No. 758,622. PATENTED MAY 3, 1904.

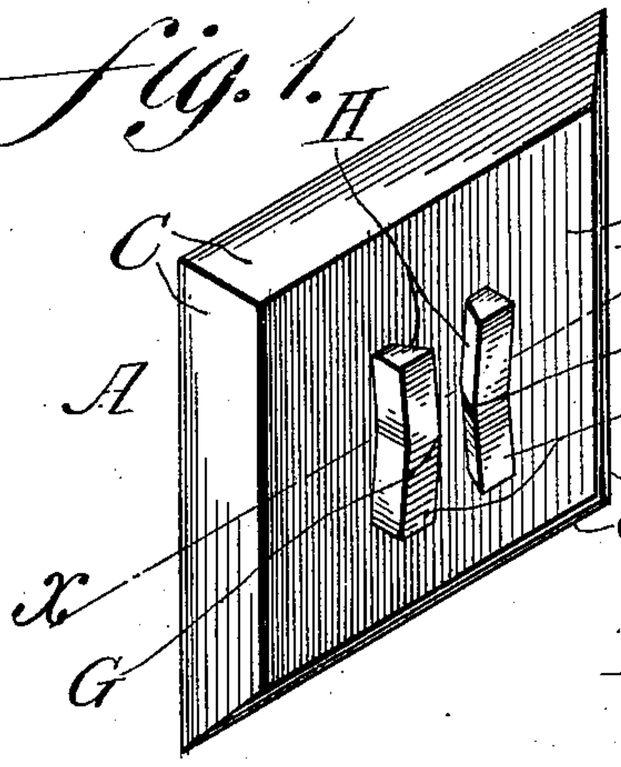
I. R. DAVIS.

REVERSIBLE DOOR FOR FURNACES.

APPLICATION FILED OCT. 19, 1903.

NO MODEL.

Fig. 1.



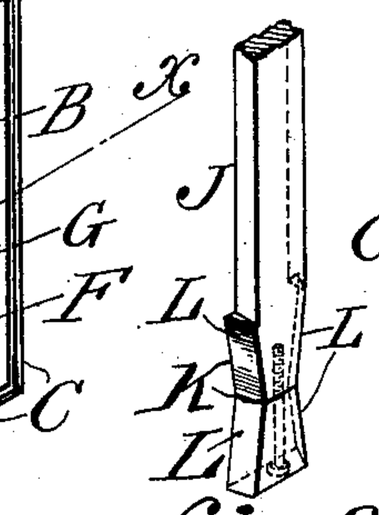
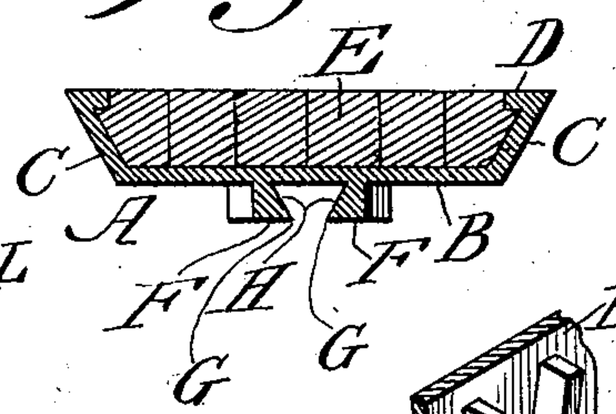


Fig. 3

Fig. 2.



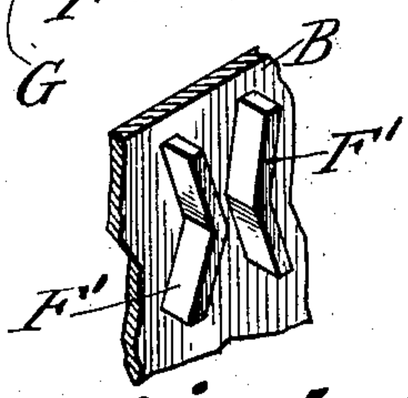


Fig. 5.

Fig. 8.

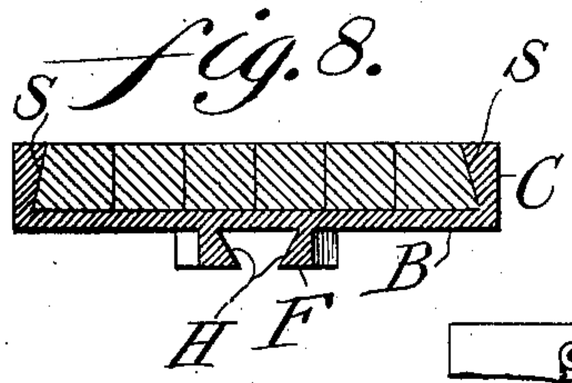


Fig. 4.

