

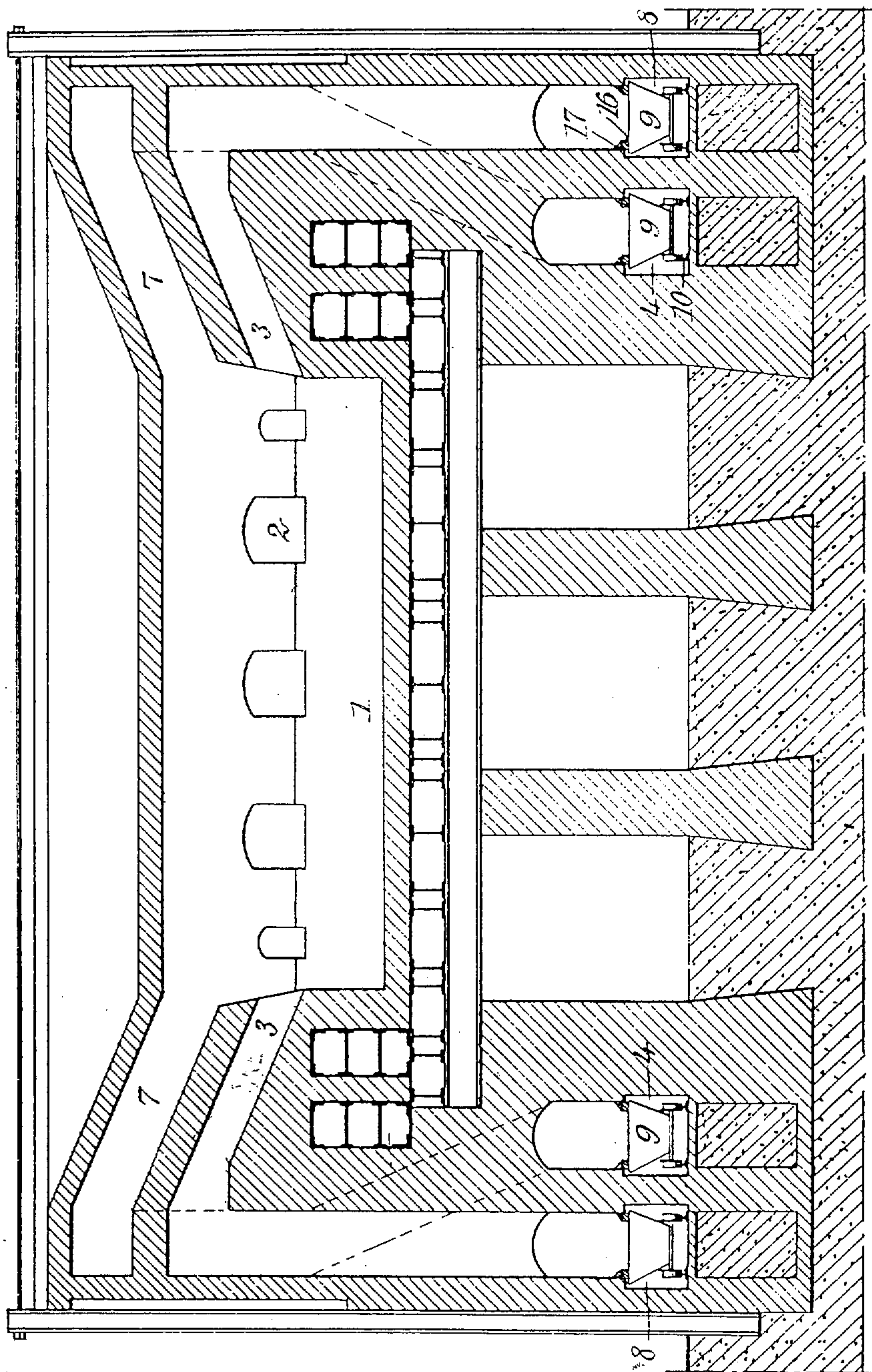
W. F. CARR & J. P. MOLIMANS.

