

No. 675,858.

Patented June 4, 1901.

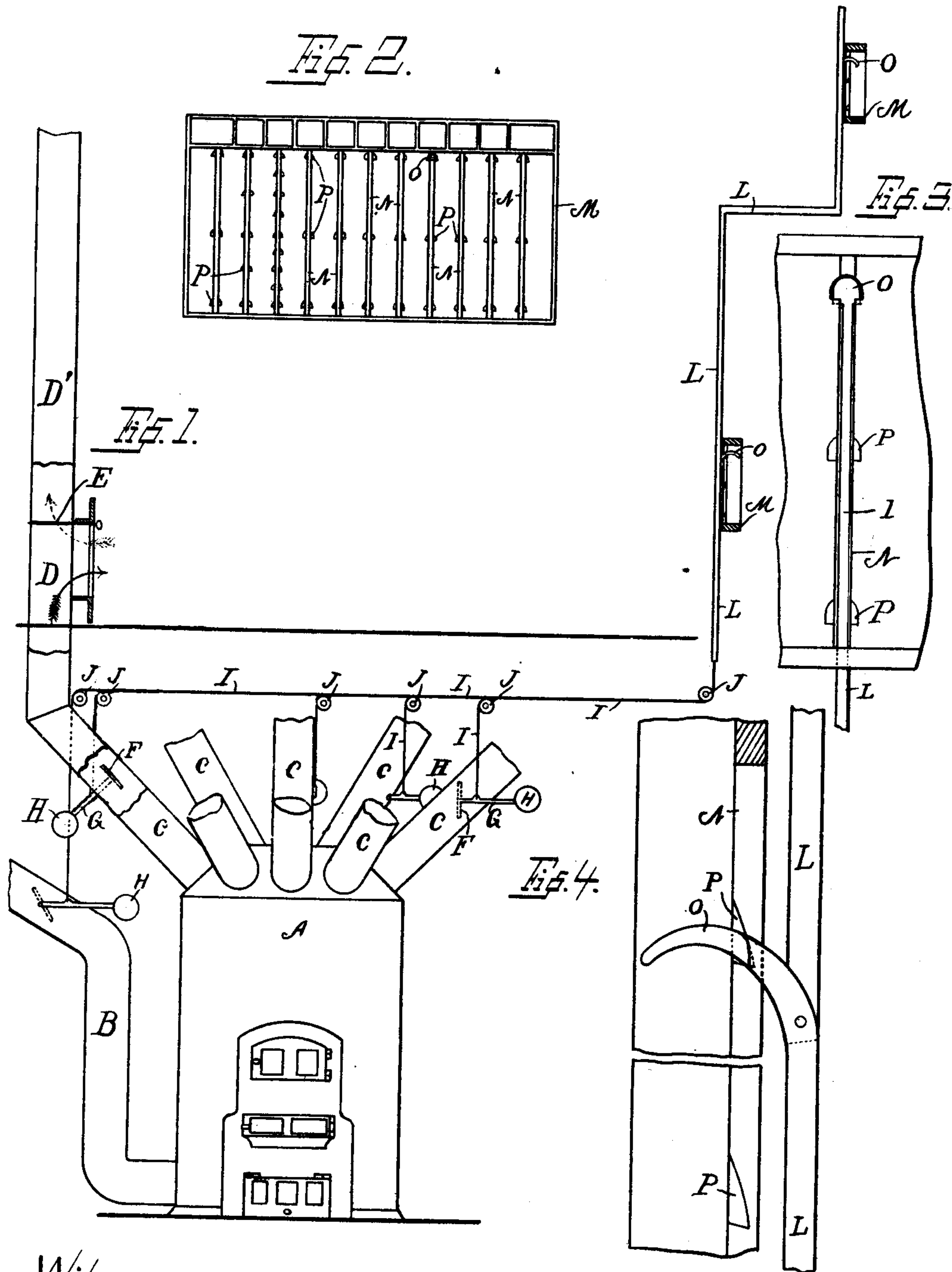
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HEAT REGULATING SYSTEM FOR HOT AIR FURNACES.

(No Model.)

(Application filed May 29, 1899.)

