

951,461.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

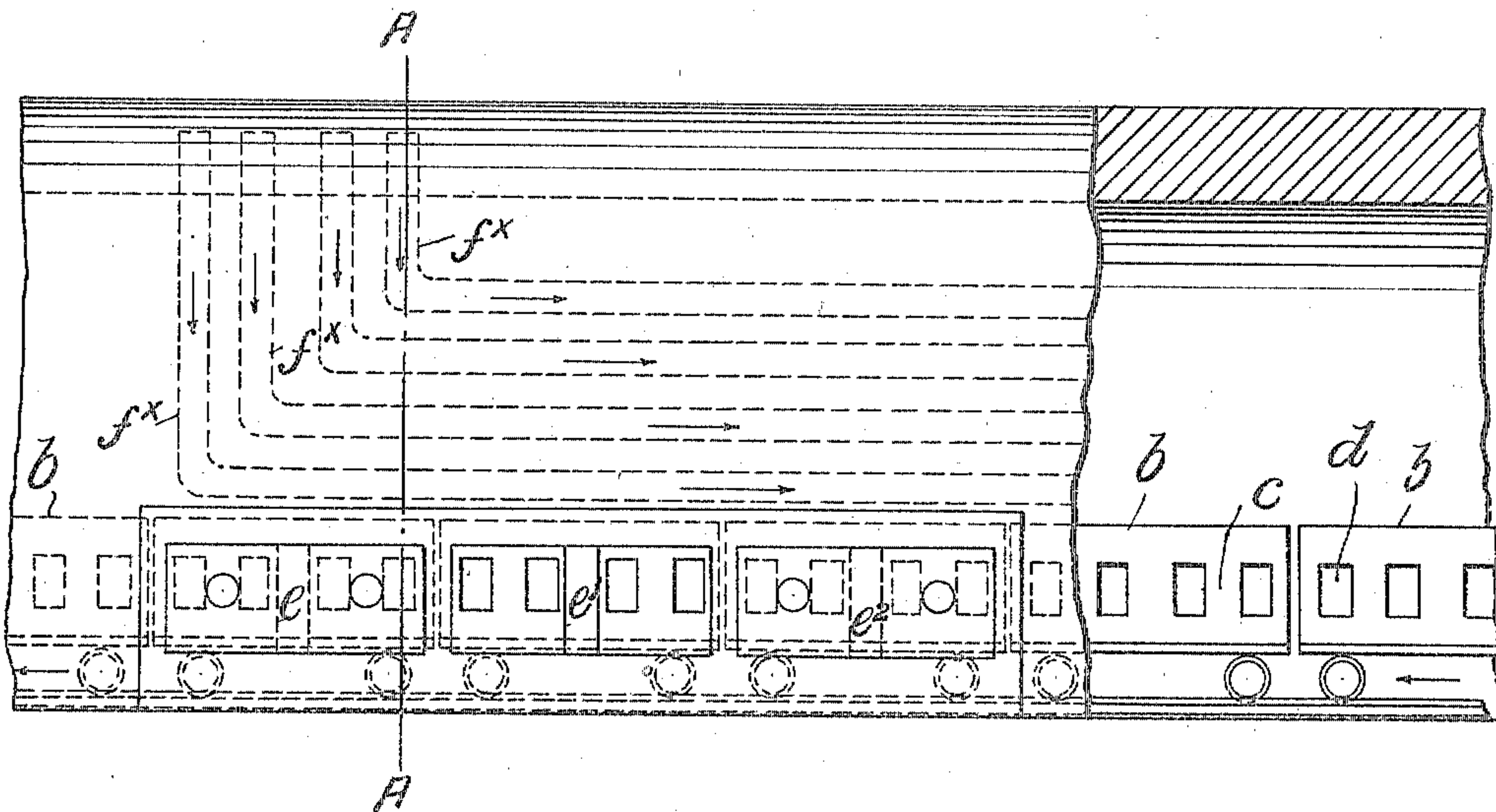
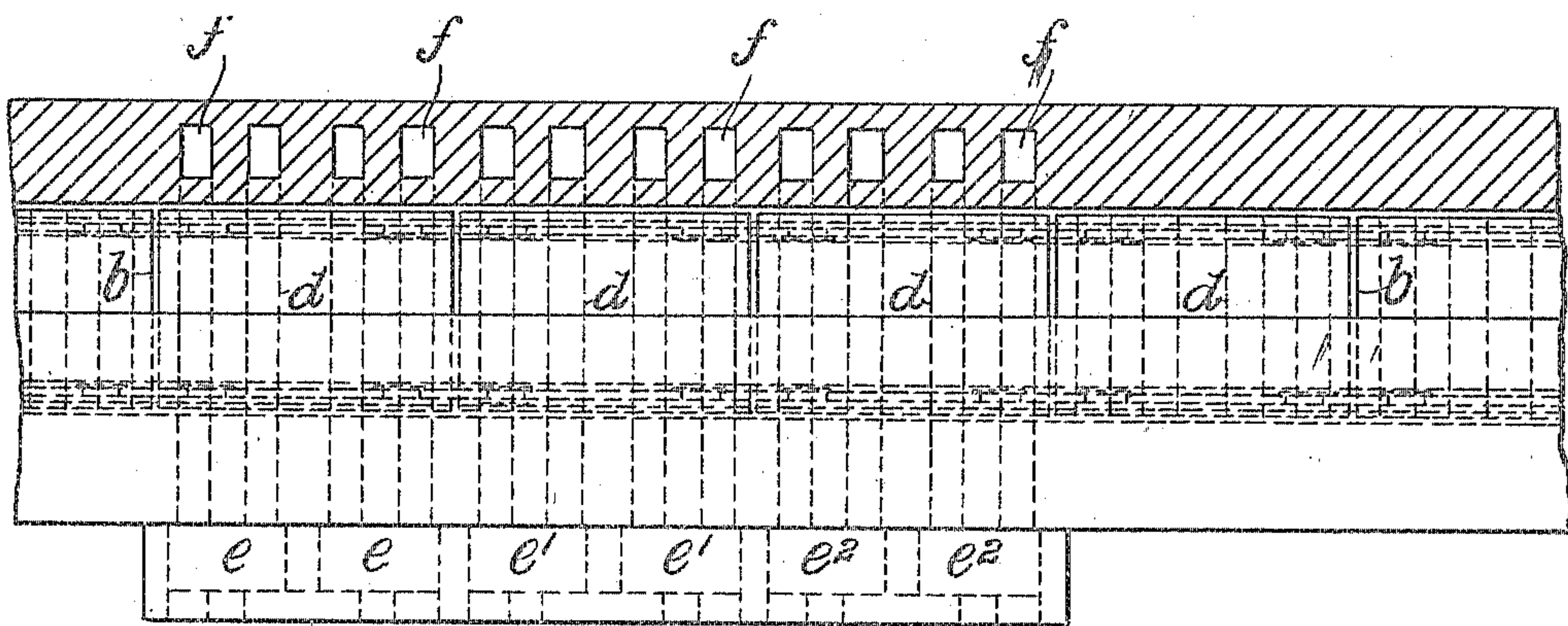


