

(No Model.)

H. H. DREYER.

FURNACE DOOR.

No. 316,884.

Patented Apr. 28, 1885.

Fig. 1.

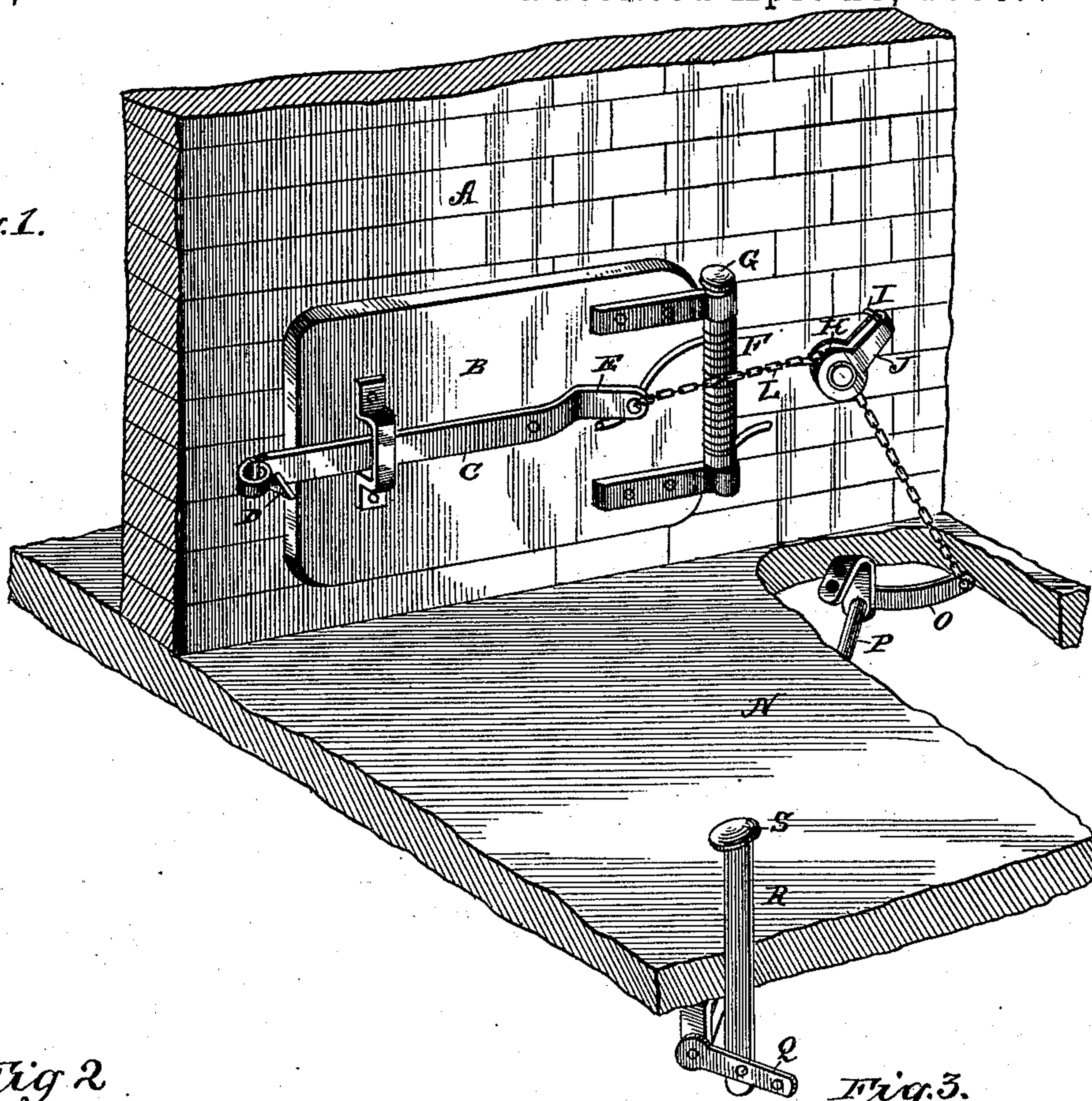


Fig. 2.

