No. 669,596. Patented Mar. 12, 1901.

H. N. RIDGWAY.

REGISTER.

(Application filed Dec. 29, 1899.)

(No Model.)

Fig. 1.

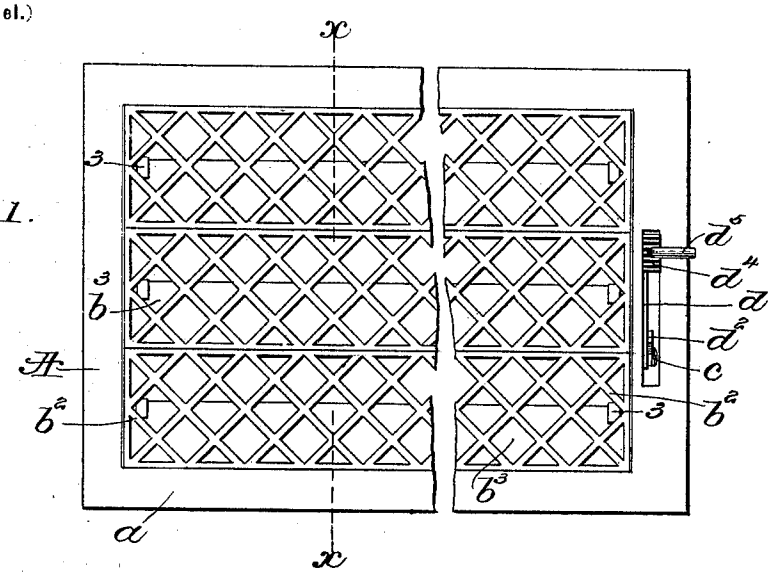


Fig. 2.

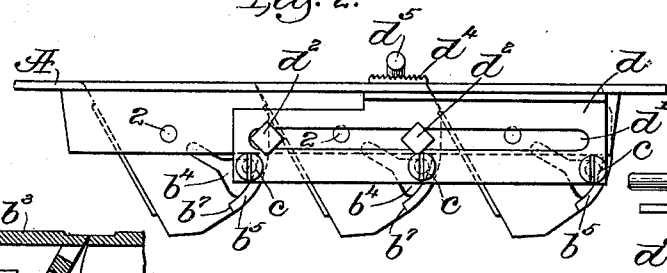


Fig. 3.

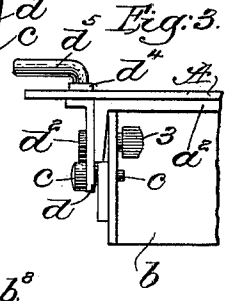


Fig 6

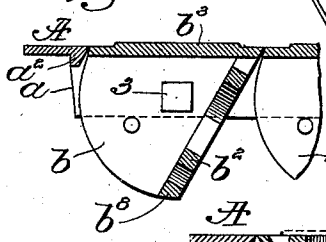


Fig. 4.

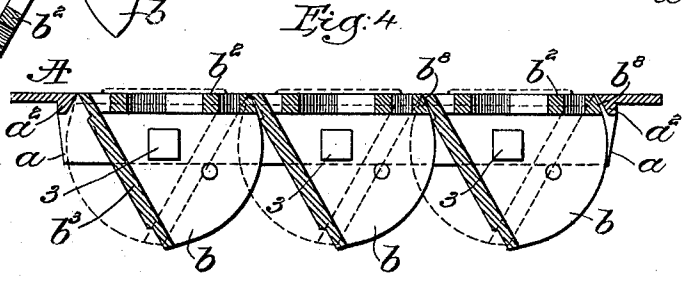
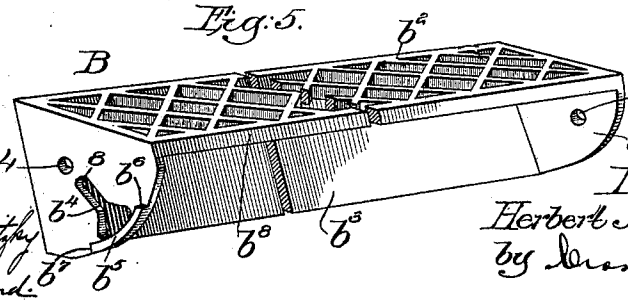


Fig. 5.



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UNITED STATES PATENT OFFICE.

HERBERT N. RIDGWAY, OF WINTHROP, MASSACHUSETTS.

REGISTER.

SPECIFICATION forming part of Letters Patent No. 669,596, dated March 12, 1901.

