

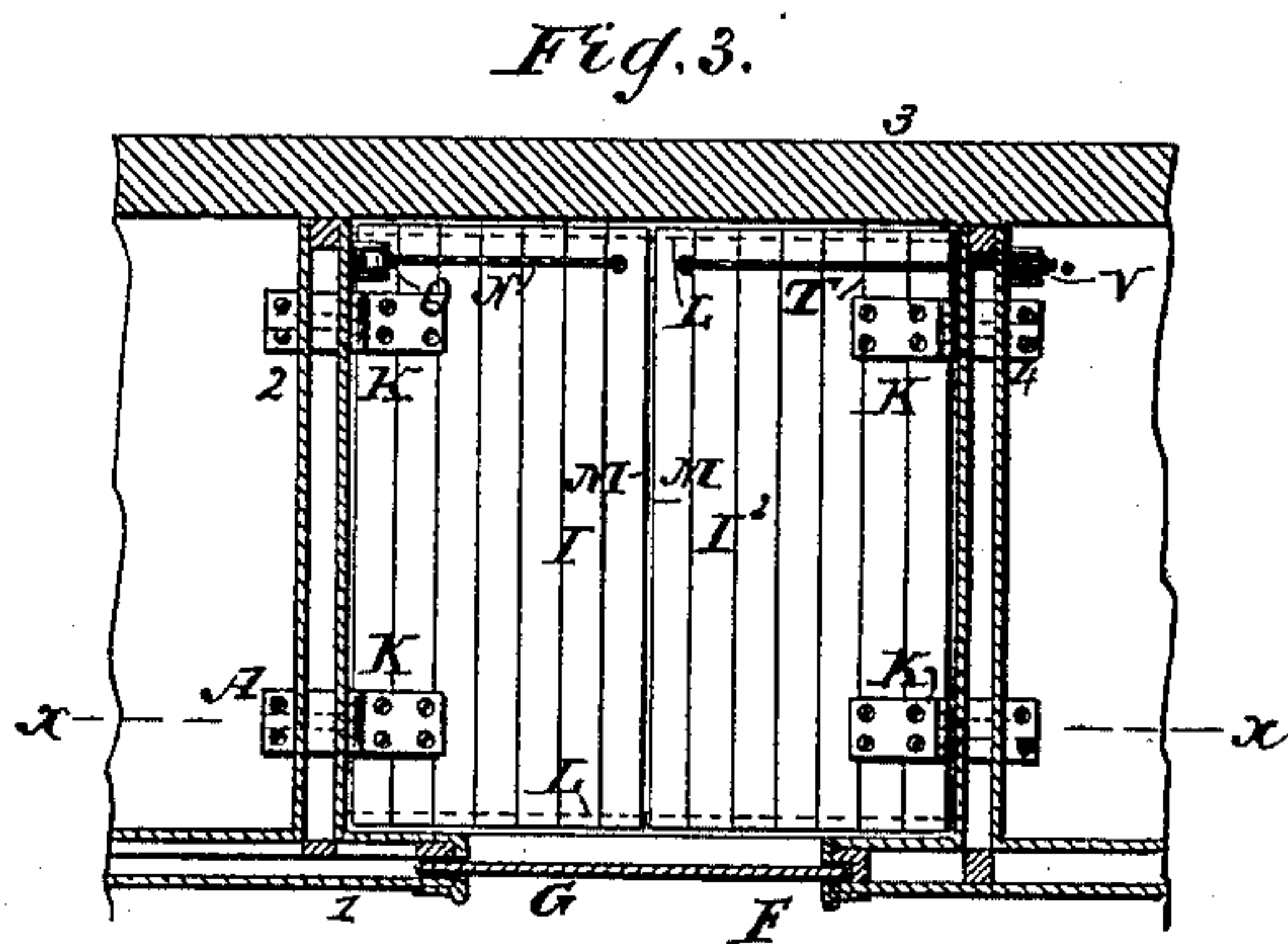
