

No. 630,207.

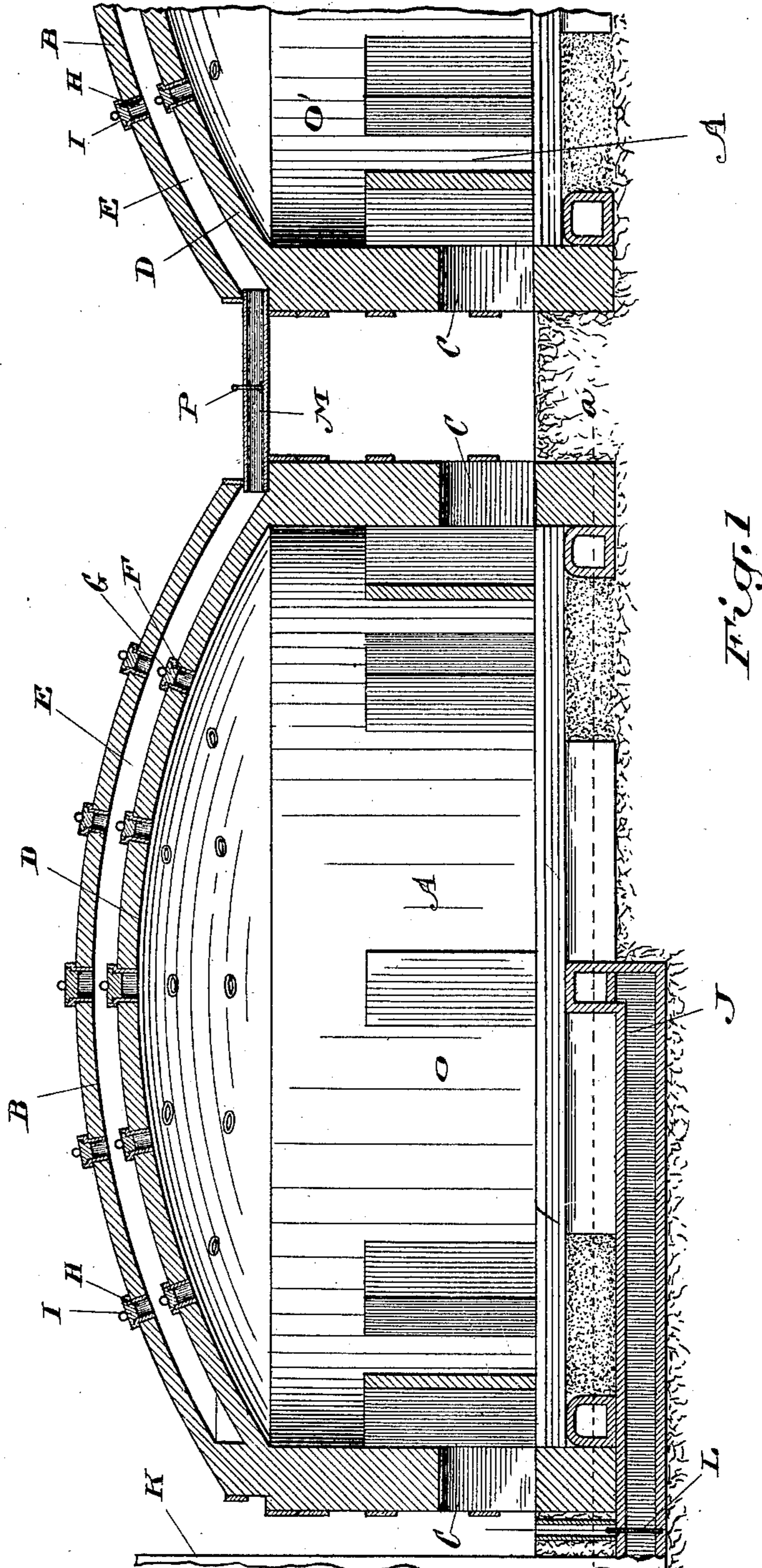
Patented Aug. 1, 1899.