Application filed December 29, 1899. Serial No. 741,888. (No model.)

To all whom it may concern:

Be it known that I, HERBERT N. RIDGWAY, a citizen of the United States, residing at Winthrop, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Registers, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of an improved register which may be opened when it is desired that heat should enter an apartment and which may be closed when the entrance of heat is to be cut off, said register when closed presenting at the level of the register-frame an imperforate surface which will prevent any dirt or dust collected in sweeping from entering the register.

In accordance with my invention I provide a register-frame with a plurality of valve-sections presenting each a grated or imperforate face and a plain and imperforate face, and when said valve-sections are in their position to present the grated or perforate faces at the level of the frame and the floor, as well as when they are in a position to present their plain or imperforate faces at the level of the frame or floor and to abut one the other, so that the entire area of the space within the register-frame may be used to admit heat when the grated face is exposed. The valve-sections herein shown have their grated or perforated and plain or imperforate surfaces arranged in planes which intersect at an acute angle, and each valve-section is suitably pivoted in or with relation to the frame and has coöperating with one of its ends a suitable locking device and a stop by which to confine the valve-sections fixedly in either of their two positions, as when the grated face is exposed or the plain face is exposed at the top of the register-frame.

Figure 1 of the drawings is a top or plan view, partially broken out to save space on the drawings, of a register-frame containing three valve-sections made in accordance with my invention, the grated faces of the valve-sections being operative to permit heat to enter an apartment. Fig. 2 is an end elevation of Fig. 1 looking at it from the right. Fig. 3 is a partial side elevation looking at Fig. 2 from the right. Fig. 4 is a section in the line x, Fig. 1. Fig. 5 shows in isometric perspective one of the valve-sections detached and broken out to save space, and Fig. 6 is a partial cross-section in the line x to show the imperforate face of the valve-section in operative position.

The frame A may be of any usual or suitable shape and material, preferably cast-iron or brass, said frame at its opposite ends having a depending web a, which enters a suitable hole in the floor or a suitable hole in a soapstone or other slab set into the floor, the body of the frame extending over and being supported by said slab. The webs a at the ends of the frame (see Fig. 2) are bored to provide holes 2, which receive suitable stud-screws 3, said stud-screws being also passed through holes 4 made in the end walls b of the valve-sections B, so that said valve-sections are each pivoted in a suitable manner upon or within said webs a.

Ordinarily register-frames have depending webs made entirely around them; but in my invention I have done away with the webs at the longer sides of the frame, and instead I simply strengthen the sides of the frame by short ribs a^2, the omission of said webs at the sides of the register-frame affording better opportunity for the entrance of air into the valve-sections and the passage of hot air therethrough into the room where the register is used, especially when used in connection with a wall-flue.

My improved valve-sections B present two faces, as b^2 b^3, the face b^2 being cast to present a grated appearance or to present what may be called "grillwork" of any desired or suitable pattern, whereas the face b^3 is preferably imperforate. The faces b^2 and b^3 occupy such an angle one with relation to the other as to form an acute-angled corner. Each valve-section has at one end a slot b^4, enlarged at its outer end and presenting, preferably, a projection b^5, the opposite ends b^6 b^7 of which present shoulders which serve as stops, each slot forming part of a locking means, the other part of the locking means being a series of stud-screws or projections c, screwed into or projecting from a slide or actuator d, applied to the outer face of the web a of the register-frame, said slide being slotted, as at

d', to receive suitable guiding or sustaining bolts d^2, the inner ends of said screws or projections c entering and extending, preferably, through the slots b^4. The slide d has extended upwardly from it a projection d^4, which may be notched, as represented in Figs. 1 and 2, and, if desired, said projection may be provided with a handle d^5, the serrated projection being preferably employed when the register is put into a floor, the handle being employed when the register is put into a wall.

Viewing Figs. 1 and 4, the valve-sections occupy a position where their grated faces are substantially level with the top of the register-frame for the admission of heat into the apartment, and it will be noticed that the acute-angled edge of the first valve-section at the left, Fig. 4, abuts the edge of the frame and that as to the other two valve-sections their acute-angled corners abut each against the edge b^8 of the other valve-section, or, in other words, the parallel longer edges of said valve-sections, as represented in Figs. 1, 2, and 3, stand substantially in contact and the grated surface presented by the valve-sections is distributed throughout the area inclosed by the register-frame, so that all parts of said area are used for the passage of heat through the register and into the apartment.

