

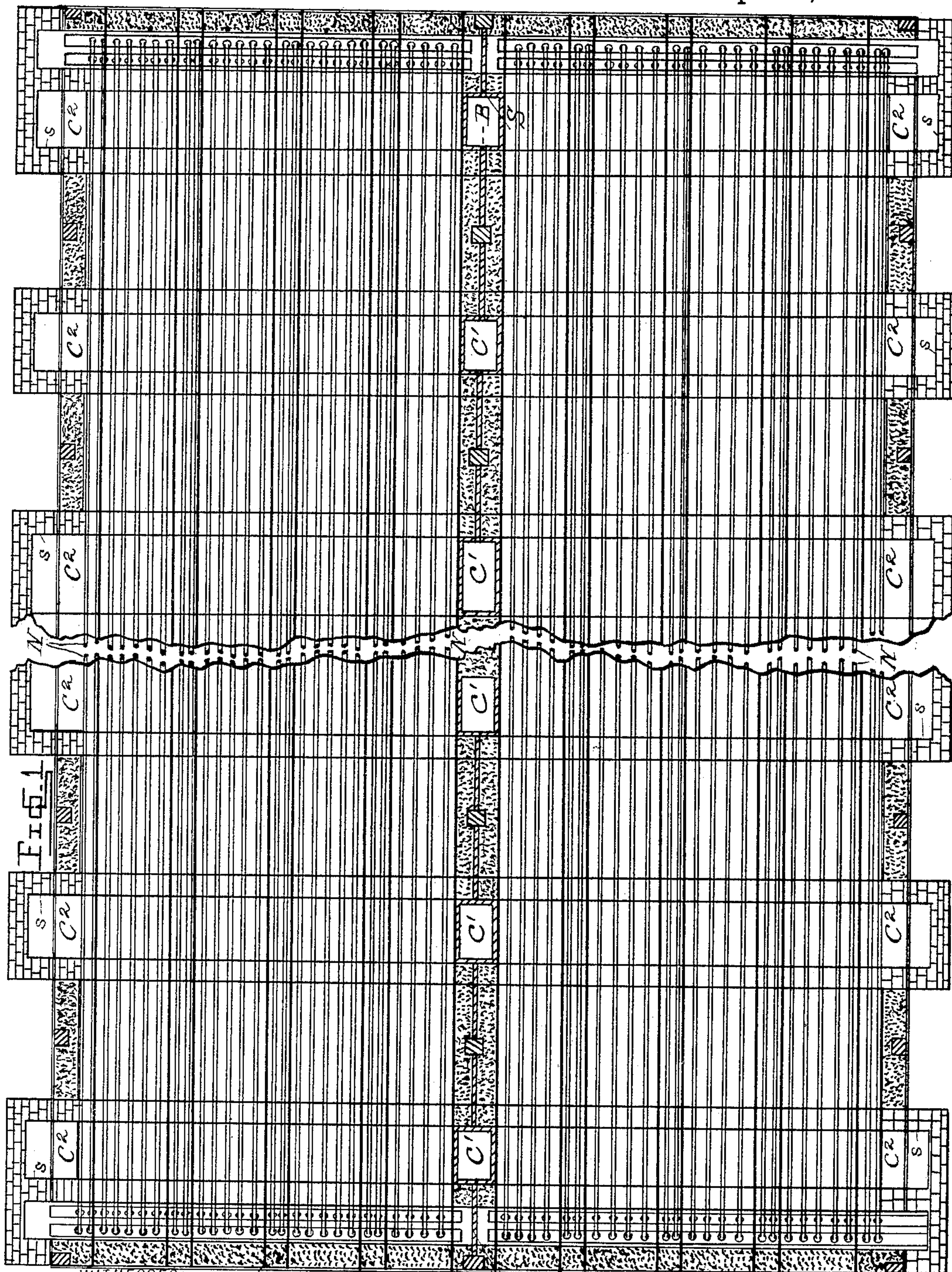
(No Model.)

