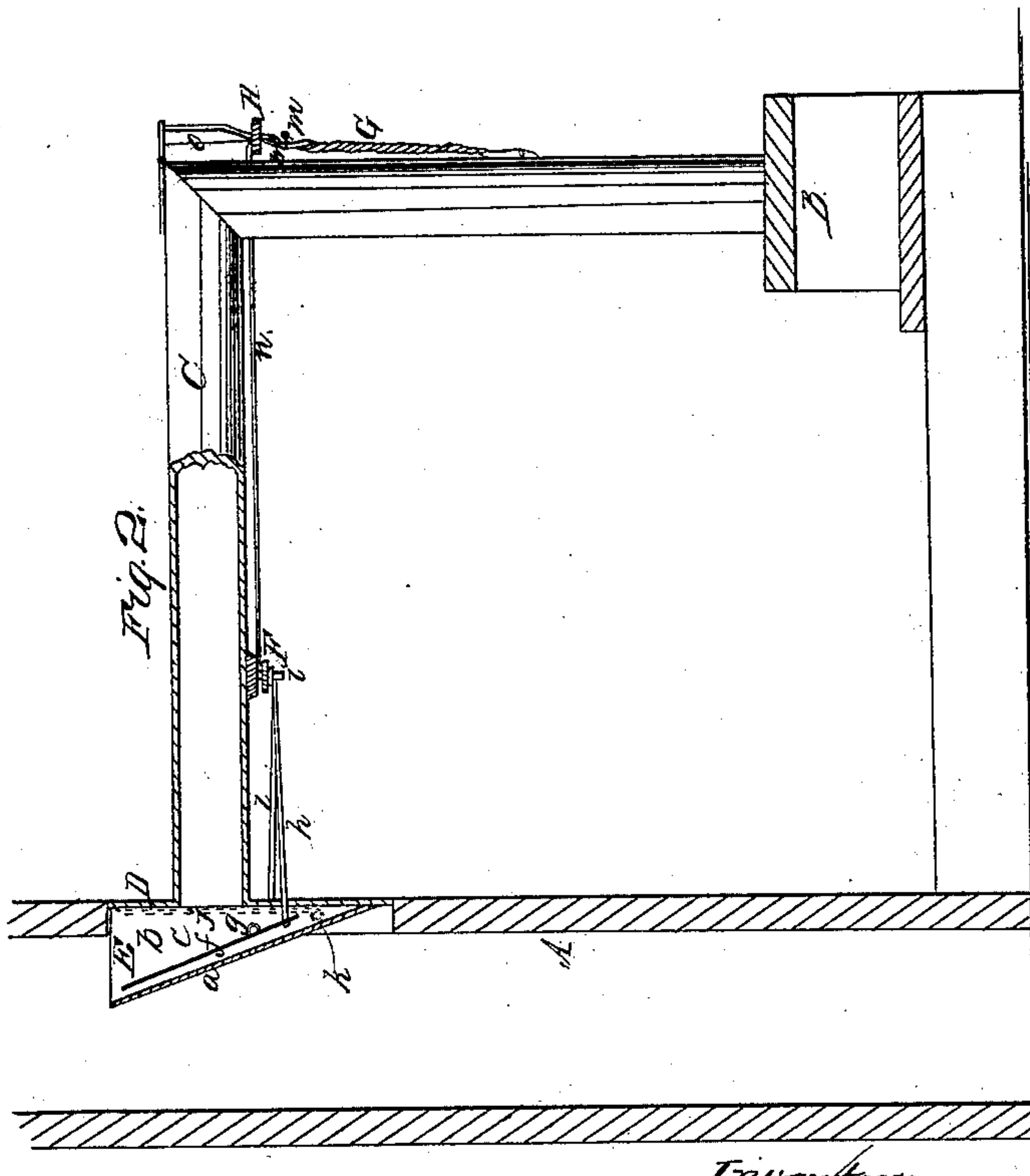
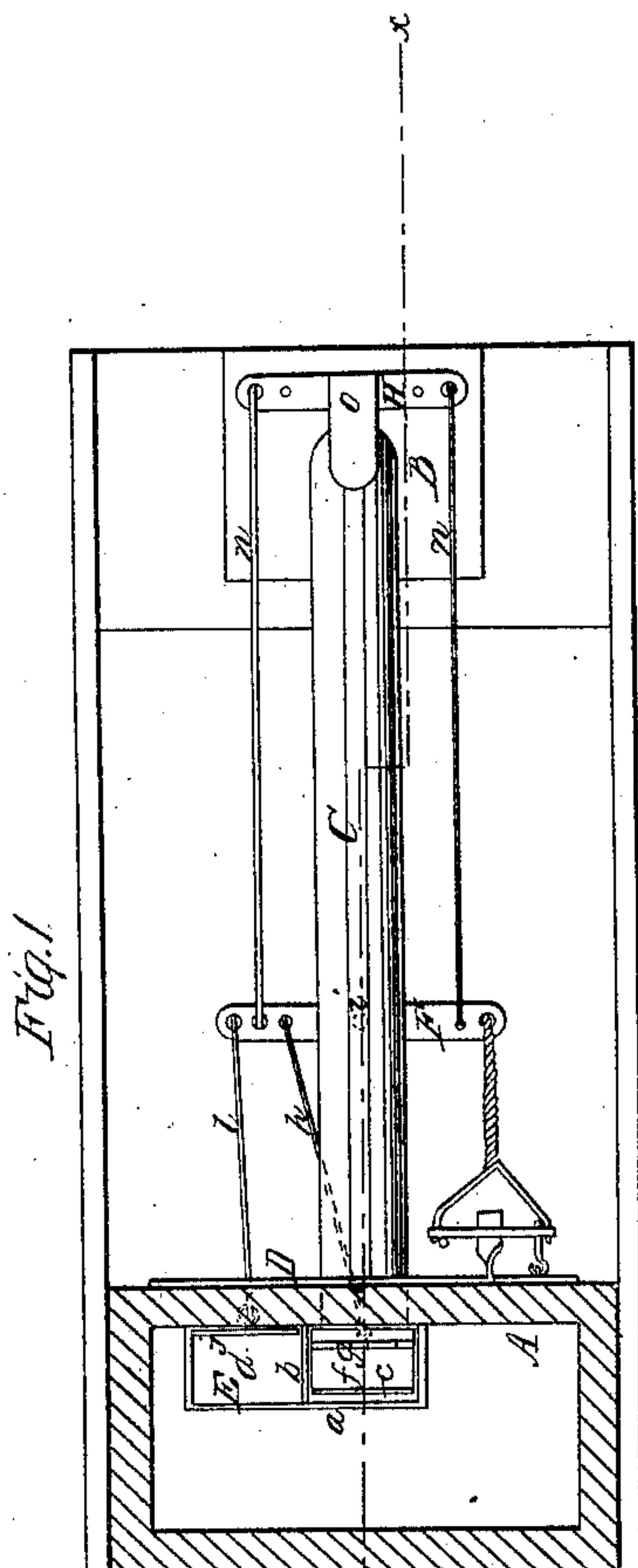
