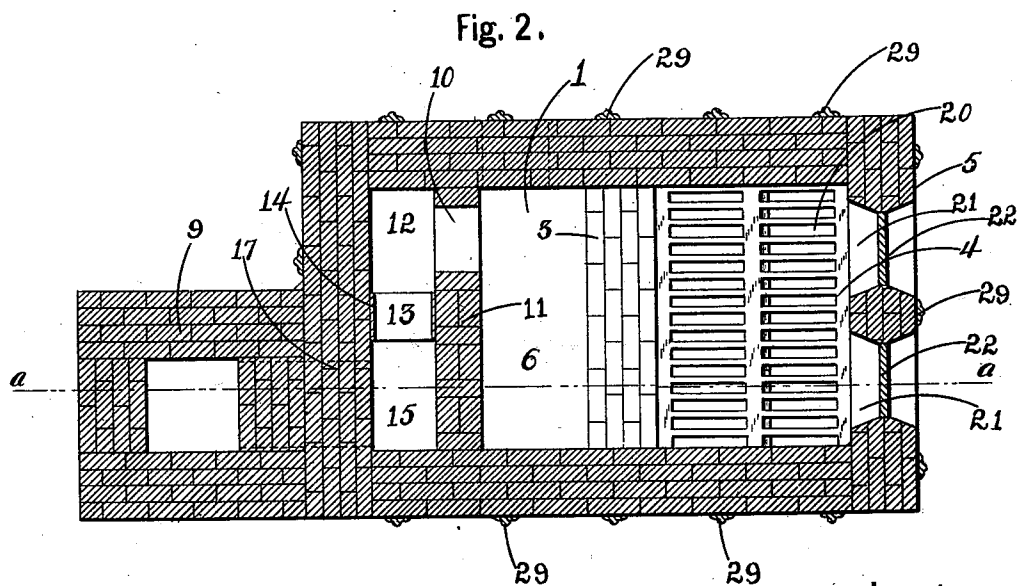
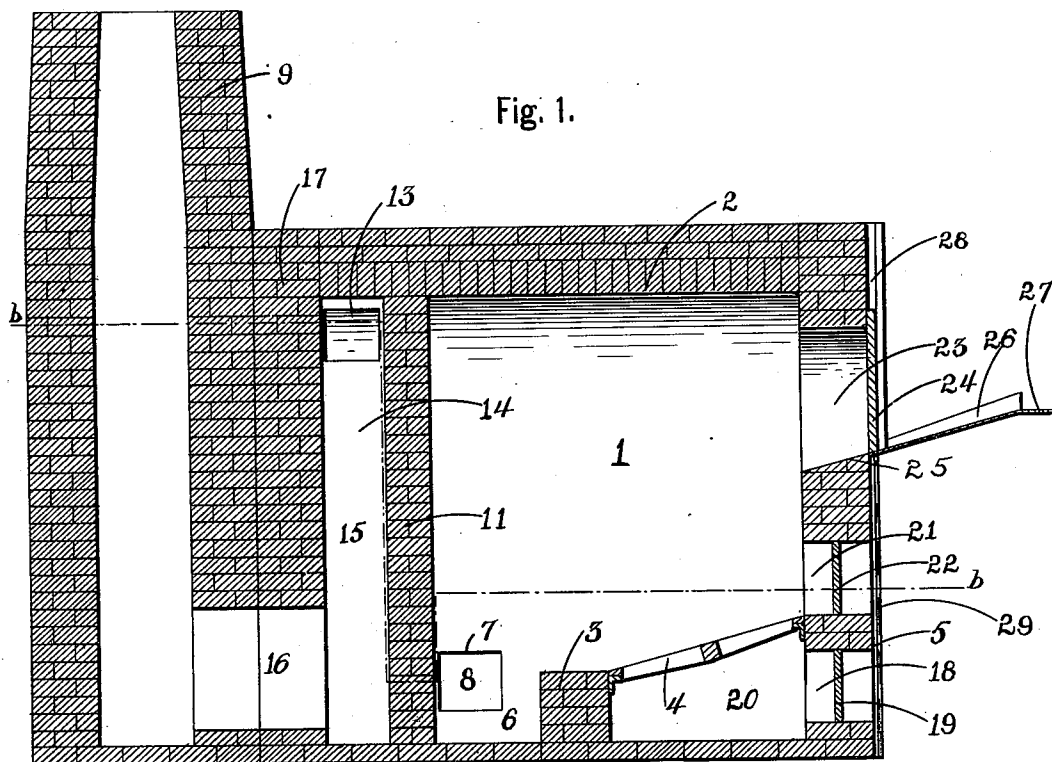


J. HALL.
RUBBISH CREMATORY.
(Application filed Nov. 23, 1899.)

(No Model.)



Witnesses.

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JAMES HALL, OF BUFFALO, NEW YORK.

RUBBISH-CREMATORY.

SPECIFICATION forming part of Letters Patent No. 655,975, dated August 14, 1900.

Application filed November 23, 1899. Serial No. 738,025. (No model.)

To all whom it may concern:

Be it known that I, JAMES HALL, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Rubbish-Crematories, of which the following is a specification.