3 Sheets—Sheet 1.

W. L. GREGG.
APPARATUS FOR DRYING BRICK.

No. 348,838.

Patented Sept. 7, 1886.



WITNESSES:

WITNESSES:
 J. H. Blackwood
 R. L. Du Bois

INVENTOR

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(No Model.)

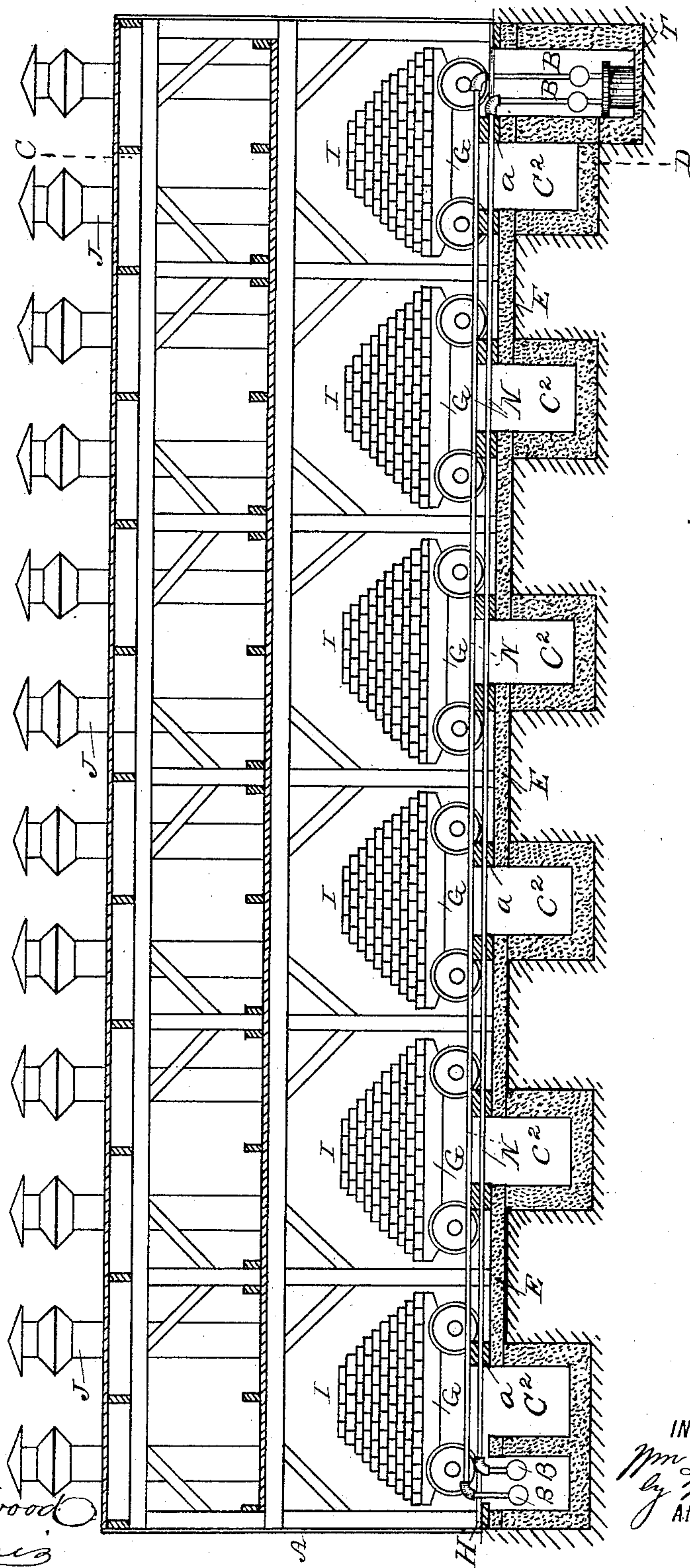
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Fig. 2—



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3 Sheets—Sheet 3.

