

No. 814,888.

PATENTED MAR. 13, 1906.

H. SYMONDS.  
HOT AIR REGISTER.  
APPLICATION FILED MAR. 30, 1905.

Fig. 1.

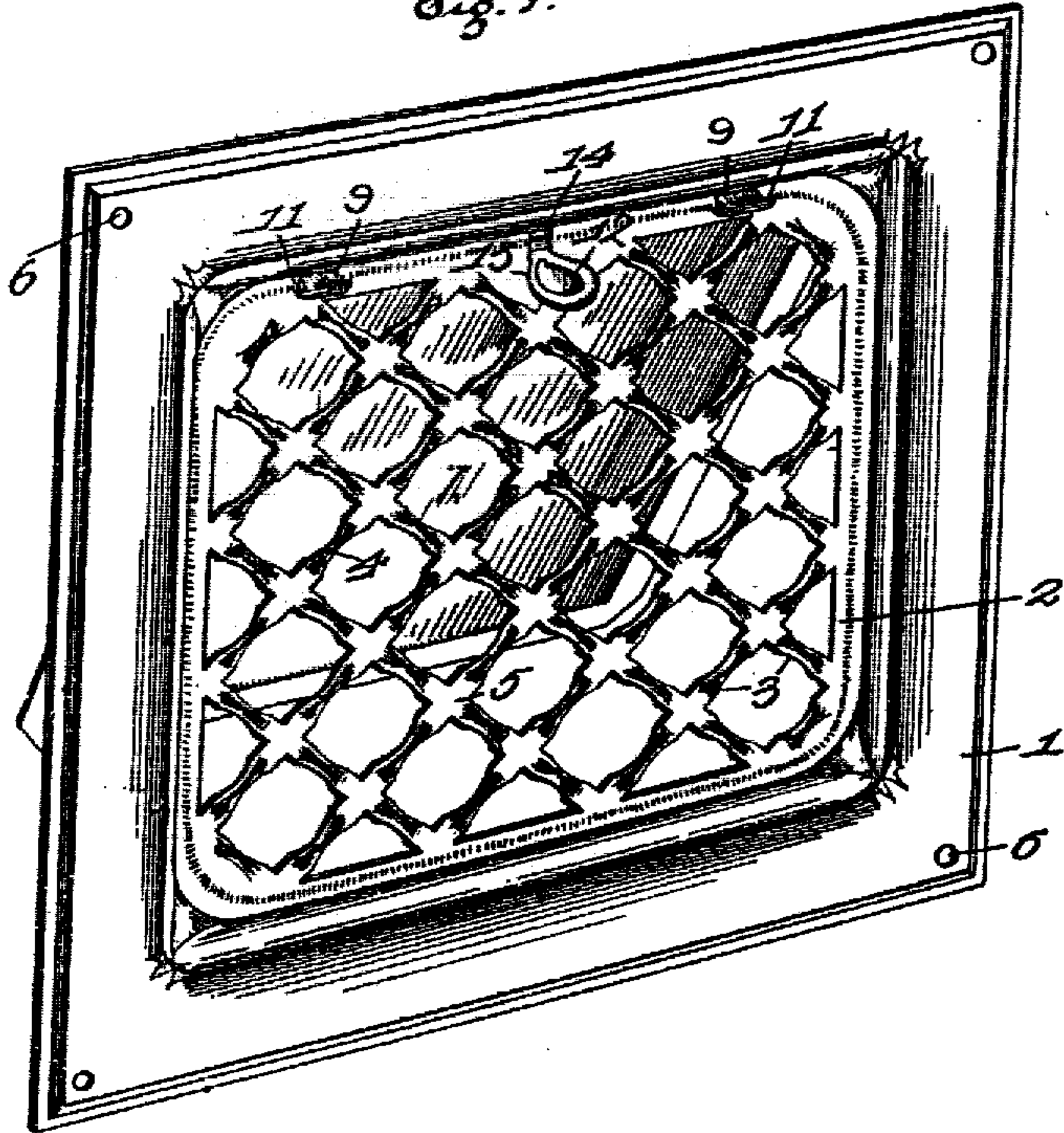
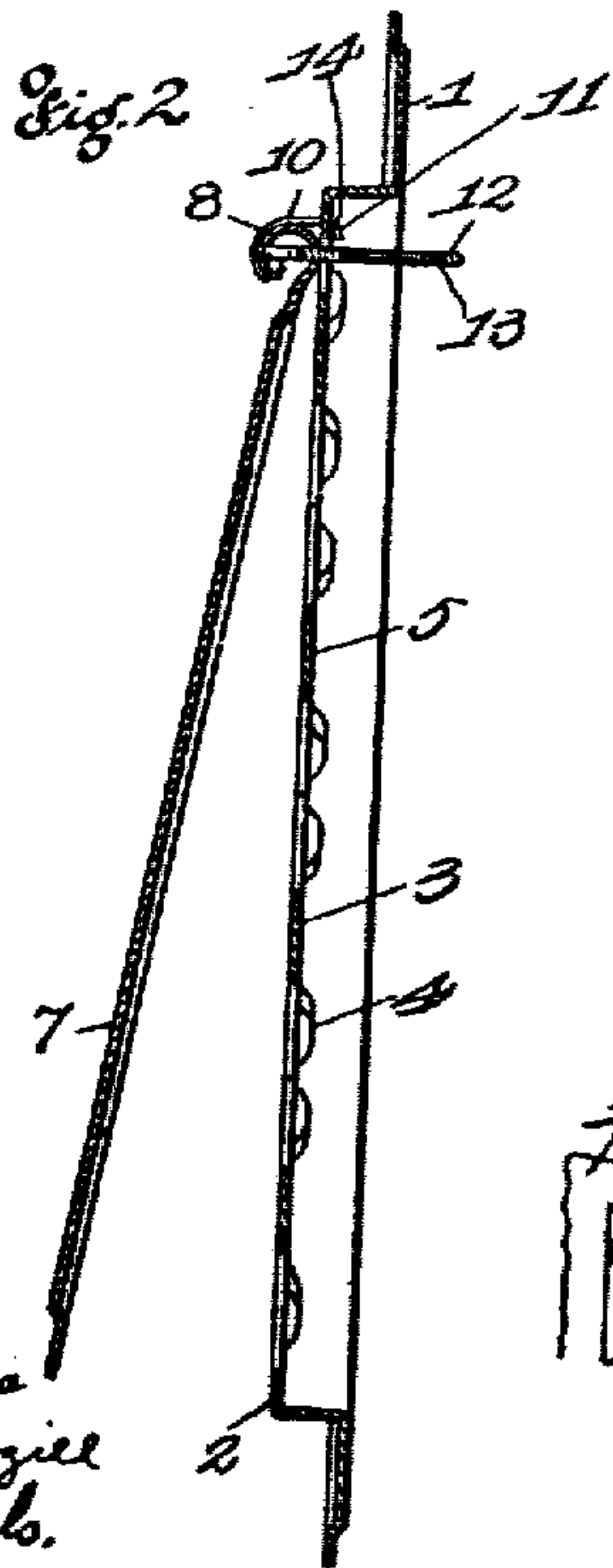


