Aug. 8, 1933. F. C. REYNOLDS 1,921,040

COMBINATION WINDOW AND RADIATOR INCLOSURE

Filed Sept. 24, 1929 2 Sheets-Sheet 1

Fig. 1.

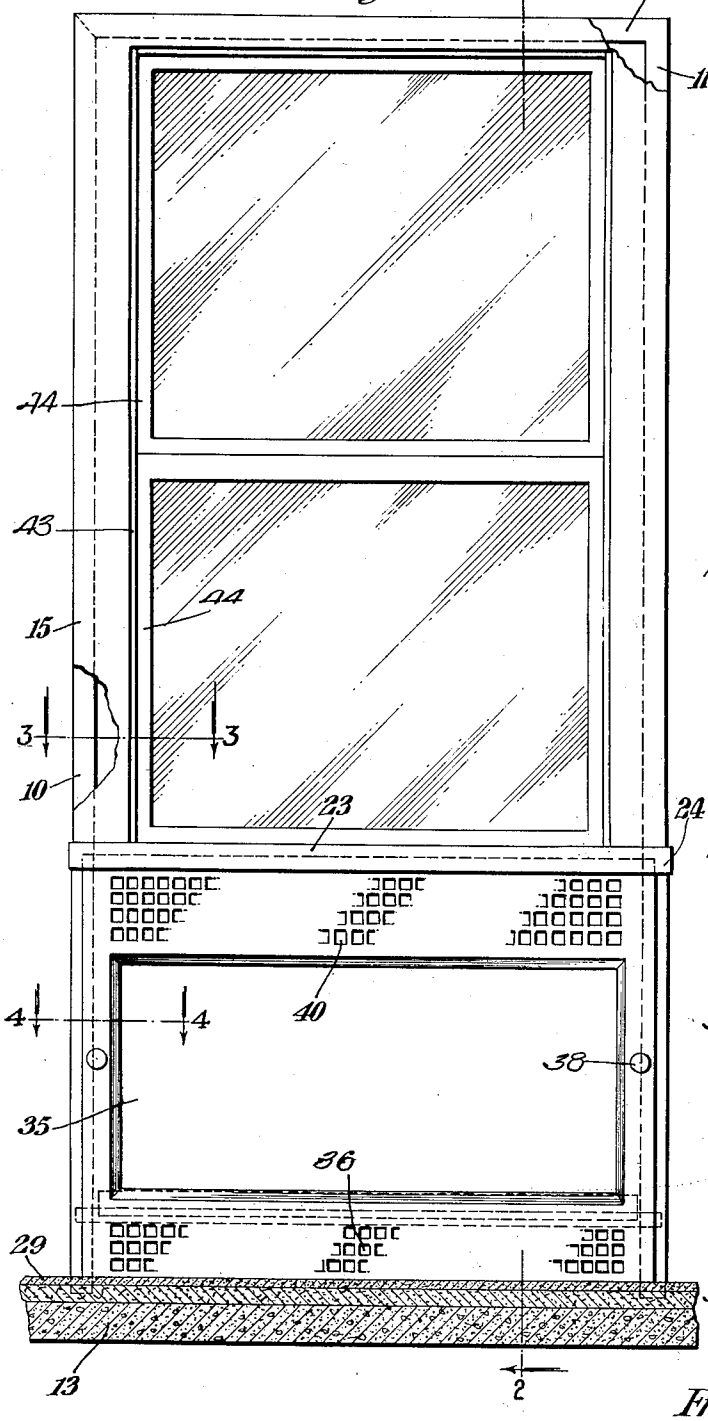
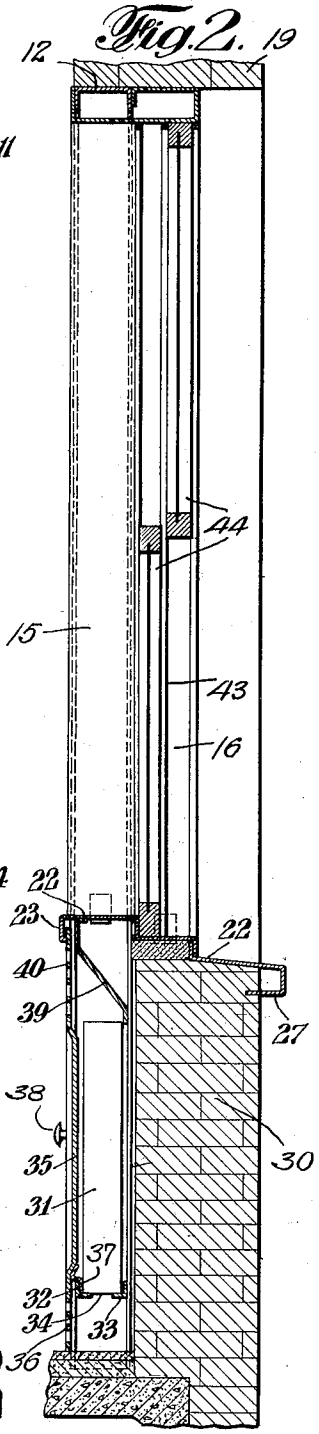


