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H. W. SYMONDS

1,961,948

AIR CONTROL WALL REGISTER

Filed Dec. 27, 1932

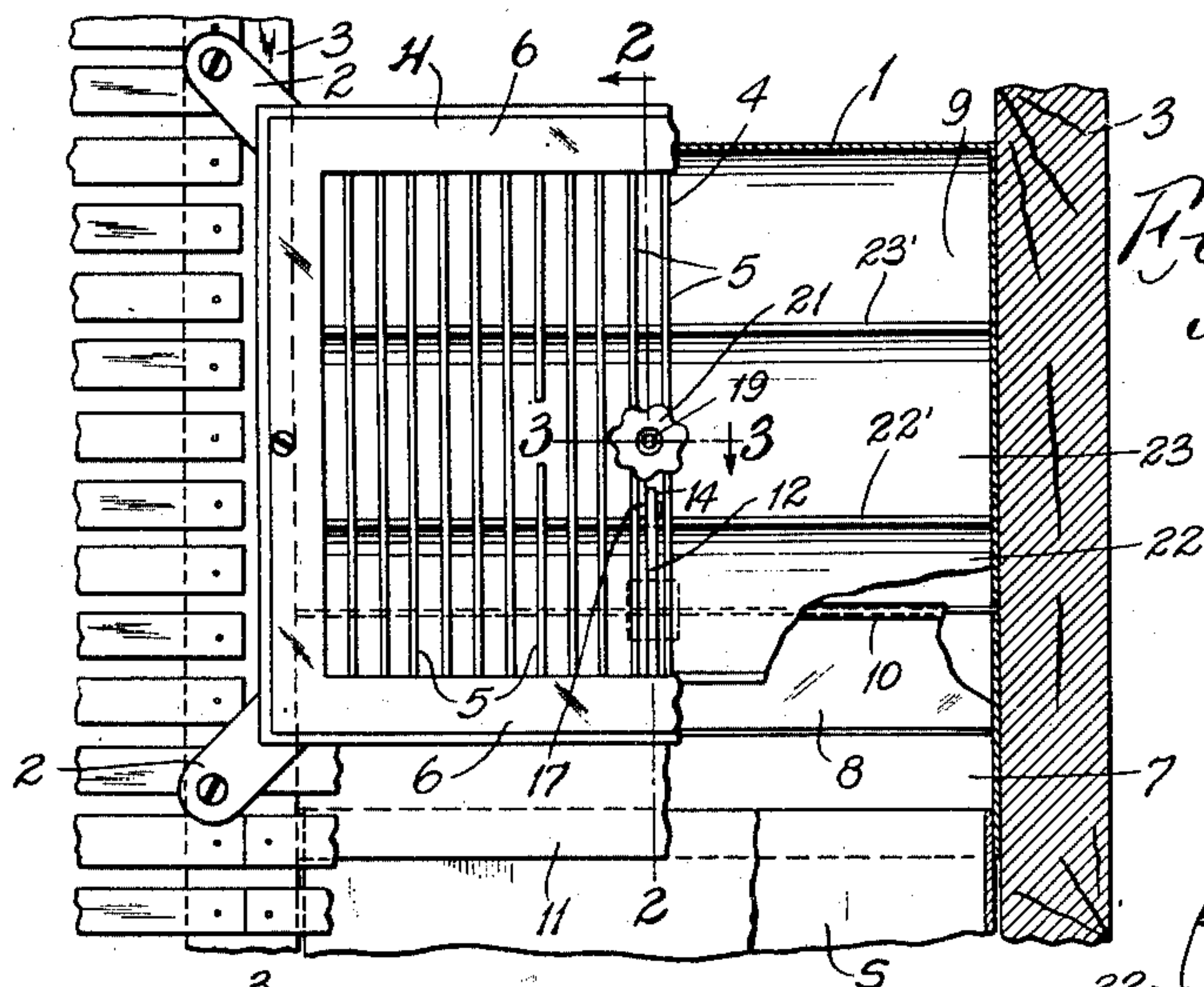


Fig. 1.

Fig. 4.