Fig. 2.



Witnesses  
Wm. Brazill  
Fred Michels.

Fig. 3.

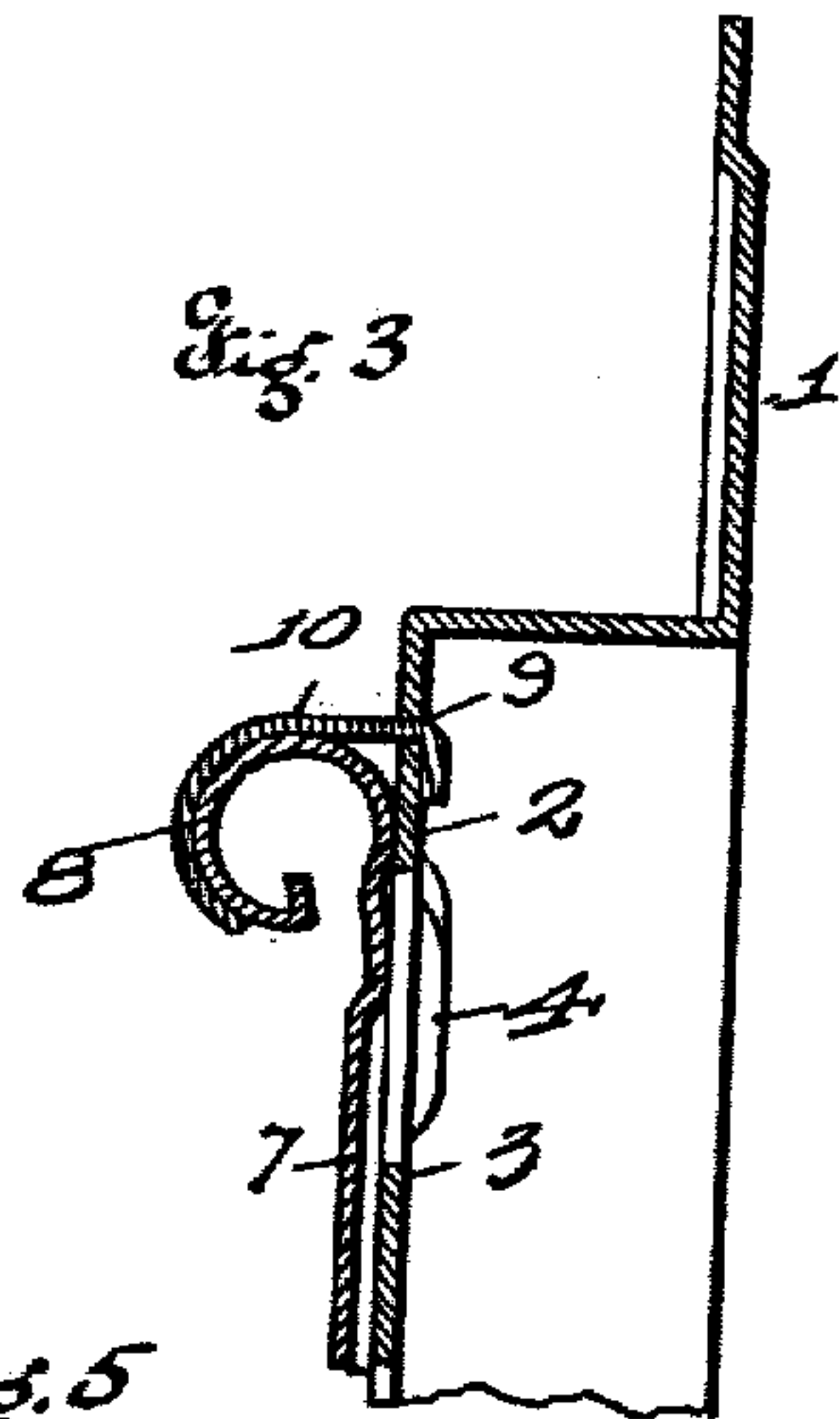
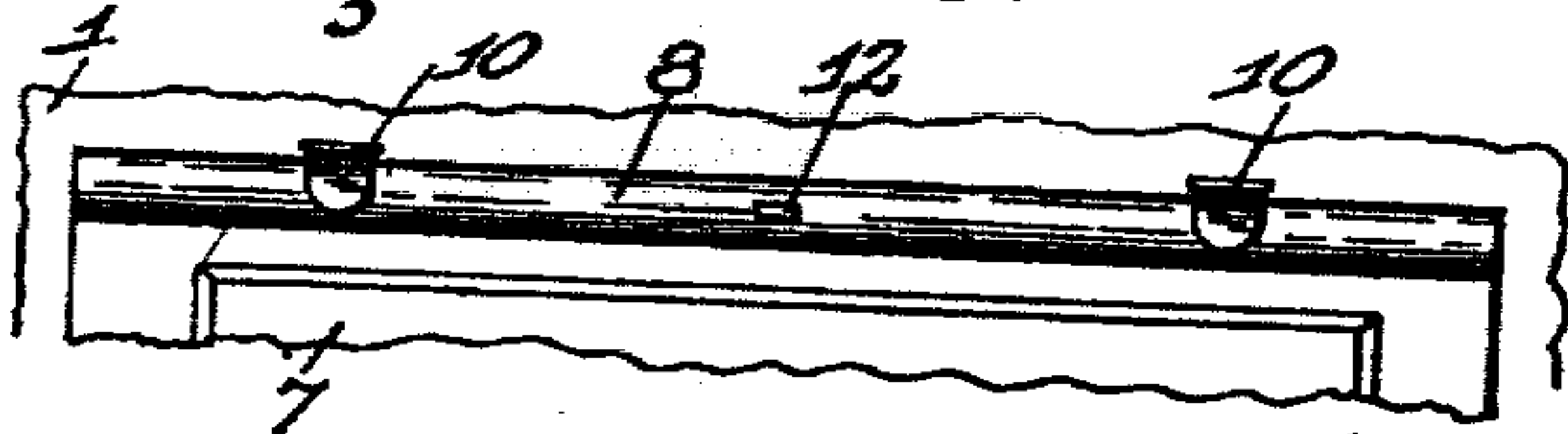