Fig. 2.



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Fig. 3.

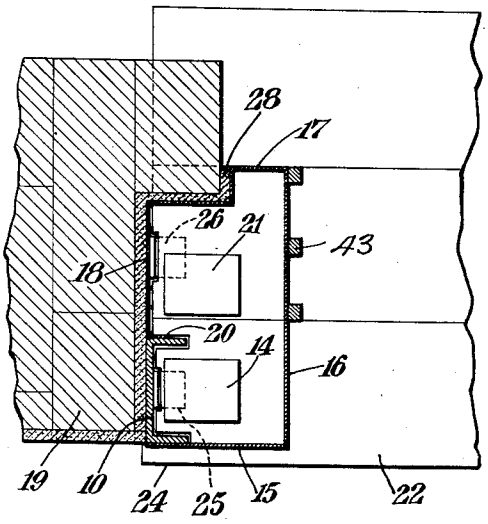


Fig. 4.

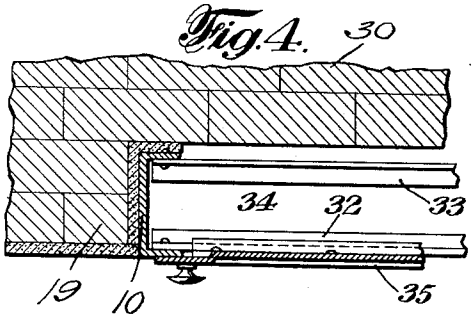


Fig. 6.

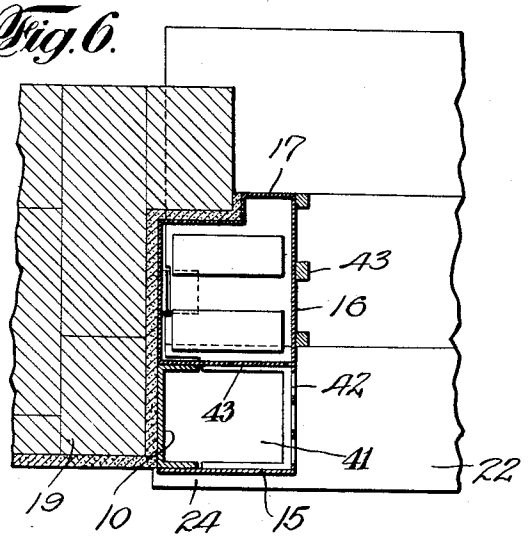
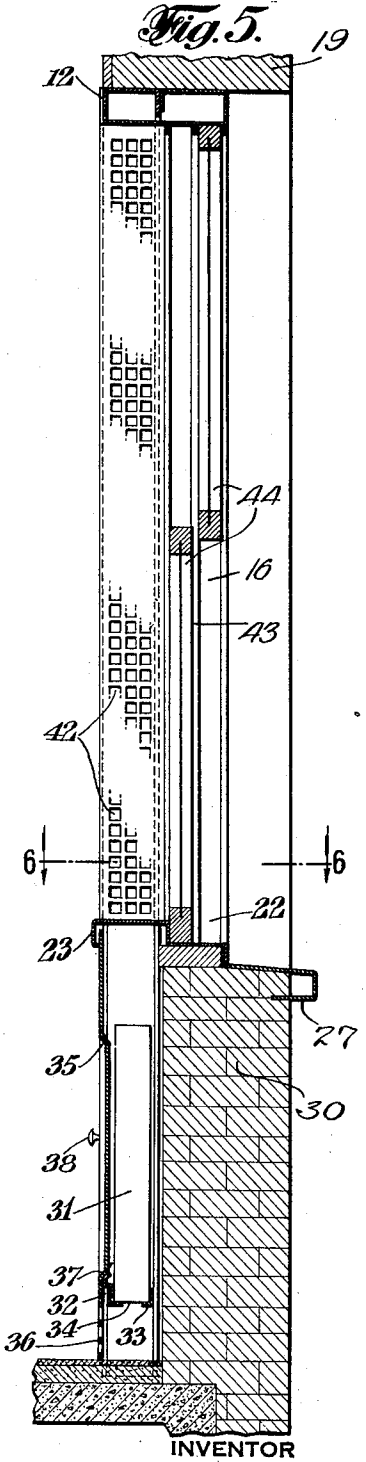


