

No. 842,043.

PATENTED JAN. 22, 1907.

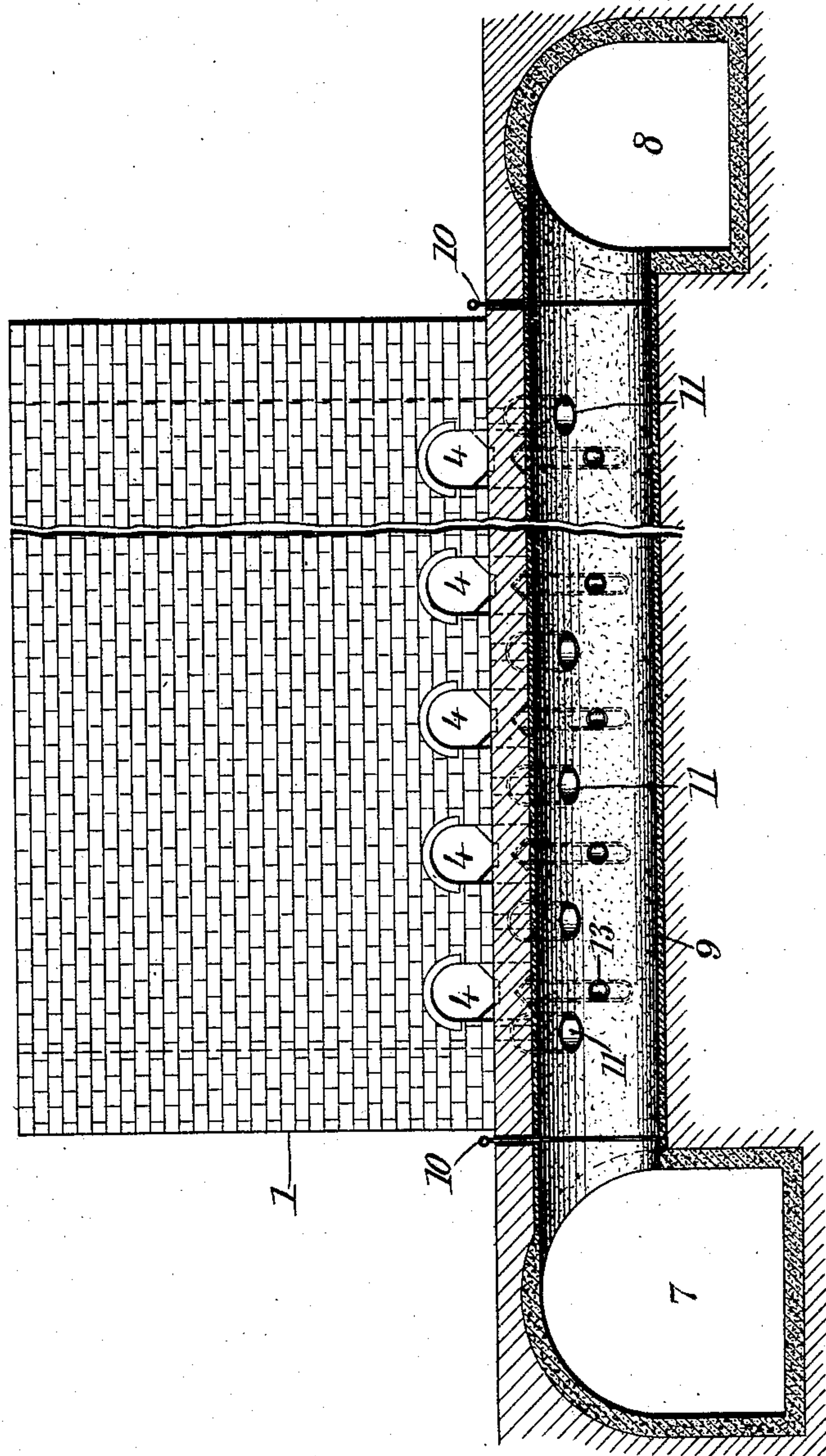
C. K. WELLER.

BRICK KILN.