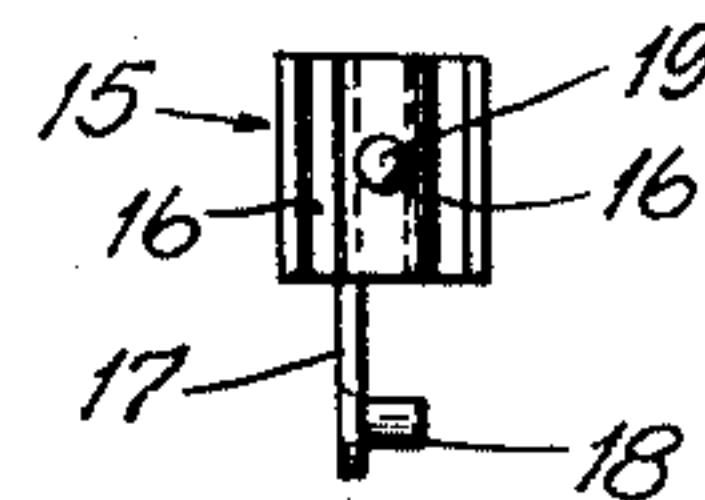


Fig. 3.

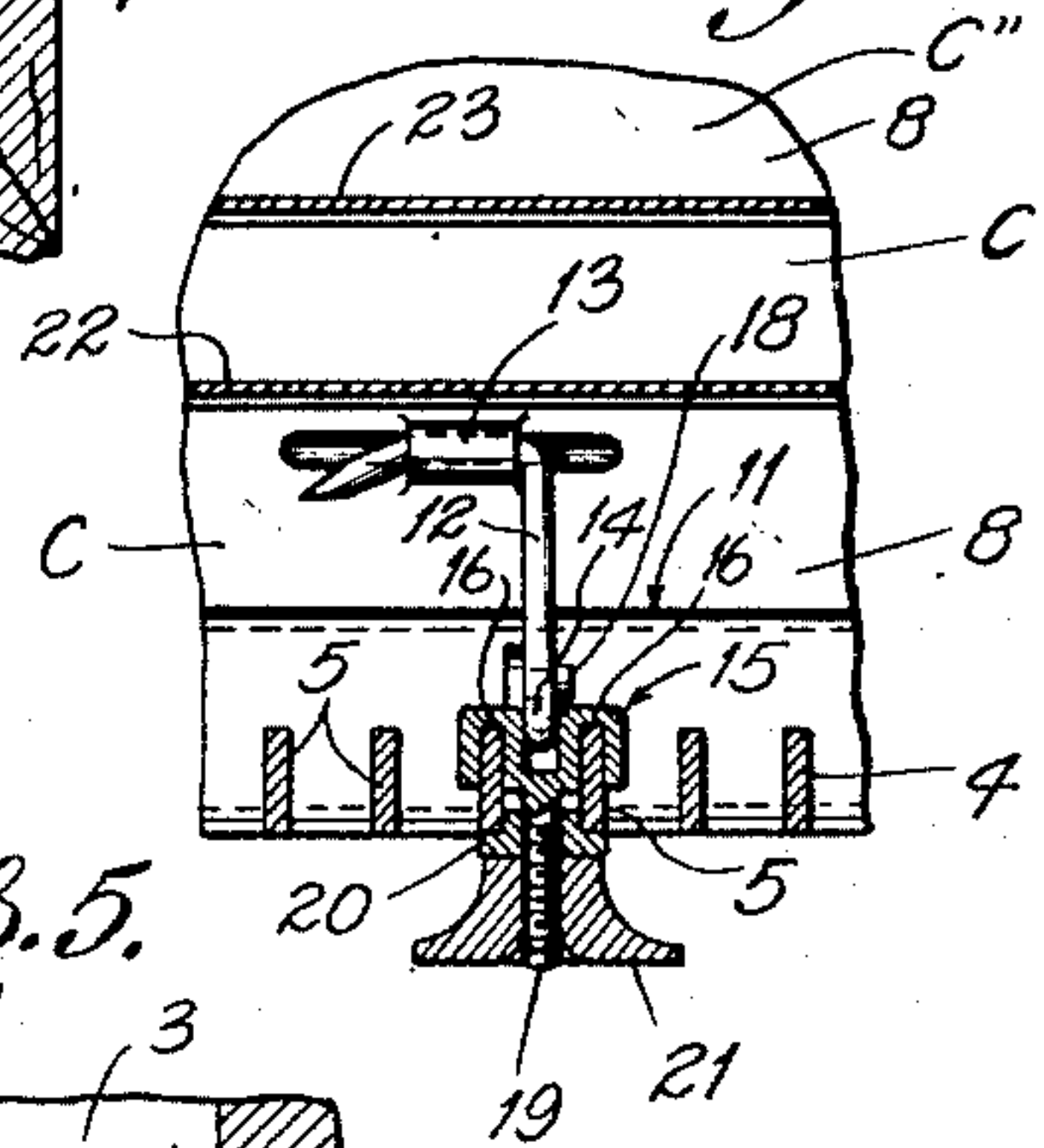


Fig. 2.

Fig. 5.