FURNACE.

APPLICATION FILED OCT. 26, 1905.

3 SHEETS—SHEET 1.

Fig. 1



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No. 837,191.

PATENTED NOV. 27, 1906.

W. F. CARR & J. P. McLIMANS.

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3 SHEETS—SHEET 2.

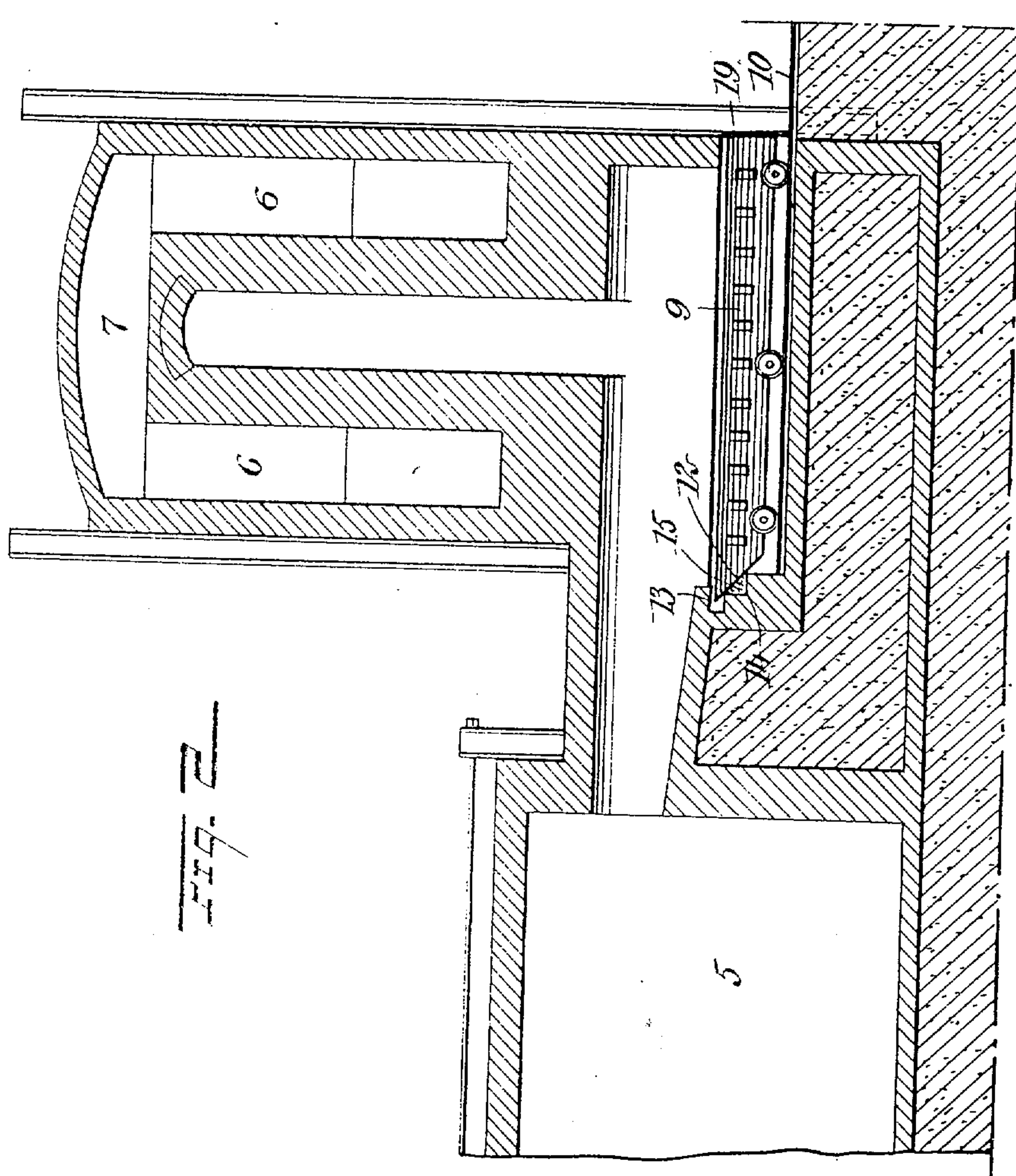


Fig. 2

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3 SHEETS—SHEET 3

