

(No Model.)

P. McLOON.
LIMEKILN.

No. 503,059.

Patented Aug. 8, 1893.

Fig. 1.

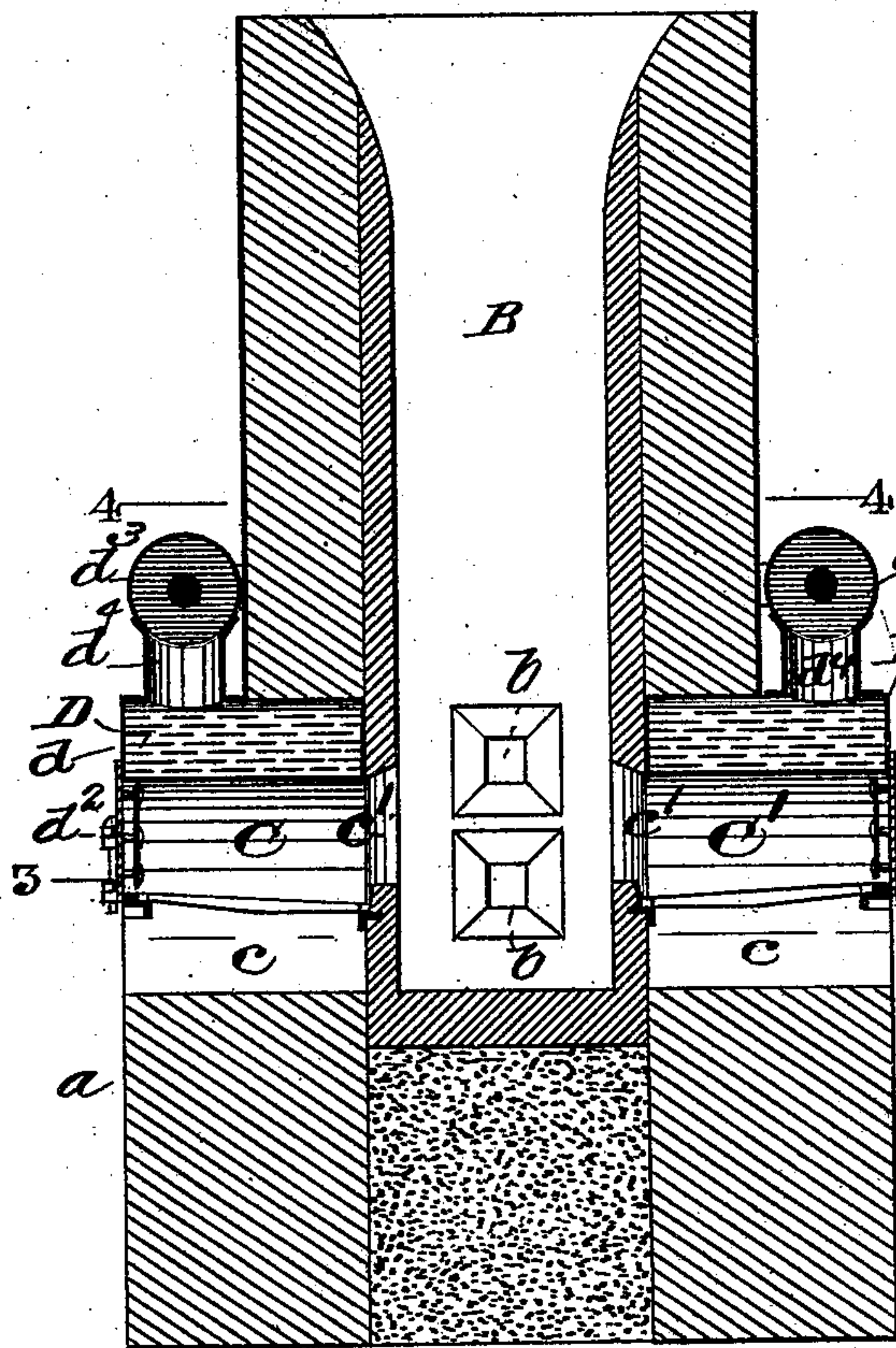


Fig. 2.

