J. H. SHENTON.

HEATING OR VENTILATING REGISTER.

APPLICATION FILED MAY 22, 1920.

1,394,227. **Patented Oct. 18, 1921.**

Fig. 1.

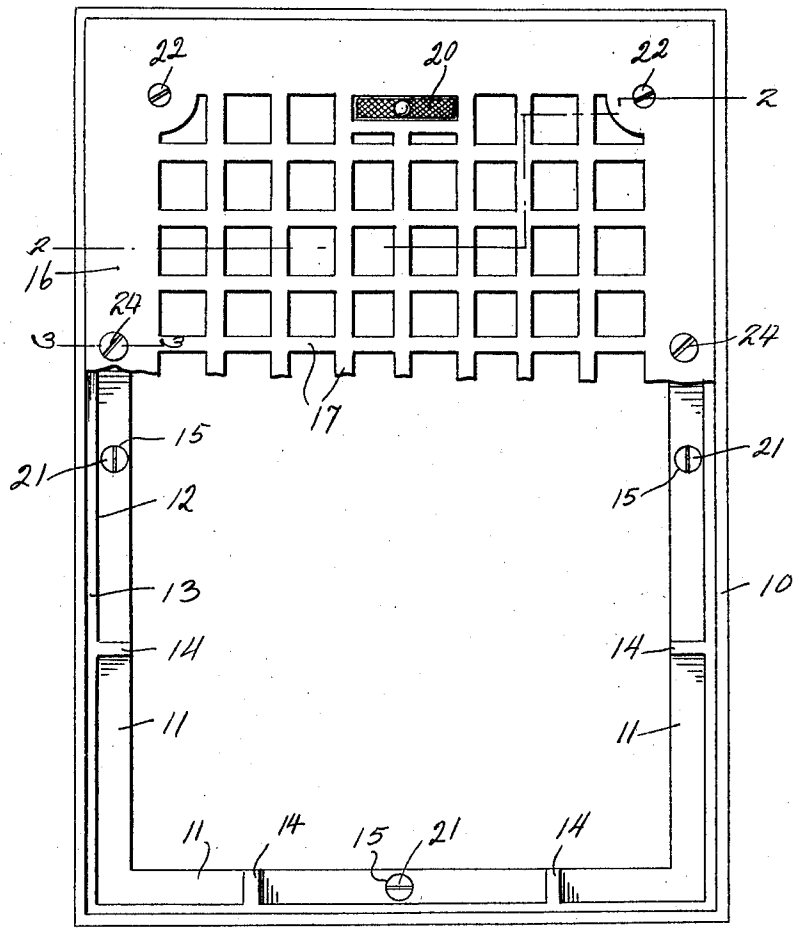


Fig. 2.

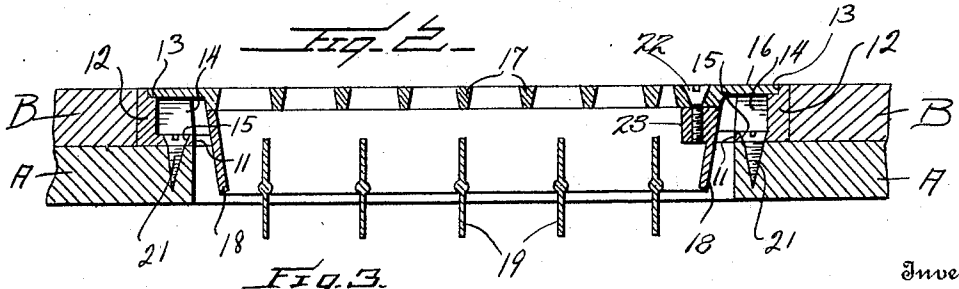
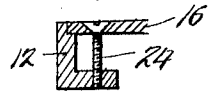


Fig. 3.



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HEATING OR VENTILATING REGISTER.

1,394,227. Specification of Letters Patent. Patented Oct. 18, 1921.

Application filed May 22, 1920. Serial No. 383,474.