J. T. FINCH.  
KILN FOR BURNING SEWER PIPE.

(Application filed Apr. 22, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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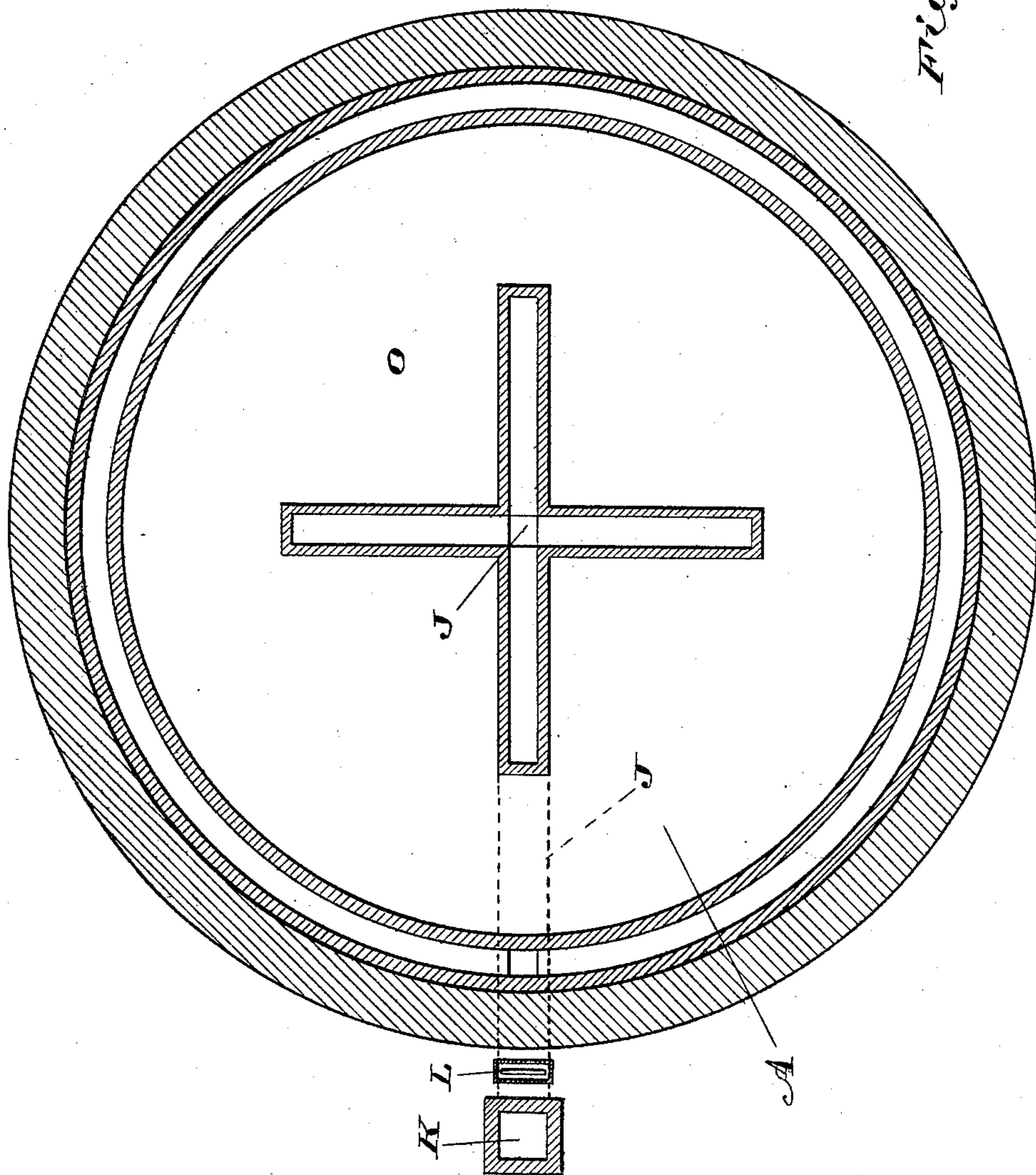
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# UNITED STATES PATENT OFFICE.

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## KILN FOR BURNING SEWER-PIPE.

SPECIFICATION forming part of Letters Patent No. 630,207, dated August 1, 1899.

Application filed April 22, 1899. Serial No. 714,078. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES THOMAS FINCH, of Mimico, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Kilns for Burning Sewer-Pipe; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in kilns for burning sewer-pipes, and it relates more particularly to the peculiar construction of the kiln and the manner in which the products of combustion can be conducted from one kiln to another and the passage of the products of combustion controlled from one kiln to the other. Within the upper part of the kiln is a supplemental chamber formed by the ordinary top of the kiln and an arc-shaped dome slightly below the top, the edges of which are built into or connected to the sides of the kiln in any ordinary manner. Formed through the arch-shaped dome are a series of independent damper-controlled passages forming the means of communication between the supplemental chamber and the body or burning-chamber of the kiln. Connecting the supplemental chambers of two adjacent kilns is a pipe fitted with a suitable damper to control the passage of the products of combustion from the supplemental chamber of one kiln to the supplemental chamber of another. In the top of a kiln are a series of openings opposed to the passage-ways through the arch-shaped dome closed by removable covers, the purpose of which is to permit of access to the dampers of the passage-ways and also to allow of the escape of the heated gases from within the kiln when it is desired to rapidly cool the kiln.

The invention is hereinafter more fully set forth and more particularly pointed out in the claims.

In the drawings, Figure 1 represents a sectional view of two adjacent kilns. Fig. 2 is a sectional view on the lines *a a*, Fig. 1, showing the arrangement of flues.

Like letters of reference refer to like parts throughout the specification and drawings.

A represents the body of the kiln, which may be of any size and shape, B represents the top of the kiln, and C C represent the

fire-holes, the invention thus far being similar to any of the kilns in common use.

Within the upper part of the kiln is an arch-shaped dome D, slightly below the top B. The edges of the dome D, as shown in Fig. 1 of the drawings, are built into the sides of the body A and constructed of the same material. The dome D may, however, be made independent from the body A and held in position in any suitable manner. The dome D is sufficiently remote from the top B to form, with the top B, a chamber E, supplemental to the burning-chamber, the purpose of which is to receive the heated gases from the body of the kiln and equalize their distribution in the manner hereinafter specified.

