No. 715,314. Patented Dec. 9, 1902.

J. STARKEY.

BRICK DRIER.

(Application filed Apr. 16, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

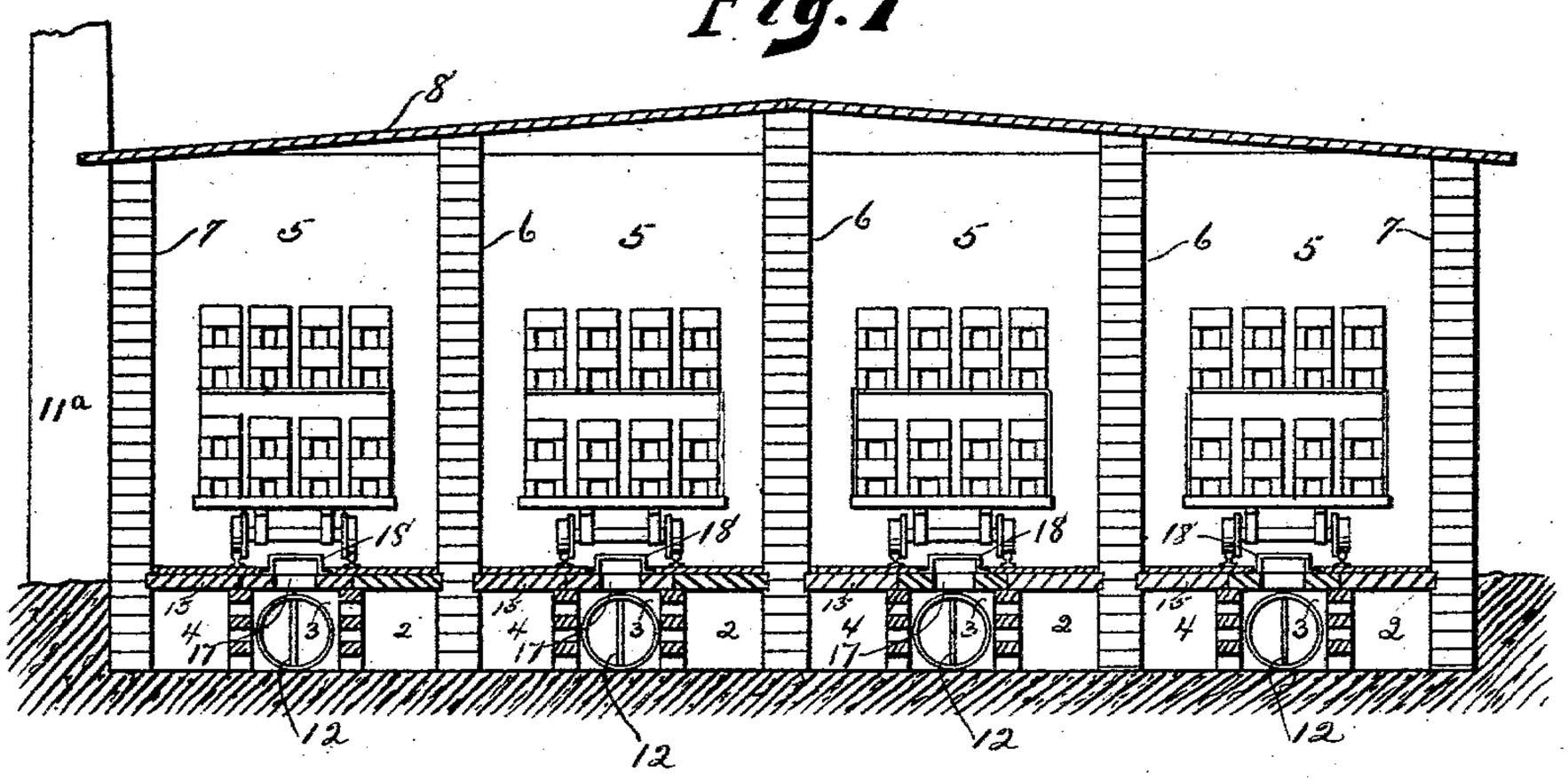


Fig. 2

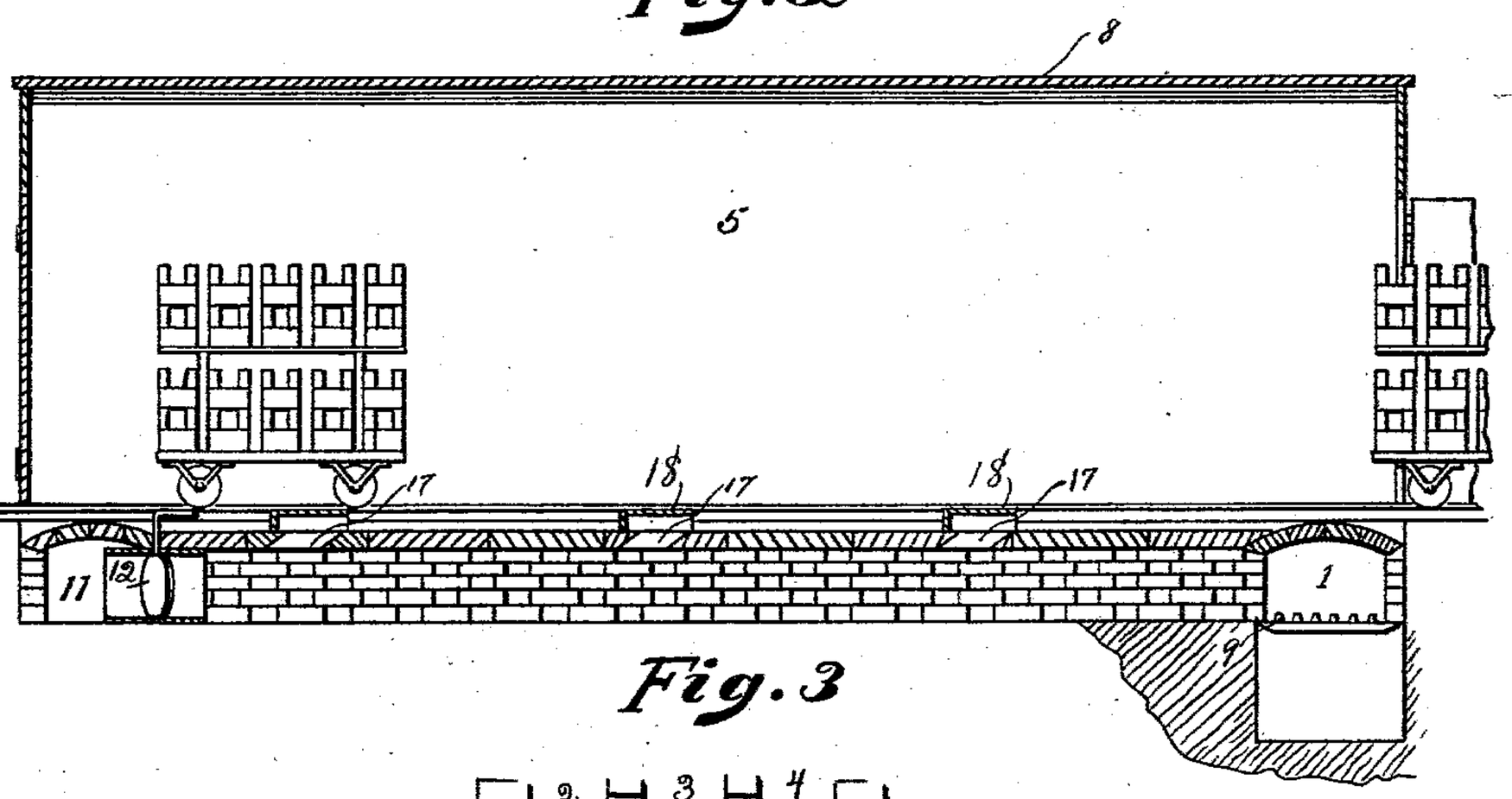
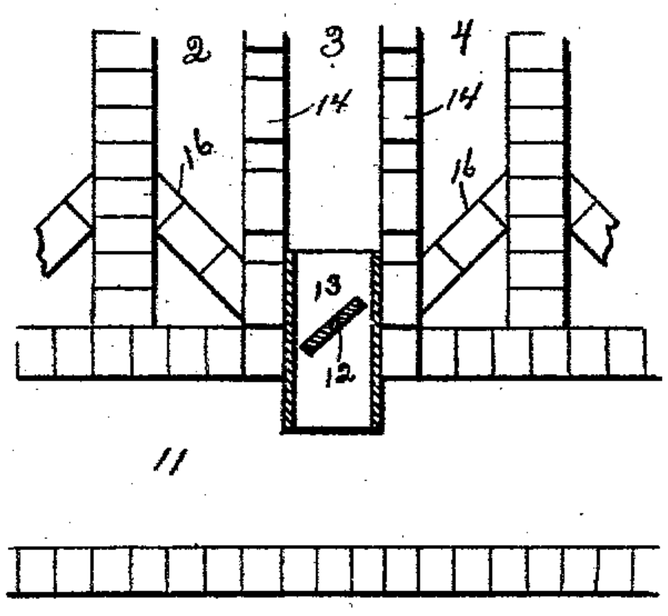