My invention relates to an improved furnace for consuming or cremating the combustible portions of worthless rubbish collected in cities, &c., having a combustion-chamber into which the rubbish is dumped and a series of flues which form a tortuous or winding passage for the products of combustion from the combustion-chamber to the smoke-stack, thus enabling more thorough and complete combustion and the burning of the rubbish without the aid of other or additional fuel.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The invention is susceptible to various changes in the form, proportion, and minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 represents a vertical section through my approved furnace on or about line *a a*, Fig. 2. Fig. 2 is a section on or about line *b b*, Fig. 1.

In referring to the drawings in detail like numerals designate like parts.

The furnace is preferably built of fire-brick and has a combustion-chamber 1, provided with an arch-shaped dome or top 2. The bridge-wall 3 is arranged within the combustion-chamber, and a grate 4 extends from the front wall 5 of the combustion-chamber to the bridge-wall 3 and slants diagonally downward and rearward from the wall 5 to the bridge-wall 3, substantially as shown in Fig. 1, so that the unconsumed portions of the rubbish that are too large to pass between the grate-bars can be easily pushed or poked into the lower rear portion or pit 6 of the combustion-chamber and removed therefrom through the clean-out opening 7. This clean-out opening 7 is normally closed by a door 8.

The products of combustion in passing from the combustion-chamber to the smoke-stack 9 follow a tortuous course, passing first through the lower opening 10 in the rear wall 11 of the combustion-chamber into the vertical flue 12, upwardly through the flue 12, and through the upper opening 13 in the vertical wall 14, dividing the two flues into the second vertical flue 15, from thence downwardly through said flue 15, then outwardly through an opening 16 in the rear wall 17 of the furnace and the front of the smoke-stacks into the smoke-stack, and finally through said smoke-stack into the open air. By this means more thorough and perfect combustion is afforded, and the burning particles are retarded or prevented from reaching and passing out of the stack.

The front wall 5 is provided with lower openings 18, having doors 19, through which the ashes are removed from the ash-pit 20 beneath the grate; intermediate openings 21, having doors 22, which are on a level with the front of the grate and serve to permit the introduction of a poker or similar instrument to push the large portions of unconsumed rubbish into the lower rear portion or pit 6, and an upper opening 23, having a door 24, through which the rubbish is introduced into the combustion-chamber. The lower edge 25 of the wall surrounding the upper opening 23 inclines diagonally from the outer surface of the wall and forms an inclined chute for the material or rubbish. A hopper 26 is arranged with its rear end level with the outer lower edge of the opening 23 and its forward end connected to and level with the end of a sorting table or platform 27. The door 24 has a vertical up or down movement in its support-slideway 28, so that it will not interfere with the inclination of the hopper.

The exterior of the furnace is strengthened and held together by a metallic stay-rod 29. (See Fig. 2.)

In disposing of rubbish by means of this furnace the rubbish is dumped upon the table or platform 27, a portion of which is shown in Fig. 1, the paper and other comparatively-valuable substances and material are sorted and picked out, and the worthless rubbish is shoveled or otherwise forced down the hopper 26, through the opening 23, upon the grate

4, and is then set on fire in any well-known way. The products of combustion follow a circuitous route in passing from the combustion-chamber to the stack. The ashes are removed through the opening 18, and the unconsumed portions are pushed off the grate into the rear portion or pit 6 and removed therefrom through the opening 7, all of which has hitherto been described.

10 By the aid of this improved furnace worthless rubbish of a combustible nature is quickly and economically consumed, the rubbish acting itself as fuel, and thus saving the expense of coal or other fuel.

15 The arched dome 2 forms a concaved surface which deflects the moving currents of the products of combustion at various angles, and thus materially aids in effecting as perfect combustion as possible, the products of combustion first arising as they are thrown off by the fire, then deflecting from the arched dome, and passing downward through the lower opening 10 into the flues, as before described.

25 Some of the great advantages of this furnace are that vertical flues are formed in the rear of the combustion-chamber by means of a supplementary transverse vertical wall, the flue-space behind said wall being divided into two flues by a longitudinal vertical wall, and that the smoke-stack is built closely against the rear of the furnace, the lower portion practically forming a part of the furnace-body itself and acting as a third flue, and also materially strengthening, simplifying, and cheapening the construction.

I claim as my invention—

An improved furnace for burning combustible rubbish without the aid of additional fuel and having a combustion-chamber, a smoke-stack having its lower portion closely against the rear of the furnace proper, a transverse vertical wall in the furnace forming the rear wall of the combustion-chamber and the front wall of a vertical flue-space, and a longitudinal vertical wall dividing the flue-space into two separate vertical flues; the transverse vertical wall having a horizontal longitudinally-extending lower opening in its lower part leading into one of the flues; the longitudinal vertical wall having a horizontal transversely-extending top opening connecting the first-mentioned flue with the second flue, and the smoke-stack and rear wall of the furnace having common horizontally-extending lower openings connecting the second flue with the smoke-stack, a bridge-wall within the combustion-chamber, a grate extending diagonally downward from the first wall of the furnace to the bridge-wall; the front wall of the furnace having lower openings for the removal of ashes, intermediate openings on a level with the front of the grate, and an upper opening having its lower edge inclining diagonally inward and downward and a diagonally-inclined hopper having its rear end level with the outer lower edge of the upper opening, as set forth.

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Witnesses:

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