2 Sheets—Sheet 1.



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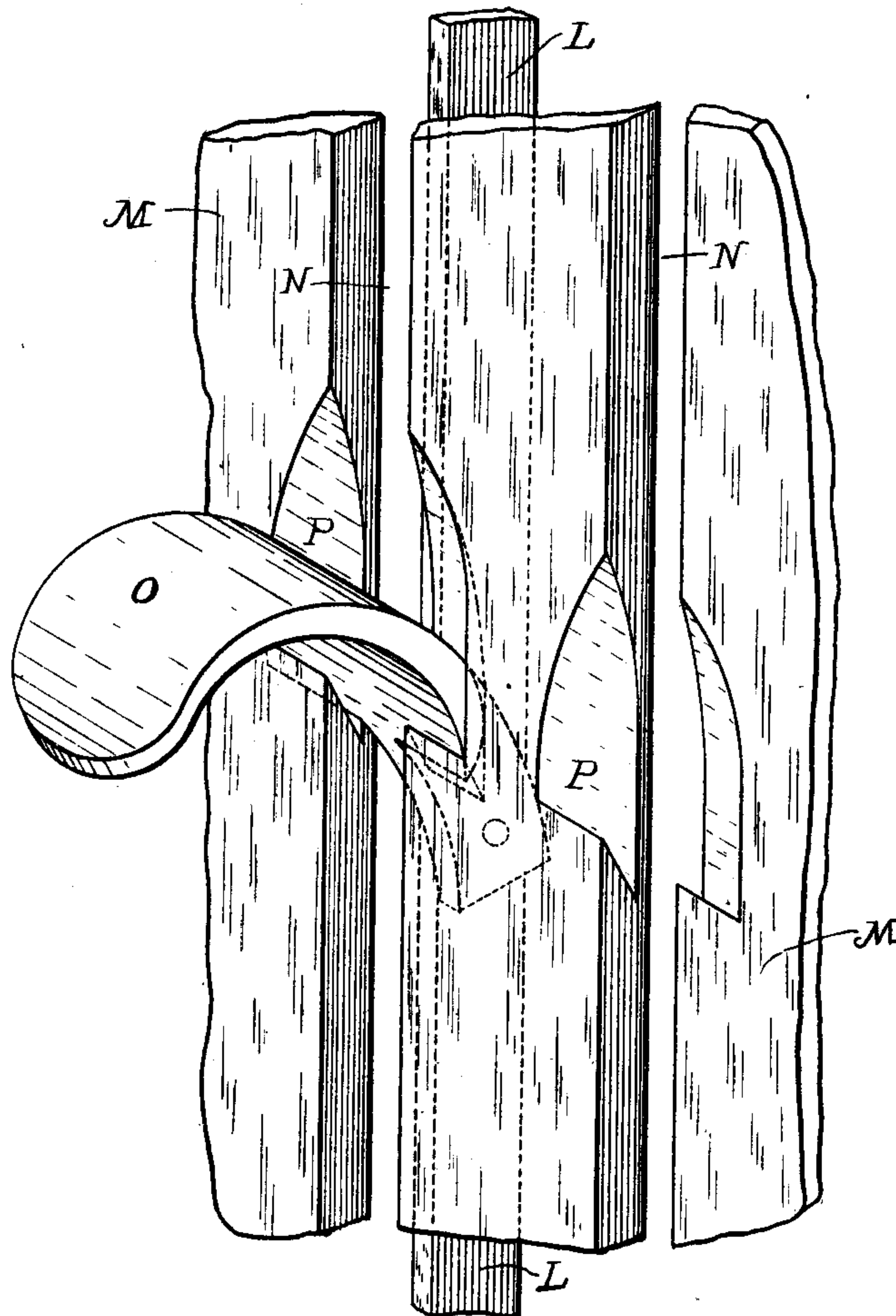
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2 Sheets—Sheet 2.

Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## HEAT-REGULATING SYSTEM FOR HOT-AIR FURNACES.

SPECIFICATION forming part of Letters Patent No. 675,858, dated June 4, 1901.

Application filed May 29, 1899. Serial No. 718,636. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO KORNREICH, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Heat-Regulating Systems for Hot-Air Furnaces, of which the following is a specification.