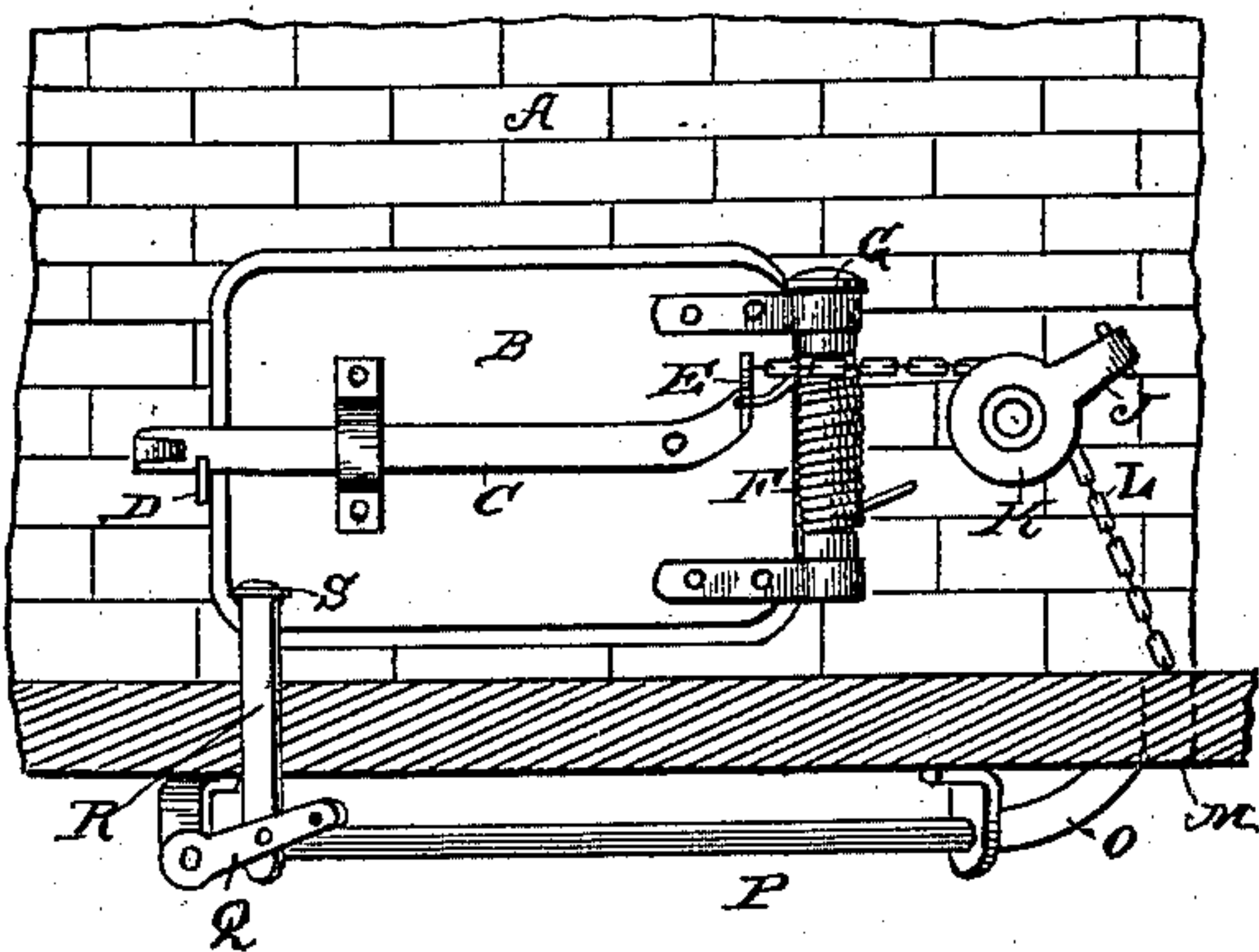
