

Nov. 11, 1941.

W. T. TRUAX

2,262,124

REGISTER

Filed July 19, 1939

3 Sheets-Sheet 1

Fig. 1

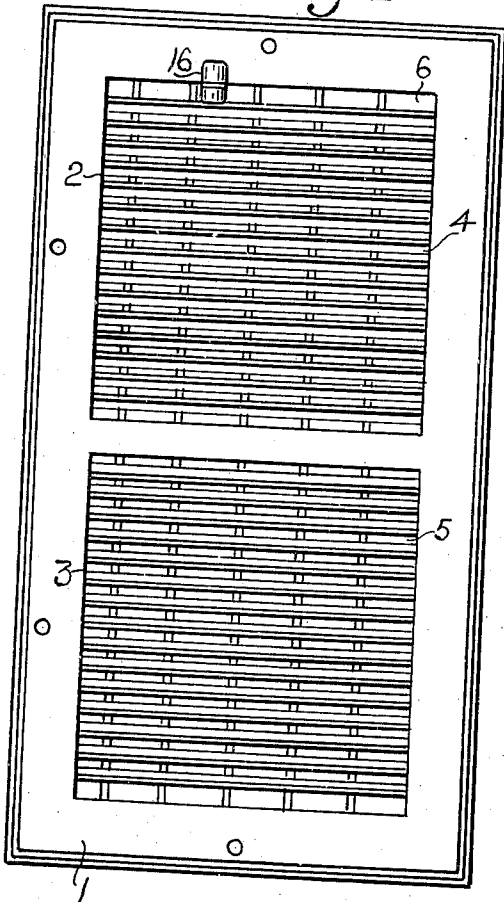


Fig. 2

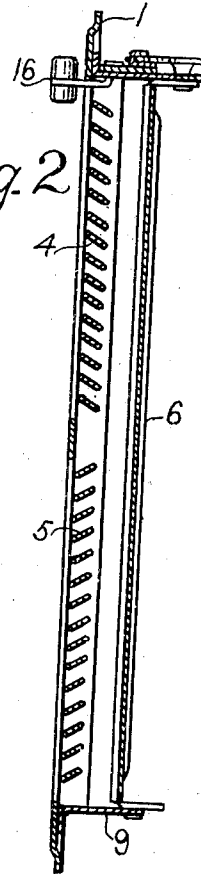


Fig. 3

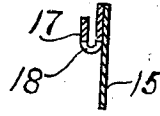


Fig. 4

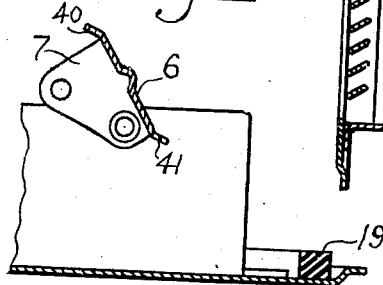
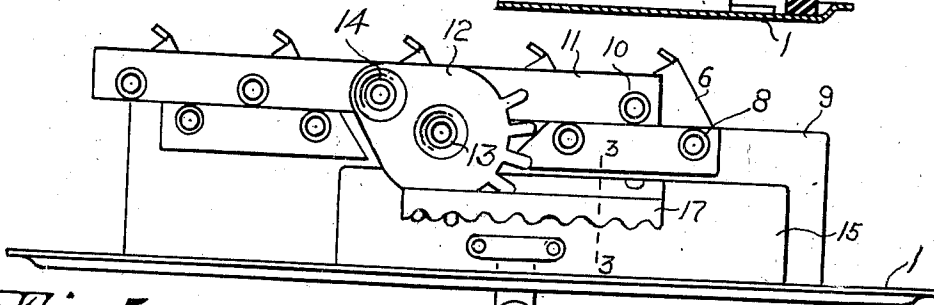