FIG. 2.



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CONTINUOUS KILN.  
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2 SHEETS—SHEET 2.

FIG 3.

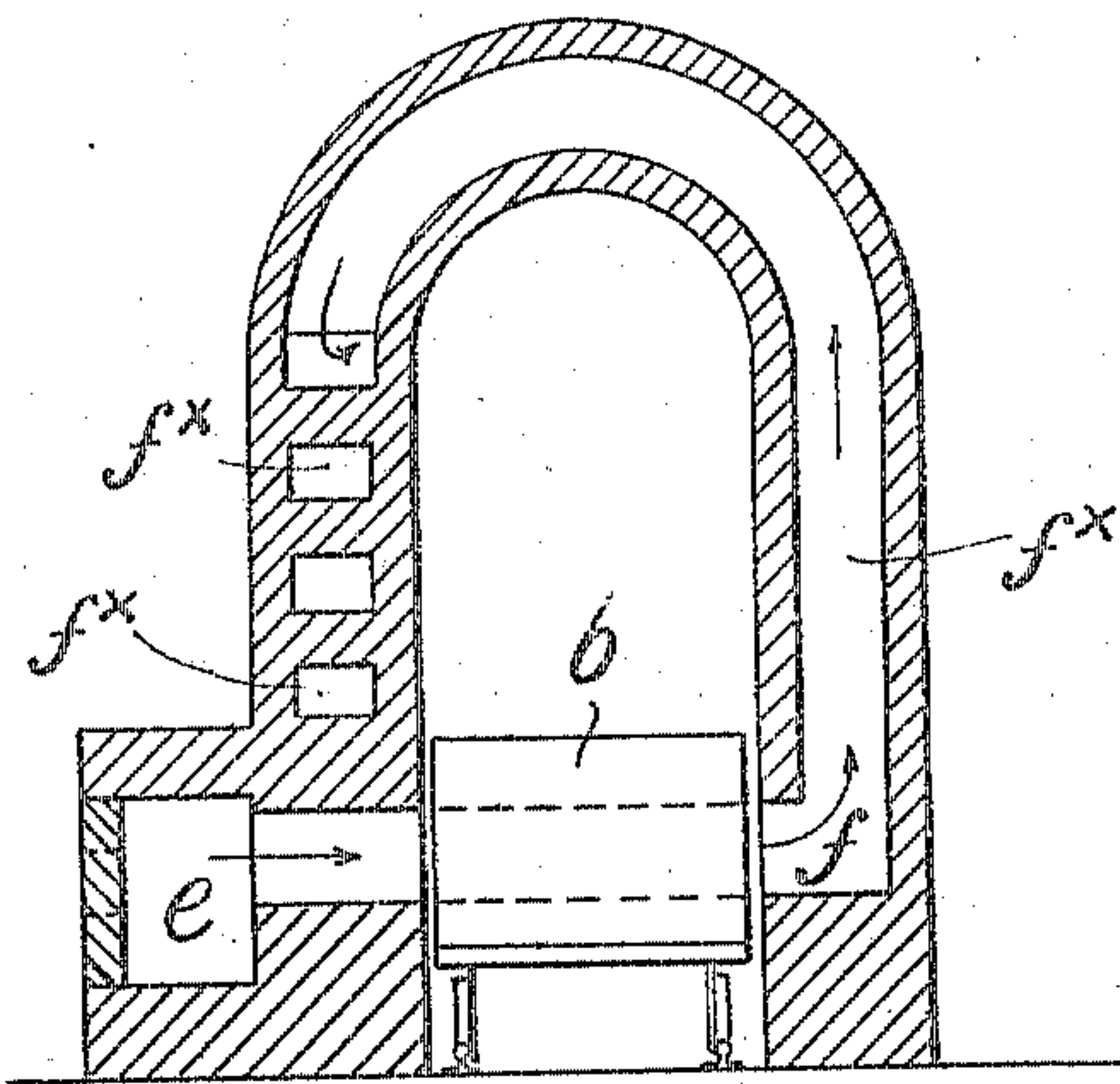


FIG 4.