Fig. 5.



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Fig. 4.





# UNITED STATES PATENT OFFICE.

HERBERT SYMONDS, OF EAST ST. LOUIS, ILLINOIS.

## HOT-AIR REGISTER.

No. 814,888.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed March 30, 1906. Serial No. 252,915.

*To all whom it may concern:*

Be it known that I, HERBERT SYMONDS, a citizen of the United States, and a resident of East St. Louis, in the county of St. Clair, in the State of Illinois, have invented certain new and useful Improvements in Hot-Air Registers, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in hot-air registers, and has for its object to provide a hot-air register of the wall type provided with a single valve and having the advantages as to economy of construction and efficiency of function hereinafter set forth.

In the drawings, Figure 1 is a perspective view of the register of my invention. Fig. 2 is a transverse vertical view of the same in mid-section. Fig. 3 is an enlarged transverse vertical view in mid-section, showing the manner in which the valve is attached to and supported by the grille. Fig. 4 is an enlarged longitudinal mid-sectional view of one of the intersecting strips composing the grille. Fig. 5 is a plan view of the upper portion of the back of the valve, showing its mode of attachment to the grille.

In the form shown in the drawings I have provided a frame 1 and a reticulated grille 2, which are integral with each other and which may be stamped from a single sheet of metal or be formed by a single casting, as preferred. The grille is composed of the cross-pieces 3, which are corrugated for stiffening purposes, as indicated by the numeral 4, while at their points of intersection the said cross-pieces 3 present flat plane surfaces, as indicated by the numeral 5. The sheet of metal is stamped, as shown in the drawings, the frame 1 being provided with ornamental corrugations to insure its rigidity, and the grille 2 is depressed beneath or beyond the plane of the outer surface of the frame 1, so that the plane of the surface of the grille when in position is parallel to the plane of the surface of the wall and the inner face of the frame 1 is in contact with the face of the wall and directly attached thereto. The frame is provided with openings 6, through which screws or other fastening means may be inserted to screw the frame in its desired position upon the wall of the room to be heated.

By the construction of my grille and frame from a single sheet of metal I have entirely dispensed with the register-frames heretofore

employed in this art and have supplied a single integral and ornamental device performing all the functions of the face-plates and borders and register-frames of the prior art, and my device is attached directly to the face of the wall, saving not only the entire cost of the material and labor entering into the old register-frames, but also the very considerable cost of installing the register-frames in place.