Fig. 3



Witnesses,
W. H. Stough
J. R. Bond

Inventor
John Starkey
By F. W. Bond
Atty.

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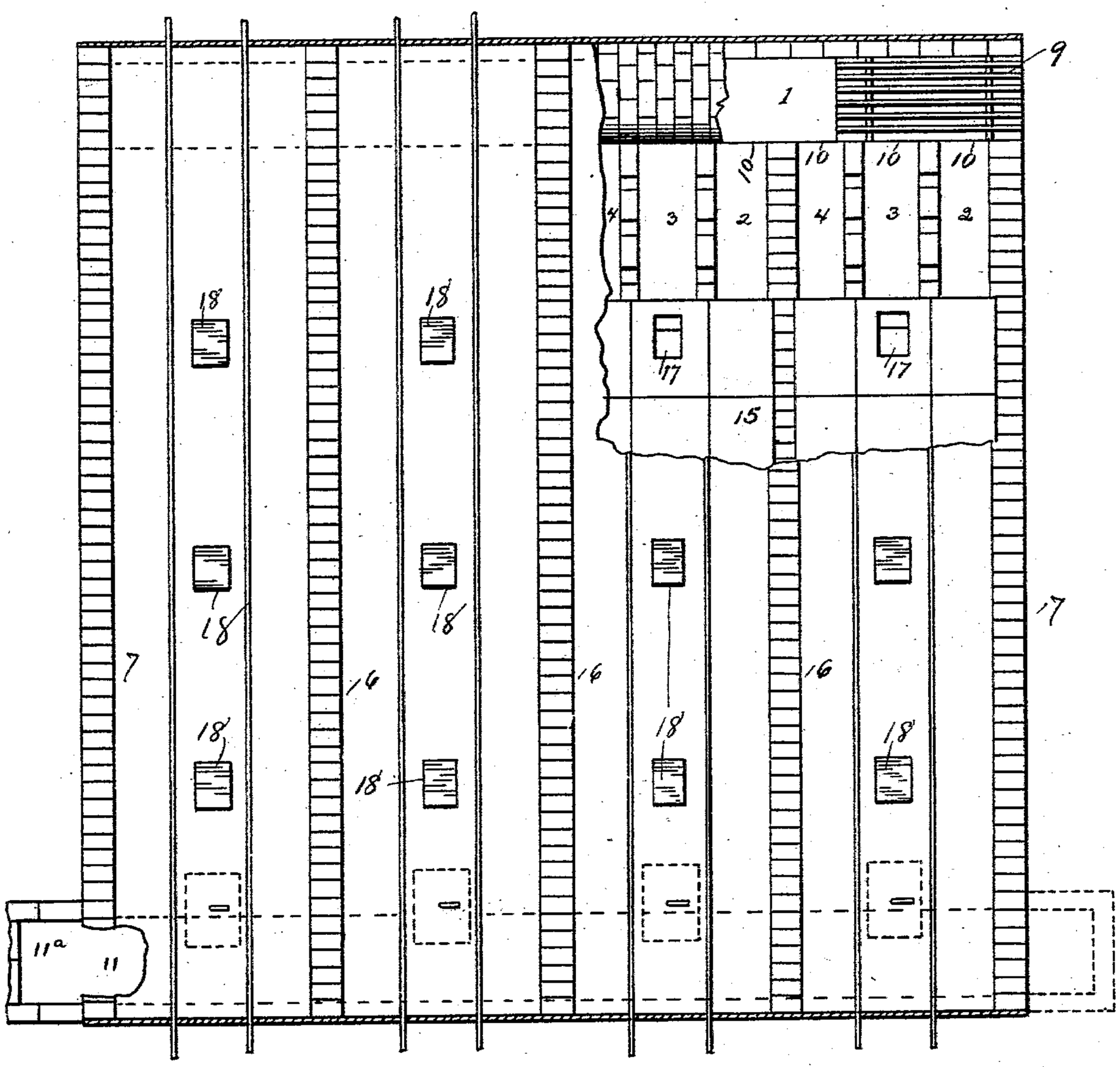
Fig. 4



