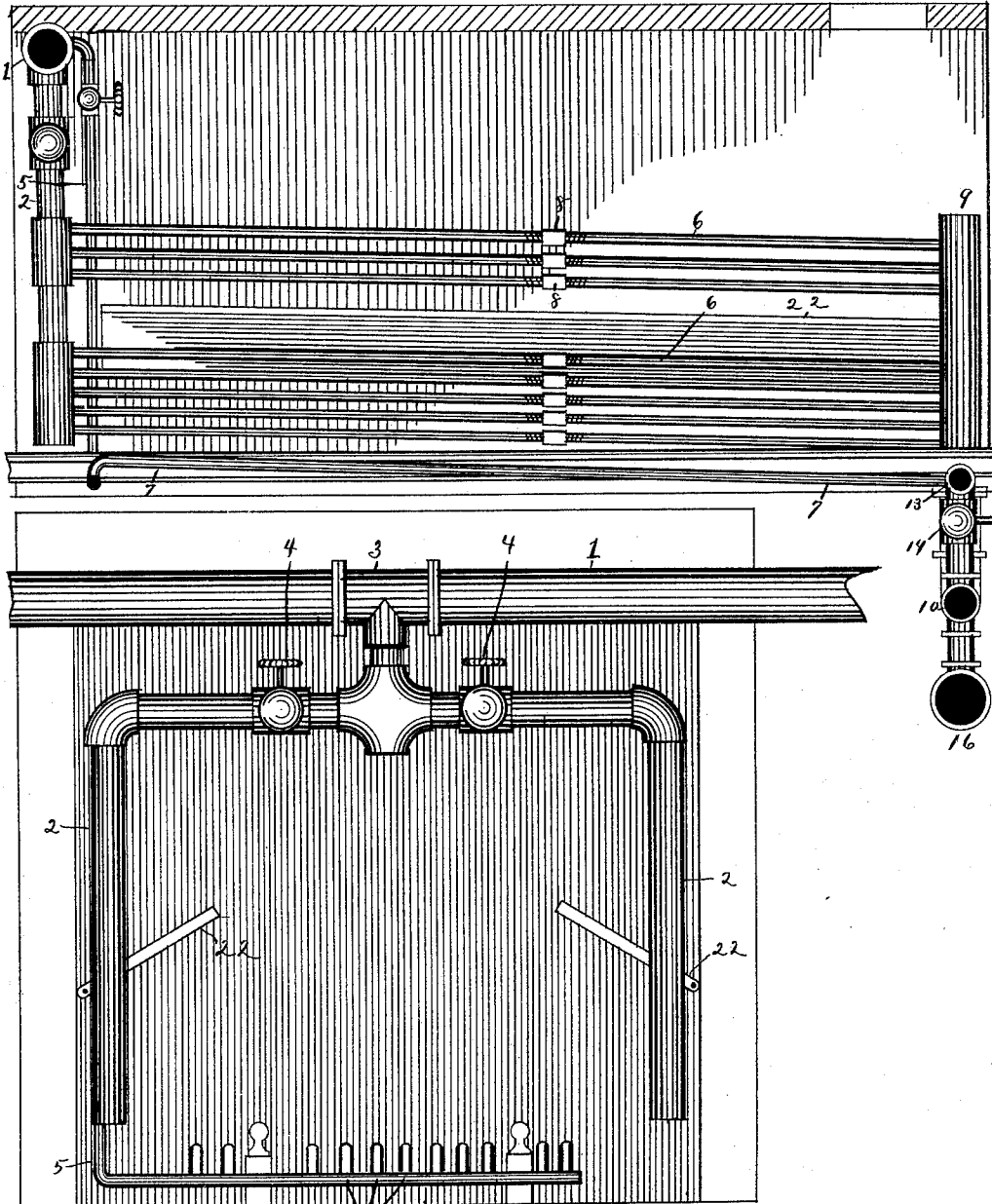
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3 Sheets—Sheet 2.

F. E. McELFRESH.  
BRICK DRIER.

No. 482,690.

Fig. 3. Patented Sept. 13, 1892.



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Fig. 4.

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(No Model.)