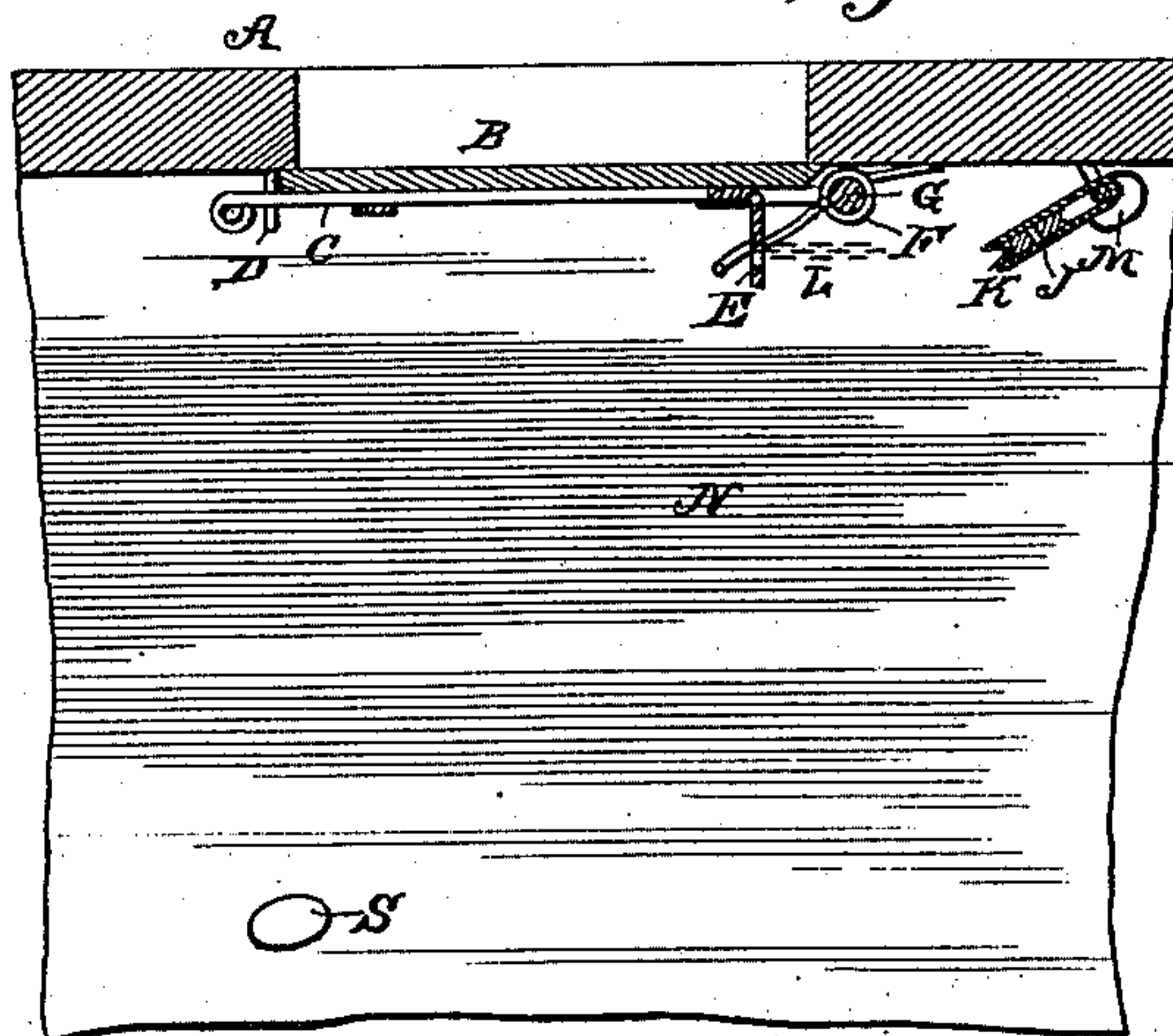