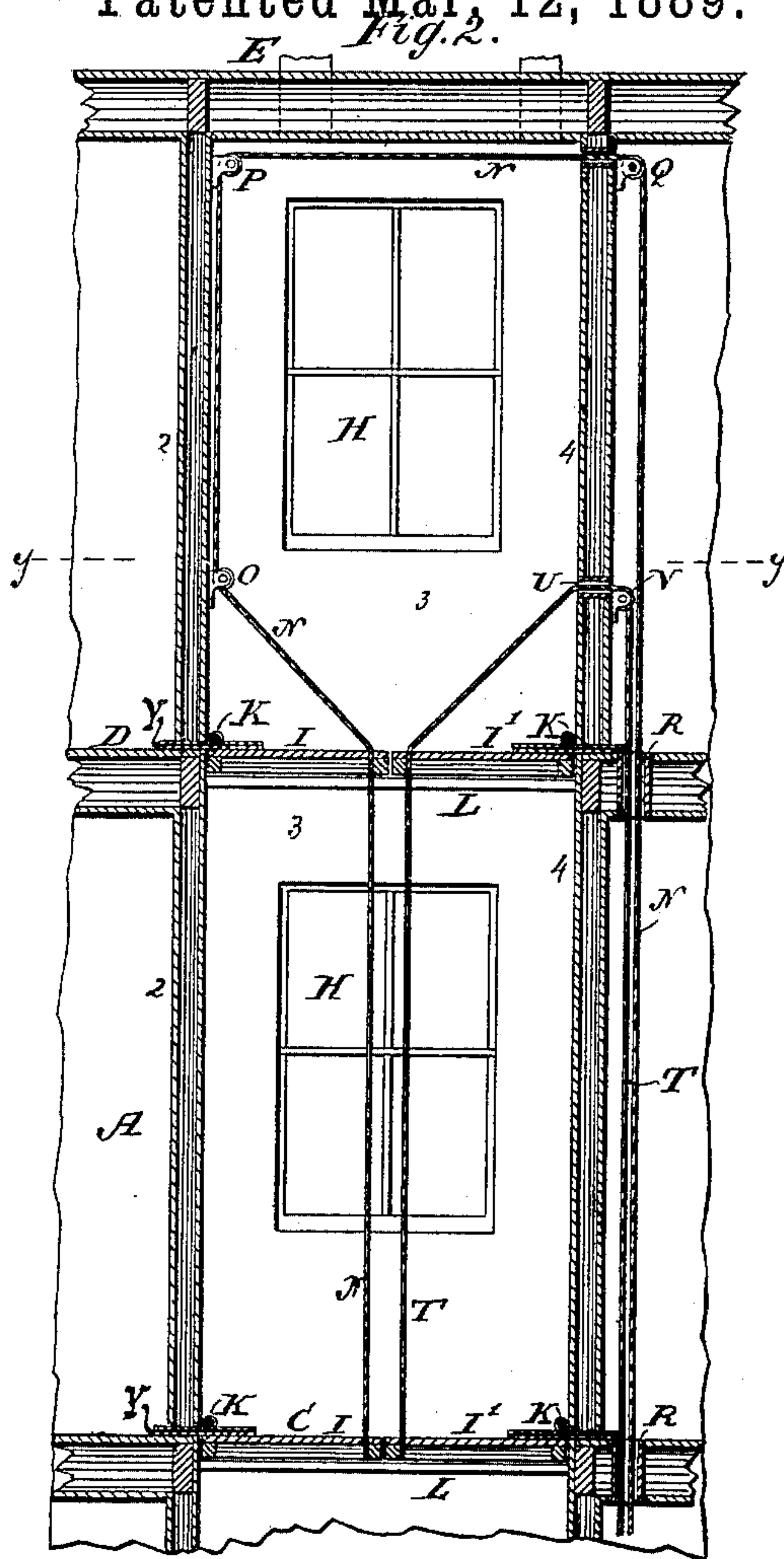