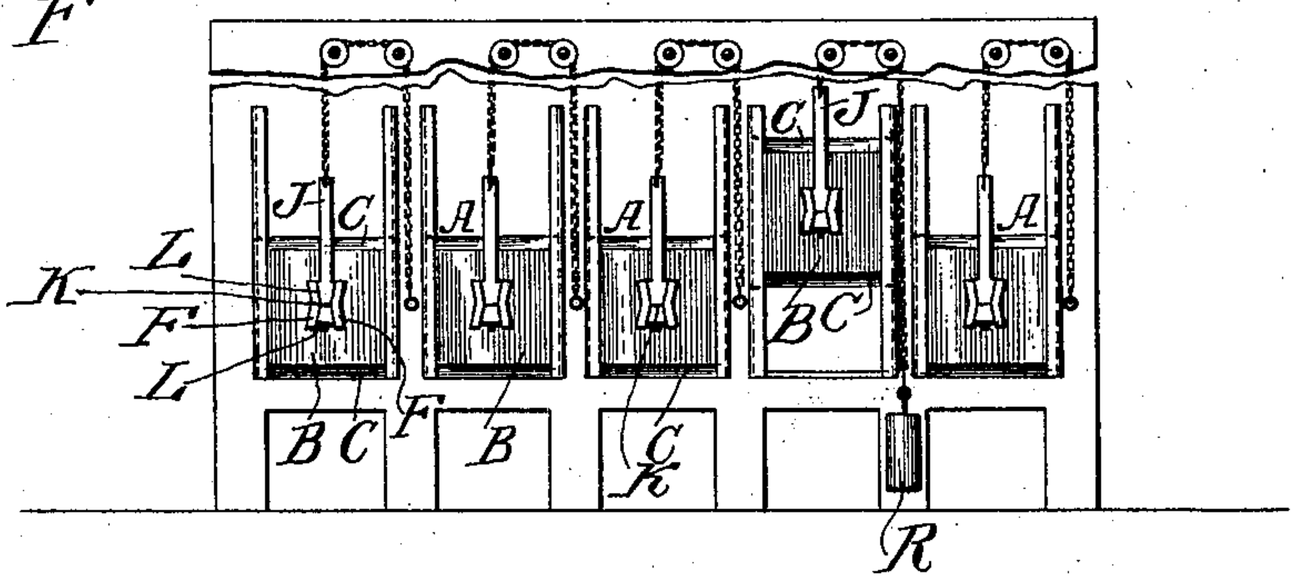


Fig. 6.

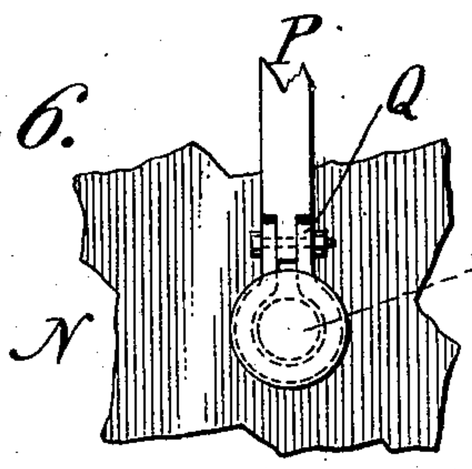
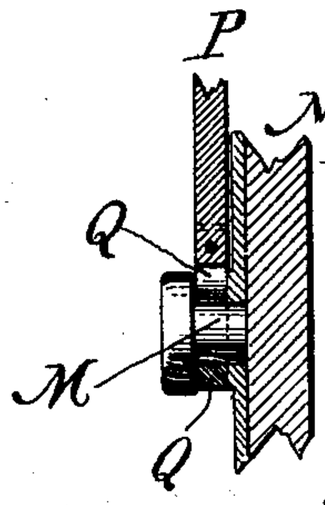


Fig. 7.



Witnesses

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No. 758,622. Patented May 3, 1904.

UNITED STATES PATENT OFFICE.

ISAAC R. DAVIS, OF PHILADELPHIA, PENNSYLVANIA.

REVERSIBLE DOOR FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 758,622, dated May 3, 1904.

Application filed October 19, 1903. Serial No. 177,516. (No model.)

To all whom it may concern:

Be it known that I, ISAAC R. DAVIS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Reversible Doors for Furnaces, of which the following is a specification.

My invention consists of an improvement in doors for furnaces whereby the same are reversible.

It further consists of an improvement in means for engagement with the door for opening and closing the same.

It further consists of novel details of construction, all as will be hereinafter fully set forth.