Fig. 5.



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UNITED STATES PATENT OFFICE

1,921,040

COMBINATION WINDOW AND RADIATOR INCLOSURE

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Application September 24, 1929
Serial No. 394,774

12 Claims. (Cl. 189—75)

This invention relates to a window frame and radiator inclosure construction.

Objects of the invention are to provide a window frame and radiator inclosure of simple construction that provides a radiator space and air circulating and heating passages without adding to the bulk of the frame and that can be easily installed and that affords ready access to the radiator space.

Other objects will appear in detail in the following description.

The various features of the invention are illustrated in the accompanying drawings, in which;

Fig. 1 is a view in vertical elevation of a window frame and radiator inclosure embodying a preferred form of the invention, portions being broken away to show the interior construction.

Fig. 2 is a vertical sectional view of the frame and inclosure taken on line 2—2 of Fig. 1;

Figs. 3 and 4 are sectional views of the frame and of the radiator inclosure taken on lines 3—3 and 4—4, respectively, of Fig. 1;

Fig. 5 is a vertical sectional view, taken similarly to that of Fig. 2 or a modified form of embodiment of the invention, and;

Fig. 6 is a cross sectional view of the frame taken on line 6—6 of Fig. 5.

The window frame and radiator inclosure of the invention are supported on a pair of metal side channels 10 and 11 and a metal top channel 12 which extends from the top of one of the channels 10 or 11 to the top of the other. The side channels 10 and 11 extend from the upper channel 12 downwardly to a floor slab 13, which as shown in Figs. 1 and 2, may be of concrete. The channels 10, 11 and 12 may be formed of integral channel iron welded or otherwise secured at the corners joining the ends of the top channel 12 to the tops of the side channels 10 and 11 or may be formed of angle iron or other shapes. The two side channels 10 and 11 also form weight boxes for the weights 14, Fig. 3 of a window sash. The channels can each be made of one single piece or can be made in separate detachable parts and can be riveted, bolted, screwed or otherwise assembled.

The upper part of the channels 10 and 11 and the top channel 12 are enclosed within a casing having front walls 15, side walls 16, Fig. 3, along which the window sashes slide, rear walls 17 facing the exterior of the building and walls 18 that face, and lie adjacent to the edge surface of the window opening in the wall 19.

The edges of walls 18 are joined to edge flanges of the channels 10, 11 and 12 by means of flanges 20 integral with the wall 18 lying against the channel flanges and joined thereto in any suitable manner as by welding, rivets, bolts or screws. The inclosure formed by the walls 15—18 forms a box for the sash weight 14 and for a sash weight 21. It will be understood that the channel irons 10 and 11 may be formed to include both of the weights 14 and 21 if desired or both weights may be entirely outside the channel. The construction shown has the advantage of separating the passages of the weights 14 and 21 by the flanges of the channels.

