(No Model.)

C. H. FOSTER.

WALL REGISTER.

No. 574,675. Patented Jan. 5, 1897.

Fig 1

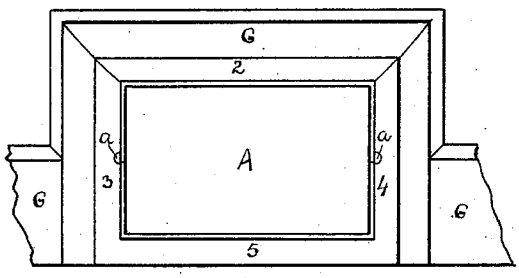


Fig 2

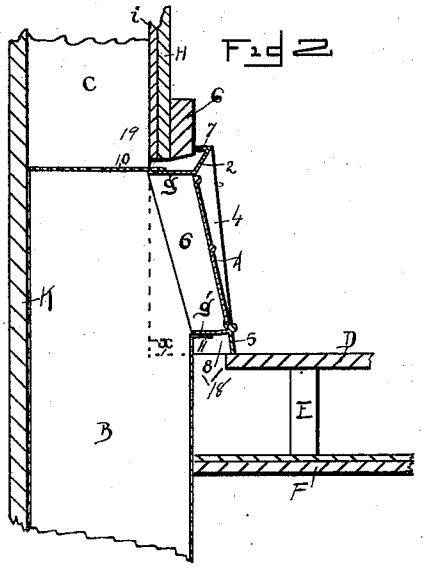


Fig 3

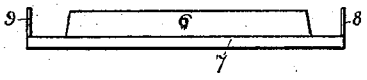


Fig 4

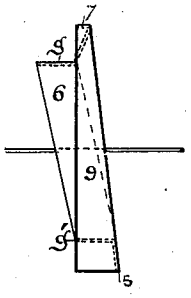


Fig 5

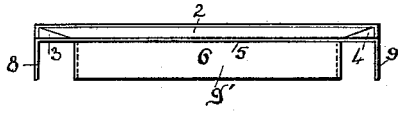


Fig 7

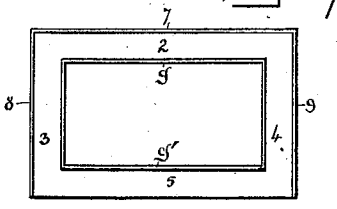
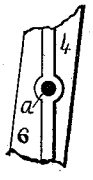


Fig 6



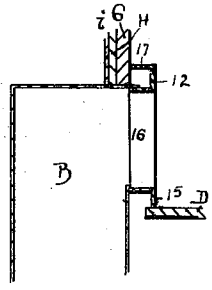


Fig 8

WITNESSES:

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CHARLES H. FOSTER, OF OMAHA, NEBRASKA.

WALL-REGISTER.

SPECIFICATION forming part of Letters Patent No. 574,675, dated January 5, 1897.

Application filed April 8, 1895. Serial No. 545,032. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. FOSTER, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain useful Improvements in Wall-Registers; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The first object of the invention is to make it possible to use larger air-pipes for first-floor registers than heretofore have been practicable with a partition of a given thickness.

The second object is to produce or permit the circulation of air through or around the register frame and border to prevent the same from being overheated.

In the accompanying drawings, Figure 1 shows a front view of my side-wall register as placed in position. Fig. 2 shows a sectional view, with parts removed, of a wall having my register in position. Fig. 3 shows a detached top view of my register. Fig. 4 is a side view of my register with the hinged panel open. Fig 5 shows a bottom view of my register. Fig. 6 is a broken view showing the opening adapted to receive the panel-border. Fig. 7 shows a rear view of the register, while Fig. 8 shows my register as constructed with a full border.

By all those skilled in the art to which this invention relates it is a well-known fact that side-wall registers are now almost universally used in preference to floor-registers. It is further the general custom among builders to place the studding sixteen inches apart, center to center. This leaves but an open space of fourteen inches between the studding in the clear. In order to avoid unnecessary expense, studding known as "two-by-four stuff" is commonly used in ordinary houses. Now, as has been demonstrated in actual practice, a side-wall register, in order to be placed in an ordinary dwelling and within a fourteen-inch space, must have a measurement of at least six inches in the opposite direction, so that the flue-opening must be at least six by thirteen inches, in order to get a proper draft for the first floor.

In ordinary houses where side-wall registers are used it has been found necessary, to meet the requirement of the side-wall register, to use six-inch material in place of four in all walls provided with a side-wall register, so as to insure the proper capacity. This entails an unnecessary expense and often leaves a jog in the wall.