Witnesses
W. H. Stough
J. R. Bond

Inventor
John Starkey
By F. W. Bond
Att'y.

UNITED STATES PATENT OFFICE.

JOHN STARKEY, OF MINERVA, OHIO.

BRICK-DRIER.

SPECIFICATION forming part of Letters Patent No. 715,314, dated December 9, 1902.

Application filed April 16, 1902. Serial No. 103,235. (No model.)

To all whom it may concern:

Be it known that I, JOHN STARKEY, a citizen of the United States, residing at Minerva, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Brick-Driers; 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, and to the figures of reference marked thereon, in which—

Figure 1 is a transverse section showing a series of tunnels or chambers and their underground flues. Fig. 2 is a longitudinal section of a single tunnel, showing a transverse section of the furnace-flue and the chimney-flue. Fig. 3 is a view showing a portion of the flue under the tunnel or drying-chamber, illustrating the chimney end thereof, also showing a portion of the outer chimney-wall. Fig. 4 is a plan view showing a part of the tunnel-floor complete and showing a portion of the floor-tile and also showing portions of flues and a portion of the furnace-flue.

The present invention has relation to brick-driers; and it consists in the novel construction hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the furnace-flue, which is located at right angles to the flues 2, 3, and 4, said flues 2, 3, and 4 being located directly below the dry-chambers 5, which dry-chambers are formed of any desired width and height, reference being had to the capacity of each drying-chamber. In the drawings I have illustrated four chambers or tunnels located side by side; but it will be understood that this number may be increased or decreased without departing from the nature of my invention, and in use when it is desired to increase the drying capacity additional tunnels may be built and connected to the side or sides of one or ones originally built. The various tunnels are divided by solid partition-walls 6, which partition-walls extend from the foundation proper to the top of the tunnel or tunnels. The outer walls 7 are constructed in substantially the same manner that the partition-walls 6 are and upon which walls and the partition-walls the roof or covering of the tunnels is supported. The roof 8 is formed without air-inlets or openings of any kind, and no direct atmospheric connection is to be employed or used between the drying chambers or tunnels 5 and the atmosphere, except such air as may enter through the material used in the construction of the roof; but the roof is to be practically air-tight, reference of course being had to the tendency of air finding its way through structures not entirely air-tight.

The furnace-flue 1 is provided at one end with the usual grate-bars 9 and upon which fuel is burned for the purpose of creating the desired amount of heat. The opposite end of the furnace-flue 1 is closed and is so formed for the purpose of conducting the heat through the desired flues under the tunnels, or, in other words, turning the heat into said flues.

Along the inner side of the furnace-flue 1 are located a series of openings 10, which openings communicate with the flues 2, 3, and 4 and into which flues the heat from the furnace-flue passes. The flues 2, 3, and 4 extend under the tunnels or drying-chambers 5 their entire length and communicate with the chimney-flue 11, which chimney-flue is located at the opposite end of the tunnel from that of the furnace-flues.

For the purpose of cutting off the draft from the flues 2, 3, and 4 under any given tunnel a series of dampers 12 are provided, which dampers are located in the central opening 13.