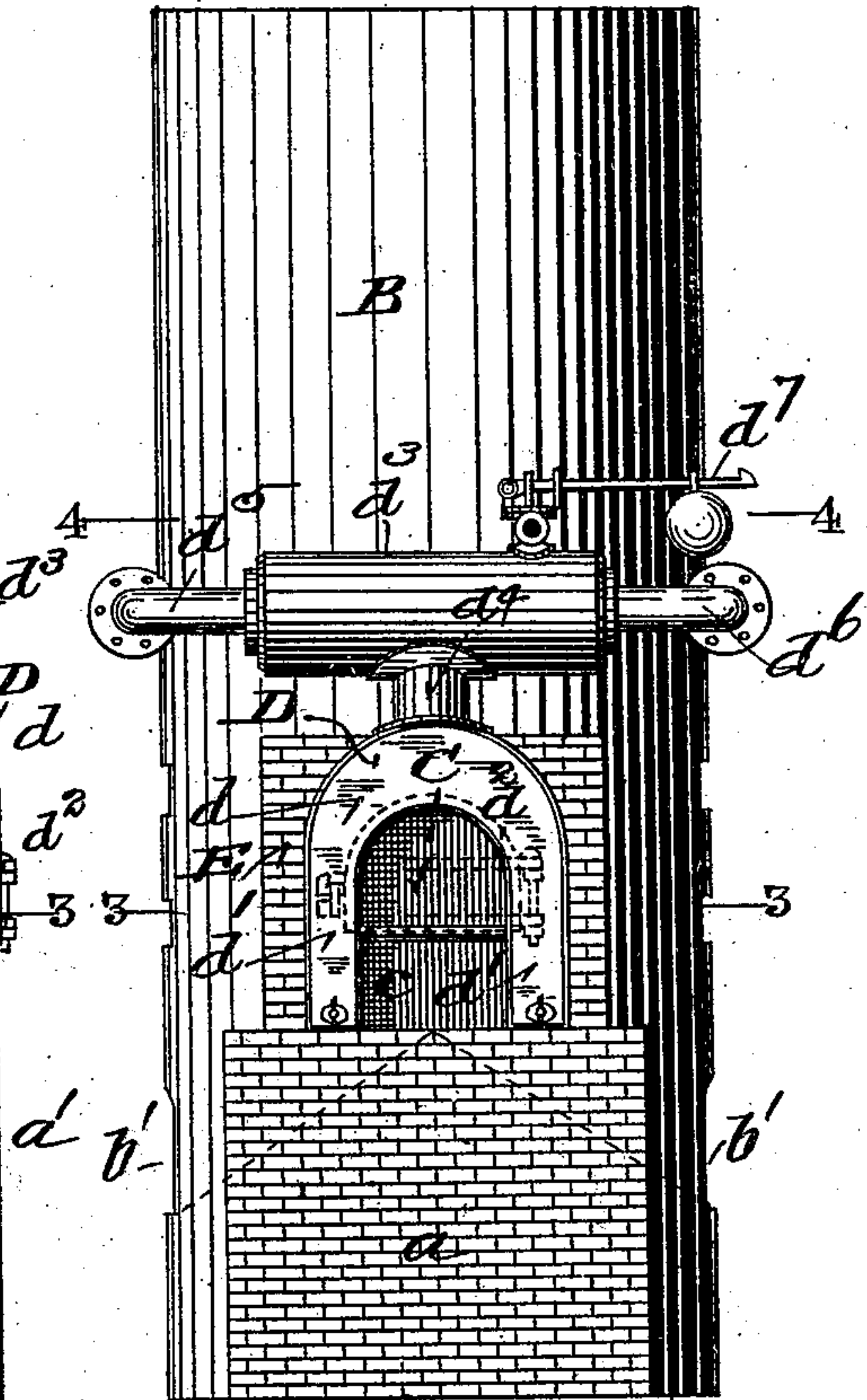


Fig. 3.