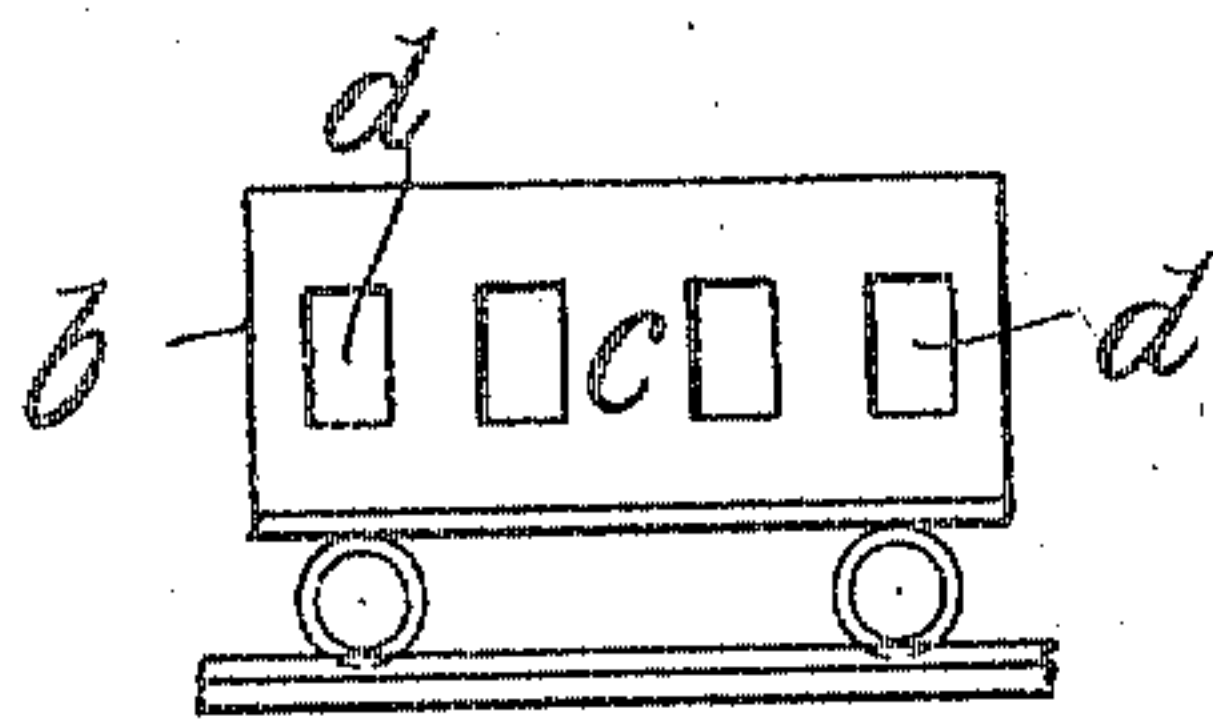


FIG 6.