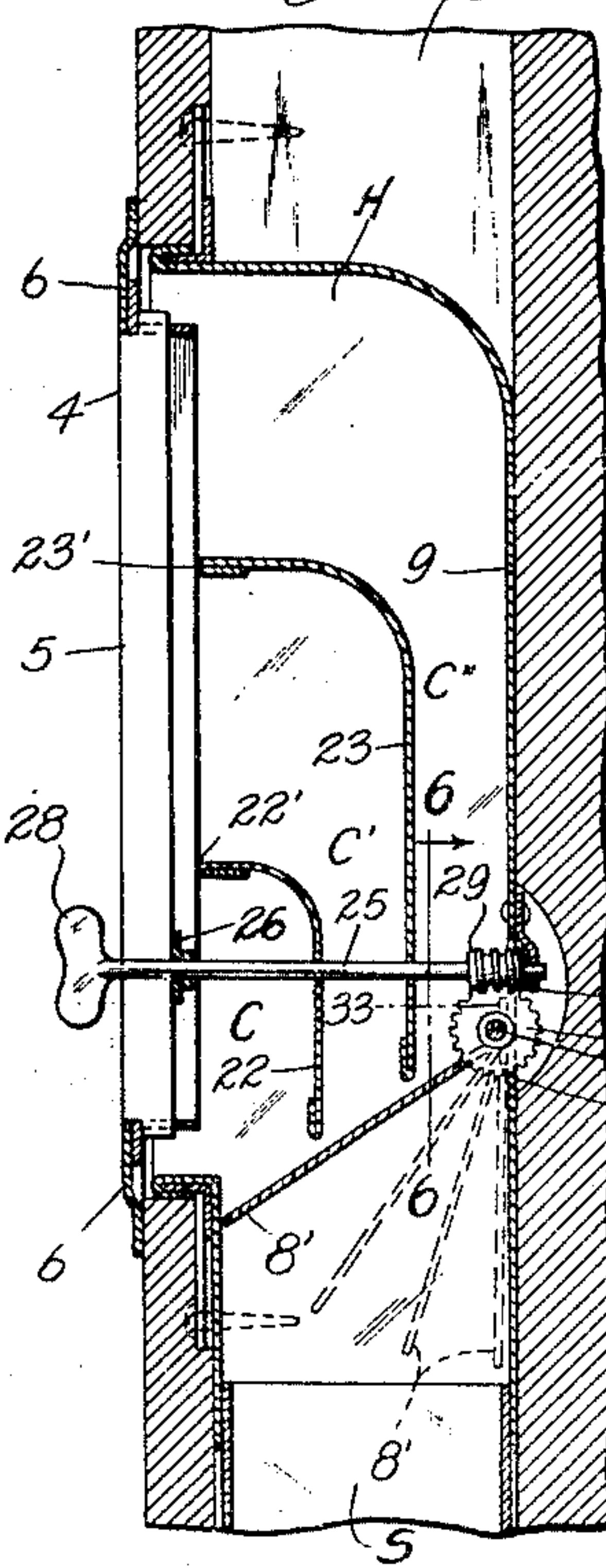
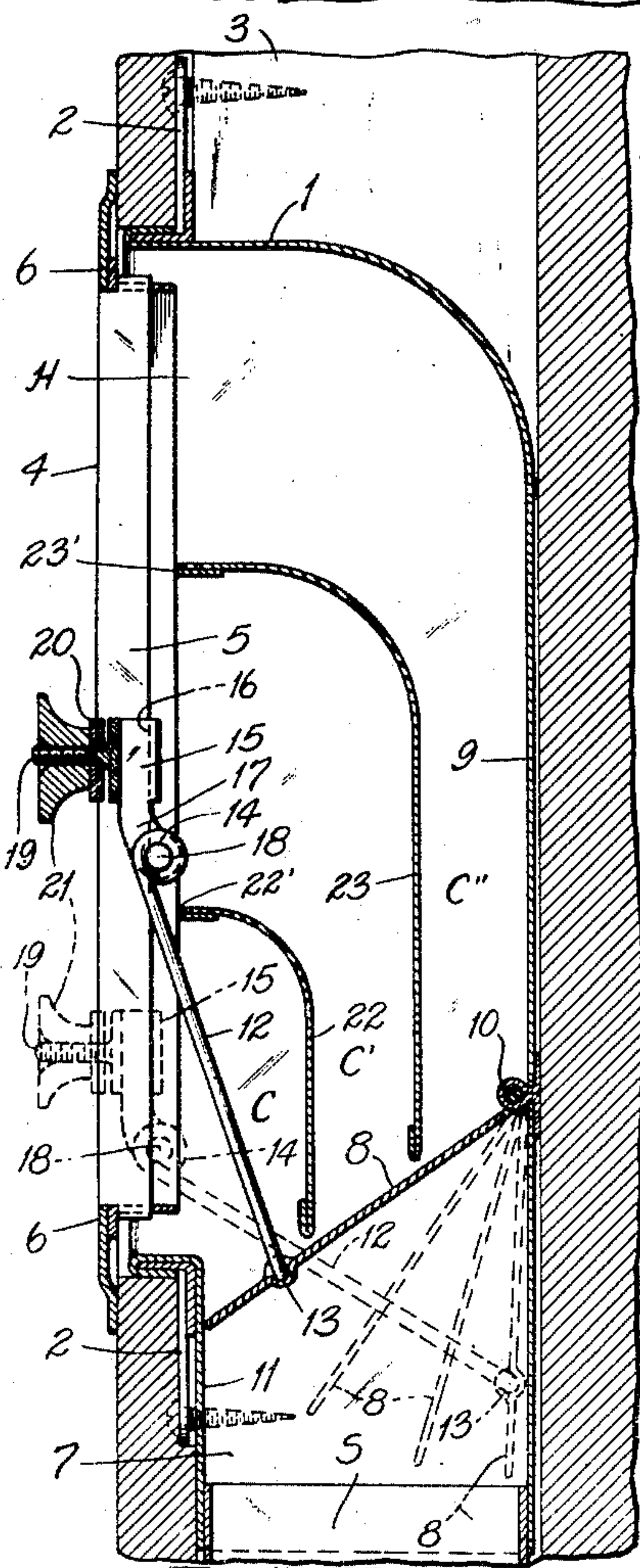
