

(No Model.)

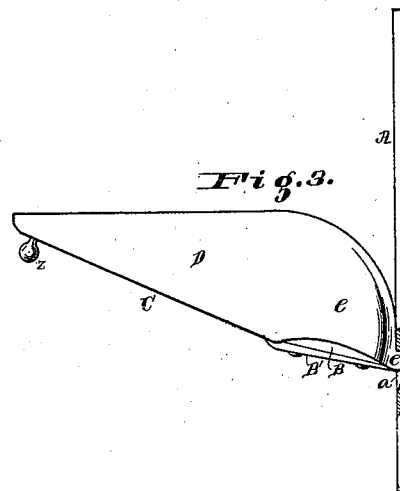
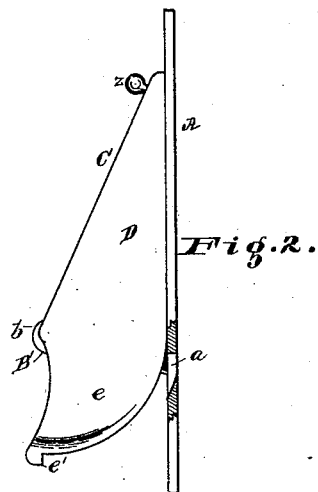
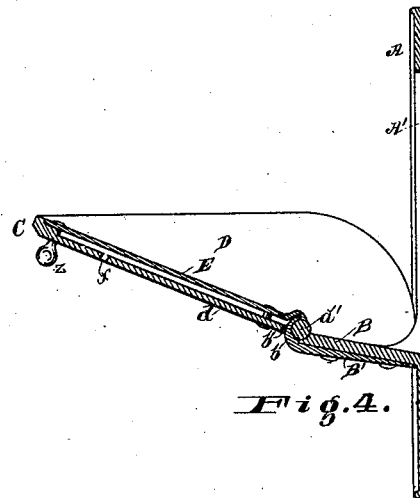
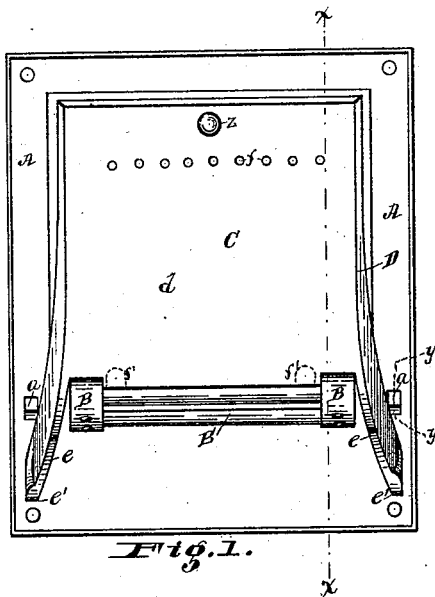
2 Sheets—Sheet 1.

W. G. FISCHER.

DOOR FOR STOVES, RANGES, AND FURNACES,

No. 306,732.

Patented Oct. 21, 1884.



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H. Gulick

Inventor:

Wm. G. Fischer,
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Fig. 5.

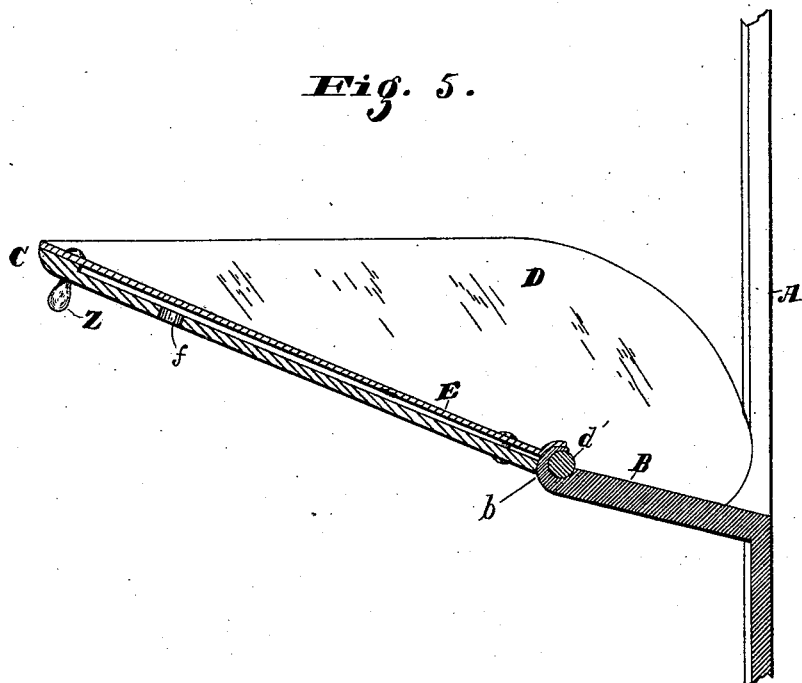
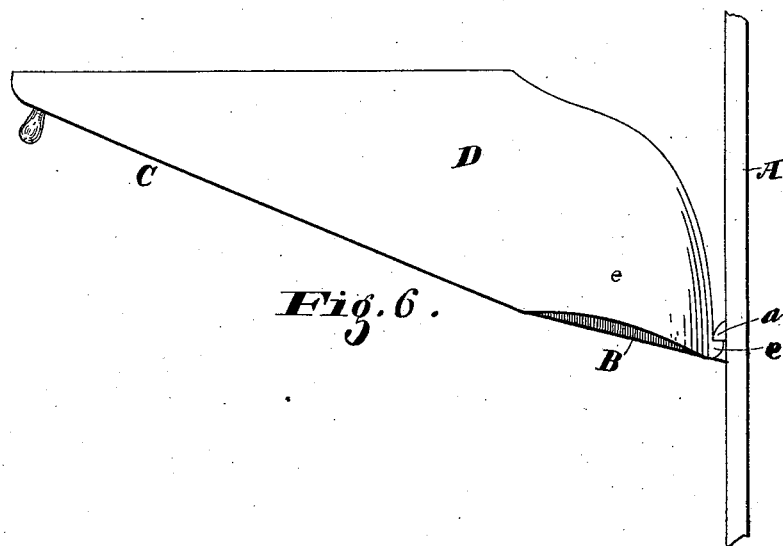