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HERMAN H. DREYER, OF GENOA, OHIO, ASSIGNOR OF ONE-HALF TO JOHN H. H. UTHOFF, OF SAME PLACE.

## FURNACE-DOOR.

SPECIFICATION forming part of Letters Patent No. 316,884, dated April 28, 1885.

Application filed January 20, 1885. (No model.)

*To all whom it may concern:*

Be it known, that I, HERMAN H. DREYER, a citizen of the United States, and a resident of Genoa, in the county of Ottawa and State of Ohio, have invented certain new and useful Improvements in Furnace-Doors and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved furnace-door, showing the same closed and with portions of the flooring in front of the furnace removed for the purpose of illustrating the construction of the operating device. Fig. 2 is a front view of the furnace-door with its attachments, and Fig. 3 is a horizontal sectional view taken on the line *xx* in Fig. 2.

The same letters refer to the same parts in all the figures.

This invention relates to furnace-doors; and it has for its object to provide a device whereby such doors may be readily operated without manual contact, and in such a manner that the door may be retained open while the furnace is being fed, or while for any reason it shall be desirable, and that it shall be automatically closed when desired.

With these ends in view, the invention consists in the improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates the front of a furnace, and B the door which is hinged to the same. The front of the door is provided with the latch-lever C engaging the catch D, and provided at its inner end with a forwardly-extending inclined arm, E.

F is a spring, coiled around the hinge rod G, and bearing at one end against the furnace-front and with the other end against the under side of the arm E of the latch-lever, thus serving the double purpose of keeping the door closed and causing the latch-lever to engage its catch.

I is a staple secured to the side or front of the furnace near the hinged end of the door,

and in this staple is arranged a bail, J, carrying a pulley, K, the periphery of which is grooved, and over which passes a chain, L, one end of which is attached to the outer end of the arm E of the latch-lever and the other end of which passes through an opening, M, in the floor N, in front of the furnace, and is attached to the end of an arm or crank, O, extending from a shaft, P, which is journaled in suitable bearings under the said floor. The rear end of the said shaft has another crank, Q, to which is pivoted an arm, R, extending upwardly through an opening in the floor and provided at its upper end with a foot-piece or treadle, S, upon which the foot of the operator may be placed in the operation of the device.

From the foregoing description taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood. When it is desired to open the furnace-door for the purpose of feeding, raking, or inspecting the fire, or for any purpose whatever, the operator only has to step upon the foot-piece or treadle S, thereby rocking the shaft P in its bearings, and pulling upon the chain L. The latch will thus be raised from the catch and the door be drawn open. In this position it will remain until the pressure upon the treadle is released, when, by the action of the spring F, the door will be automatically closed and the latch fastened. It will be seen that the pulley over which the chain passes will readily adapt itself to any position of the door.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a furnace-door and catch, of a latch-lever pivoted to said door and provided at its inner end with an inclined arm, and a spring coiled upon the hinge-rod and having projecting ends bearing, respectively, against the furnace-front and against the under side of the latch-lever, substantially as herein described, for the purpose set forth.

2. The combination, with a furnace-door and catch, of a latch-lever pivoted to said door and having at its inner end an inclined forwardly projecting arm, a spring coiled upon the hinge-rod and having projecting ends bearing against

the front of the furnace and against the under  
side of the inclined arm of the latch-lever, a  
rock-shaft journaled under the floor in front of  
the furnace and having cranks at both ends,  
5 a treadle-piece connected pivotally with the  
front arm of said shaft and extending upward  
through the floor, and a chain passing over a  
pulley in a suitably-pivoted block and con-  
necting the rear end of said shaft with the in-

clined arm of the latch-lever, substantially as 10  
set forth.

In testimony that I claim the foregoing as  
my own I have hereunto affixed my signature  
in presence of two witnesses.

HERMAN H. DREYER.

Witnesses:

JOHN BOWLAND,  
JOHN ELKINGTON, JR.