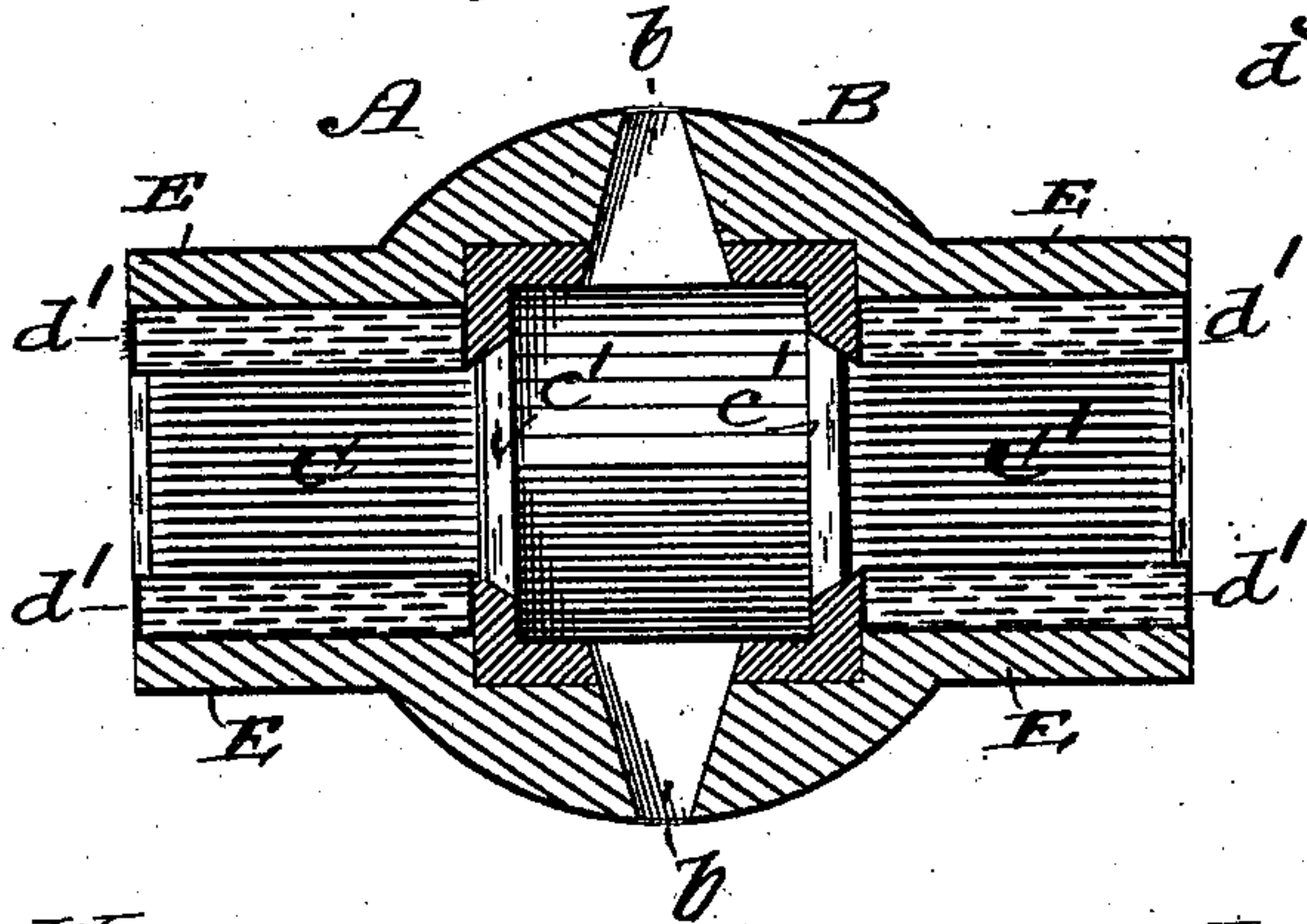
