No. 657,612. Patented Sept. 11, 1900.

C. C. NOTT & F. G. WARD.

FURNACE DOOR.

(Application filed Mar. 2, 1900.)

(No Model.)

Fig. 1.

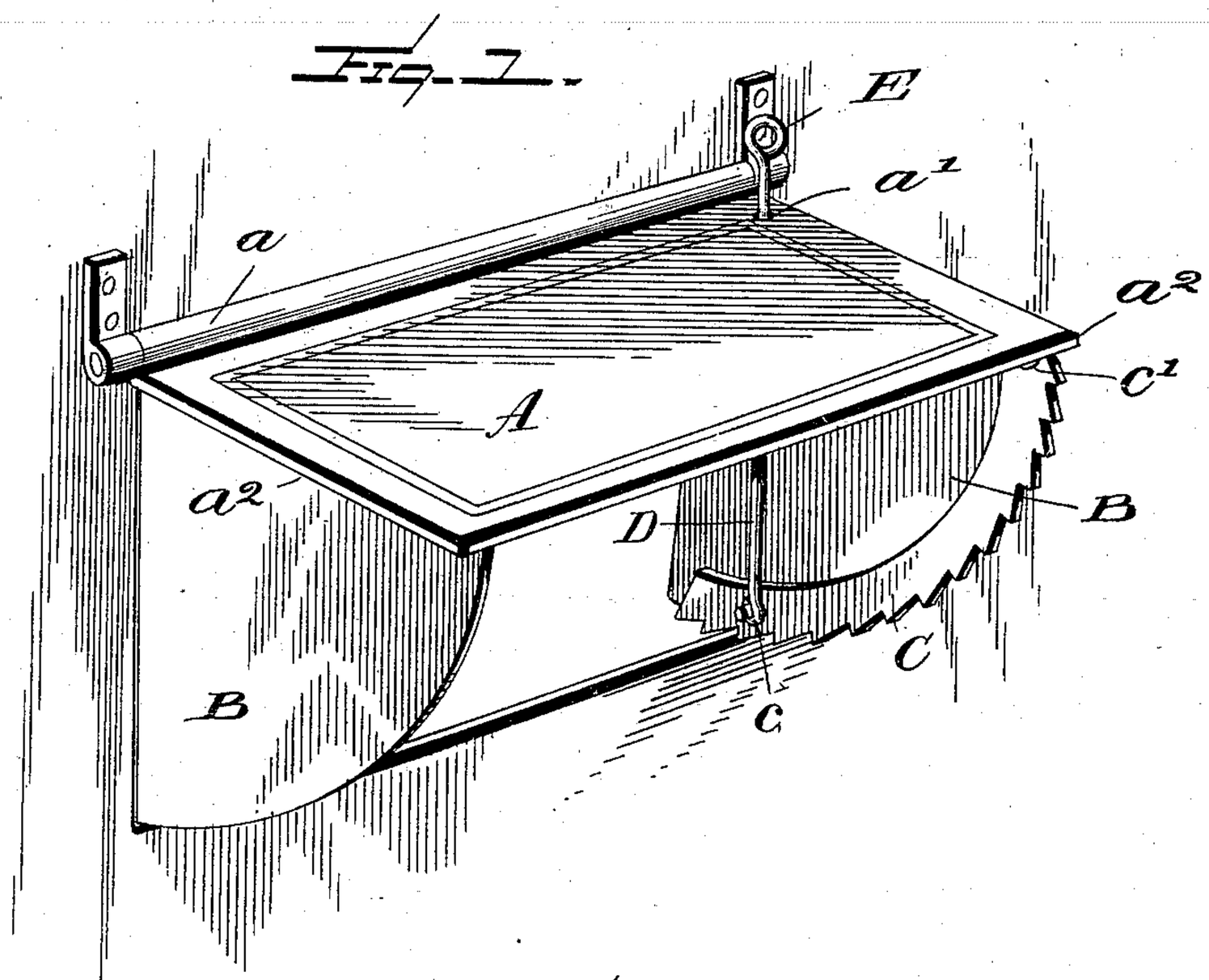
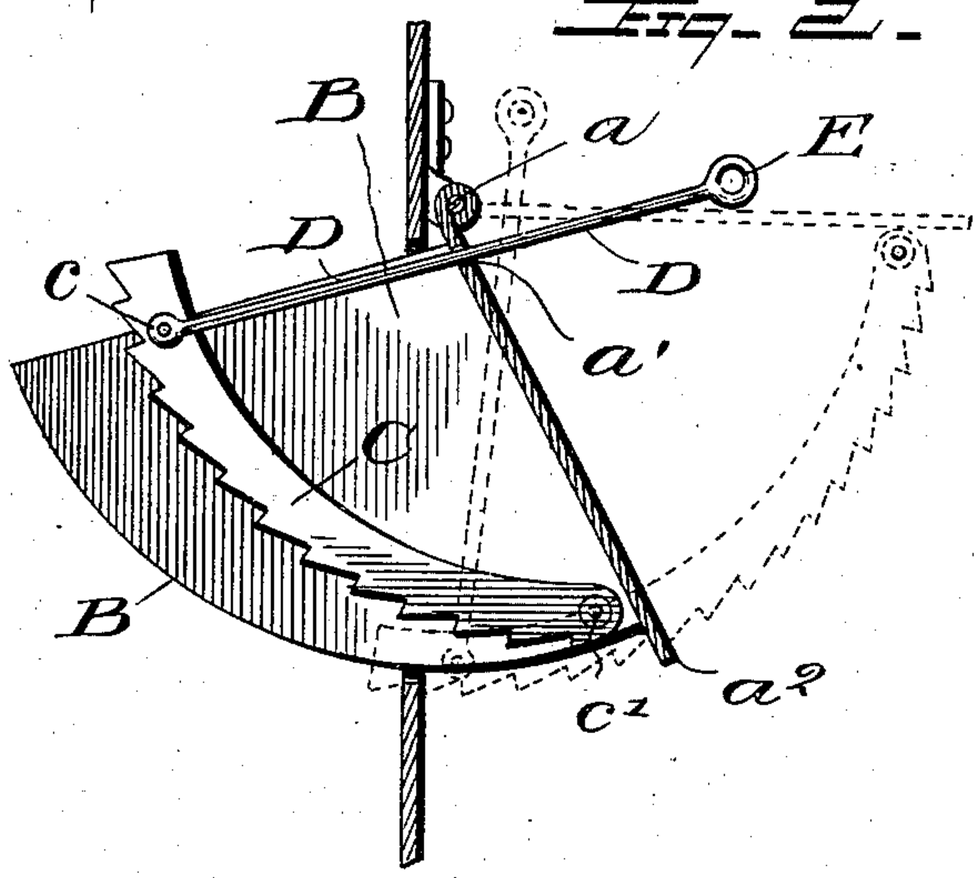