APPLICATION FILED JULY 24, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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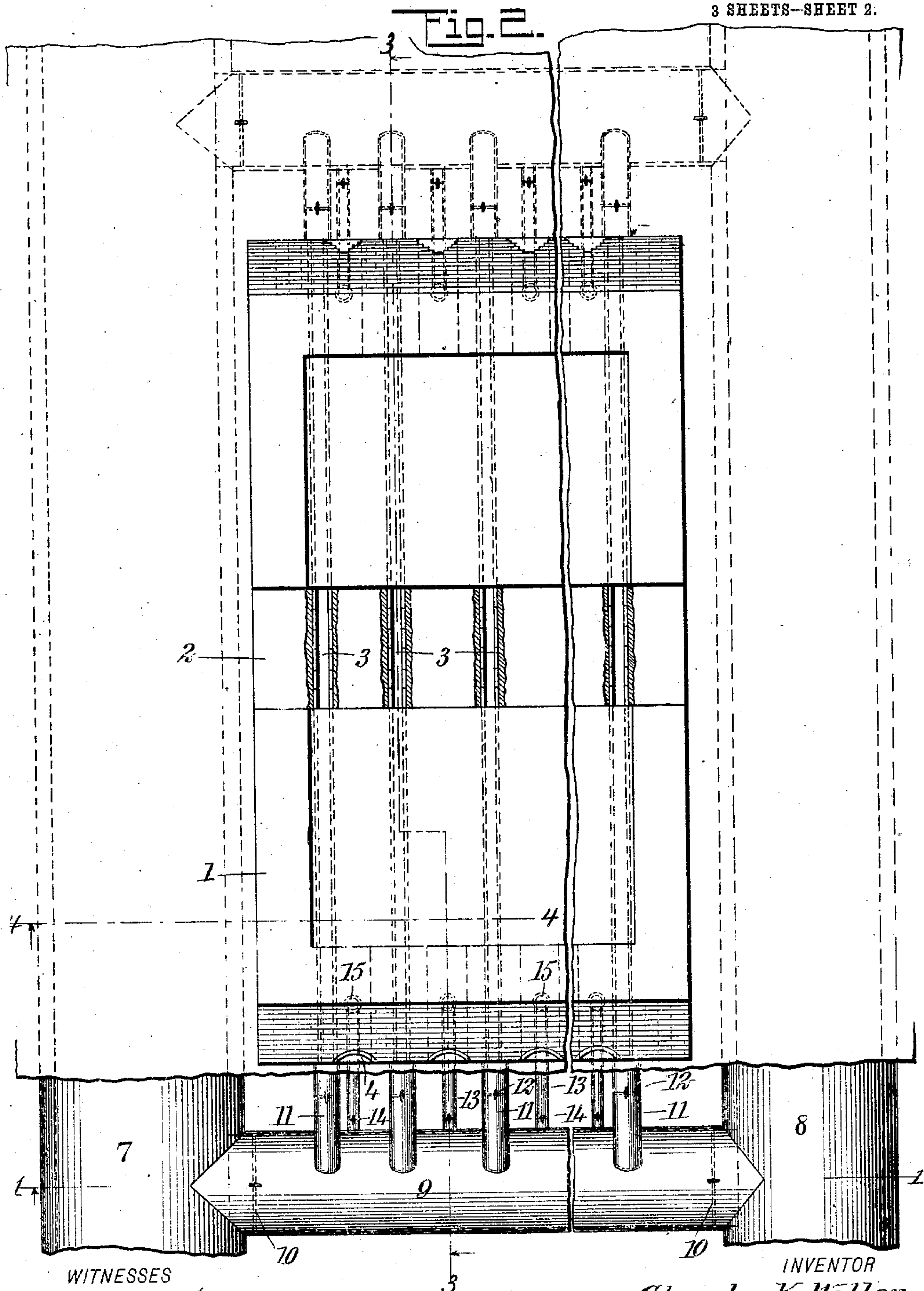
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WITNESSES