Fig. 5



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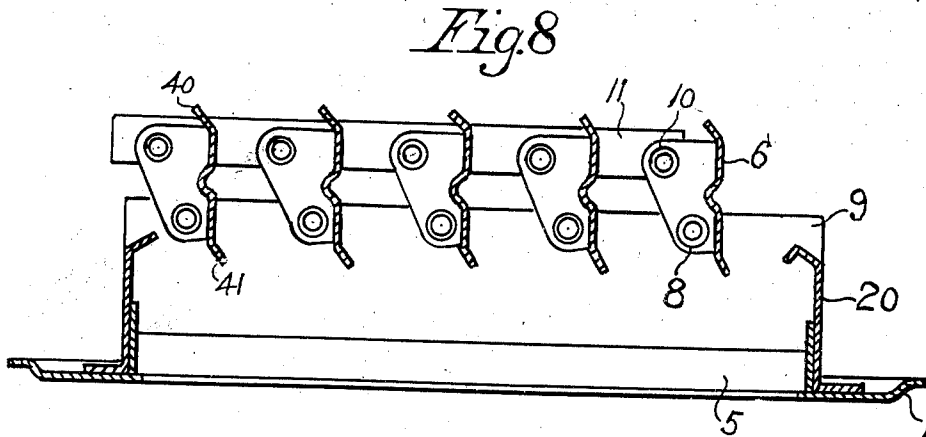
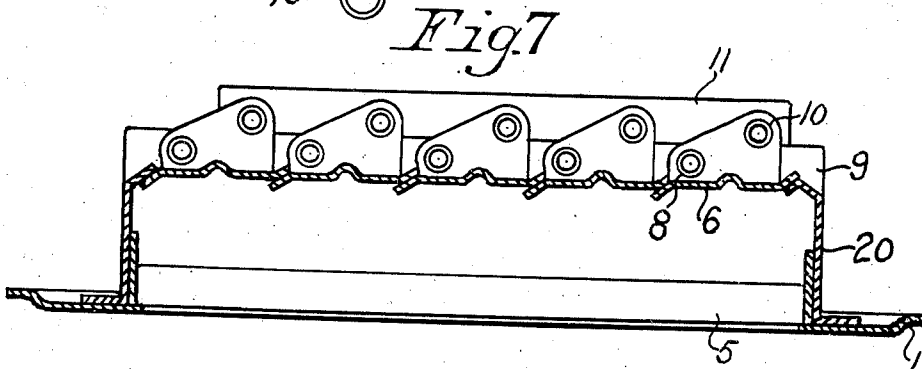
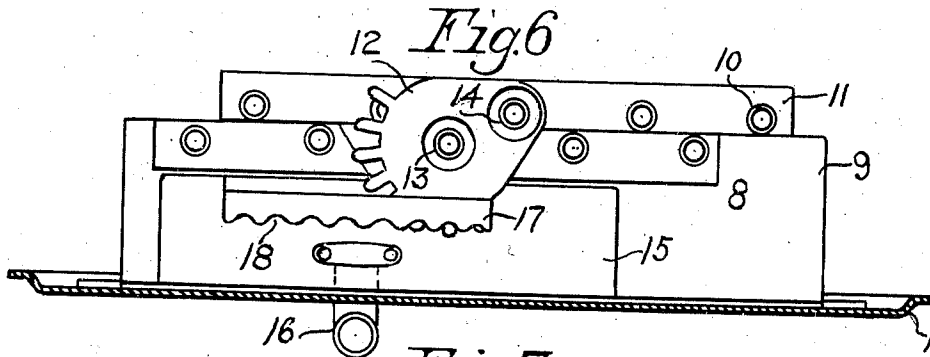
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3 Sheets-Sheet 2



