

(No Model.)

2 Sheets—Sheet 1.

W. WHITESELL.

APPARATUS FOR BURNING TILE AND BRICK.

No. 510,458.

Patented Dec. 12, 1893.

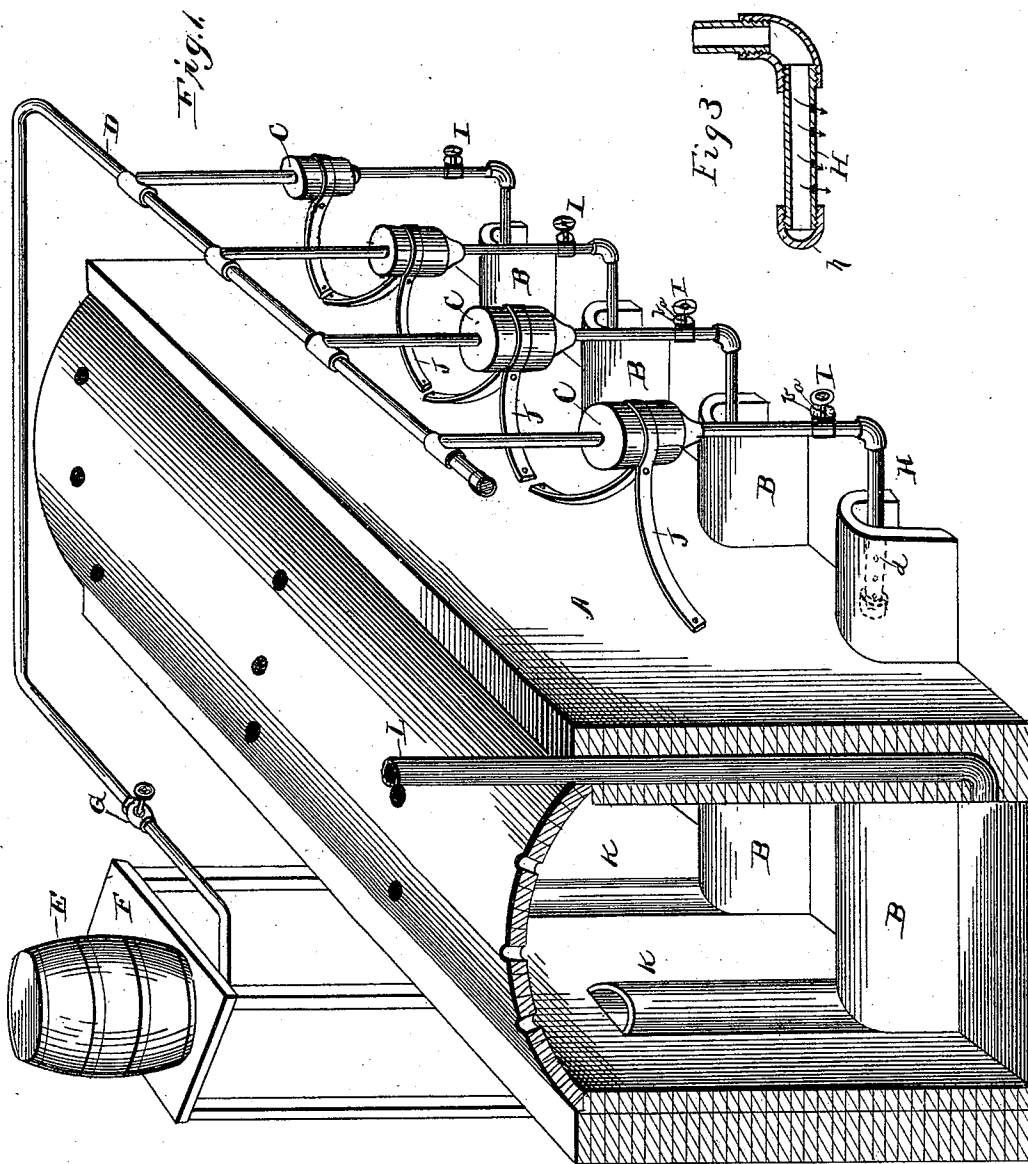


Fig 3

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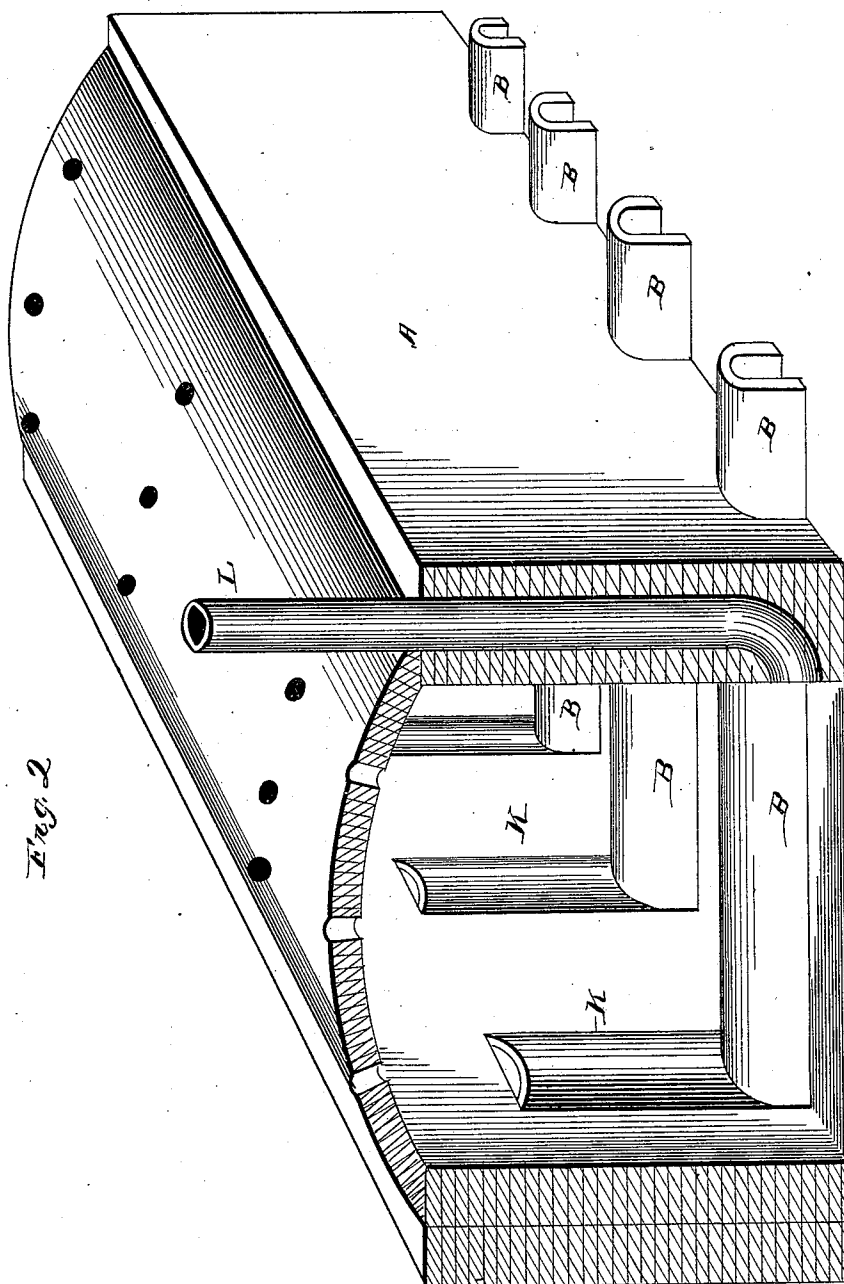
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UNITED STATES PATENT OFFICE.

WILLIAM WHITESELL, OF FORT RECOVERY, OHIO.

APPARATUS FOR BURNING TILES AND BRICK.

SPECIFICATION forming part of Letters Patent No. 510,458, dated December 12, 1893.

Application filed October 12, 1892. Serial No. 448,651. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WHITESELL, a citizen of the United States, residing at Fort Recovery, in the county of Mercer and State of Ohio, have invented certain new and useful Improvements in Apparatus for Use in the Burning of Tile and Brick, of which the following is so full, clear, and exact a description as will enable those skilled in the art to which the invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a kiln provided with my improved apparatus. Fig. 2 is a perspective of a kiln, showing the arrangement of the arches and of their flues in the structure. Fig. 3 is a detail view of the outlet pipe and its cap.

The object of my invention is to provide an improved apparatus by the use of which the greatest number of perfect tile and brick may be produced in the shortest possible time, and with the least expense of fuel and of physical and mechanical force.

Another object of my invention is to provide an apparatus by the use of which a uniform degree of heat may be maintained throughout the entire time consumed in burning.

Another object of my invention is to provide an apparatus by the use of which the labor incident to the burning of a kiln of tile or brick, which is necessitated by the constant renewal of wood fires, may be entirely dispensed with.

Another object of my invention is to produce an apparatus by the use of which the cost of fuel will be reduced to a minimum.

Ordinarily the burning of a kiln requires from ten to fifteen cords of wood, more or less, at a cost of say two dollars (\$2) per cord. By the use of my apparatus, substituting crude petroleum or any suitable hydro-carbon for the wood as a fuel, a kiln may be burned at an expense of from three to six barrels, at an average cost of in the neighborhood of fifty cents (\$.50). Thus it will be seen that by using my apparatus, we save between twenty and thirty dollars at each burning.