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM G. FISCHER, OF CINCINNATI, OHIO.

DOOR FOR STOVES, RANGES, AND FURNACES.

SPECIFICATION forming part of Letters Patent No. 306,732, dated October 21, 1884.

Application filed December 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. FISCHER, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Doors for Stoves, Ranges, and Furnaces, of which the following is a specification.

My invention relates in general to the construction of the door and the frame which receives it.

My invention is alike applicable to stoves, ranges, or furnaces.

The various features of my invention and the advantages resulting therefrom will be apparent from the following description.

Heretofore hinged fire-doors carrying cheeks have been combined with a stove to serve as a chute or leader for conducting the fuel into the fire-box of the stove or other cooking or heating apparatus; but to insure a perfect performance of their proposed functions the construction of these cheeks and the combination of the door-cheeks and stove have been such as to either compel the formation and presence of supplemental cheeks projecting from the stove, or the door-cheeks had to be constructed to pass into the fire-chamber or stove.

One feature of my invention enables me to dispense with the use of supplemental cheeks, and also avoid the necessity of having the cheeks enter the fire-chamber or stove.

The preferred forms of stop mechanism which I employ in conjunction with my said door-cheeks, to prevent the door from dropping too far when opened, enable me to dispense with separate plates or lugs heretofore attached to the frame to form stop mechanism.

Referring to the drawings forming part of this specification, Figure 1 is a front elevation of a door and frame illustrating my invention, the door being closed. Fig. 2 is a side elevation of the same, the edge of the frame being broken away, as indicated by the dotted lines *yy* of Fig. 1. Fig. 3 is a side elevation showing the door opened, the edge of the frame being broken away, as in Fig. 2. Fig. 4 is a sectional elevation showing the door open, the section being taken at the dotted lines *xx* of Fig. 1, and in a plane at right angles to the front surface of the door. Fig. 5 represents a vertical section through the door-shelf and stove front plate, illustrating a certain modification of

my invention to be hereinafter specified. 55
Fig. 6 represents a side elevation of a door-cheek and stove front plate, illustrating a modification of the stove mechanism for preventing the door when opened from falling down too far, and which modification will be hereinafter fully described. 60

In the present instance I have shown my invention as constructed for application to a range, but from the following description it will be obvious that it may be as readily applied to stoves or furnaces. 65

A is the door-frame, which is to be secured to the side of the range; and this frame is provided with the fuel-opening A'. At the bottom of this opening A' is an extension projecting shelf, B, which, in connection with the door, serves as a chute for the fuel; and this shelf is preferably cast with the frame A. The door is secured to the frame or its extension by any suitable hinge-connection. 70

A preferred hinge-connection is as follows: The shelf B is provided at or near each end with the hinge-plates B', cast with or otherwise secured to the shelf or to the lower part of the frame A, and preferably located on the under side of said shelf. Each of these plates B' has an end, *b*, which retains the door, whether opened or closed, and while being opened or closed in position with relation to the shelf. When the shelf B is of sufficient strength, this end *b* may be cast in one piece with the shelf B, and the plates B' may be omitted, as illustrated in Fig. 6, Sheet 2. 75

C is the door, which consists of the plate *d* and the wings or cheeks D. The lower edge of the plate *d* of the door is thickened to form a cylindrical ridge, *d'*, with which the hooks or eyes *b* of shelf B engage to form the hinges of the door. Where the ends *b* are hooks, openings *b'* are usually present in the door to receive the end of the hooks (see Fig. 4) when the door is open. 80