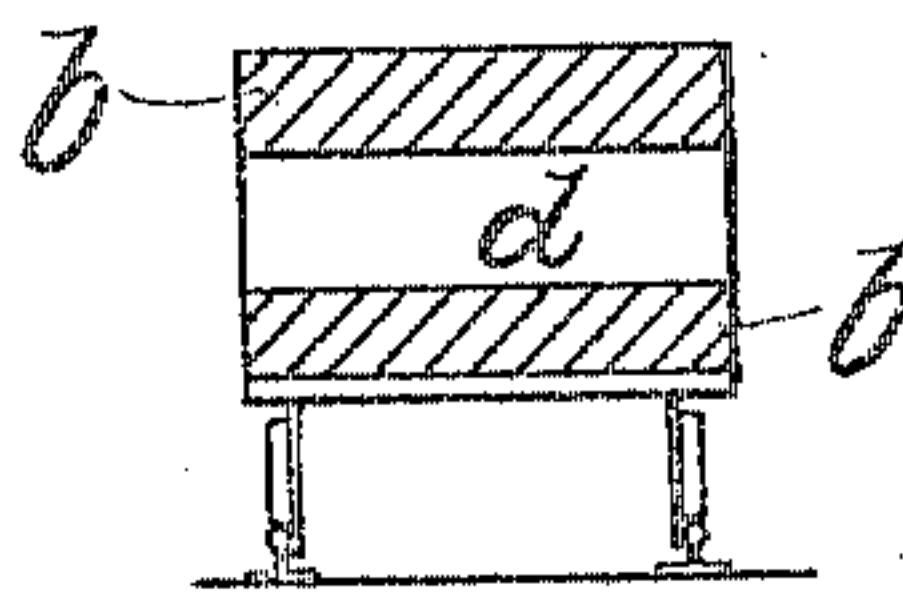
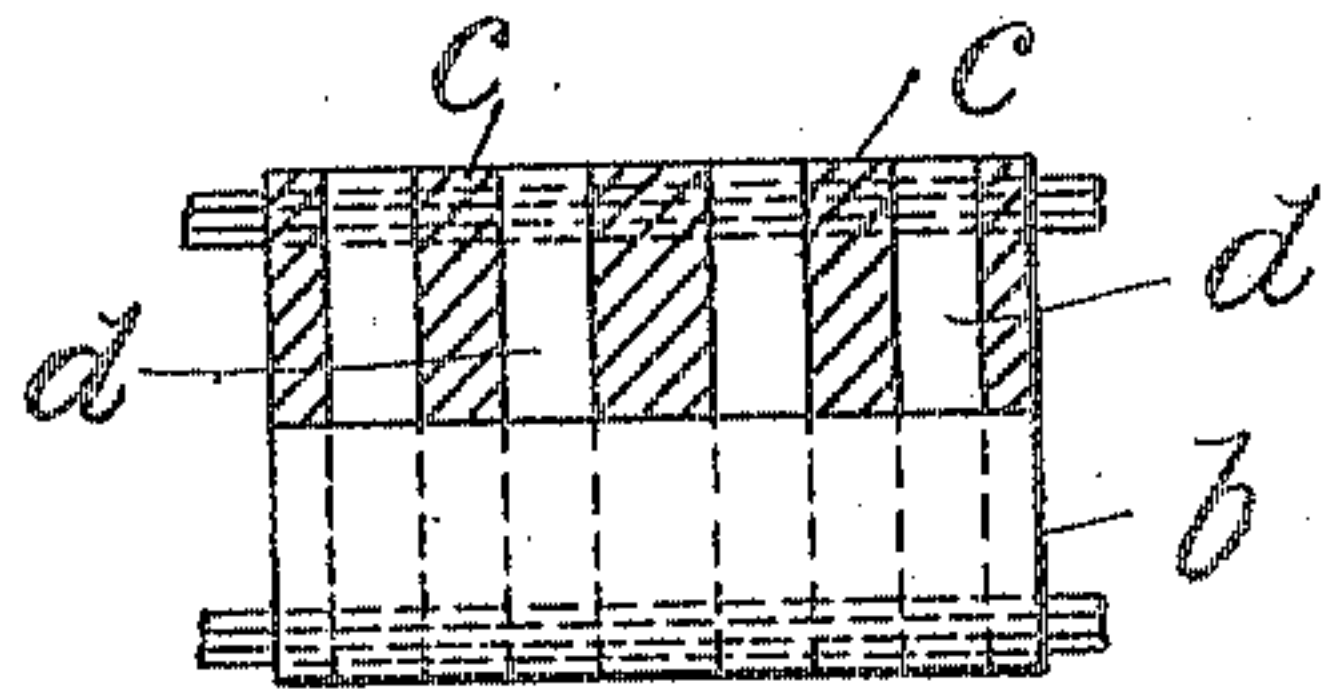


FIG 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM HENRY SMITH, OF SWINTON, ENGLAND.

## CONTINUOUS KILN.

951,461.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed October 8, 1909. Serial No. 521,769.

To all whom it may concern:

Be it known that I, WILLIAM HENRY SMITH, a subject of the King of Great Britain and Ireland, residing in Swinton, in the county of Lancaster, England, have invented an Improved Continuous Kiln, of which the following is a specification.