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Fig. 4.

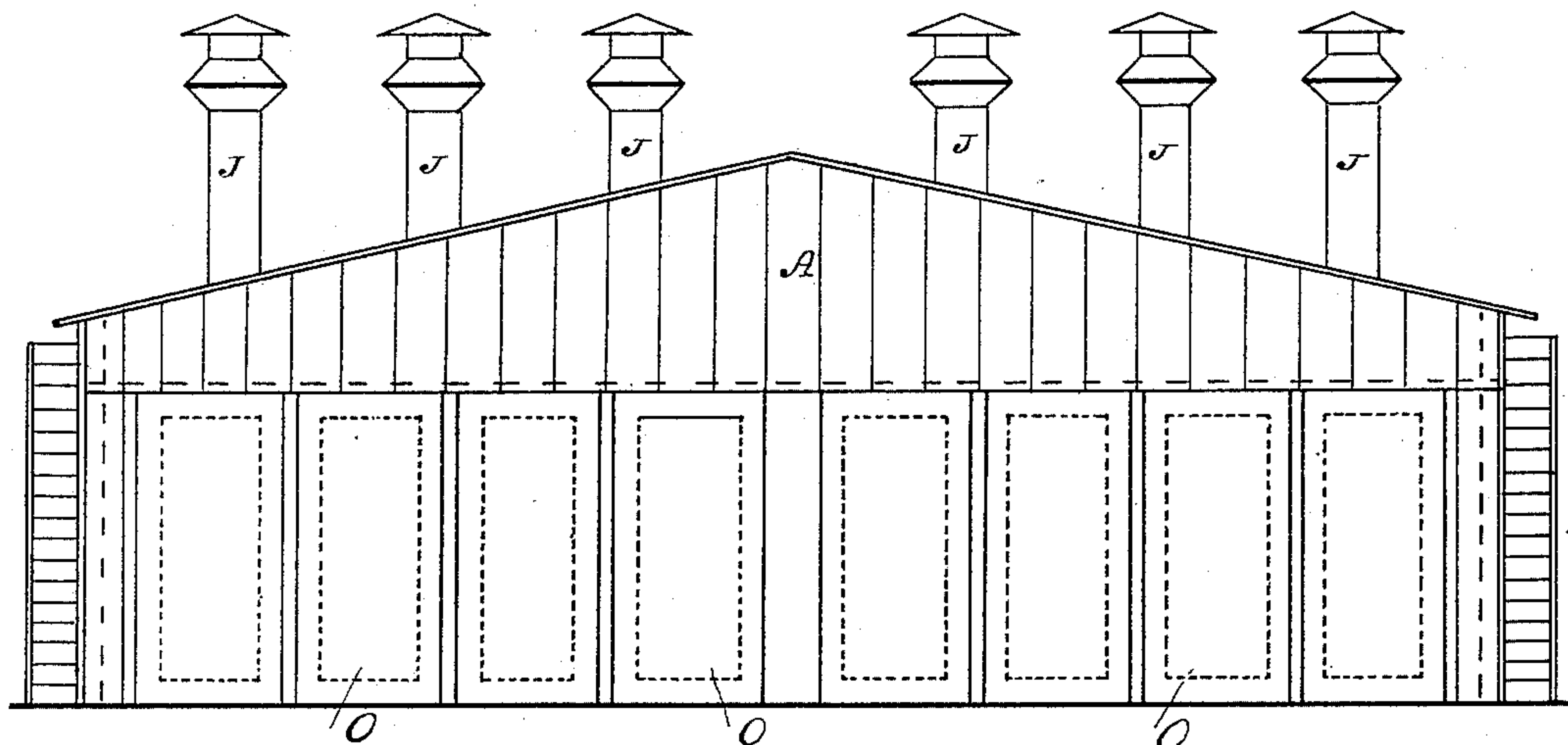
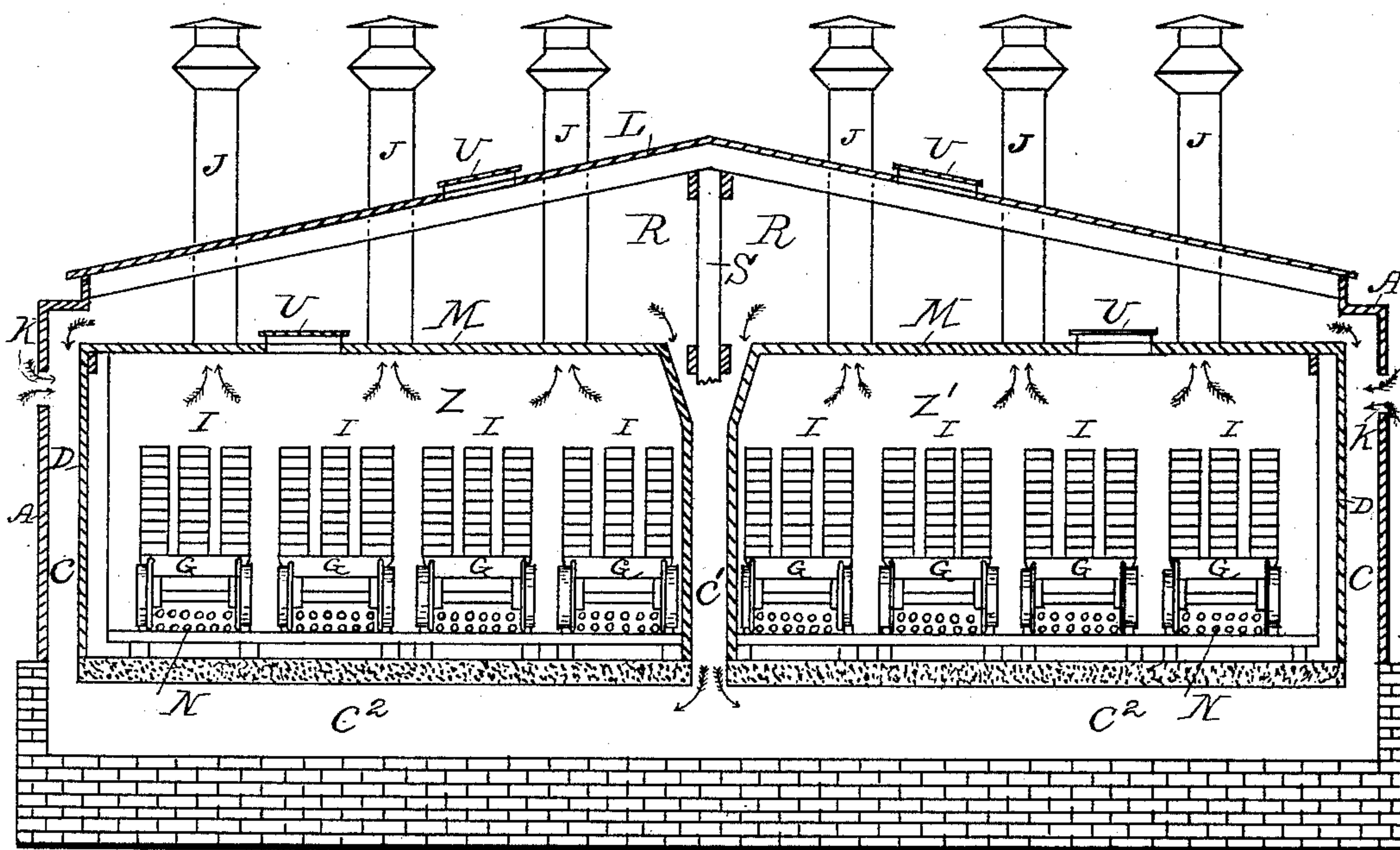


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM LAMPAS GREGG, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR DRYING BRICK.