3 Sheets—Sheet 3.

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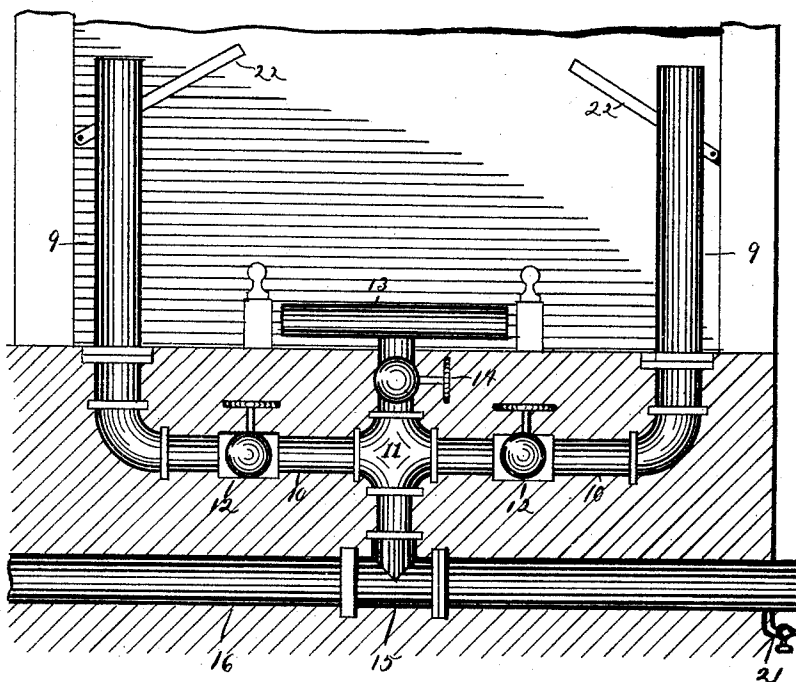


Fig. 5.

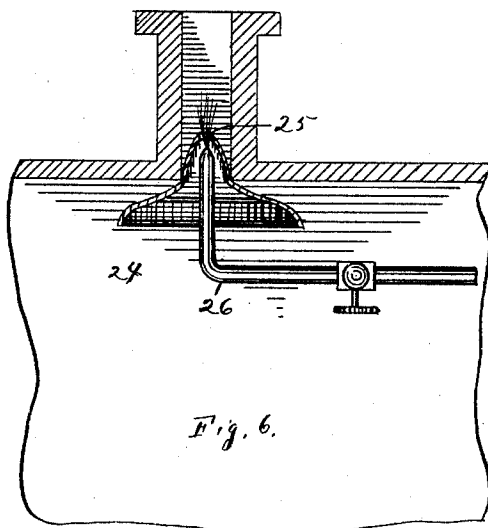


Fig. 6.

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# UNITED STATES PATENT OFFICE.

FRANCIS E. McELFRESH, OF NEW CUMBERLAND, WEST VIRGINIA.

## BRICK-DRIER.

SPECIFICATION forming part of Letters Patent No. 482,690, dated September 13, 1892.

Application filed September 23, 1891. Serial No. 406,573. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS EDWARD McELFRESH, a citizen of the United States, residing at New Cumberland, in the county of Hancock and State of West Virginia, have invented a certain new, useful, and valuable Improvement in Brick-Driers, of which the following is a full, clear, and exact description.

My invention has relation to brick-driers; and it consists in the novel construction and arrangement of its parts.

In the accompanying drawings, Figure 1 is a perspective view of my drier. Fig. 2 is a front end of one of the tunnels, showing the arrangement of the pipe in that part and a car which carries the brick in position. Fig. 3 is a longitudinal sectional view of a tunnel, showing the arrangement of the pipe. Fig. 4 is a modified view of Fig. 2, showing a slight difference in the arrangement of the pipe. Fig. 5 is a view of the rear end of the tunnel, showing the arrangement of the pipe in that part and also the connection of the return-pipe with the boiler. The top of the tunnel in this view is cut away. Fig. 6 is a detail sectional view of a device which I use in the tunnels to relieve the same from the vapor which rises from the brick while drying.