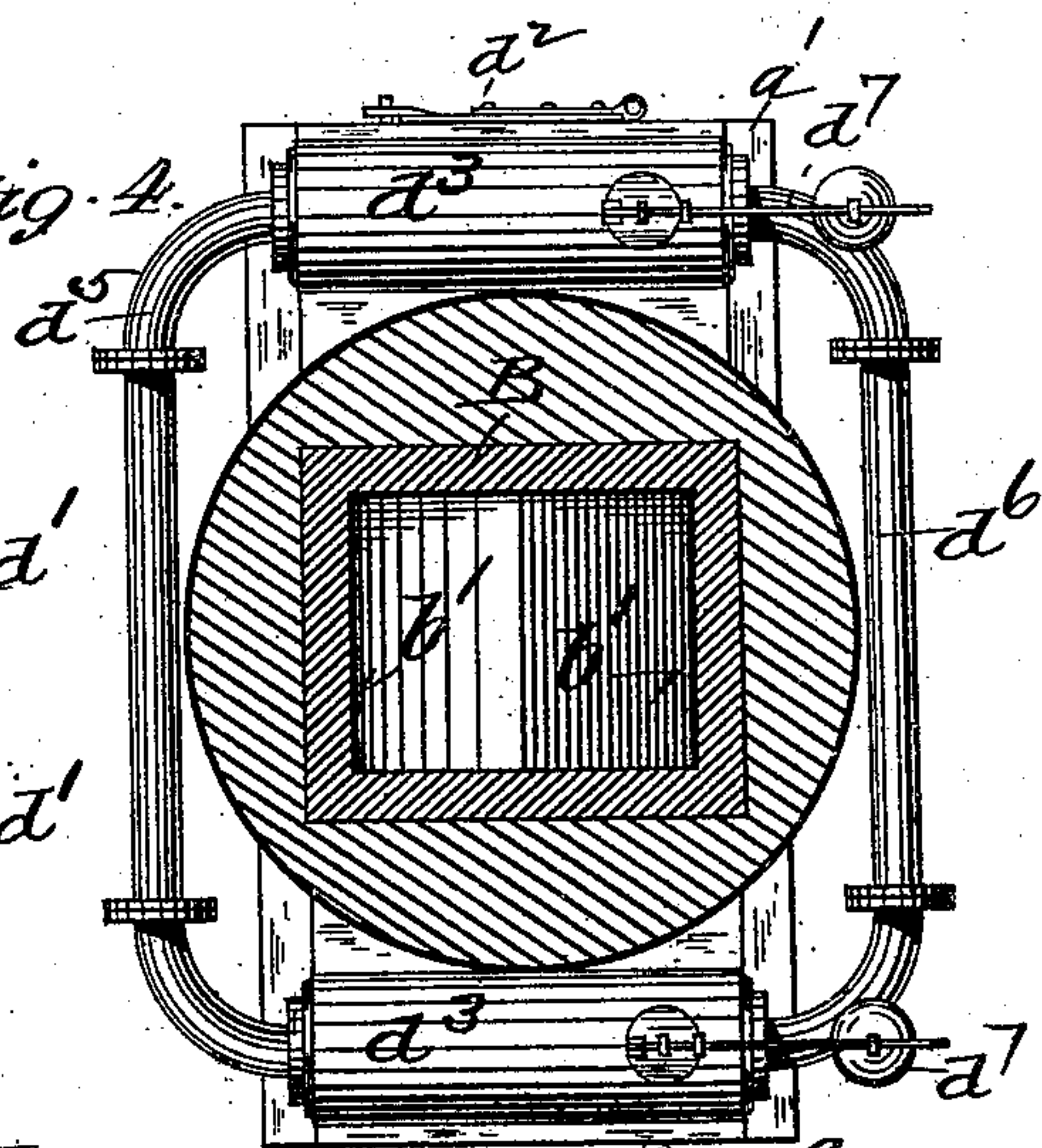