In this position described for the valve-sections the pins c stand in one end of the widened portion of the slot b^4, and the end b^6 of the portion b^5 contacts with the under edge of the downward extension or web a at the end of the register-frame, so that said valve-sections are prevented from turning from pressure exerted in one direction by or through the pins in the slots and pressure exerted in the other direction by or through the shoulders b^6.

Viewing now Fig. 6, it will be understood that the slide d occupies its farthest position to the left instead of to the right, as represented in Fig. 4, and in starting the slide from the position in Fig. 4 the first movement of the slide withdraws the pins c from the larger ends of the slots b^4, said pins not acting to turn the valve-sections until after they enter the smaller parts of said slots, said pins contacting with the ends 8 of the slots about as the acute-angled edges of the valve-sections arrive in a position substantially vertically above the said pin, and thereafter in the further movement of the slide the pin works on the opposite side edge of the narrow part of the slot, and finally turns the valve-sections into the position Fig. 6, the pins entering the large ends of the slots and putting the shoulders b^7 against the lower edge of the depending portions or web a of the register-frame, the said slide when moved fully to the left from its position Fig. 5 locking the valve-sections in place and presenting their imperforate sides or faces b^3 uppermost in line with the surface of the floor or of the register-frame, and in such position also the edges of the imperforate sides of the valve-sections substantially meet, leaving the register in such condition as to exclude the passage of heat through the register into the apartment and also to prevent the descent of dirt, due to sweeping or otherwise, from the register into the pipe conducting the heat to the register.

The sides or faces b^3 of the valve-sections are preferably imperforate; but it is to be understood that my invention is not necessarily limited in this respect.

When I use the terms "grated" or "perforate" and "imperforate" in the following claims, I wish the word "perforate" to be understood as meaning that the face of the valve-section is capable of permitting the free passage of air therethrough and the word "imperforate" to be understood as meaning that the valve-section is impervious to the passage of air therethrough or, in other words, acts as a stop for preventing the passage of air.

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

1. A register composed of a frame having a free or unobstructed opening and a series of valve-sections pivoted therein, each valve-section presenting a grated and an imperforate face, said valve-sections adapted to fill substantially the entire opening in the frame in either position and when their grated faces are exposed permitting the passage of heat therethrough throughout substantially the entire area of the space within the register-frame.

2. A register-frame having a free or unobstructed opening composed of a face-flange, ribs extended along the sides of the register-frame and deeper portions or webs a' extended across the ends of the frame, combined with a series of valve-sections pivoted within said register-frame at their ends, said valve-sections presenting grated and imperforate sides, the grated and imperforate sides when in their operative positions filling substantially the entire area inclosed by the register-frame.

3. A register-frame, having a free or unobstructed opening combined with a plurality of valve-sections having grated and imperforate sides located in planes one with relation to the other to present an acute-angled edge, pivots to sustain said valve-sections, means to actuate said valve-sections to expose either their grated or imperforate faces in the space inclosed by the register-frame, said valve-sections in either of their two positions completely filling the entire space bounded by the register-frame.

4. A register comprising a frame, a series of separate valve-sections pivotally supported by the frame, and each having a flat, grated face, and a flat imperforate face, and means to operate said valve-sections to bring the entire surface of one face of each section into the same plane at the outer face of the

frame to constitute a tread-surface therefor, and automatic means to lock said sections in either of their two positions.

5. A register comprising a frame, a series of valve-sections pivoted therein, each of said valve-sections having two faces, one for the passage of air and the other to shut off the passage of air, and means to operate the valve-sections to bring either face of the valve-sections edge to edge in a common plane whereby a level surface is formed preventing the lodgment of dirt.

6. A register composed of a frame having a free or unobstructed opening, a series of valve-sections movably mounted therein, each of said valve-sections presenting grated and imperforate faces adapted respectively to fill substantially the entire opening in the frame in either position, and when their grated faces are exposed permitting the passage of heat through substantially the entire area of the space within the register-frame, and means to operate said bars.

7. A register comprising a frame, a series of separate valve-sections supported by the frame and each having a grated face and an imperforate face, and means to operate said valve-sections to bring either face of the valve-sections into the same plane at the outer face of the frame to constitute a tread-surface therefor, means to stop the rotation of said valve-sections as the faces thereof are brought into the same plane, and automatic means to lock said sections in either of their two positions.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERBERT N. RIDGWAY.

Witnesses:
GEO. W. GREGORY,
MARGARET A. DUNN.