This invention relates to an improved continuous muffle kiln for burning china earthenware, tiles, glazed, enameled or terra cotta ware and the like by gas, with the object of avoiding the risk of fracture by too rapid firing or too rapid cooling.

In the accompanying drawings illustrating my invention and to which I hereinafter refer, Figure 1 is a part side view and part longitudinal section of so much of a kiln as is necessary to show my improvements. Fig. 2 is a part plan and part longitudinal section and Fig. 3 a transverse section of the same on line A A Fig. 1; Fig. 4 is a side view, Fig. 5 a plan partly in section and Fig. 6 a cross section of the truck for carrying the ware.

In these views the same letters refer to like parts.

According to and for the purpose of my said invention, I construct a continuous kiln of the form preferably as shown on the drawings; I lay a line of rails in the bottom of the kiln and place trucks *b* thereon, that are constructed with transverse divisions, under the platform on which the goods to be fired are placed, leaving spaces *d* between said divisions corresponding in width and position to the width and position of the flues that are formed in the sides of the central portion of the kiln, in which three (preferably) fire holes *e*, *e'*, and *e''* are constructed and fitted with gas burners, from which the heat for firing is obtained: these fire holes are arranged so that each of the flues from the fire holes is opposite to a flue on the opposite side of the kiln, and also correspond with the transverse flues or passages *d* through the trucks *b*.

In constructing a kiln I prefer to arrange the flues as shown on the drawing, but the number of flues and their positions may be varied so long as the openings in the flues and the distances between said flues correspond with the passages and the distances between said passages in the trucks.

In the application of my invention in a kiln having three fire holes in the center as shown on the drawing, I place a train of

trucks as Figs. 4, 5 and 6, each truck having transverse spaces or openings *d* therein, said transverse spaces being placed opposite the openings *f* at the base of the flues *f'* that are in the central portion of the kiln; the heat from the gas in the first fire hole *e* passes through the first transverse space *d* in the leading truck *b*, and ascends the flue *f'* opposite thereto, which is continued over the kiln to the near or firing hole side, and then along until it joins the flue to the chimney, the remaining flues repeating a like course to the chimney; the passage of the heat from each of the fire holes is by the same means conducted successively in a continuous circuitous course around the kiln to the chimney, the heat being greatest in the center of the kiln and decreasing in intensity at each end of the kiln: the goods to be fired are placed on a truck which is moved into the kiln, remaining for the required time near the entrance; the truck is then moved along the length of another truck, which it succeeds, again remaining a specified time and is followed in like manner by other trucks, the goods being thereby gradually heated to a greater extent until each truck reaches the center of the kiln; when the firing is completed, each truck gradually in like manner recedes from the heat until it reaches the outer end of the kiln, when the goods will have sufficiently cooled to be removed therefrom; the line of rails in the kiln may be slightly lower at the exit than at the entrance to facilitate the passage of the trucks, which may be moved by an endless chain or by other convenient means.

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

1. The combination in a kiln of an elongated chamber, having entrance and exit openings at its ends; with a truck or series of trucks operating within the chamber and provided with transverse passages; there being a series of fire holes along one side of said kiln opening directly into the passages of the trucks when said trucks are in the proper positions, and a series of flues also opening into the passages of the trucks and respectively opposite the fire hole openings, all of said flues extending upwardly in substantially parallel lines for different distances and then extending horizontally parallel with the longitudinal axis of the kiln to an outlet.



2. The combination in a kiln, of an elongated chamber having inlet and outlet openings; with a series of trucks operative within said chamber of the kiln and provided with  
5 transverse passages, there being a plurality of series of fire holes opening so as to register with the passages of the trucks when the latter are in the proper positions; and a plurality of series of flues also having openings  
10 capable of registering with the passages of the trucks, all of the flues extending trans-

versely of the kiln for different distances and then horizontally parallel with the longitudinal axis of the kiln to an outlet.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM HENRY SMITH.

Witnesses:

THOS. PRESCOTT,  
HAROLD WALKER.