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES COOPER NOTT AND FRANCIS GILBERT WARD, OF WASHINGTON, DISTRICT OF COLUMBIA.

FURNACE-DOOR.

SPECIFICATION forming part of Letters Patent No. 657,612, dated September 11, 1900.

Application filed March 2, 1900. Serial No. 7,098. (No model.)

To all whom it may concern:

Be it known that we, CHARLES COOPER NOTT and FRANCIS GILBERT WARD, citizens of the United States, and residents of the city of Washington, in the District of Columbia, have invented certain new and useful Improvements in Furnace-Doors, of which the following is a specification.

The furnace-door in which our invention is comprised is one that can be applied readily to any furnace without requiring change in the structural details of the furnace; and it consists of an outwardly-opening hood-like structure hinged at its top to the doorway of the furnace and having side wings which when the door is closed are contained within the compass of the doorway and fit snugly against the sides thereof, means being provided by which the door can be held open at any desired angle for the purpose of draft regulation.

In the accompanying drawings, Figure 1 is a perspective view of so much of a furnace as is needed to illustrate our invention, and Fig. 2 is a detail section of the same.

In the accompanying drawings the door A is hinged at *a* to the top of the doorway of the furnace and closes by falling instead of swinging. The door consists of a plate of sufficient size to cover the doorway of the furnace and is provided at its ends with inwardly-extending sides or wings B. These sides or wings are in form quadrants of a circle the radius of which is the distance from the hinges of the door to the bottom of the doorway. They are so attached to the door that they will just pass into the doorway when the door is closed and fit snugly against the sides of the doorway, leaving a flange a^2 at the ends and bottom edge of the door to completely cover the doorway.

Attached to the door is a device for holding it open at any desired angle. We may use for this purpose any desired means, such as will readily suggest themselves to the skilled mechanic, and therefore do not desire to be understood as restricting ourselves to the particular device shown in the drawings in illustration of our invention. The device shown consists of a curved rack-bar C, placed on the inside of and hinged at its outer end *c'* to the door at *c* and operating with the bottom plate of the door, which forms a catch for the rack. Secured to the inner end of this rack-bar is a rod D, which projects through a hole *a'* in the door and has formed at its other extremity, extending on the outside of the door, a handle E, so arranged that when the rod is drawn out it will lift the rack-bar C and free it from the catch, thereby permitting the lowering of the door. By means of this device the door may be used either as a damper admitting the smallest desired quantity of air or may be set wide open to check the fire or to cool the furnace.

When the door is placed in a horizontal plane, the quadrant-shaped sides or wings B will extend to the bottom and sides of the doorway. When the door, being further closed, passes below a horizontal plane, the sides or wings will slide into the doorway of the furnace. The door upon being placed below a horizontal plane forms with its sides or wings a passage-way having an upward draft or current of air. As a result of this novel arrangement whenever the door is below a horizontal plane an indraft of air will be secured, thereby effectually preventing an outward current or escape of smoke and gas.

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

A furnace-door hinged at the top to the doorway of the furnace with sides or wings which are contained within the compass of the doorway and fit snugly against the sides thereof when the door is closed, and means for holding the door open at any desired angle, as and for the purposes hereinbefore shown and described.

In testimony whereof we have hereunto set our hands this 1st day of March, 1900.

CHARLES COOPER NOTT.
FRANCIS GILBERT WARD.

Witnesses:
ARCHIBALD HOPKINS,
GEORGE W. TAYLOR.