The sill of the window frame is formed by a horizontal metal sheet 22 having a downturned front flange 23. The sheet 22 and flange 23 are so cut that the flange 23 and the part of the sheet extending forwardly of the walls 15 are extended as at 24 sidewise to the edges of and cover the channels 10 and 11 and meet the edges of the wall 19. The walls 15 terminate within and their ends are overlapped and concealed by the extensions 24. The walls 16 also terminate at their lower ends at the upper surface of the sill sheet 22, which extends beneath the ends of the walls 16 to the channels 10 and 11 and walls 18 to which it is secured by angle plates 25 and 26 respectively welded, riveted or otherwise secured to the sheet and to the channels 10 and 11 and walls 18. The sill sheet 22 may also be welded or secured to the lower edges of the walls 16. The sheet 22 is also extended rearwardly to the exterior of the wall 19 of the building and is turned downwardly and inwardly as at 27 on the exterior of the building.

The walls 15—18 and the sill 22 thus form a window frame supported by the channels 10 and 11. In setting this frame the feet of the channels 10 and 11 are placed on the floor slab or base 13 and lifted by shims or thin wedges until the sash is at a height sufficient to fit the upper part of the window opening of the wall. The space between the perimeter of the frame, formed by the channels 10, 11 and 12 and walls 18, and the opening in the wall 19 is then filled with a weather-proof filling 28, Fig. 3. A finished floor layer 29 is later formed on the floor base or slab 13 concealing and embedding the lower ends or feet of the channels 10 and 11.

The wall 30 of the building beneath the sill 22 is made thinner than the wall 19 at the sides and top of the frame to leave a space between the channels 10 and 11 and beneath the sill 22 for a radiator 31. The radiator 31 is supported above the floor 29 by means of a front channel iron 32 and a rear channel iron 33 which extend between, and are secured at their ends to

the channels 10 and 11. The dimensions of the channel irons 32 and 33 are such as to leave between them a space 34 for the upward passage of air to the radiator.

The radiator space between the channels 10 and 11 is closed by means of a sheet metal panel 35 that extends sidewise to cover the front edge flanges of the channels 10 and 11 and extends downwardly from within the sill flange 23 to below the radiator supporting angle bar 32. The panel 35 may terminate at its lower end a short distance above the floor 29 to form an opening for the entrance of air to the lower part of the radiator space and to the opening 34 or may extend to the floor and be provided with a grille 36 for the entrance of air. The panel 35 is supported on the front radiator supporting bar 32 by means of a horizontal double angled strip 37 joined to the inner surface of the panel 35 and overlapping the forward flange of the bar 32. The panel 35 is removable and is inserted, after the setting of the window frame and radiator 31, by inserting its upper edge back of the sill flange 23, slipping the strip 37 over the flange of bar 32 and then lowering it until the strip 37 rests on the bar 32. The panel 35 may be lifted and placed by means of knobs 38 on its front surface.

The air that has entered through the opening or grille 36 and has been heated by passing upwardly past or through the radiator 31 is deflected forwardly above the radiator by means of an upwardly and forwardly inclined deflecting plate 39 (Fig. 2) and passes out of the radiator space through a grille 40 in the upper part of the panel 35. As an alternative the plate 39 may be omitted and the grille 40 may be formed in the sill plate 22.

In the modification shown in Figs. 5 and 6 the deflecting plate 39 is omitted, the grille 40 is omitted from the panel 35 and the sill plate 22, both of which are solid, and the heated air passes through openings 41 in the plate 22 within the walls 15—18 and enters the enclosure within these walls. From this inclosure it flows sidewise through grille openings 42 in the walls 16. The heated air within the walls 15—18 may be confined to the forward part of the hollow window frame by means of a partition 43, Fig. 6, so that it does not come into contact, and become chilled by contact, with the outer walls 17.