To the plate *d* is preferably secured a lining-plate, E, a slight air-space being left between said plate and lining, and the lower edge of this lining covers the ends of hooks *b*, not permitting any dust or ashes to interfere with the hinges, and this plate is usually perforated with a series of small openings near its lower edge, and the plate *d* is likewise perforated with a series of perforations, *f*, near its upper edge. Any dirt or ashes which may enter the holes at the bottom of the lining E is prevented 85

from interfering with the hinges by lugs or studs f' , (indicated by dotted lines in Fig. 1,) to which studs the lining E is riveted. The purpose of this air-space between the plates and the air-openings is to keep the door-plates from warping and to furnish heated air to improve combustion. The cheeks D extend below the hinges of the door (when the door is closed) a distance equal to the distance from the hinges to the face of the frame A, as shown at e , and these extensions are shaped in or nearly in the arc of a circle the center of which is formed by the hinges of the door, the periphery of the circle being at the face of the frame A, so that as the door C is turned on its hinges the edge of this extension e is at all times close to this frame, and these cheeks D, with the extensions e , form the sides of the chute, the bottom of which chute is formed by the door when open and the shelf B. A suitable stop or stops for holding the door, after being opened, in position whereby it shall form a part of the chute-way are present at any convenient and desirable point.

A desirable mode of applying such a stop or stops is shown in the drawings, and is as follows: The lower end of each of the extensions e is provided with a lug or stop, e' , which, when the door is opened, enters a stop-hole, a , in the frame A, preventing the door from dropping beyond a certain point. Instead of these holes a , projecting lugs may be formed on the face of the frame, against which the lugs e' may strike, as illustrated in Fig. 6, Sheet 2; but this last-mentioned construction is obviously not so desirable as the construction herein previously described.

As before intimated, the ends b may be eyes or hooks. I prefer to construct them in the shape of hooks, for the reason that thus the door may be readily lifted from the hinges at any time, and this capability is obviously a great advantage.

The amount of projection of the shelf B may be increased or diminished to suit the particular class of work to which the door is to be applied, the width of the cheeks D and the extension e being governed by the amount of projection of the shelf.

The door is usually provided with a suitable handle or extension, z , for convenience in opening or closing the door.

When employed for stoves, the shelf B will usually be cast with the side of the stove.

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

1. In combination, the frame having shelf B, and the door C, hinged to the shelf and provided with cheeks having extensions e , whose periphery is formed in the arc of a circle whose center is the hinge, said periphery being in close proximity to the front surface of the frame and outside of the door-opening of the frame, substantially as and for the purposes specified.

2. In combination, the frame, shelf, and

door C, hinged at or near the outer edge of the shelf, and provided with cheeks having extensions e , whose periphery is of the form of an arc concentric with the hinge, and in close proximity to the front surface of the frame and outside of the door-opening of the frame, the extensions being provided with lugs e' , adapted to engage suitable stops for checking the descent of the door, substantially as and for the purposes specified.

3. The combination of the door C, frame, and shelf, and suitable stop mechanism for arresting the descent of the door, and the cheeks connected to the door and having extensions e formed in the arc of a circle whose periphery is concentric with the hinge-connection of the door, substantially as and for the purposes specified.

4. The frame A, provided with projecting shelf B, in combination with the door C, provided with cheeks D, having extensions e , said door being detachably hinged to the outer edge of the shelf for enabling the door to be readily lifted off, said extensions being formed in the arc of a circle the center of which is the hinge, the periphery at all times coming into close proximity to the frame, and provided with a suitable stop for preventing the door from opening beyond a certain point, substantially as and for the purposes specified.

5. The frame supporting the shelf, provided with the hinge-plates B', carrying hooked extremities b , in combination with door C, having cheeks D, with extensions e , shaped and operating as described, and suitable stop mechanism for arresting the descent of the door, substantially as and for the purposes specified.

6. The frame A, provided with shelf B, having secured thereto the hinge-plates B', said plates being provided with hooked extremities b , in combination with the door C, provided with cheeks D, having extensions e , shaped as described, and provided with lugs e' for engaging with the holes a , said door being hinged to the hooked extremities b by cylindrical ridges d' , substantially as and for the purposes specified.

7. The combination of the frame, shelf, and plates B', having hooked extremities b , and the door provided with rod d' and slots b' for the reception of said hooked ends, substantially as and for the purposes specified.

8. The frame A, having stop-holes a , in combination with the door C, hinged to the frame and provided with side cheeks, D, having extensions e , said extensions being provided with lugs e' , adapted to engage with the holes a in the frame, the lugs e' and the holes a being in the same plane with the extensions e , substantially as and for the purposes specified.

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