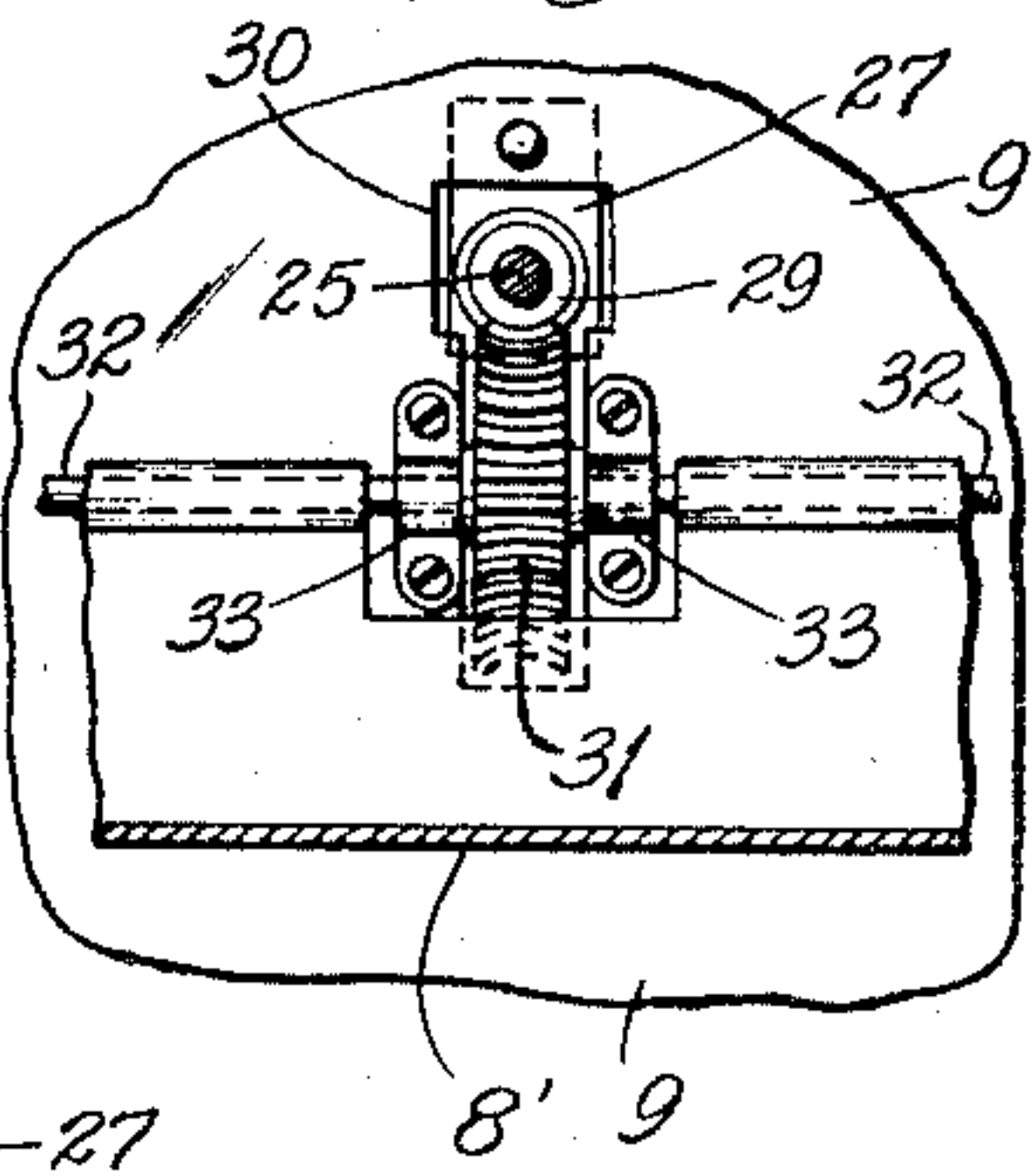