FIG. 4

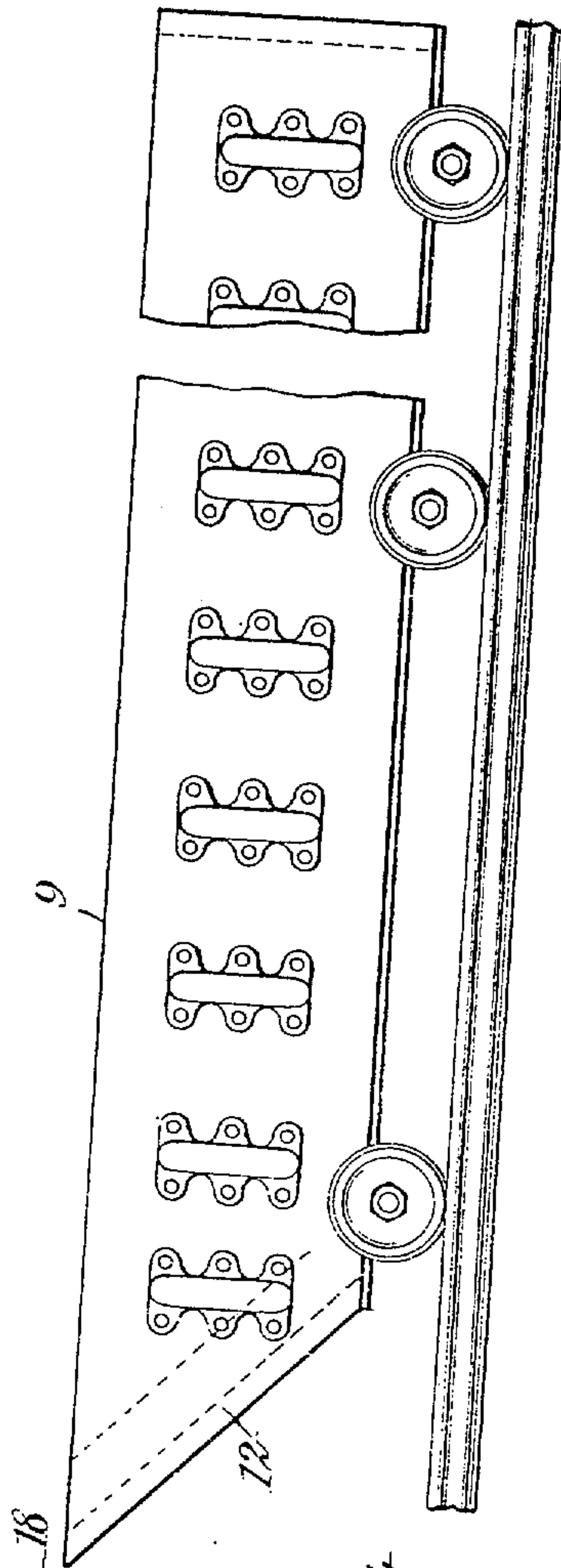
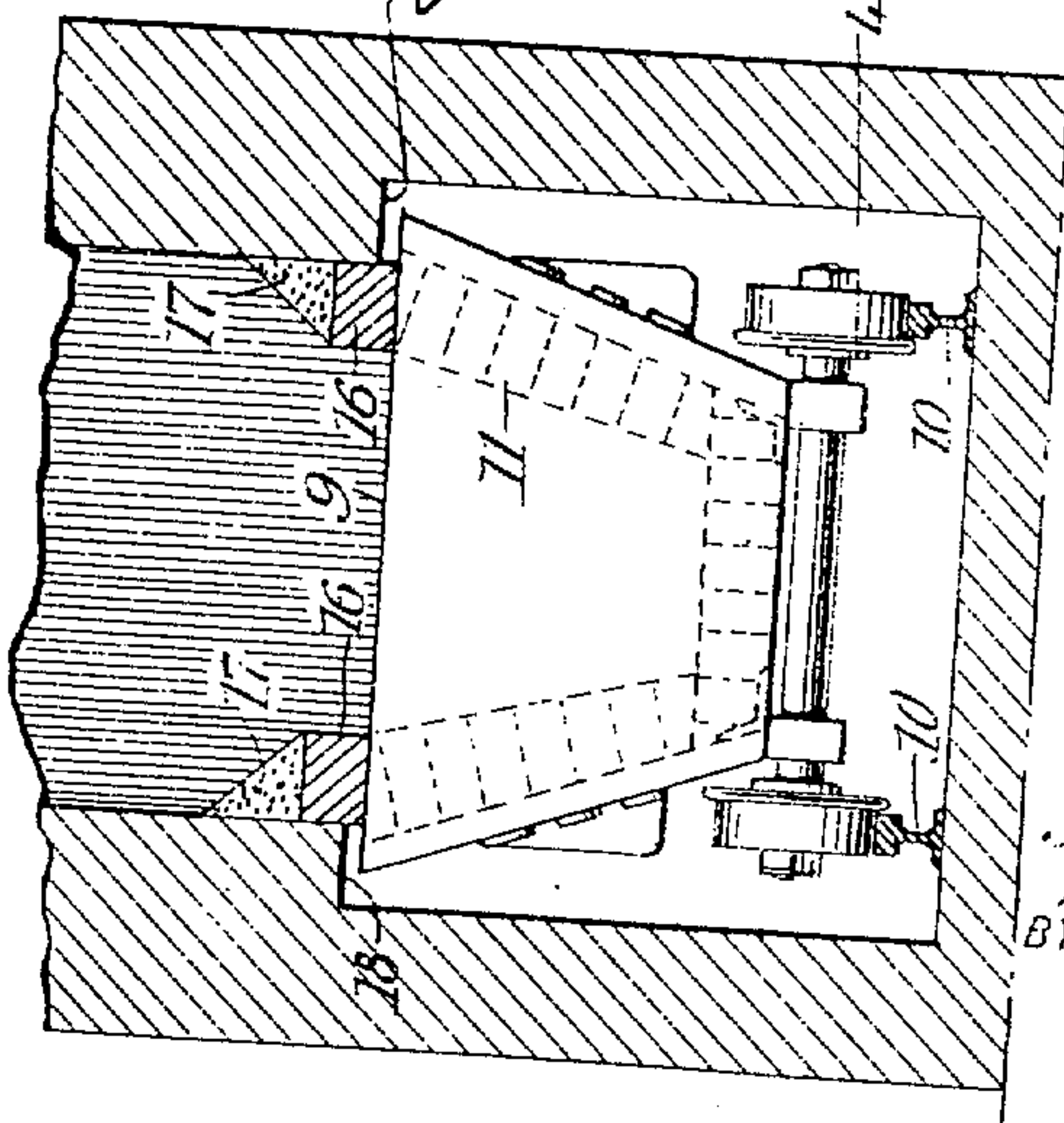


FIG. 3



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# UNITED STATES PATENT OFFICE.

WILLIAM FAIRBROTHER CARR AND JOHN PUSEY McLIMANS, OF COATESVILLE, PENNSYLVANIA.

## FURNACE.

No. 837,191.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed October 26, 1905. Serial No. 284,551.

*To all whom it may concern:*

Be it known that we, WILLIAM FAIRBROTHER CARR and JOHN PUSEY McLIMANS, citizens of the United States, and residents of Coatesville, in the county of Chester and State of Pennsylvania, have invented a new and Improved Furnace, of which the following is a full, clear, and exact description.