My invention is described as follows:

It consists of a series of tunnels, each provided with the ordinary track and each adapted to be heated by steam in the following manner: The steam is brought from the boiler by the three-inch main 1, which passes along the front ends of the tunnels at or near the top of the same. The steam then passes down into the upright columns 2, which columns may be of less diameter than the main 1. These columns are connected to the main 1 by the T-joint 3, which are provided with flange-unions, whereby an easy and ready separation may be made when it is desired to repair the apparatus. Each column 2 is provided with a globe-valve 4, so that the steam may be shut off or lessened for repairs in the particular column and will not affect the function of the other columns.

Connected to the main 1 is the upright pipe 5, which is also provided with a globe-valve, and its lower end runs under the track of the drier. This pipe connects with several pipes

which run lengthwise of the tunnel, and which will be described hereinafter.

In Fig. 4, which is a modified view of Fig. 2, the steam is taken from the main 1 by a single T-joint 3, which supplies the columns 2 2 in the manner shown. The steam is conveyed from the front part of the tunnel to the rear part by the pipes 6, which connect the upright columns 2 2 in the front part of the tunnel with similar upright columns in the rear part, and the pipes 7, which connect the horizontal end of the pipe 5 with a horizontal header in the rear of the tunnel. All of the pipes which run from the front to the rear of the tunnel consist of two sections of substantially equal length. The adjacent ends of each pair of sections are provided with similarly-cut screw-threads, which are continued back a suitable distance from their ends. A straight coupling is then screwed onto the adjacent ends of each of said pairs of sections, whereby a tight joint is acquired. The said straight coupling is of a length less than one-half the extent of the threaded portion of one section of a pipe 6, whereby it may be screwed entirely from one section onto the adjacent section, so that either of said sections may be removed. In the rear end of the tunnel are the columns 9 9, which are connected with columns 2 2 in the fore part of the tunnel, as described. These columns are connected by suitable flange-unions to the pipes 10, which run at right angles to the columns and connect with the four-way 11. The pipes 10 are provided with the globe-valves 12. The header 13, which is connected with the horizontal end of the pipe 5 in the front part of the tunnel by the pipes 7, is connected with the four-way 11 by a pipe provided with the globe-valve 14. The four-way 11 in turn is connected by a suitable T-joint 15 with the main 16. From the main 16 the condensed steam may be returned to the boiler.

It will be observed that the steam is brought into the tunnel at the top of the front end of the same and that it is conducted out of the same at the lower rear end, and also all the pipes which run lengthwise of the tunnel slant downward toward the rear. Thus it will be seen that all water and condensed steam in the pipes will run down and collect in the

main 16, and said water may be let off from said main by the blow-off cock 21, which is located at the lowest point.

To each side of the tunnel is hinged the iron leaf 22, which swings down between the upper and lower sections of the pipes 6, the upper pipe of the lower section supporting it at an acute angle with the wall. These leaves serve to convey the heat out and pass it through the goods which are placed on the car. This leaf when not in use may be swung up against the wall, and thus kept out of the way.

Each tunnel is provided with a chimney, and in each chimney I place an apparatus, as shown in Fig. 6, to relieve the tunnel of the vapor which rises from the goods while they are drying. This apparatus consists of a bell-shaped disk 24, which is flaring at its bottom and has in its upper part an opening 25. Just below this opening is the end of a pipe 26, which conveys steam from the boiler and discharges it through the opening 25. This causes a suction-draft and will draw off all the vapor caused by the drying brick, and thus the goods are kept from sweating.

The advantages of my drier are as follows: In the simplicity of construction, any laborer

can handle it, and as it is shown it is placed on such principles that should any part or any pipe burst or wear out at any time, even when in operation, a man can take out the inferior pipe or whatever part and substitute a new one in its place without stopping the working of the remaining tunnels; and also in the warm seasons of the year, when it is not desired to have the full capacity of heat, any line of the pipe may be used; and as my drier reuses the condensed steam it is a great saver of fuel.

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

In a brick-drier having upper and lower sections of pipes arranged against its side walls and extending throughout their length, the leaves 22, hinged to the said side walls midway between the two sections of pipes and adapted to throw the rising heat against the goods, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

F. E. McELFRESH.

Witnesses:

ARMOR S. COOPER,  
A. M. SHELTER.