My invention relates to improvements in heat-regulating systems for hot-air furnaces, and pertains especially to the provision of means whereby cut-off devices located in the basement may be operated from various floor-levels. To accomplish this, it is necessary to dispense with the chains ordinarily used for the regulation of furnaces and provide rigid connections between the points of operation on the various floors with means for engaging and disengaging the same at all points of support from any one of such points. Where the actuating connections can be run vertically from the various points of operation, this is a simple problem, the rods being engaged and released by a simple rotary movement; but as few buildings are so constructed that the rods can be extended vertically to convenient points of operation at the various levels, and it is necessary to provide angular bends or turns in the rods, it is therefore also necessary to provide means for automatically disengaging the rod at all points other than the point of operation whenever the rod is actuated.

The object of my invention is to provide such mechanism.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a view of a furnace with my invention applied thereto. Fig. 2 is a front view of a slotted registry-plate adapted to support the actuating connections. Fig. 3 is an enlarged detail view of the same. Fig. 4 is a detail view of a portion of the registry-plate and one of the rods, showing one of the actuating-arms in engagement with the plate. Fig. 5 is an enlarged perspective view of a portion of the registry-plate and one of the arms O and damper-actuating rod.

Like parts are identified by the same reference-letter throughout the several views.

A is a hot-air furnace provided with a cold-

air flue B and hot-air service-pipes C, leading to the flues D D' in the walls in the usual manner.

E is a damper interposed between the sections D D' of the flues.

The pipes C are provided with dampers F near the furnace, the axis of the damper being extended to a point exterior to the pipe and provided with an arm G. A weight H may be secured to the end of the arm G to hold the damper normally in an open position. Wires I or other suitable flexible connections are secured to the damper-arms G and passed over pulleys J to a point in the wall-space of the building, in which are located a series of damper-controlling rods L, the wires I being attached to the lower ends of the rods.

On the various floor-levels from which the furnace is to be operated I have provided a registry-plate M, which is provided with a series of slots N, corresponding in position with the rods L, and curved actuating-arms O, secured to said rods, project through the slots in a position to be grasped by the operator. The arms O are lifted in the slots to elevate the rods L and cause the wires I to lift the damper-arms G and close the dampers, while by lowering the arms O in the slots the dampers are permitted to open automatically under the pressure exerted by the weights H H' on the arms G.

It will be observed that the registry-plates M are provided with a series of notches P in the side of each slot, in which the arms O may be engaged. It will be observed that as the arms O are curved they will move forwardly in the notches when the rods are lifted vertically, thus disengaging from the notches and permitting the rod to be adjusted to any desired position. This will be true whether the arms are rigidly connected to the rods or secured thereto by a jointed connection, and I have therefore not illustrated and do not describe or limit myself to any specific manner of connecting the arms. If rigidly secured to the rods, they will when moving out of the notches draw the rods forwardly, and the latter should therefore be allowed sufficient play to permit them to move in this manner. When adjusted to the desired po-



sition, the arm at the point of operation is reengaged in the notches at that position, it being immaterial whether the other arms on the rod reengage or not.

5 It will be observed that a registry-plate is provided for each floor of the building, and as the rods L are continuous from the base-  
 10 ment to the upper floor they can be actuated from either floor and will indicate their position of adjustment on the registry-plate of each of the other floors by the position of the arm in the slots N. With this construction the dampers may be adjusted from a single  
 15 point of operation on either floor to control the admission of air to any room in the house. The particular room to which each rod pertains is indicated upon the registry-plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters  
 20 Patent, is—

1. The combination with the dampers of a furnace; of damper-actuating rods located in the building-walls and connected therewith; a flat-surfaced registry-plate located on one  
 25 or more floor-levels of the building, and provided with vertical slots and with notches ex-

tending laterally therefrom; and hook-arms secured to the damper-actuating rods and extending through the slots, with laterally-projecting shoulders adapted to engage in said  
 30 notches.

2. The combination with the dampers of a furnace; of a series of registry-plates located on the various floor-levels, each plate being provided with vertical slots, and with notches  
 35 extending laterally therefrom; a series of rods connected with the dampers and extending upwardly in the rear of each registry-plate of the series; and hook-arms secured to each of said rods and projecting through the  
 40 slots in the registry-plate, said arms being curved and provided with laterally-extending shoulders adapted to engage in the notches of the registry-plate, and to disengage there-  
 45 from when the rods are moved vertically.

In testimony whereof I have hereunto set my hand this 10th day of May, 1899.

OTTO KORNREICH.

Witnesses:

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 F. A. OTTO.