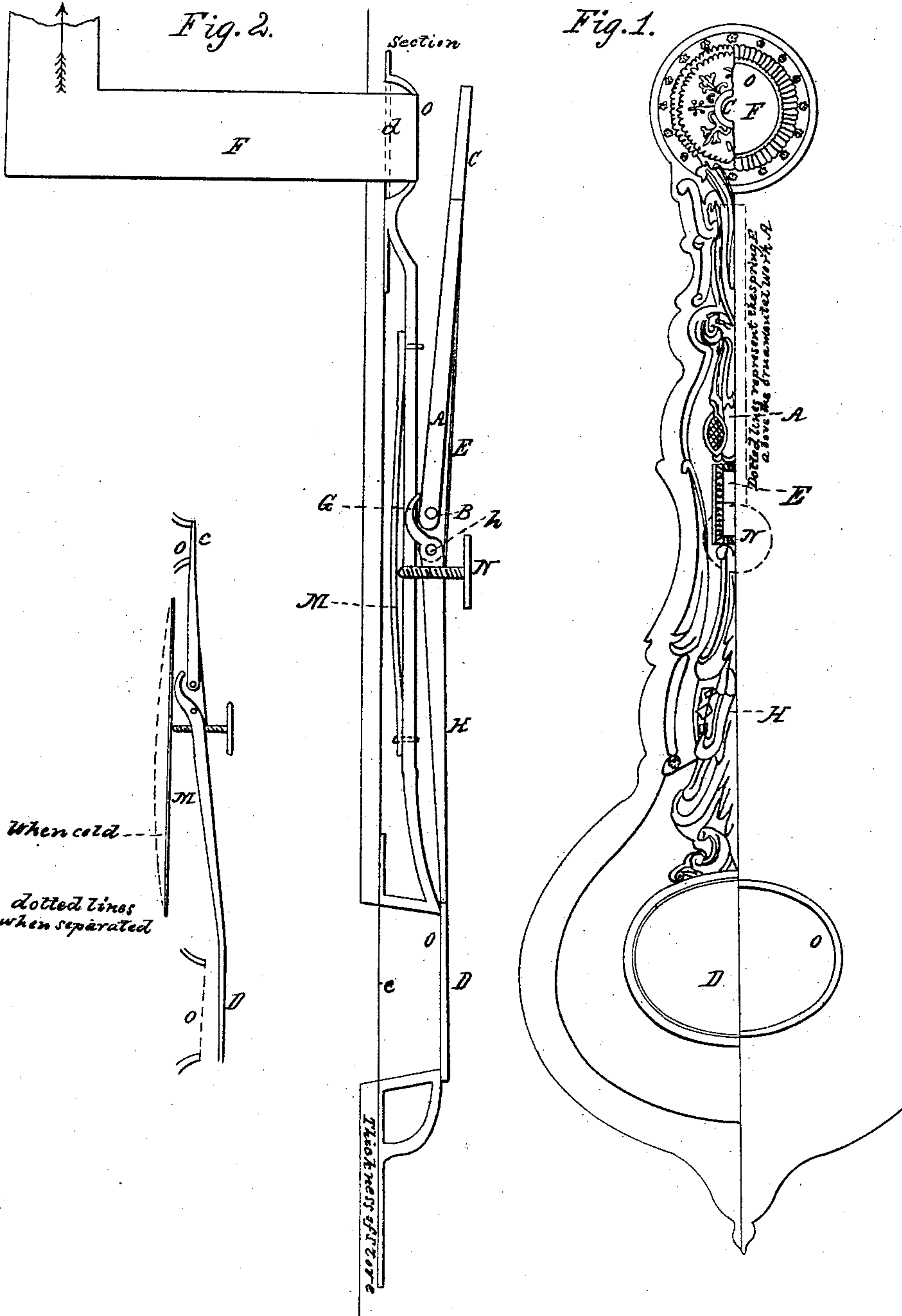


## Stove Damper.

No. 10,234.

Patented Nov. 15, 1853.



# UNITED STATES PATENT OFFICE.

SERGIUS P. LYON, OF FARMINGTON, MICHIGAN.

## SELF-ACTING DAMPER FOR AIR-TIGHT STOVES.

Specification of Letters Patent No. 10,234, dated November 15, 1853.