Now the aim and object of my invention is to provide a first-floor side-wall register that shall be so arranged that my register can be used in a building where but four-inch studding is employed and which shall have the proper measurement of six by thirteen inches. This I accomplish as follows:

I lead the flue-pipe B, referring to Fig. 2, from below to a six by thirteen opening within the lower ceiling F. The next floor D, I provide with an opening larger than six inches, through which I carry the hot-air flue B between the studding C, as is usual in the art. I next, however, in order to avoid the unnecessary expense of using two by six material, remove the base-board G the full width of the flue-opening, as well as remove the plaster H and lath *i*. This gives me full two inches from the bottom of the base-board to the rear line of the lath, as will be noticed in referring to Fig. 2, where the gain in space is shown by dotted lines *x*. This gain of space then enables me to enter the first-floor wall with the proper opening, six by thirteen inches. I next carry the flue B out by means of the flanges 10 and 11. The next step, then, is to attach the side-wall register.

Now an ordinary register could not be used in this connection, for it would, if properly positioned, project inward the distance of its flue-flange or wall-frame, and so obstruct the flue. In order to avoid this, I construct a register which has a hollow border of a depth at least as great as that of the flue-flange, as is shown in Fig. 8. This, however, gives the register a clumsy appearance, so in order to avoid this I keep true to my invention, but construct a register having a hollow border, the lower portion of which is of a depth as great as that of the flue-flange, but which border gradually decreases in capacity toward the upper end, where the space is not of such great importance. This, it should be understood, is simply done for appearance sake.

In constructing a register in which the hollow border decreases in capacity toward the upper end I make the side flue-flanges 6 6 in the shape of a parallelogram, as is shown in Figs. 2 and 4.

The wall-line of the register extends from the forward point of the upper flange *g* to the rear point of the lower flange *g'*, as is shown in Figs. 2 and 4, so that an upper inwardly-projecting wedge-shaped hood is formed in reference to said base-lines, as will be noticed more clearly by referring to Fig. 4, which hood portion projects inward and into the flue B, while the lower flange *g* projects outward and beyond the flue B, as is clearly shown in the drawings. It will be noticed that this flue-opening is in no way objectionable in that it has its maximum width at the upper point, while toward the floor it extends still farther outward. Extending from this flue-flange or wall-frame, comprising the parallelogram-shaped end flange-sections 6 6 and the square top and lower flange-sections *g g'*, is a face comprising the upper section 2 and the side sections 3 and 4 and the lower face-flange 5. The lower flange 5 extends in the same line with the forward edge of the side flanges 6, while the upper face-flange 2 extends outward to form a hollow border by means of the top stub-flange 7, which flange extends in a plane parallel with that of the upper flange *g*, as will be noticed in referring to Fig. 2. This upper face-flange 2 extends forward a suitable distance, the width approximately of this flange. This necessitates the side flanges 3 and 4 extending at an angle at the upper end and gradually receding and merging into the face base-flanges, as will be understood in referring to Figs. 1 and 5.

The register is provided with an ordinary swinging damper A. Extending rearwardly from the face-flanges 3 and 4 are the wedge-shaped flanges 8 and 9, which, together with the flange 7, form a channel around three sides of the register. The back edges of these flanges are arranged to rest against the base-board or wall of the apartment in which the register is placed. The bottom is not provided with a flange corresponding to those designated by the characters 7, 8, and 9 on the other sides. This arrangement of flanges is resorted to to secure a circulation of air in the manner to be described. The opening in the floor is made larger than is necessary for the air-pipe B, whereby a space 18 is left between the pipe and the edge of the floor. The opening covered by the register is also cut a little higher in the wall than is necessary to accommodate the top 10 of the air-pipe B and the flange *g* of the register, thus forming an opening 19 between the register and the wall or partition. When the register is placed in position, these openings 18 and 19 are covered by these flanges, the flange 5 resting upon the floor beyond the former and the flange 7 resting against the wall above the latter. By this means the space between the joists E and that between the studding are put in communication with each other, and when the register is in use and the walls thereof become heated, the air will circulate through and around the casing, being drawn in from the space occupied by the joists E, through opening 18, through the channel formed in the register-frame and border, through the opening 19, and out into the space between the studding. By this arrangement the register is kept comparatively cool, and all danger of its setting fire to surrounding woodwork avoided. At the same time the air passing through the border is not raised to such a degree as to be dangerous to the woodwork of the partition.

The principle involved in the construction shown in Fig. 8 is the same as that shown in the other figures, except that no means is shown for forming communication between the space between the joists and that between the studding, and therefore the circulation of air through the hollow border is not so rapid and efficient.

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

1. A wall-frame and border for registers provided with two flanges arranged at substantially right angles thereto, one of the flanges disposed at the inner edge of the frame, and the other flange disposed at the outer edge of the frame, the outer flange being as deep or deeper than the inner flange.

2. A wall-frame and border for registers provided with two flanges arranged at substantially right angles thereto, one of the flanges being disposed at the inner edge of the frame, and the other flange disposed at the outer edge of the frame, the two flanges forming a ventilating-flue; in combination with a hot-air flue, and means for causing air to pass through the ventilating-flue.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. FOSTER.

Witnesses:
G. W. SUES,
H. W. PENNOCK.