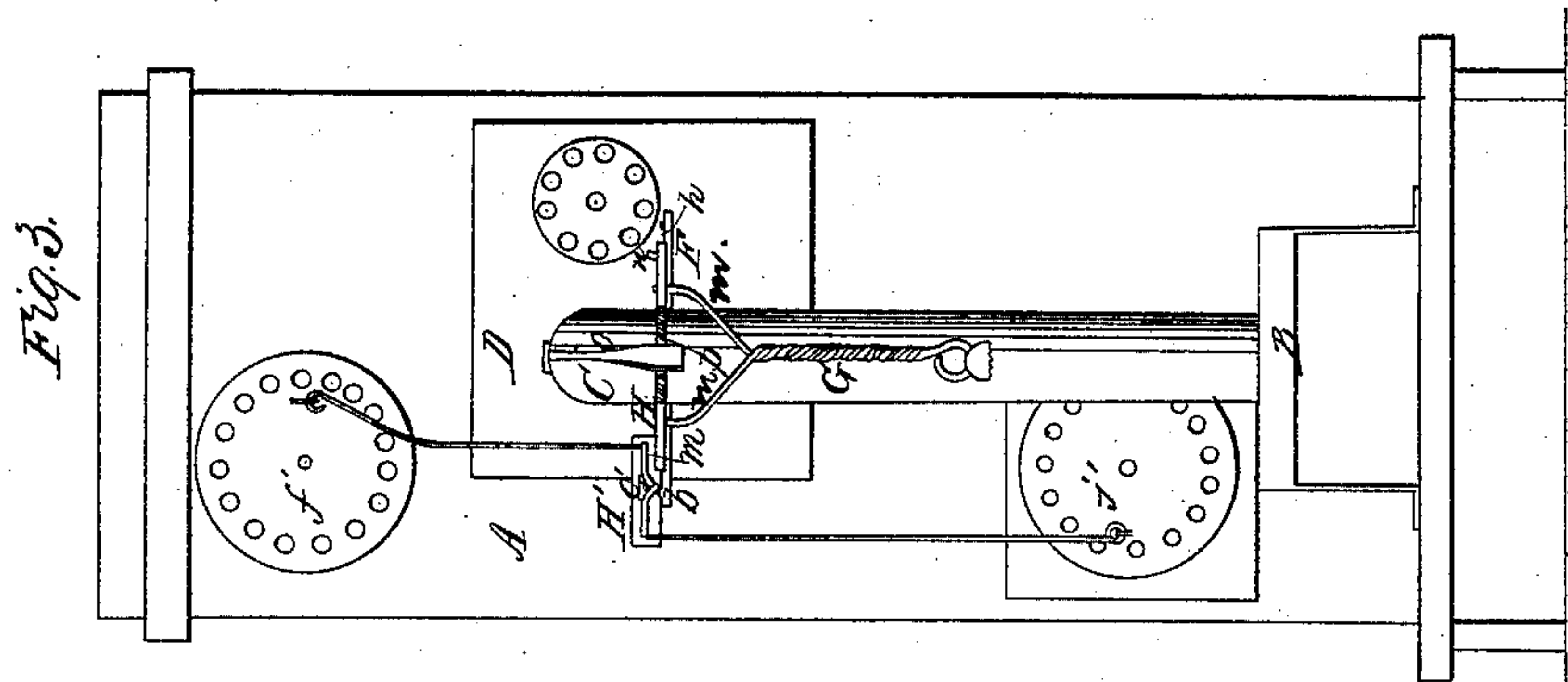