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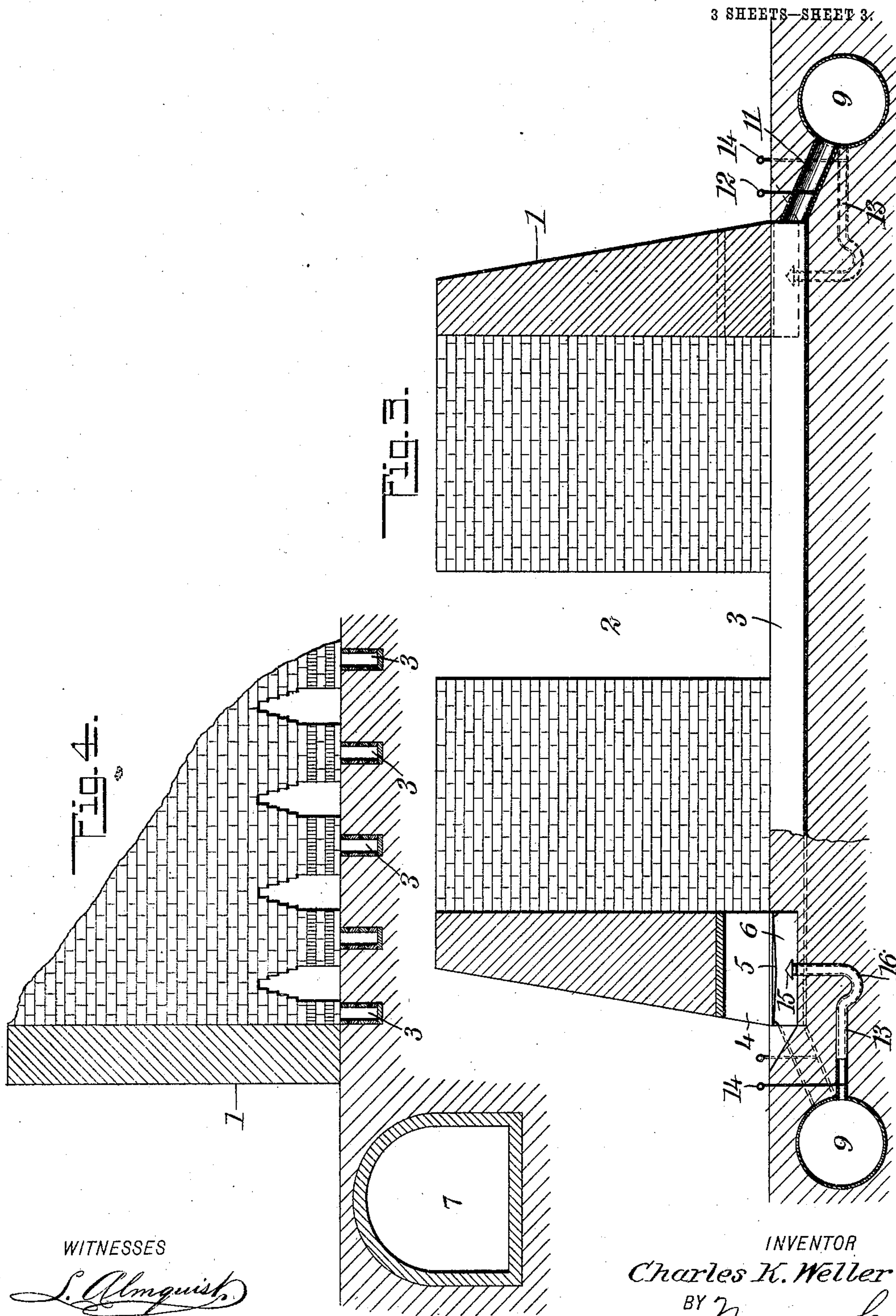
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

CHARLES KNIGHT WELLER, OF ATLANTA, GEORGIA.

BRICK-KILN.

No. 842,043.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed July 24, 1906. Serial No. 327,538.

To all whom it may concern:

Be it known that I, CHARLES KNIGHT WELLER, a citizen of the United States, and a resident of Atlanta, in the county of Fulton and State of Georgia, have invented a new and Improved Brick-Kiln, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in kilns for drying and burning brick, and has for its object to provide a structure wherein it is not necessary to cover the entire length of the kiln-floor, as in other structures heretofore used, before turning the drying-air into the duct; but as fast as a bench or section of the brick is set the air may be turned into it and the drying commenced, thus facilitating the working of the kiln.

Another improvement consists in locating the air-ducts outside of the kiln, whereby all danger of their being filled with refuse or the arches giving in or crumbling from weight or excessive heat is eliminated. The fire-boxes are so arranged that the entire grate-surface will necessarily be covered with fuel and the maximum heating effect obtained from a minimum amount of grate-surface.

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

Figure 1 is a side elevation of the brick drying and burning inclosure, the supply-duct being shown in section, said section being taken on the line 1 1 of Fig. 2. Fig. 2 is a plan view of the structure, a portion thereof being broken away. Fig. 3 is a longitudinal section on the line 3 3 of Fig. 2, and Fig. 4 is a transverse section on the line 4 4 of Fig. 2.