It will be understood that the tunnels or drying-chambers 5 must be formed of a width to admit cars to be moved in and out of the tunnels upon suitable track or tracks, and in order to supply proper supports for the floor or floors of the tunnel or tunnels the open partition-walls 14 are provided, which open partition-walls form supports for the floor tile or brick 15, this construction being preferable; but it will be understood that the object and purpose of the present invention can be carried out without any special reference to the construction of the flues under the tunnel or drying-chambers; but provision must be made for the purpose of bridging the flues and at the same time providing a structure of sufficient strength to give the load designed to be

placed upon the floors of the drying-chambers or tunnels.

For the purpose of closing all of the flues 2, 3, and 4 with one damper the chimney-flue ends thereof are so constructed that a single damper will so act and cut off the draft. This may be done by the inclined walls 16. In the floor of the tunnel or tunnels are located any desired number of openings 17, which openings are inclined downward toward the chimney-flue 11, as illustrated in Fig. 4, and are so inclined for the purpose of preventing smoke from backing up into the tunnels or drying-chambers 5. For the purpose of properly covering the openings 17 and at the same time assisting in preventing the backing up of smoke the caps 18 are provided, which caps are open toward the furnace-flue 1 and closed toward the chimney-flue 11.

In use the brick designed to be dried are placed upon a car or cars of the usual construction and the car or cars placed in the tunnel, the end of the tunnel being closed by doors of usual construction. The heat from the furnace is passed through the flues under the tunnel, which has a tendency to withdraw from the tunnels the cold atmosphere contained therein, and the heat produced by the flues will heat the bottom of the tunnel, and thereby dry the brick contained therein. The steam arising from the drying brick will be drawn downward and into the flues below the tunnel through the openings 17, and the draft of the chimney will remove the steam, together with the smoke arising from the consumption of the fuel. It will be understood that when any given damper 12 is closed there will be no draft, and hence the heat will be practically cut off, and hence I am enabled to regulate the heat of any convenient tunnel.

In the drying of brick it is important that no direct atmospheric connection be had between the open atmosphere and the drying-chamber or tunnel. It is an important matter that the center or inside portions of the brick be dried in as rapid a manner as the outer surface, owing to the fact that when a dry shell is formed upon the brick before their centers are dried the steam arising from the dampness contained in the center must escape, and in so doing the dry shells of the brick will be cracked, thereby injuring the brick during the drying process.

In the drawings I have illustrated in dotted lines the chimney 11^a, located upon the opposite side from that shown in full lines. This arrangement being desirable in some instances and especially when it is desired to add additional tunnels to the ones already constructed.

It will be understood that so far as the present invention is concerned it makes no difference as to the location of the chimney, except that it must be so located that a direct draft can be maintained between the chimney-flue and the chimney proper.

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

1. In a brick-drier, the combination of a furnace-flue, a tunnel having tight-closed tops and sides, a flue located below the tunnel communicating with the furnace-flue, a chimney-flue located at the opposite end of the tunnel from that of the furnace-flue, and a damper located between the chimney-flue and the flue below the drying chamber or tunnel, and openings in the floor of the tunnel and communicating with the flue thereunder, substantially as and for the purpose specified.

2. In a brick-drier, the combination of a series of tunnels, a furnace-flue located at right angles to the tunnels, flues located below the tunnels and communicating with a chimney-flue located at right angles to the tunnels, and the tunnels provided with closed sides and tops, openings located in the floors of the tunnel and inclined downward toward the chimney-flue, and dampers located in the chimney-flue ends of the flues below the tunnels, substantially as and for the purpose specified.

3. In a brick-drier of the class described, a tunnel having a tight-closed top, a divided flue located below the tunnel, a furnace-flue located at right angles to the tunnel and to the flues thereunder, a chimney-flue and dampers adapted to cut off the communication of heat between the chimney-flue and the flue under the tunnel, and openings leading from the tunnel to the flue below, and caps located over the openings, substantially as and for the purpose specified.

4. In a brick-drier of the class described, a tunnel having a tight-closed top, a divided flue located below the tunnel, a heating-flue located at right angles to the tunnel and to the flue thereunder, a chimney-flue located at right angles to the flues under the tunnel and dampers located between the chimney-flue and the tunnel-flues, openings leading from the tunnel to the flue below the tunnel and caps located over the openings, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN STARKEY.

Witnesses:
JOHN BRIDENSTEIN,
FRANK MILLER.