Fig. 6.



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## UNITED STATES PATENT OFFICE

1,961,948

## AIR CONTROL WALL REGISTER

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Application December 27, 1932, Serial No. 648,924

2 Claims. (Cl. 98—101)

My invention has relation to improvements in wall register constructions to be used in connection with hot air heating systems, and it consists in the novel features of construction more fully set forth in the specification and pointed out in the claims.

The invention is more particularly directed to the register head which embodies air control mechanism for regulating the volume of warm air issuing from the register.

The principal object of the invention is to provide a wall register having a valve in the stack portion thereof and having a plurality of baffles or diffusers with which the valve cooperates to regulate the volume of air issuing from the register. Heretofore baffles or diffusers have been used, but as far as I know the use of baffles in conjunction with the air valve to regulate the volume of air discharged is new. It is a further object of my invention to provide the valve with operating mechanism extending through the face of the register and embodying means whereby the valve may be locked in any position. This operating mechanism may comprise a simple sliding device provided with a lock nut, or as an alternative form a worm and gear mechanism operable through the face of the register.

These advantages together with others inherent in the invention will be better apparent from a detailed description thereof in connection with the accompanying drawing, in which:

Fig. 1 is a face view of my improved wall register with parts broken away; Fig. 2 is a vertical longitudinal section taken on the line 2—2 of Fig. 1; Fig. 3 is a cross-sectional detail taken on the line 3—3 of Fig. 1; Fig. 4 is a face view of the sliding clip comprising a part of the valve operating mechanism; Fig. 5 is a section similar to Fig. 2 showing a modified form of the invention in which a worm and gear valve actuating mechanism is employed; and Fig. 6 is a fragmentary section taken on the line 6—6 of Fig. 5.