To all whom it may concern:

Be it known that I, JAMES H. SHENTON, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Heating or Ventilating Registers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to registers or analogous grid-like devices for admitting heated air or for ventilation purposes, and particularly to a register border, that is a frame in which the register plate is disposed, either in floors or walls, that it will be more sightly than the ordinary border, and to so form it that a thoroughly good, clean joint may be formed between the finished floor and the border or between the plaster of the wall and the border.

Another object is to so construct the border that it may be set flush with the finished floor or the finished wall.

And still another object is to form the register in two parts or sections, one of which constitutes the border or frame for the register body, this border or frame being adapted to be set in place in the building before the register plate or body is put in place.

Other objects and advantages will be later stated.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a front elevation of my improved border, the register plate being broken away;

Fig. 2 is a transverse sectional view through a floor and showing my device applied;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Referring to these drawings, it will be seen that my improved border consists of a rectangular border or frame, designated 10, which is right angular in cross section to provide an inwardly extending attaching flange 11. The outwardly extending or border flange or wall 12 of this frame is recessed or rabbeted, as at 13, so that the upper edge of the wall 12 is relatively narrow, having in actual practice a width hardly greater than $\frac{1}{8}''$. At a plurality of points lugs 14 are formed which extend outward from the flange 11 and join the wall 12, the upper edges of the lugs being flush with the rabbet 13. It will be understood, of course, that the lugs are cast integral with this frame. A plurality of counter-sunk screw openings 15 are formed in the flange 11, four of these screw openings being ordinarily used. It is to be particularly noted that the outer face of the wall 12 is flat from its junction with the outer face of flange 11 to the outer edge of the wall 12. It is also to be noted that the shoulder formed by rabbeting the inner corner of the wall 12, as at 13, extends entirely around the frame or wall and that the wall 12 is relatively shallow.

Coacting with the frame 10 is a rectangular register plate 16 which is cast or otherwise formed, this plate being formed with an openwork or grid-like central portion comprising the intersecting bars or webs 17 defining a series of longitudinal or transverse openings, as is usual in registers. The plate 16 is formed with or carries a depending frame 18, there being pivoted shutters or dampers 19 operatively supported upon this frame in any desired or usual way and adapted to be operated by means of a knurled operating wheel or disk 20 extending through an aperture formed in the face of the plate 16. These dampers may be closed into horizontal alinement with each other or shifted into any desired relation to control the passage of heat or air through the openings in the register face plate. The particular formation of the dampers and the manner of mounting forms no part of my invention. This frame 18 is held in place against the frame 16 by screws 22 which pass through the corners of the register plate 16 and into lugs 23 formed at the corners of the frame 18. I do not wish to be limited to this particular manner of holding the frame 18 in place.

In the installation of this device, assuming that the register is to be placed in a floor, the frame 10 is disposed upon the rough floor, which is roughly cut out to receive the pipe leading from the heater or fresh air pipe, and this frame is held in place by the screws 21 disposed through the apertures 15. After this frame is in place, the finished floor B may be disposed on the rough floor A and a good joint may be made between the floor boards and the upwardly projecting side walls or flange 12 of the frame. The face plate 16 or register plate may then be put in place within the frame.

Where the register is used for a floor register, the weight of the plate 17 with its attached frame 18 will hold the register plate in place within the frame 10. Where the mechanism is to be used for a wall register, however, the plate 16 should be attached to the frame 10, as by means of screws 24 passing through the plate 16 and into the flange 11. Any other means might be used, however, for locking the plate 16 in place to the frame 10.

The register face plate and the border or frame may be of course made of cast iron, bronze or brass or of any other desired metal, and can be used for any standard warm air register of ventilator, and, as previously stated, may be used either in a floor or wall.