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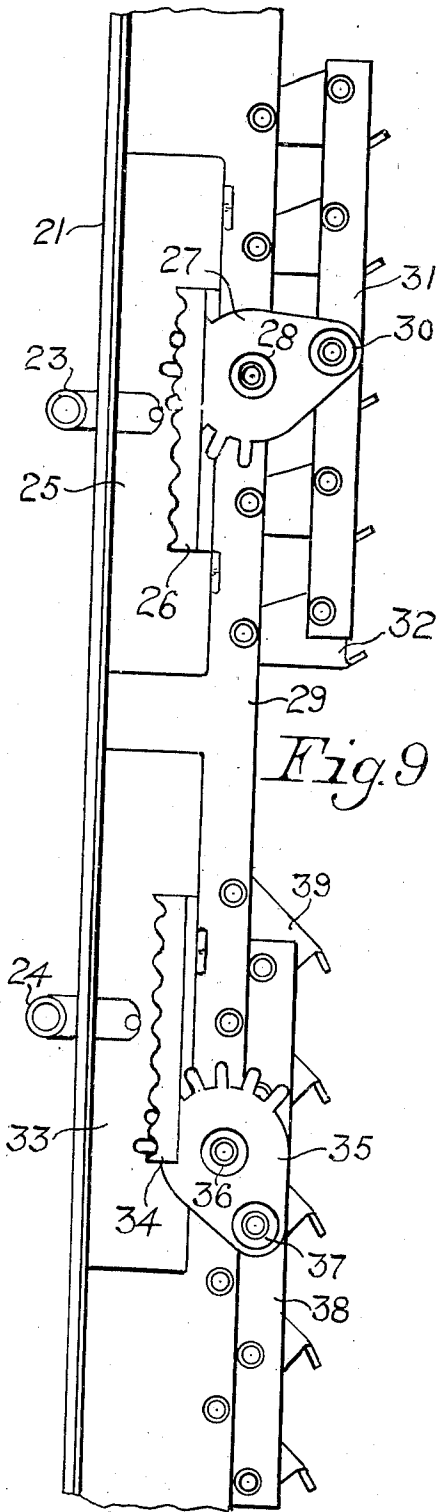


Fig. 9

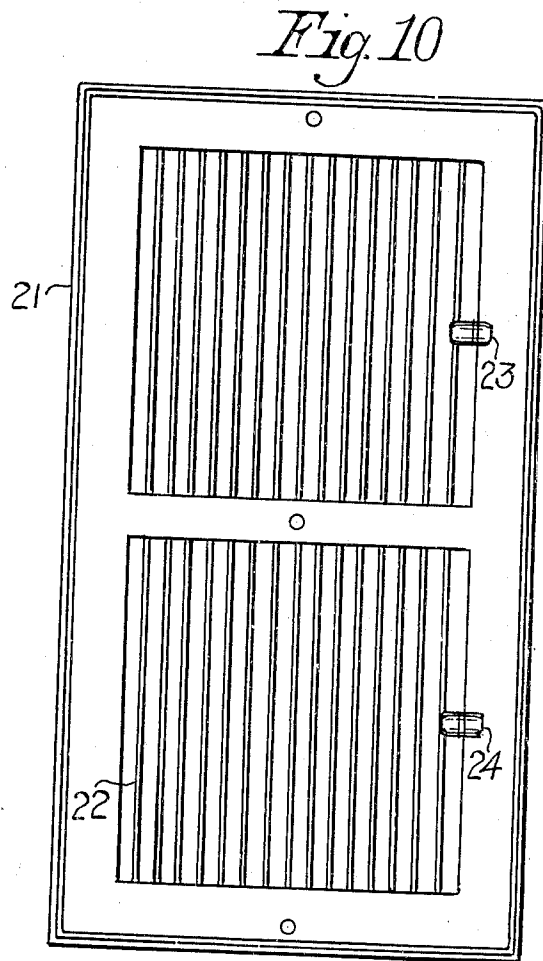


Fig. 10

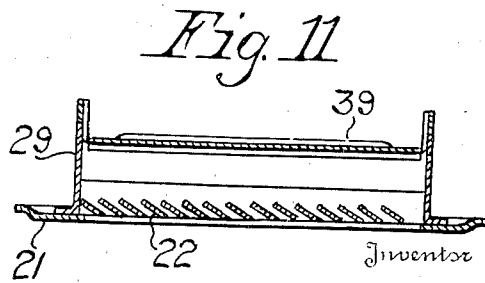


Fig. 11

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UNITED STATES PATENT OFFICE

2,262,124

REGISTER

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Application July 19, 1939, Serial No. 285,398

2 Claims. (Cl. 98—110)

This invention relates to registers for directing the passage of moving air at various angles and in controlled volume.