Referring to the drawing, H represents my improved register head comprising a casing head 1 secured by means of lugs 2, 2 to the studding members 3, 3, said casing being provided with a grille 4 which forms the face of the register and through which the hot air issues into the room. The grille may be of any design (of which there are many in the art), although in the present instance I prefer to employ a plain grille comprising longitudinally disposed bars 5, 5, etc., extending between the top and bottom margins 6, 6 of the grille 4. The casing head 1 is provided with a stack portion 7 extending downwardly below the

grille 4 and a valve 8 is disposed in the upper part of the stack portion 7, said valve being secured to the back wall 9 of the casing head by means of a hinge member 10. The valve inclines downwardly toward the front wall 11 of the casing head and is operable by means of a link 12 pivotally connected at 13 to the valve and at its opposite end having an eye 14 connected to a sliding clip 15. The clip 15 is formed so as to have spaced grooves 16, 16 for receiving adjacent bars 5, 5 of the grille 4 and also a depending lug 17 having a pin 18 projecting from its lower end and disposed in the eye 14 of the link 12 whereby said link is pivotally connected between the valve 8 and the clip 15. A stud 19 projects forwardly from the clip 15 and extends between the central adjacent bars 5, 5 of the grille 4. A perforated plate 20 is disposed over the stud 19 and adapted to engage the bars 5, 5 for locking the clip in any desired position by means of the lock nut 21, as shown in Figs. 1 and 2.

Within the casing head 1 there are two spaced baffles or diffusers 22 and 23 extending upwardly from the valve 8 and curved forwardly so that their upper edges 22' and 23' respectively are adjacent to the bars 5. The purpose of the baffles is to divide the casing head into three compartments or passages C, C', C'' having outlets of substantially uniform area through the grille 4. It will be observed that when the valve 8 is in its closed position (Fig. 2) no air can pass through the attack S into the casing head 1; but when the valve is about one-third open (dotted position Fig. 2) the hot air will enter compartment C of the stack only and will issue only from about one-third of the grille 4. If the valve is now opened to its second open position (Fig. 2) the hot air will enter both compartments C and C' to issue from two-thirds of the grille 4, and when the valve is fully opened (Fig. 2) the hot air will pass through all the compartments C, C', C'' to issue from the entire grille giving its maximum heating effect.

In actuating the valve 8 it is merely necessary to unscrew the nut 21 so as to release the clamping effect of the clip 15 and plate 20 on the bars 5, 5 whereupon the clip 15 may be slid downwardly on the bars 5, 5 to obtain the desired position of the valve 8, after which the nut 21 is again screwed tightly to lock the valve 8 in such a position (Fig. 2).

In lieu of the sliding clip 15 and link 12, I may substitute a worm and gear mechanism for operating the valve 8, as shown in Figs. 5 and 6. Referring to said figures, 25 represents a shaft



mounted in a bearing 26 fixed in the grille and a bearing 27 secured to the rear wall 9 of the casing head, said shaft having an operating handle 28 in front of the grille and a worm 29 fixed to it adjacent to its rear end. Obviously an opening 30 should be provided in the wall 9 of the casing head to receive the worm 29 as well as gear 31 fixed on a shaft 32 mounted in suitable bearings 33 fixed to the casing wall 9. The shaft 32 carries the valve 8' which may be moved to any of its positions by rotating the shaft 32 through the gear and pinion connection just described. It should be apparent to a skilled mechanic that other mechanism may be employed for actuating the valve and accordingly I do not wish to be restricted to either of the specific mechanisms herein shown and described.

Having described my invention, I claim:

1. A wall register comprising a casing head

having a stack portion, a grille forming the face of said head, a series of baffles dividing said head into air passages, a valve mounted in the stack portion adjacent to the passages considered as a series, and operable to close said passages or open said passages successively, and means projecting through the grille for actuating said valve. 80

2. A wall register comprising a casing head having a stack portion, a grille forming the face of said head, a series of baffles dividing said head into air passages, a valve mounted in the stack portion adjacent to the passages considered as a series, and operable to close said passages or open said passages successively, and mechanism projecting through the grille for actuating the valve, said mechanism embodying means for holding the valve against movement. 85 90

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