Fig. 4.



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PATRICK McLOON, OF SULPHUR SPRINGS, MISSOURI.

LIMEKILN.

SPECIFICATION forming part of Letters Patent No. 503,059, dated August 8, 1893.

Application filed December 5, 1892. Serial No. 454,166. (No model.)

To all whom it may concern:

Be it known that I, PATRICK McLOON, of Sulphur Springs, Jefferson county, Missouri, have made a new and useful Improvement in Limekilns, of which the following is a full, clear, and exact description.

The improvement under consideration has relation to the fire places of the kiln whereby the heat thereof is utilized not only for operating the kiln but also for generating steam in an advantageous manner, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a vertical central section of the improved kiln; Fig. 2 a side elevation thereof, the view being at right angles to that of Fig. 1; Fig. 3 a horizontal section on the line 3—3 of Figs. 1 and 2; and Fig. 4 a horizontal section on the line 4—4 of Figs. 1 and 2.

The same letters of reference denote the same parts.

The kiln, A, is of any suitable style adapted to receive the improvement under consideration, and, saving as it is modified or supplemented by the improvement, the kiln is of ordinary construction. B represents its shaft or stack.

C, C' represent the fire places of which two are preferably used. They are arranged in the usual position and, so far as heating the contents of the kiln is concerned, they operate in the ordinary manner. But in the place of constructing their walls of masonry, or making them solid, I construct the setting of each furnace in the form of a steam boiler D. The boiler is preferably of the wagon-type, its top-portion, d , extending above the fire place, and its legs d' , d' , serving to inclose the fire place, and the ash-pit, c , at the sides thereof, substantially as shown, and at the inner end thereof the boiler preferably abuts against the inner portion of the kiln. Masonry, E, may be used as shown to inclose the boiler.

The doors of the fire place and ash pit are indicated in the full and the broken lines d^2 .

Each boiler is provided with an overhead steam drum, d^3 , which is connected with the main portion of the boiler by means of a suit-

able leg, d^4 , and the improvement is more fully carried out when the two drums, of the two boilers respectively, are connected by means of the pipes, d^5 , d^6 , substantially as shown. Each drum is provided with a safety valve, d^7 . Steam can be taken from either or both of the drums in any desirable manner. The projecting portions, a , a' , of the kiln-wall provide desirable supports for the boilers in question.

In operation the fire places are fired as is customary for running a lime kiln, and the principal portion of the heat thereof passes through the opening c' at the inner end of the fire place, into the stack, and that portion of the heat which heretofore has been dissipated in the walls of the fire place as previously constructed is imparted to the boiler and its contents and steam is thereby generated as in other steam-boilers. It will be noted that by the present arrangement of the described boilers no obstacle is presented to the ordinary operation of the kiln, as is the case when a boiler is arranged above the stack. The boilers, also, as arranged, serve to buttress the inner portion of the kiln more effectively than the masonry formerly used. The boiler is also of use in that it tends to keep down the temperature in those parts of the kiln which otherwise are liable to become too highly heated and to become worn out.

I desire not to be restricted to the particular style of boiler shown. The boilers are composed of ordinary boiler material, and the different plates, and other parts used, are united in the customary manner. There are the usual openings, b , in the stack for operating upon the contents of the kiln, and the lime is discharged at b' , in the usual manner.

I claim—

1. In combination with the lime kiln and its stack B, the fire places C, C', each having a steam boiler setting D, provided with top portion d , and legs d' , and the over head drums d^3 , each connected with one of the main boilers by leg d^4 , each of said fire places having an opening c' , at the inner end into the stack, substantially as shown and described.

2. The combination of the stack, and the fire places at each side of its base, and each

delivering the main portion of its heat at its inner end into the stack, and each fire place having a steam boiler setting, as described, and over head steam drums connected there-
5 with and said drums connected with each other by means of pipes d^5 , d^6 , substantially as described.

Witness my hand this 2d day of December, 1892.

PATRICK McLOON.

Witnesses:

C. D. MOODY,
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