SPECIFICATION forming part of Letters Patent No. 348,838, dated September 7, 1886.

Application filed March 11, 1886. Serial No. 194,569. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LAMPAS GREGG, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Drying Brick; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the manufacture of bricks, tiles, terra-cotta, and other similar products; and it consists in an improved apparatus for drying them, as will be more fully described hereinafter, and pointed out in the claims.

It is well known by those versed in the art that slush or mud bricks have been dried on floors heated by steam; but my invention does not relate to the treatment of this class of bricks, but to dry and semi-dry or moist-clay bricks made on semi-dry brick-presses and stiff enough to hack on cars.

In the drawings, Figure 1 is a ground plan of the brick-heating compartments, car-tracks, and steam-heating pipes located between the tracks and running parallel therewith, and also transverse flues located beneath said tracks and pipes, and a central partition dividing the whole into two independent drying-chambers; Fig. 2, a longitudinal section through line A B of Fig. 1, which shows the transverse flues, a concrete floor, the steam-pipes supported by blocks, and cars loaded with brick resting upon the tracks, and the general arrangement of my complete apparatus; Fig. 3, a cross-section through line C D of the preceding figure, showing the arrangement of the flues, (the arrows representing the course of the circulating atmosphere,) and also the location of the steam-pipes in relation to the loaded cars. Fig. 4 is an end view in elevation of the building, showing in dotted lines the doors in compartments.

Like letters represent like figures throughout the several views.

My general plan of construction is to make an outer building, A, preferably of corrugated iron, and an inner structure, D, divided into two or more drying-compartments, Z Z', each capable of holding a day's work of ma-

terial, so that when the bricks in one compartment are being dried the other compartment can be thrown open and filled, and in providing the inner structure with a concrete or cement floor impervious to moisture.

The leading idea of my invention being to improve the method of drying the products in the shortest time and in the most economical manner, a most important feature is the concrete or cement floor and lining in each compartment. In a compartment so constructed the heated air is concentrated entirely upon the material on the cars, and none of it is diverted or misapplied to drawing and drying the moisture from the earth, I having found by experience that in these structures in which the drying-chambers are provided, partly or wholly, with earth floors, or connected with the earth in any way, the moisture drawn from the earth absorbs as much, if not more, of the heat than that arising from the materials being dried, thus requiring the expenditure of a much larger amount of time and heat to dry the materials than should be necessary.

I represents green bricks which are placed on cars or trucks G, said trucks being made of wood or iron, or other suitable material, and run upon rails H, laid on blocks on the concrete floor E.

C are transverse flues lined with cement or concrete, extending across the bottom of the drying-chambers, and over which the cars stand while the brick or other material are drying. These flues may have their walls constructed of brick, as shown in the plan view, with a cement lining, s, or may be constructed solidly of concrete, as shown in Fig. 2.

Underneath the cars, running parallel with and between the car-tracks, are located a series of longitudinal steam-pipes, N, which connect with transverse supply-pipes B B at either end of the compartments, and which rest upon blocks a, of iron or of wood covered with zinc, and arranged in two or more layers, one above the other. The supply-pipes may be connected with any suitable steam-generator. The compartments are also provided with doors O at each end, for the ingress and egress of the cars G. The object of these doors is to enable each compartment to be entirely closed to confine the heat. The car-tracks shown

connect with transfer-tracks (not shown) at the opposite sides of the building.

C' are central vertical flues leading down from the space R, between the roof L and ceiling M, to the transverse flues C², below the central partition, S, which separates the building into two independent compartments, Z and Z'.

Along the outer sides of the heating-chambers are a series of vertical flues, C, provided with ports K, for the ingress of the outside air, and also connecting the air-chamber and the lower transverse flues, C².