This invention relates particularly to improvements in means for removing slag and other foreign substances detached from the metal, glass, or other material manufactured or under treatment in furnaces, the object being to provide a means for removing slag and foreign substances while the furnace is under operation, thus permitting the furnace to finish its run, obviating the cooling off to remove deposits of slag and the like, which is the usual practice, and which is detrimental to the life and run of the furnace, also injurious to the brickwork, as brickwork is often drawn out when removing slag in the ordinary way, resulting in the stopping of the run.

By our invention the slag may be removed at any time during the run without injury to the furnace-walls.

We will describe a furnace embodying our invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical longitudinal section of a furnace embodying our invention. Fig. 2 is a transverse section thereof. Fig. 3 is an end view of one of the truck slag-pockets employed, and Fig. 4 is a side view thereof.

Referring to the drawings, 1 designates the furnace, having the door-closed charging-openings 2 and having in its end walls gas-flues 3, which lead into gas-flues 8, which communicate with checker-chambers 5 in the usual manner. At the sides of the gas-flues are air-flues 6, these air-flues communicating with air-course 7, leading into the furnace. These air-flues communicate at the lower end with slag-flues 4. As a means for receiving and removing slag deposits and the like from flues 4 and 8, we employ trucks 9, which are movable into and out of the flues on tracks 10. The truck slag-pocket bodies consist of metal, and these bodies have a lining 11 of

fire-brick or the like. The inner ends of the truck-bodies are inclined upward, as indicated at 12, so that the upper edges may pass under ledges 13, and below the ledges 13 are shelves 14, on which a packing 15 of sand is to be placed, thus practically preventing any passing of gas and air to the lower sides of the truck slag-pockets. The side edges are also packed by means of brick 16, which rest upon the side lining-bricks of the truck slag-pockets, and upon the upper sides of the brick 16 is packing-sand 17.

It will be noted in Fig. 3 that the upper portions of the truck slag-pocket sides pass under ledges 18 in the side walls of the flues.

In the operation the gas and air pass through their respective flues into the furnace, where they mix and are ignited, and the waste products pass out through the flues at the opposite end, the heavy foreign matter falling into a truck slag-pocket and the remainder passing off through the usual stack. Of course the usual valves will be employed for directing the air and gas into the furnace from either end. The waste products falling into the truck slag-pockets will become hardened or form slag, and the loaded trucks may be drawn out through openings 19. It will be seen that said openings are partly closed by the outer ends of the trucks; but sufficient space is left to permit cold air to enter and circulate around the trucks. Thus it will be noted that the furnace may be kept in continuous operation.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination with a furnace having chambers, gas and air flues providing communication between the chambers and furnace, of trucks movable into and out of the chambers, and means for sealing the upper portion of the truck-bodies in the chambers.

2. The combination with a furnace having chambers communicating with the furnace through air and gas flues, the inner ends of the chambers having ledges at the top, of trucks having their inner ends inclined upward to engage the top edges of the inner ends with the under sides of the ledges, and ledges below the first-named ledges for supporting a sealing material.

3. The combination with a furnace having chambers communicating therewith, of

wheel-mounted trucks movable into and out of the chambers, the bodies of the trucks having a lining of refractory material, sealing-brick contacting with the lining-brick when  
5 the trucks are in the chambers, and sand on said sealing-brick to form an auxiliary seal.

4. The combination with a furnace having flue communication with chambers, the side walls of the upper portions of the chambers  
10 having inwardly-extended ledges, of trucks movable into and out of the chambers and

having their side walls arranged to pass under said ledges and sealing material between said flanges and the truck side walls.

In testimony whereof we have signed our 15 names to this specification in the presence of two subscribing witnesses.

WILLIAM FAIRBROTHER CARR.  
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Witnesses:

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