Figure 1 represents a perspective view of a furnace-door embodying my invention. Fig. 2 represents a sectional view on line *x x*, Fig. 1. Fig. 3 represents a perspective view of a portion of a bar which is adapted to operate the door. Fig. 4 represents a front elevation of a portion of a furnace, showing a plurality of doors, one of which is in elevated position. Fig. 5 represents a perspective view of a portion of a door, showing a slightly-different construction of lugs employed. Fig. 6 represents a front elevation of a portion of a door with a bar for operating the same, showing a slightly-different construction. Fig. 7 represents a sectional view of the parts shown in Fig. 6. Fig. 8 represents a sectional view of the door of a slightly-different construction.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a furnace-door having the front plate B and the inclined side walls C, said door being provided with the inwardly-extending shoulder D, and on the interior of the door is adapted to be placed fire-brick or other suitable material E, the outer bricks of which have inclined faces in order to fit the inclination of the side walls C. On the face B of the door I provide the lugs F, which are angular and are so disposed toward each other that the central portion or points G of each are nearest to each other, forming a narrow passage. The inner walls H of these lugs are also inclined, the narrow portion of the lugs being adjacent to the furnace-door.

J designates the operating-bar for the door, the lower portion of which has the reduced neck K, which is adapted to fit the narrowest portion of the passage between the lugs F and the opposite sides of the said bar, and on each side of the reduced neck are the inclined walls L, which are adapted to fit the inclination of the walls H of the lugs.

It will be understood that the bar K can be placed in engagement with the lugs by inserting the same therebetween, the reduced neck K of the bar permitting the insertion, after which the bar will be slightly raised, so that the inclined faces engage and prevent the bar from leaving its position between the lugs.

R designates a weight which is connected with the bar J by any suitable means—as, for example, a chain—it being understood that in the present instance the weight will serve the double purpose of acting as a balance for the door and also will act to hold the inclined faces of the bar in proper contact with the inclined faces of the lug, so that the bar will not be released therefrom until it is so desired, it being necessary to overcome the resistance of the weight in order to allow the bar J to be so adjusted with respect to the lugs that the neck K thereof is in alinement with the points G of the lugs. In lieu of the weight I may employ a pin or key to lock the bar in proper engagement with the lugs, in which case it will be necessary to first remove the pin or key in order to disengage the bar from the lugs.

As the greatest heat to which the door is subjected when in position would be at the bottom, it will be understood that when the same has been burned out by elevating the door to a proper height and the bar being removed from the lugs the door may be inverted in any suitable manner and the bar placed in position again between the lugs, it being seen that the opposite ends of the latter will then be in engagement with the walls of the bar.

It will be understood from the above that the bar cannot be removed from between the lugs without first bringing the reduced neck into alinement with the narrowest portion of

the passage between the lugs. In Fig. 5 I have shown the lugs F′ without the angular walls H. In Figs. 6 and 7 I have placed a headed pin M upon the door N and have employed a bar P, to which I attach a band Q and which I so arrange that by proper tightening of the same around the pin N the door will be properly held in position, and by loosening the tightening means sufficiently the door can be rotated with respect to the bar, after which the band is tightened.

In Fig. 8 I have shown a construction of door where the inside S of the walls C are inclined, while the outside walls are flat, it being seen that the inclined walls C serve the same purpose as the shoulder D.

It will be evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

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

1. A combination of a stationary furnace adapted to heat the upper and lower portions of its door to materially different temperatures and provided with guides, of an invertible furnace-door sliding in said guides and provided with raising means engageable with said door in both its original and inverted positions, whereby both end portions of said door may be successively subjected to similar conditions of temperature.

2. A combination of a stationary furnace adapted to heat the upper and lower portions of its door to materially different temperatures and provided with guides, of an invertible furnace-door sliding in said guides and provided with raising means engageable with said door in both its original and inverted positions, and with means for positively securing said raising means to said door in either of such positions, whereby both end portions of said door may be successively subjected to similar conditions of temperature.

3. The combination with a stationary furnace adapted to heat the upper and lower portions of its door to materially different temperatures and provided with guides, of an invertible door sliding in said guides and having a lug located substantially centrally of its outer face, and raising means engageable with said lug when said door is in either its original or inverted position whereby both end portions of said door may be successively subjected to similar conditions of temperature.

4. In a furnace-door consisting of heat-resisting material, lugs thereon situated at an acute angle with respect to each other, in combination with an elevating-bar having a reduced neck adjacent one end thereof, whereby the same may be inserted between the lugs.

5. An invertible furnace-door consisting of heat-resisting material provided with pairs of lugs arranged at an acute angle with each other and a lifting-bar adapted to fit therebetween when said door is in either its original or inverted position whereby both end portions of said door may be successively subjected to similar conditions of temperature.

ISAAC R. DAVIS.

Witnesses:
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