A single valve 7 is mounted behind the grille 2 in the following manner by the following means: The valve 7 is preferably composed of a sheet of resilient material of a sufficient size to completely cover the grille, the upper edge of which sheet is bent over upon itself to form the approximately cylindrical roll 8. This cylindrical transverse roll is preferably made in the form shown in section in Fig. 2, so that the edge of the roll does not contact with the back of the grille 7, whereby the roll 8 is given a considerable resiliency. The grille is provided at or near its top with one or more slots 9. Seated through the slots 9 are one or more hook-shaped members 10, which are provided at their outer ends with ears 11, which prevent their slipping through the slots 9. The hook-shaped members 10 being placed in position through the slots 9, the transverse cylindrical roll 8 of the grille is compressed and slipped into position within the hooks 10, so that it is embraced by said hooks 10 and held in position in the manner shown in section in Fig. 3. The inner sides of the hooks 10 combine with the roll 8 to form a hinge, and the resilient character of the roll 8 enables it to be held in close frictional contact with the inner surfaces of the hooks 10, so that by reason of the said friction the valve 7 will remain in any position with reference to the grille 2 in which it may be placed. It is obvious that any number of the hooks 10 may be employed, their number depending upon the width and weight of the valve 7.

In order to provide the valve 7 with means whereby it may be opened and closed, I have provided a tongue 12, which is enlarged at its outer end, as indicated at 13, and which is seated loosely through the opening 14 in the grille 2, its inner end mounted diametrically through the roll 8, as shown in section in Fig. 2. The valve is opened or closed by the pressure of the foot or hand exerted upon the outer end of the tongue 12, and the frictional contact of the inner faces of the hooks 10 on



the roll 8 serves, as above described, to hold the valve 7 in any desired position, either partly opened or partly closed.

In the registers of the prior art in which a single valve has been employed the pivotal connection between the valve and the grille has been of such a character as to permit the loss of heat. In the register of my invention the upper edge of the valve 7 is held in close frictional contact throughout its entire width to the back of the grille 2, as shown in Fig. 2, thus preventing the waste of heat and making a perfectly close and practically air-tight hinge.

It is obvious that the tongue 12 must be of a length sufficient to secure the proper leverage upon the roll 8 to operate the valve 7, and this length must be so considerable in practice that it is both expedient and necessary to recess the grille 2 in the manner shown in the drawings, so that the tongue 12 will not project much beyond the surface of the wall, as when so projected and at the height at which wall-registers are used it would be calculated to injure furniture or clothing accidentally brought in contact with it.

Having thus described my invention, what I claim as new, and desire to have secured to me by the grant of Letters Patent, is—

1. In a wall-register, the combination of an integral grille and frame, a valve mounted thereon, said valve having one of its edges formed into a roll and a member secured to said frame and curved to frictionally embrace said roll and thereby hinge said valve to said frame, so that the valve may be turned into and retained in any one of several positions of adjustment, substantially as specified.

2. In a wall-register, the combination of an integral grille and frame, a valve mounted thereon, said valve having one of its edges formed into a roll, a member secured to said frame and curved to frictionally embrace said roll and thereby hinge said valve to said frame, so that the valve may be turned into and retained in any one of several positions of adjustment, and means for opening and closing the valve, substantially as specified.

3. In a wall-register, the combination of an integral grille and frame, a valve mounted thereon, said valve having one of its edges formed into a roll, a member secured to said frame and curved to frictionally embrace said roll and thereby hinge said valve to said frame, so that the valve may be turned into and retained in any one of several positions of adjustment, and a tongue mounted through the roll and projecting through the grille to open and close the same, substantially as specified.

4. In a wall-register, a combined grille and register-frame formed from a single metallic sheet, the frame being adapted to be directly attached to the face of the wall, and the grille being recessed from the plane of the outer surface of the frame, a valve pivotally mounted upon the inner face of the grille, and means for opening and closing the valve, substantially as specified.

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

HERBERT SYMONDS.

Witnesses:

ALFRED A. EICKS,  
M. M. BRAZILL.