*To all whom it may concern:*

Be it known that I, SERGIUS P. LYON, of Farmington, in the county of Oakland and State of Michigan, have invented a new and  
5 useful method of constructing and operating the dampers of air-tight stoves whereby the injurious effect of an accumulation of corrosive vapors—such as pyroligneous-acid or other impure and explosive gases is ob-  
10 viated—and at the same time a more perfect and automatic control of the stove is obtained, whereby great economy of fuel results and durability of the pipes and flues secured; and I do hereby declare that the  
15 following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

I am aware that stoves have been con-  
20 structed in which the valve or damper controlling the draft (through an opening at the lower edge of the stove), of air to the fire; and having also another valve or damper on the mouth of a pipe secured under  
25 the top plate inside of the stove, are not new; neither is it new to connect these dampers or valves by a pivoted bar or lever, so that by the hand or controlled by an attendant, one of the valves being moved effects  
30 the other. It is not new to operate a single valve controlling the draft to the fire, by the expansion of a metal rod secured only at one end, the other connected immediately with the valve; but in my invention, which  
35 will hereafter be explained, I operate each valve or damper by its own rod or lever, while at the same time the upper valve or air inlet to the flue, is dependent on the position of the extended end of the rod of the  
40 lower damper, and of a spring on said lower rod; by this division of the rod I produce extreme sensitiveness thereof through the agency of a thumb screw passing through the lower rod near its fulcrum; said screw  
45 being in contact and operated on by an expansible metal plate secured at both its ends; any change of heat causing it to change its shape and consequent action on the end of the screw levers, &c., and thus by  
50 an automatic movement at the same time, control both the draft of air to the fire and that of draft into the flue.

To enable others skilled in the art to make and use my invention I will describe it as  
55 follows:

In the accompanying drawings No. 1, is a front view of the register or automatic damper; No. 2, a central vertical section thereof; and it is applicable to all varieties of air tight stoves, only requiring the addition of  
60 an inlet pipe, as represented by F, (on No. 2.) This is placed inside of the stove near the top, one end secured by a flange or by rivets to the front side of the stove in which there is a suitable opening *d* for air to en-  
65 ter; the other end entering the smoke pipe or flue and turns up therein with an elbow for the purpose of preventing the fire being supplied with air, and also for giving a direction to the current of air upward, by  
70 which the vapors of wood are carried out of the pipe or flue and the injurious effects of stagnation prevented. At the lower edge of the side, is also an opening *e*, or draft for the fire.  
75

The registering device is formed of thin metal plate, having corresponding openings to those described fitting closely around the edges thereof by means of a flange, so as to prevent the admission of air except  
80 through the openings *o*, *o*, when the valves are raised.

H, is a lever or valve rod, pivoted at *h*, carrying on its lower end the valve or damper D, by which the fire draft is regu-  
85 lated, and on its upper end beyond the pivot (*h*,) the curved portion G.

A, is the upper valve lever pivoted at B, a short distance above *h*, and sufficiently near, to be acted on near its fulcrum by G' of the  
90 lower rod; C, is on the upper end of A; E, a small flap spring fastened on the opposite side of A, to G; it will be noticed in No. 2 that the spring and curved portion of H embrace the end of lever A; M is a flexi-  
95 ble plate of metal secured at both ends to the back of the plate forming the register; N is a thumb screw, which is tapped in H, serving to adjust the rod and valve by protruding it toward M in setting the fire draft;  
100 and it will be perceived, that being near the pivot of H, the slightest action of the plate M operates very sensibly the valve D and its rod.

What I claim as my invention and desire  
105 to secure by Letters Patent is—

The arrangement of the lever H having the valve D on its lower end, and a curved portion G and flat spring E on its upper  
110 end in combination with the lever A pivoted



between the curve portion and spring, (said  
lever attached to the upper valve C,) the  
thumb screw N, and expansible plate M;  
the whole operating automatically in the  
5 regulation of the draft of air to the fire and  
also to the induction of air to the flue, in  
the manner set forth and shown.

In testimony whereof I have hereunto  
signed my name before two subscribing  
witnesses.

SERGIUS P. LYON.

Witnesses:

MARK ARNOLD,  
CHAS. E. EASTMAN.