Formed through the dome D are a series of independent passages F, each closed by a cover or damper G, and formed through the top B are a series of openings H, closed by covers or dampers I, the openings H being opposed to the passage F.

J represents the flue to convey the products of combustion from the body of the kiln to the chimney K when burning its contents. The passage through the flue J is controlled by a damper L.

M represents a pipe connecting the chambers E E of two adjacent kilns O O', each kiln being constructed as above described. The pipe M is provided with a damper P, by means of which the passage of the products of combustion through the pipe from the supplemental chamber of one kiln to the supplemental chamber of the other kiln can be regulated.

The operation of the invention is as follows: The goods to be burned are placed in the body of the kiln O, the passage-ways F of the said kiln being closed by the covers or dampers G to cut off all communication from the body of the kiln and its supplemental chamber E, the openings H also being closed by the covers or dampers I. The damper L is moved to open the passage through the flue J from the body of the kiln to the chimney. The fire is then lighted in the kiln, and the products of combustion pass from the body of the kiln through the flue to the chimney K. As soon as the contents of the kiln O are properly burned the covers or dampers G are removed from the passage-ways F of both kilns O O',

and the damper P is moved to open the passage-way from the supplemental chamber E of the kiln O to the supplemental chamber E of the kiln O', and the damper L is turned to close the passage through the flue J to the chimney K of the kiln O. The products of combustion then pass from the body of the kiln O through the passage-ways F into its supplemental chamber E, and from the supplemental chamber E of the kiln O into the supplemental chamber E of the kiln O' by means of the pipe M, and from the supplemental chamber E of the kiln O' through the passage-ways F into the body of the kiln O', and from the body through the flue J of the kiln O' to the chimney K, the damper of which is moved to open the passage from the body of the kiln to the chimney. By means of this arrangement the heated gases of the kiln O, after its contents are properly burned, can be utilized to assist in burning the contents of the kiln O', and vice versa, by this means effecting a saving of a considerable amount of fuel in the burning of the goods and avoiding the necessary delay in heating the kiln to the required temperature after lighting the fires.

It is customary to burn the sewer-pipe five and sometimes six days, three days of the time being usually devoted to slow burning and the remaining time to full fires. The gases from the first kiln, when burning with the full fires, can be drawn from the first kiln into the second kiln and used instead of the slow fires, and when the gases from the first kiln have burned the contents of the second kiln to the same degree of hardness as the slow fires would the full fires are started in the second kiln and the means of communication between the two kilns is closed off. When the contents of the first kiln are properly burned, the openings H through the top are uncovered and the gases are permitted to escape to the outer atmosphere and the kiln allowed to rapidly cool down, after which its contents are removed, the kiln refilled, and the heated gases drawn from the second kiln into the first in the same manner as just described.

The dome D serves a secondary purpose in addition to forming the supplemental chamber E—that is, it acts as a baffle for the heated products of combustion and gases from the body of the kiln, breaking the force of the current before permitting it to escape into the body of the kiln and rendering it impossible for the heated currents to injure the contents.

It is possible to use this style of a kiln for

burning other classes of clay goods besides sewer-pipe, and it is not desired, therefore, that the invention should be confined solely to this particular class of manufacture. It is also possible to fit a pipe to the supplemental chamber of the kiln and convey the heated gases from that chamber to the drying-room of the factory or to any other place where it might be desired to use the same.

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

1. The combination of a pair of kilns for burning sewer-pipe, &c., each consisting of a burning-chamber, an arc-shaped dome for the burning-chamber having a series of passages therethrough, removable dampers to close the passages, a top inclosing the arc-shaped dome, and forming with it a supplemental chamber, passages formed through the top opposed to the passages through the dome, removable covers to close the passages, and a conduit-pipe connecting the supplemental chambers of the kilns, substantially as specified.

2. A kiln for burning sewer-pipe and other articles of clay manufacture consisting of a body, a top for the body, an arc-shaped dome within the upper part of the body arranged to form between itself and the under side of the top a supplemental chamber, a series of passage-ways from the arc-shaped dome, removable covers to close the passage-ways, a series of openings through the top of the kiln, covers to close the openings, an outlet from the supplemental chamber, and an outlet from the body of the kiln to the chimney, substantially as specified.

3. A pair of kilns for burning sewer-pipe and other articles of clay manufacture each consisting of a body, a top for the body, an arc-shaped dome within the upper part of the body arranged to form between itself and the under side of the top a supplemental chamber, a series of passage-ways from the arc-shaped dome, removable covers to close the passage-ways, a series of openings through the top of the kiln, covers to close the openings, a pipe connecting the supplemental chambers of the two kilns, and an outlet from the body of each kiln to the chimney, substantially as specified.

Toronto, Canada, April 17, A. D. 1899.

JAMES T. FINCH.

In presence of—

M. A. WESTWOOD,  
C. H. RICHES.