While the invention has been described in connection with the use of the radiator 31 as a heating element it will be understood that the radiator may be used as a cooling or heat abstracting element, in which case warm air will enter the grille 40 or 42, descending past the radiator 31 and thereby becoming chilled, and will pass into the room through the grille or opening 36.

The portions of the plate 16 which are offset transversely to the rear of the members 10 carry guides 43 for the sashes 44. Thus the members 10 and the radiator inclosure are in a plane forwardly of the sashes and the sash-conveying part of the window frame.

Through the above invention a window frame and radiator inclosure of unitary structure is provided, which may be readily inserted in a window opening and set therein. The structure is such as to provide a radiator recess or inclosure that provides an unobstructed circulation of air, permits access to the radiator and forms a smooth unobstructed or unbroken wall with the inner wall of the building.

Having described the invention what I claim and desire to secure by Letters Patent is:—

1. A combined radiator inclosure and window frame above it made in a unitary structure with the inclosure located below the level of the window sill and the sides of the frame extending in vertical alinement with the sides of the inclosure.

2. A combined radiator inclosure and window frame above it made in a unitary structure with the inclosure located below the level of the window sill and the front face of the inclosure in the same plane as the front face of the frame.

3. A combined radiator inclosure and window frame above it made in a unitary structure with the inclosure located below the level of the window sill and the front face of the inclosure in the same plane as the front face of the frame and the side faces of the inclosure in the same transverse vertical planes as those of the frame.

4. The combination with plates forming hollow side frames of a window and a sill extending between said frames, of uprights forming outer portions of said frames and extending below said sill and constituting parts of a radiator inclosure.

5. The combination with plates forming hollow side frames of a window and a sill extending between said frames, of uprights forming outer portions of said frames and extending below said sill and constituting parts of a radiator inclosure, and partitions in said hollow side frames separating the front part from the rear, the front parts only of said side frames communicating at their lower ends with the space in said inclosure.

6. The combination with plates forming hollow side frames of a window and a sill extending between said frames, of uprights forming outer portions of said frames and extending below said sill and constituting parts of a radiator inclosure, said side frames communicating at their lower ends with the space in said inclosure.

7. A building construction assemblage constituting a combined window frame and radiator inclosure and including in combination a wall having a window opening therein, hollow uprights within and at the sides of said opening and a horizontal member located in the space between said uprights and forming part of the window sill and the top of the radiator inclosure, said uprights having openings therein and the parts being arranged to pass through said openings heated air arising from within said inclosure.

8. A building construction assemblage constituting a combined window frame and radiator inclosure and including in combination a wall having a window opening therein, vertical frame members within and at the sides of said opening, hollow uprights surrounding said frame members and extending transversely beyond the rear faces of the same, the rearwardly extended portion being adapted to carry the window sashes.

9. A building construction assemblage constituting a combined window frame and radiator inclosure and including in combination a wall having a window opening therein, a pair of uprights the upper portions of which are located at the sides of said opening and constitute parts of a window frame and the lower portions of which are below said window opening and constitute parts of the radiator inclosure, the upper portions of said uprights being hollow and having openings for the discharge of heated air rising from within said inclosure.

10. A building construction assemblage constituting a combined window frame and radiator inclosure and including in combination a wall

having a window opening therein, a pair of uprights of which the lower portions form the sides of the radiator inclosure and the upper portions form the sides of the window frame and a connection between the upper ends of said uprights.

11. A building construction assemblage constituting a combined window frame and radiator inclosure and including in combination a wall having a window opening therein, a pair of uprights of which the lower portions form the sides of the radiator inclosure and the upper portions form the sides of the window frame and a connection between the upper ends of said uprights, the upper parts of said uprights being hollow and communicating with the radiator inclosure and having openings therein for the escape of heated air rising from the inclosure.

12. A building construction assemblage constituting a combined window frame and radiator inclosure and including in combination a wall having a window opening therein, a pair of uprights of which the lower portions form the sides of the radiator inclosure and the upper portions form the sides of the window frame and a plate extending between said uprights at an intermediate level and forming the window sill and the top of the inclosure.

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