The oil is supported on a platform or any suitable elevation, a little distance from the

kiln, and is provided with an outlet and distributing pipe, and is conducted along to the arching through intermediate reservoirs and pipes as will be hereinafter fully described. 55

In the accompanying drawings, A designates the main outer wall of the kiln. Below and in front of the wall are located arches or fire places, B, B. Above and in front of these arches is supported a series of reservoirs C, C, which are fed from a main conduit, D, which conducts the oil from the tank E supported on any suitable elevation or platform, F. The main conduit D is provided with a gage or globe valve G, and between each reservoir C and the outlet pipe H is located a second gage or globe valve, I, I. These valves I, I, may be provided with an indicator *a*, and a graduated scale or plate *b*, to indicate the amount of oil which is flowing from the reservoir C to the outlet pipe H. I only mention this as an auxiliary and it may or may not be used as is found necessary or desirable. 60 65 70

The perforated outlet pipe H extends into the arch or fire place along the top of it a distance of from two to three feet, as the case may require, depending in each instance upon the length of the arch and upon the amount of heat required. 75

The outlet pipe H is provided with a series of perforations *d*, *d*, which in practice are placed in the arch in the bottom of the pipe; that is to say, they are so arranged within the arch that the perforations *d*, *d*, allow the liquid hydro-carbon to drop straight down into the arch from the pipe instead of running over it as it would if at the top or side. I do not wish to be understood as limiting myself to placing them in this position and reserve the right to make them at the top and the bottom and the sides, or any one of these locations, should it prove desirable or expedient. 80 85 90

In practice the reservoirs C, C, are made to contain say from three to five gallons, as may be found necessary, to correspond with the size of the kiln and the amount of heat required. The reservoirs and main conduit D, are held in place above the arches by brackets J, J. I have shown these brackets as consisting of iron straps which may be secured to the reservoir in any suitable manner, one 95 100

of which would be to pass the strap around the reservoir, crossing at the rear and securing the ends to the side walls of the kiln.

In Fig. 2 of the drawings, I show the arches 5 extending across the lower part of the kiln, conducting the heat across the lower part of the kiln and up through the flue K, thence down through the tile or brick, and up out of the exit flue L. It will be readily understood that the style of arch used has nothing 10 to do with the invention in this case, and I have simply shown one means of putting the apparatus into practice.

By slight variations of structure and arrangements, the apparatus is readily adapted 15 to be applied to any form of kiln.

In practice the gage G between the tank and the reservoirs C, C, in the main conduit D, is thrown wide open, when it is desired to 20 start the fires, and the gages *i, i*, are depended upon to regulate the flow of the oil through the outlet pipes, H. By this means the heat can be regulated to accommodate the draft, size of kiln, and conditions of atmosphere and 25 hydro-carbon.

To prevent the possibility of any foreign matter getting into the liquid hydro-carbon in the conduit D, and through the pipes and valves generally, I place a screen M, over the 30 opening from the tank into the conduit D. This serves as a strainer or filter and keeps any foreign matter out of the pipes. The exact location of this screen is not material, as it may be placed anywhere between the tank 35 E and the reservoirs C, C, but I designate the bottom of the tank as the most convenient point. In practice it has been found that the liquid hydro-carbon will sometimes thicken in cold weather and the result has been that 40 once in a while, there will be a stoppage in the small valves near the outlet pipe. To obviate this, I provide the intermediate reservoirs C, C, which hold a quantity of the liquid hydro-carbon, and which by reason of 45 their close proximity to the walls of the kiln are always kept sufficiently warm to secure a uniform flow of the liquid hydro-carbon through the outlet pipes.

To guard against any irregularity in the flow of the oil on first starting the fires, the 50 barrel containing the oil may be kept in a comparatively warm place, just before putting it up for use, or it may be subjected to heat in any suitable manner.

The outlet pipe H is provided with a solid 55 cap *h*.

From the foregoing it will be readily understood that a constant and regular flow of the hydro-carbon will be always maintained and after the fires are once started, the work 60 of burning the kiln is practically finished.

Having described the objects, uses, and advantages of my device and having set forth in detail the construction of the same, what I desire to secure by Letters Patent of the United 65 States, and what I therefore claim, is—

1. In a device of the character described, a kiln provided with an arch, imperforate at top; in combination with a reservoir or tank and a pipe leading from the same to an intermediate reservoir, and an outlet pipe communicating with the intermediate reservoir, 70 said outlet pipe located within said arch and provided with a closed outer end and a series of openings along the bottom, substantially 75 as and for the purpose set forth.

2. In a device of the character described, a kiln provided with a series of arches, imperforate at the top; in combination with a reservoir or tank and a pipe leading from the 80 same, a series of intermediate reservoirs having outlet pipes communicating with them and leading from them down and extending horizontally into the arches, said outlet pipes closed at the ends and perforated at the bottom, and brackets J for holding the intermediate reservoirs into position, all constructed 85 and combined to operate substantially as specified.

In testimony whereof I affix my signature in 90 the presence of two witnesses.

WILLIAM WHITESELL.

Witnesses:

D. E. SQUIRES,
CHAS. E. BARBER.