The brick drying and burning kiln herein-after described comprises a rectangular inclosure 1, formed of refuse brick, clay, or the like and having entrance-openings 2 on opposite sides thereof, whereby the brick to be dried and burned may be conveniently placed in position. The floor of the kiln is provided with a plurality of troughs or channels 3, preferably lined with terra-cotta and having open tops, the width of said troughs being preferably less than the length of a brick, whereby the trough may be spanned by the bricks when the latter are placed in position. The opposite sides of the inclosure are provided with small fireplaces or furnaces 4, extending therethrough and pro-

vided with grate-bars 5 and ash-pits 6 below the same.

Extending along the opposite ends of the inclosure and outside thereof there are provided the main hot-air duct 7 and the main waste-heat duct 8, the two being connected at opposite sides of the inclosure by intermediate ducts 9. For connecting the intermediate ducts with the hot-air duct or the waste-heat duct and controlling the supply to the intermediate duct I provide dampers 10 at each end of said intermediate duct. Extending from each intermediate duct 9 at an upwardly-inclined angle there are provided a plurality of connecting pipes or ducts 11, which permit of the delivery of air or hot gases to either or both ends of each of the troughs 3, and each of said connecting pipes or ducts 11 is provided with a suitable damper 12 for controlling the flow therethrough. Each of the intermediate ducts 9 is also provided with a plurality of connecting-ducts 13, one leading to each of the furnaces or fireplaces 4, and each of these ducts 13 has its damper 14 and has the outlet end thereof delivering below the grate-bars of the fireplace or furnace and capped over by a hood 15 to prevent the admission of ashes and other refuse matter to said pipe. For further preventing the passage of such refuse matter from the fireplace back into the intermediate duct I provide each connecting-pipe 13 with a suitable trap 16 intermediate its ends.

In the operation of my improved device the bricks are inserted in the usual manner and arranged to cover the open-topped troughs and form arches therebetween, said arches communicating with the furnaces or fireplaces in the end walls of the inclosure. As soon as a single one of the open-topped-troughs is covered the damper in the connecting-pipe 11, leading to said trough, may be opened and the drying operation begun immediately before the entire floor of the inclosure is covered, whereby a great saving of time is accomplished, as by the time the entire floor is covered to the proper height the bricks which were inserted the first may be dry enough to permit of a second layer being placed thereon, whereby the operation of filling may be carried on continuously until the inclosure is filled to the height desired for burning. As soon as each trough is covered the hot air is admitted thereto and the

drying operation begun. When the bricks have been thoroughly dried in this manner, fires are started on the grate-bars 5 and a forced draft therefor being produced through the pipe 13. The hot gases from the fires pass lengthwise of the inclosure through the arched passage-way shown in Fig. 4 and rise through the interstices between the bricks and thoroughly accomplish the desired burning. In the drying operation the first course or layer of bricks tempers the air for the second, and the second for the third, and so on, so that when the last course is set the bottom of the kiln and the lower courses are as hot as the hot air can make them and the kiln is in good condition to start firing.

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

1. A brick-kiln having suitable walls, a plurality of furnaces in two of the oppositely-disposed walls, a grate in each of said furnaces, an air-supply pipe, branch pipes connected to said supply-pipe and delivering to each of the furnaces beneath the grate thereof, a damper in each of said pipes, a trap in each of said pipes, and a hood over the delivery end of each pipe and serving to prevent the entrance of foreign matter thereto.
2. A brick-kiln having a floor, suitable walls, one of said walls having a plurality of

furnaces located therein and the floor having a plurality of open-ended troughs alternately arranged in respect to said furnaces, an air-supply pipe located beneath the floor and at one side thereof, branch pipes connecting said supply-pipe with each of said troughs, branch pipes connecting said supply-pipe with each of said furnaces, and dampers in each of said branch pipes, whereby air may be delivered to the furnaces or to the troughs.

3. A brick-kiln having a floor provided with a plurality of open-ended troughs, suitable walls having furnaces located therein and alternately disposed in respect to said open-ended troughs, a grate in each of said furnaces, an air-supply pipe beneath said floor and to one side thereof, branch pipes connecting said supply-pipe with each of said troughs, branch pipes connecting said supply-pipe with each of said furnaces beneath the grate thereof, a trap and a hood in each of the last-mentioned branch pipes, and a damper in all of said branch pipes.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES KNIGHT WELLER.

Witnesses:

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W. A. HANCOCK.