## House Ventilator,

*Patented Feb. 21, 1860.*



Witnesses:  
R. S. Spencer  
J. W. Combs

Inventor:  
Geo B Clarke  
per Murray & Attorneys



# UNITED STATES PATENT OFFICE.

GEORGE B. CLARKE, OF LEONARDSVILLE, NEW YORK.

## VENTILATING APPARATUS.

Specification of Letters Patent No. 27,204, dated February 21, 1860.

*To all whom it may concern:*

Be it known that I, GEO. B. CLARKE, of Leonardsville, in the county of Madison and State of New York, have invented a new and  
5 Improved Ventilating Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specifica-  
10 tion, in which—

Figure 1. is a horizontal section of my invention. Fig. 2 is a vertical longitudinal section of the same, the line *x, x*, Fig. 1. indicating the plane of section. Fig. 3 is a  
15 front elevation of the same.

Similar letters of reference in the three views indicate corresponding parts.

This invention consists in combining with  
20 a damper and air valve a slotted cross bar, which moves on a peculiarly shaped guide bracket and the motion of which is controlled by the expansion and contraction of a twisted wire that is attached to the stove  
25 pipe in such a manner that the position of the air valve and of the damper, regulates itself according to the heat of the stove pipe.

To enable those skilled in the art to make and use my invention I will proceed to describe it.

30 A represents the chimney of a room to which the smoke from a stove B, is conducted by a pipe C. This pipe terminates in a plate D, which is set into the front of the chimney and secured to this plate is the  
35 chamber E the rear plate *a* of which may be cast with the plate D, or it may be otherwise rigidly attached to the same, and by giving to the rear plate *a* an inclined position the chamber E, enlarges toward the  
40 top as clearly shown in Fig. 2.