The particular advantages of this construction over other forms of border known to me are as follows: This form of border saves much labor in putting down finished floors, as the finished floor boards can be cut to proper lengths after the border frame 10 has been placed and fastened to the joists or to the rough floor. Under these circumstances, the top surface or edge of the border frame will be flush with the top of the standard upper flooring or flush with the outer surface of the plaster without any rabbeting or other fitting. Inasmuch as this device does not have the wide flanges of the old style border frame, there is much less likelihood of the frame being broken or damaged while the flooring is being put down. This very often happens with the wide flanged border or frame, but in my construction the edge flange 12 extends entirely outward so that it is relatively strong and cannot be readily broken. The flange 11 is entirely concealed by the margin of the face plate, and this flange enables the workman to securely fasten the border frame to the rough underflooring, and furthermore, this border frame can be readily fastened to the woodwork at the sides of the border frame if there should be enough to fasten it to on the back or under side, it being only necessary to have openings passing through the side flange 12 of the frame for this purpose.

This border can be placed on the rough underfloor or in the wall long before the building is ready for finishing or even before it is plastered without any danger of the frame becoming damaged or marked up, so that it will show after the building is completed. The frame can be placed in the wall before plastering and the plaster can work up to the frame without injury, and when the wall is plastered, the border will be flush with the outer face of the plastered wall, or the device can be placed against the plastered wall and the border will be flush with the baseboard.

It is particularly adapted for use with tile, cement or mosaic floors. The border is put in position on the foundation for the floor and the workman lays his tiles or the cement tight up to the bordering flange 12 so that the upper edge of this bordering flange will be flush with the face of the floor. It is to be particularly noted that the flange 12 of the border frame is very narrow. This adds very much to the looks of the completed work, as ordinarily the relatively large flange on the outside edge of the border frame makes an unsightly patch in the floor or wall, and it will be noted that this construction of border saves wall space, as very little more space is used than is required for the register plate itself. This permits the register to be disposed very close to a wall with practically no space between the register and the wall, if desired. By eliminating the relatively wide overhanging flange of the border frame now in use, a great deal of extra work in setting the register is eliminated, as it is very difficult to set a register properly with this overhanging flange unless the bordering flange was not disposed flush with the register but the plastering or floor was carried beneath the flange.

While I have illustrated a rectangular register frame and register plate, it will be understood that other shapes of registers may be used without departing from the spirit of the invention.

I claim:—

1. An outer border frame for registers right angular in cross section to provide a border wall, and an inwardly projecting attaching flange, the outer face of the border wall being flat throughout the depth of the wall, the inner edge of the border wall being rabbeted along its entire length, and the attaching flange having screw openings whereby it may be attached to a supporting structure.

2. An outer border frame for registers right angular in cross section to provide a border wall and an inwardly projecting attaching flange, the outer face of the border wall being flat throughout the depth of the wall, the inner edge of the border wall being rabbeted along its entire length, and the attaching flange having screw openings whereby it may be attached to a supporting structure, and a register plate fitting within the border wall and resting upon the shoulder formed by the rabbet on the border wall, the register plate having a thickness equal to the depth of the rabbet.

3. An outer border frame for registers right angular in cross section to provide a border wall, and an inwardly projecting attaching flange, the outer face of the border wall being flat throughout the depth of the wall, the inner edge of the border wall be-

ing rabbeted along its entire length, and the attaching flange having screw openings whereby it may be attached to a supporting structure, a register plate fitting within the border wall and resting upon the shoulder formed by the rabbet on the border wall, the register plate having a thickness equal to the depth of the rabbet, and a rectangular frame carried by said register plate and extending into the space defined by the border frame and having dampers.

4. A register comprising an outer frame or border, angular in cross section, to provide a border wall and an attaching flange at right angles thereto, the border wall being rabbeted on its inside edge, there being webs at intervals extending between the border wall and the attaching flange and having their edges flush with the bottom of the rabbet, the attaching flange having openings for the passage of attaching screws, and a register plate fitting within the border wall and within said rabbet thereof and having a thickness equal to the depth of the rabbet, and means for holding the register plate in engagement with the frame.

5. A register comprising a border frame formed to provide a border wall, attaching webs extending inward at right angles to the border wall, the border wall being rabbeted at its inner edge, a register plate fitting within the frame and normally resting within the rabbet and having a thickness approximately equal to the depth of the rabbet, and attaching members passing through the register plate and engaging said attaching webs.

In testimony whereof I hereunto affix my signature.

JAMES H. SHENTON.