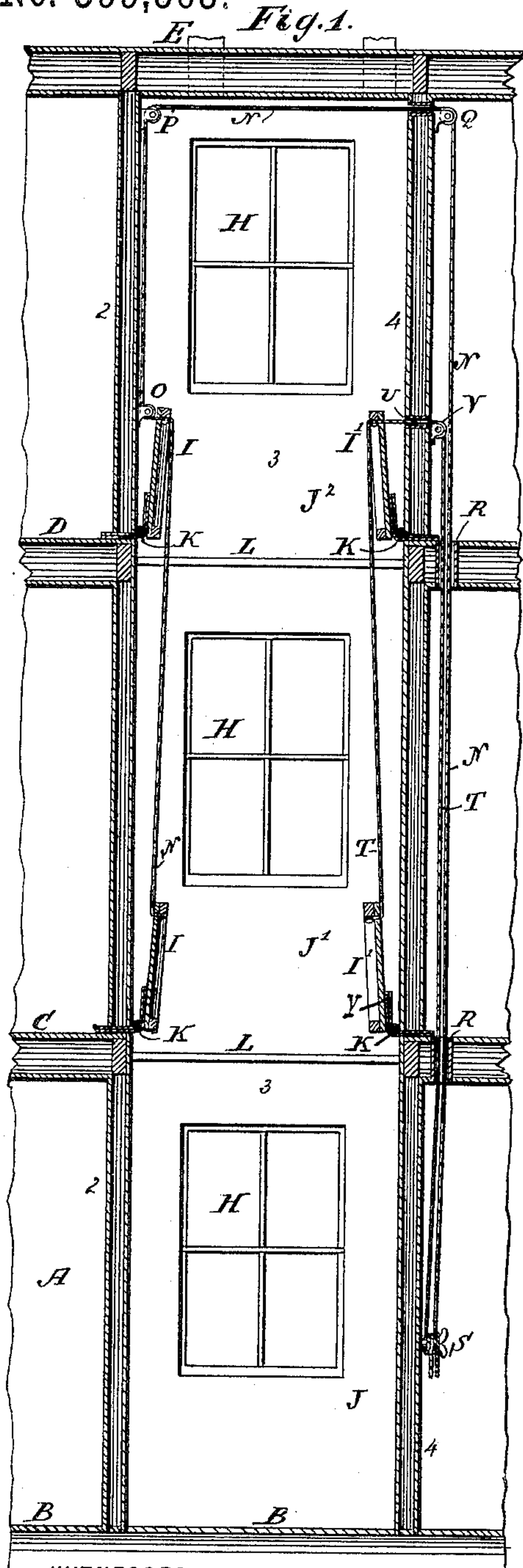
(No Model.)