At one end of each drying-compartment there is a drain-pit, T, provided with a trap, for the purpose of carrying off the products of steam condensed in the steam-pipes.

J are pipes secured in an air-tight manner to the ceilings M, and pass up through the roof L to insure a complete draft to the heating or drying chambers, and to carry off all moisture from the drying bricks.

The transverse flues in the floors of the compartments may be provided with suitable valves and ducts to regulate the circulation of air, and cold-water pipes and drip pans or troughs, for condensing and receiving the moisture evolved from the drying brick, may also be provided.

In the roof L of the main building and in the ceilings M of the compartments are skylights U, for the admission of light.

The operation of my apparatus is as follows: The bricks are taken from the press in a moist condition and placed in the usual manner for drying upon the cars, which are rolled one after another upon the track H into one of the compartments until the compartment is full. The doors O are then closed and the steam turned on. The steam-pipes being located directly beneath the cars, the heat arises, envelopes the bricks, and passes on out through the ventilating stacks or flues J into the open air.

The circulation of air and ventilation of the drying-chambers is kept up by means of the outside air entering the ports K, as shown by arrows in Fig. 3, and passing down through the flues C, and along the transverse flue C² and up in between and around the heating-pipes N, and also by reason of the upper air-chamber, R, having its sides connected with the vertical flues C, whereby the air in said chamber being somewhat heated by the chimney-pipes passing through it is cooled by contact with outer air at K, and increases the draft down the side, central, and bottom flues, C C' C², and up through the compartments.

While the bricks in the filled compartment are drying the adjoining compartment can be kept open and filled, so that the drying process can go on without interruption.

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

1. An apparatus for drying brick or other ceramic products, consisting of an outer build-

ing, A, and an inner structure, D, said inner structure divided into two or more independent drying-compartments, Z Z', and provided with a floor, walls, and ceilings impervious to moisture, an air-chamber, R, above said compartments, openings K through the outer building for the ingress of air, vertical flues C, between the outer and inner structures communicating with said openings and air-chamber, transverse flues C², lined with cement or concrete at the bottom of said inner compartment connected with flues C C', a separate independent partition, S, between the compartments Z Z', the flues C', on the opposite sides of said partition and connecting the air-chamber with the lower flue, C², and pipes or chimneys for carrying off the heat and moisture from the compartments, secured in an air-tight manner in the ceilings of the same and passing through the said chamber and roof of the outer building, substantially as and for the purpose described.

2. In a structure for drying brick or other ceramic products, two or more independent drying-compartments, Z Z', in combination with the partition S, between said compartments, air-flues C' on the opposite sides of said partition, an air-chamber, R, above said compartments, transverse cement-lined flues C² below said compartments, said chamber and flues connected by side and central flues, C C', pipes or chimneys leading from said compartments through the said air-chamber and its roof for conducting away the heated air and moisture from the compartments, and pipes for supplying heat to the bottom of each compartment, substantially as and for the purpose described.

3. In a structure for drying brick or other ceramic products, a compartment provided with a floor, walls, and ceilings provided with an impervious lining, such as cement or concrete, tracks or cars for holding the products to be dried, in combination with steam-pipes running between the tracks and beneath the cars and connecting with transverse steam-supply pipes, cold-air flues lined with cement or concrete running transversely across the compartment below the tracks and the said steam-pipes, and pipes or chimneys for carrying away the heat and moisture from the compartment, said chimneys secured to the ceiling of each compartment in an air-tight manner and in a line directly above the material to be dried, whereby all the cold air is conducted to and heated below the car-tracks, arises between them, envelopes the bricks to be dried, passes out directly above them, and all the heat is utilized in drying the said products, substantially as described.

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

WILLIAM LAMPAS GREGG.

Witnesses:

JOS. H. BLACKWOOD,
ROBERT F. McMILLAN.