H. C. CREHORE.

Hot Air Register.

No. 111,433. Patented Jan. 31, 1871.

Fig. 2.

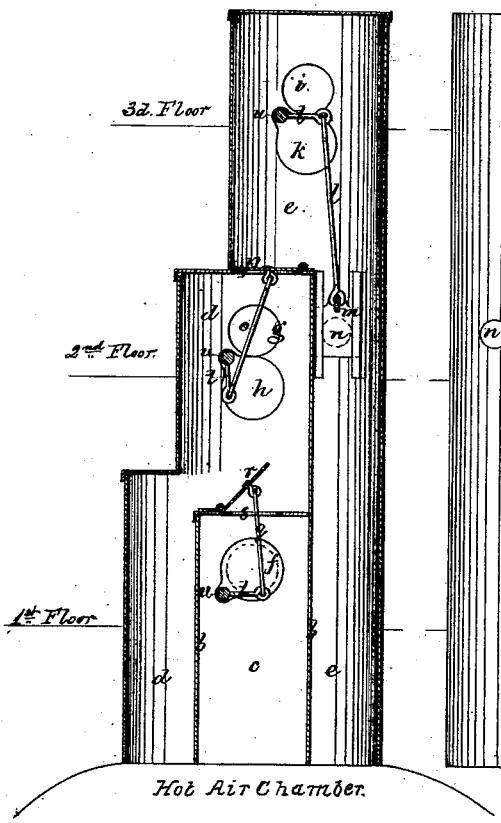
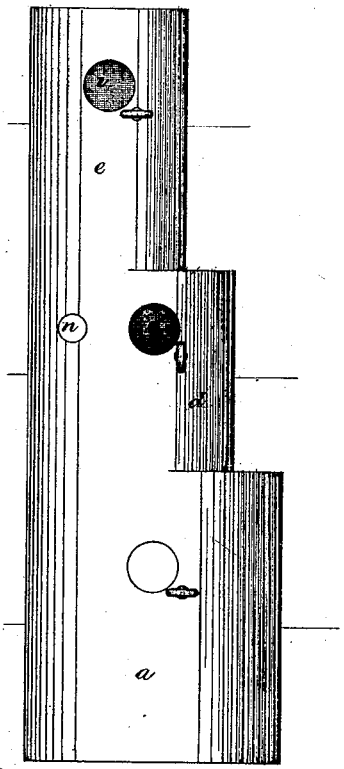


Fig. 1.



Witnesses. { M. W. Frothingham. S. B. Kidder

Inventor.
Horace C. Crehore.
By his Attys.
Crosby, Halsted & Gould

United States Patent Office.

HORACE C. CREHORE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND SAMUEL T. CUSHING, OF SAME PLACE.

Letters Patent No. 111,433, dated January 31, 1871.

IMPROVEMENT IN HOT-AIR DISTRIBUTING-PIPES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HORACE C. CREHORE, of Boston, in the county of Suffolk and State of Massachusetts, have invented Improvements in Hot-air Distributing-Pipes; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In buildings occupied by several parties having no community of interest, and where the different stories are heated from one common source of hot-air supply, it is an object of considerable importance to so arrange and combine the air-distributing pipes, and the valves which control the air-passages therefrom, as to equalize the supply of hot air to the various stories, and render it impossible for the party in any one story to improperly diminish the air-supply to any or all of the other stories or flats.

To accomplish this object is the design of my invention, and the drawing represents an arrangement of hot-air pipes embodying my improvement.

Figure 1 shows, in side elevation, and

Figure 2, in sectional elevation, my arrangement of pipes and valves.

a denotes the bottom of the main hot-air pipe leading from the hot-air chamber of the furnace, and made of a diameter or capacity equal to several ordinary hot-air pipes.

This main pipe or main portion of pipe is subdivided, by vertical partitions *b b*, into smaller pipes or hot-air conductors *c d e*, the top of the conductor *c* terminating at a point where the hot air is to be directed into the lower story or flat above the furnace, said pipe being provided with a valve, *f*, to shut off and control the passage of hot air from it into the room to be heated.

One conductor, *d*, adjacent to the conductor *c*, leads into and terminates in the second story or flat, and is provided with an air-passage, *g*, and a valve, *h*, to control the flow of hot air through said passage.

The third pipe *e* leads to the upper flat, and has a hot-air outlet, *i*, which is provided with a valve, *k*.

All of the conductors terminate, at their lower ends, in one common plane at the top of the hot-air chamber or source of hot-air supply, so that the heated air may pass from the hot-air chamber of the furnace equally well into all of the conductors, and ascend equally through all of them to all of the stories or flats when the valves are all open, the occupant of no story being able to rob the stories above or below, as is possible and is frequently the case when one common air-conductor leads through the several stories, with several valves in it, one to each story.

To enable the air passing into and through either conductor *c d e* to be utilized or directed to another flat when not needed or desired in the flat to which the particular conductor leads, I combine with each valve a device by which the shutting of the valve in one conductor automatically opens the passage into another conductor, or into some other flat than that to which the first conductor leads, thus allowing the full capacity of all of the conductors to be used at all times for distributing the air to whatever number of flats is to be heated.

For this purpose the upper valve *k* is shown as connected, by a link, *l*, to a valve, *m*, controlling a passage, *n*, from the pipe *e* into the story below, and the valve *h* is connected, by a link, *o*, to a valve, *p*, controlling a passage from pipe *d* into pipe *e*.

The lower valve *f* is similarly connected, by a link, *q*, to another valve, *r*, controlling an opening, *s*, leading from pipe *c* into pipe *d*.

Each of these links is jointed at one end to an arm, *t*, of a stem, *u*, that operates the main valve of the conductor, the hot-air passage of which such valve controls.

Now, if the occupant of the upper story needs no heat, he shuts his hot-air valve or register *k*, and thereby opens valve *n*, so that all the heat in the three conductors then passes into the two flats below.

So, likewise, if the second-story occupant wishes no heat, he shuts valve *h*, which opens valve *p*.

The openings *g* and *n* may be covered by one register, so that both may be closed when desirable.

If no heat is needed in the lower story, valve *f* is closed, thereby opening valve *r*. If the valve *k* be closed, and the valves *h* and *m*, then all the hot air will pass into the lower flat.

Thus it will be seen that not only can no robbing of heated air from the lower flat or flats be effected from upper ones, but that the hot air must be alike distributed to all, unless at the option of the occupant of any story he desires to shut off his heat, in which case, by closing the valve, the hot air is all distributed into the remaining flats.

I claim—

1. The subdivided pipe *a*, constructed with partitions arranged to equalize the distribution of heated air into vertical series of apartments, substantially as shown and described.

2. In combination with each or either main valve, an auxiliary valve, which is opened by the closing of the main valve, and *vice versa*, and which when open diverts the hot air into another conductor or flat, substantially as described.

Executed December 9, A. D. 1870.

HORACE C. CREHORE.

Witnesses:

FRANCIS GOULD,

S. B. KIDDER.