J. ROACH.

HATCHWAY.

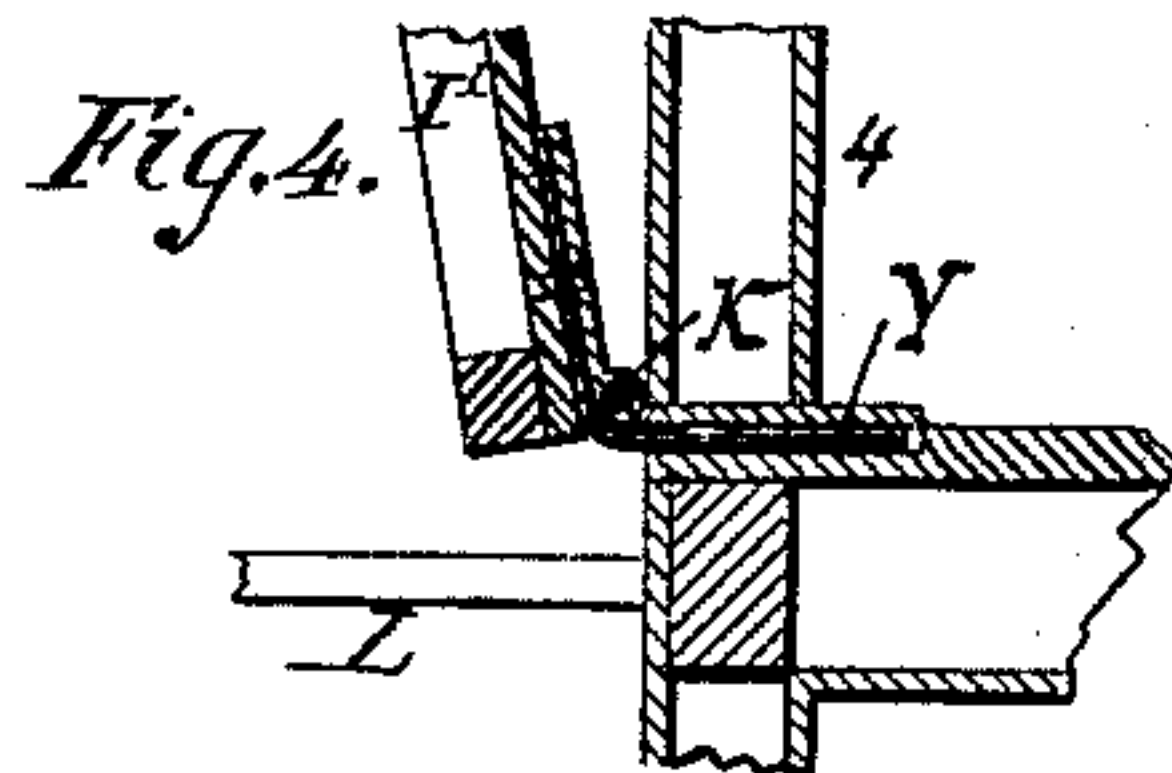
No. 399,563.

Patented Mar. 12, 1889.



WITNESSES:

*Eduard Wolff.*  
*William Miller*



INVENTOR

*John Roach.*

BY *Van Santvoord & Hauff*  
his ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOHN ROACH, OF NEW YORK, N. Y.

## HATCHWAY.

SPECIFICATION forming part of Letters Patent No. 399,563, dated March 12, 1889.

Application filed September 20, 1888. Serial No. 285,904. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ROACH, a citizen of the United States, residing at New York, in the county and State of New York, have  
5 invented new and useful Improvements in Hatchway-Door Mechanism, of which the following is a specification.

This invention relates to hatchways, and has for its object to provide novel means  
10 whereby pairs of doors or covers at the floors or landings are automatically closed and can be simultaneously raised or opened, or those doors or covers at one side be raised independent of the doors at the opposite side.

15 The object of my invention I accomplish by the features of construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

20 Figure 1 is a vertical section, on the line  $x$  of Fig. 3, of a hatchway-shaft showing my invention, the shaft being shown open. Fig. 2 is a similar section, the shaft being shown closed. Fig. 3 is a horizontal section on the  
25 line  $y y$ , Fig. 2. Fig. 4 is a detail of one of the hinges K, showing one of the leaves of the hinge K extending through the wall of the shaft.

Similar letters indicate corresponding parts.

30 The letter A designates a hatchway-shaft which may constitute an air-shaft for dwellings and other buildings. The air-shaft A is inclosed on its four sides by tight or close walls 1 2 3 4, and it extends from the lower  
35 or landing floor, B, upward through the several floors CD, to the top of the house or ceiling E. The shaft is provided at the bottom floor with a doorway, F, and door G at its front side, I, to enable one to have access to  
40 it; and it is also provided with windows H on one or more of the other sides. In this example I have shown my invention applied in a building having only two floors above the landing-floor B; but it is obvious that it can  
45 be applied to houses with any number of floors. The shaft is divided into sections J J' J<sup>2</sup>, corresponding to the number and locations of the floors, by means of spring covers or platforms I I', which correspond, respectively,  
50 to the level of the floors of the building, and which close down automatically when it is de-