The chamber E is divided by a partition *b* into the compartments *c*, *d*, and the compartment *c* communicates with the stove  
45 pipe C, whereas the compartment *d* by means of openings *e*, (see Fig. 3) in the front plate, communicates with the open air.

The compartment *c* contains the damper *f* which turns on a pivot *g*, so that it can be  
50 made to close the mouth of the stove pipe C and it connects by a rod *h*, with a vibrating lever F, the fulcrum of which is on a pivot *i* at the under side of the stove pipe.

The air valve *j*, turns on a pivot *k* in the compartment *d* in such a manner that it  
55 closes the openings *e* in the front plate or that it opens the same when thrown back,

as will be presently explained. A rod *l* connects the air valve *j* with the vibrating lever F, and it will be noticed that the point at which this rod connects with the lever, is  
60 farther from the fulcrum of said lever than the point of connection of the rod *h* so as to give the air valve a quicker motion than to the damper and to allow at all times sufficient room to the smoke to find its way to  
65 the chimney. At the same time the rod *h* connects with the damper below the pivot *g*, on which said damper swings, whereas the rod *l* connects with the air valve *j*, above the pivot *k*, on which it turns, so that by the  
70 same motion of the lever F, the damper and the air valve move in opposite directions that is to say, one opens when the other closes and vice-versa.

In order to regulate the position of the  
75 damper and of the air valve according to the temperature in the room a twisted wire or rod G is soldered or otherwise firmly secured to the stove pipe. This rod forms two  
80 prongs *m, m*, on its upper end and attached to these prongs is the slotted cross bar H which connects by means of a rod or rods *n* with the vibrating lever F. A guide  
85 bracket *o*, that passes through the slot *p*, in the cross bar H, controls the position of the latter, which in its normal position is parallel or nearly so with the front side of the  
90 chimney. The shape of the guide bracket *o* is such that the cross bar H is turned as it moves up on the same, and by this motion the vibrating lever is turned on its pivot and the damper *f*, closes while at the same time the air valve *j*, opens.

The twisted wire or rod G, ought to be made of such a metal, the expansion of  
95 which exceeds that of sheet-iron and the guide bracket *o*, the cross bar H and the vibrating lever F are so adjusted that a slight increase in the length of the twisted rod G causes a perceptible motion of the  
100 damper and air valve, and so that at a certain temperature the damper *f* is closed and the air valve *j*, is thrown wide open.

Instead of arranging the damper and the air valve in the same chamber E they may be  
105 constructed as indicated in Fig. 3 where perforated disks *f'*, and *j'*, take the places of the rectangular swinging damper *f*, and air valve *j*. These disks rotate on plates with openings to correspond to the apertures in  
110 the disks and they are controlled by a slotted cross bar H', which moves on a guide *o'*



and the motion of which is regulated by a twisted rod G'. As the cross bar H', slides on the guide o' one of the disks is closed and the other is opened.

- 5 If one heater serves to heat several rooms, the air valves in all the rooms may be connected to the same slotted cross bar, so that when the temperature reaches a certain point, all the rooms are ventilated and that  
10 the heat is not allowed to become oppressive.

- Both the air valve and the damper may be unhooked from the vibrating lever F, so that each one can be operated separately, when a combined movement is not required and  
15 the motion of the damper and of the valve may also be controlled by springs.

The operation of the air valve is combined with that of the damper, in my apparatus, so that the cool and comparatively pure air

near the floor of the apartment is not permitted to enter the stove and pass into the chimney faster or in a greater degree than is necessary to carry with it the gas and smoke generated in the stove at the time, when ventilation of the apartment is required. 20 25

What I claim as new and desire to secure by Letters Patent, is—

Combining with the damper *f* and air valve *j* or their equivalents the slotted cross bar H guide bracket *o* and twisted rod or wire G, substantially in the manner and for the purposes specified. 30

GEO. B. CLARKE.

Witnesses:

GEO. J. CRANDALL,  
JOHN B. CRANDALL.