sired to close the air-shaft. The covers I I' of each section of the shaft, when closed, extend completely across the shaft in every direction, and are hinged to the flooring of the  
55 building by spring-hinges K, (seen most clearly in Figs. 3 and 4,) which are so constructed and arranged as to tend constantly to close the covers. The sides of the covers I I', when closed, are supported by brackets  
60 L, arranged along the inside of the air-shaft, as indicated in Figs. 1, 2, and 4, and in dotted lines in Fig. 3. The outer edges, M, of the covers I I' are intended to meet when the covers are closed, so as to prevent flame or sparks  
65 of fire from passing up between them.

The covers I are opened by means of a rope or cord, N, which extends upward from the cover I of section J', to which it is fastened at its outer edge, M, to the outer edge of the  
70 cover I of the section J<sup>2</sup> above, to which it is in like manner fastened, and thence over a pulley, O, placed on the adjacent wall of the shaft, thence upward through a pulley, P, at the upper part of the upper section, J<sup>2</sup>, thence  
75 across the same and through the opposite wall of that section and over the pulley Q, thence downward outside of the shaft and through the several floors of the building at R R, to the fastening-cleat S, to which the  
80 cord is fastened.

The covers I' of the sections J' J<sup>2</sup> are opened in like manner by means of the cord T, one end of which is fastened to the lower cover, I', and said cord is taken thence upward through  
85 the upper cover, I', and thence through the adjacent wall of the shaft at U, and over pulley V, and thence downward through the floors R R to the cleat S, to which it is fastened.  
90

In Fig. 1 the several covers I I' are shown open, having been drawn up to that position by means of the cords N T, and they are kept in that position by fastening the cords, as explained. It will be observed that both cords  
95 N T are on the same side of the shaft, so that both can be readily operated at once. When the cords are released from the cleat S, or cut, the covers I I' immediately close automatically, through the operation of their spring-  
100 hinges K, the springs Y of which are flat and are placed under the hinges, one end being



secured down to the covers with the hinges, while the other end is free, as indicated in Figs. 3 and 4.

5 The cords N T are preferably made of material that can be easily cut in case the building is on fire, and that will readily burn, so that the cords being thereby severed and released the covers I I' will thereupon shut  
10 down of themselves and the air-shaft be closed, so that the peculiar danger which arises from the presence of an open air-shaft or hatchway in a building on fire will be averted, and the flames and combustion be  
15 prevented from ascending through the same to the upper stories, and the fire be confined to the place where it originated.

If desired, there may be windows on all the sides of the air-shaft, as well as on the back part, if much light is required. Any suitable  
20 spring other than the one shown can be employed in connection with the hinges of the covers. The hinges are protected from injury by fire by being arranged on the upper side of the covers and of the floors, one of the  
25 leaves, W, extending through the walls of the shaft and above the floor, as shown in Fig. 4, the other leaf, X, extending on the upper side of the cover, so that the hinges are out of the way and not liable to injury from fire from  
30 below. The spring-plates under the hinges serve to automatically close the pairs of covers down toward each other, and by the arrange-

ment of the cords described and shown, so that both descend at one and the same side of the closed walls of the air-shaft. The covers are all simultaneously opened by pulling  
35 both cords down together, while the covers at either side of the shaft may be opened by pulling down one cord alone.

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

The combination of the closed walls provided at each floor-landing with a pair of covers, each pair secured, respectively, to opposite sides of the walls by hinges, the spring-  
45 plates respectively connected at one end with the hinges to the covers and loose and sliding at the other end for automatically closing the covers down toward each other, and two independent cords passing over pulleys respectively  
50 connected with all the covers at one side of the shaft and both descending together at one side thereof and adapted to be simultaneously drawn down together, or to be independently drawn down, substantially as de-  
55 scribed.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

JOHN ROACH. [L. S.]

Witnesses:

J. VAN SANTVOORD,  
E. F. KASTENHUBER.