The object of the invention is the production of a register having parts of special construction and arrangement substantially as illustrated and described in this specification. In registers of usual construction the louvers, bars or blades in front are inclined to the right or left hand at approximately sixty degrees. The blades may be set at any angle advantageous and in series in any number. When the pivotal series of blades is on the rear of the register as illustrated herein and the louvers or blades are opened, it will be noted that the opening movement is approximately one hundred and thirty-five degrees with respect to the closed position, thereby obtaining an augmented deflection of substantially forty-five degrees. As far as known to this applicant multi-louver registers of similar construction at the present on the market open only to about ninety degrees from the closed position, and the air is accordingly discharged in a certain angular direction. By the use of this invention wherein the blades may be opened more than ninety degrees with respect to their closed positions, any desired adjustment of air flow may be made between the closed positions and the full opened arrangement of the blades. It is important in installations where the registers are used both for winter heating and for summer cooling, and there is no limitation intended in this application as to the size or particular formation of the register frame or blades therein, as the structure of those parts may be varied in practice.

Of the accompanying drawings forming a portion of this application, Fig. 1 represents a front view of a register with front blades arranged transversely and the rear pivotal blades extending longitudinally.

Fig. 2 is a vertical sectional view of Fig. 1 showing the inclination of the front blades, and the lengthwise position of the rear or pivotal blades.

Fig. 3 is a sectional view on broken line 3—3 of Fig. 5 to show the form of the bent plate attached to the sliding plate. Fig. 4 is a cross sectional view of one of the rear blades in its raised position.

Fig. 5 is a top view of the register substantially full size illustrating the gear segment blades operating devices, with the blades in raised positions.

Fig. 6 is a top view similar to Fig. 5 showing the operating members in closed positions.

Fig. 7 is a cross section of the register showing the blades in closed positions.

Fig. 8 is a cross section similar to Fig. 7 showing the blades opened ninety degrees.

Fig. 9 is a side view of a modified form of this invention showing two series of rear blades and the operating devices therefor.

Fig. 10 is a front view of the register of the modified form showing the front blades extending longitudinally.

Fig. 11 is a cross sectional view of the register shown in Fig. 10 to exhibit the inclined arrangement of the front blades.

Throughout the drawings and description the same number is used to refer to the same part.

Considering the Figs. 1 to 8. The register frame 1 has an upper opening 2 and a lower opening 3, with blades 4 and 5 in the openings and inclined as indicated in Fig. 2.

The rear blades 6 are formed with extensions or ears 7 at the ends, and they are individually and pivotally attached by pivots 8 to the ends 9 of the register frame. The pivots used in this invention are strong metal eyelets, and each pivotal blade 6 has an eyelet pivot 10 by which the ear 7 is connected to the blades shifting bar 11, as set out in Fig. 5. The blades actuating member is a gear segment 12 having teeth as illustrated. The segment has a stationary pivotal connection 13 with the frame end 9 and a movable pivotal connection 14 with the shifting bar 11. The segment is rocked by means of a sliding plate 15 on the inner surface of the frame, reciprocated by the operating hand knob 16 located on the exterior of the frame. As the knob is moved back and forth the rear or pivotal blades 6 and operating members are closed as represented in Figs. 6 and 7, or they may be opened ninety degrees as illustrated in Fig. 8, or at any desired angle thereto from the closed positions. In Figs. 7 and 8, the side walls of the register frame 20 are shown against which the bent edges of the blades close. The blades, in their fully raised position of more than ninety degrees, are shown in Fig. 4, and there also appears in this figure a rubber cushion or packing strip 19 attached to the inside of the face of the frame to contact with a wall or other surface against which the register may be secured.

The cushion strip is not an essential part of the invention herein, and is not shown in the other views. Bent plate rack 17 has teeth 18 in Fig. 3.

Considering Figs. 9, 10 and 11, there will be noted a modified form of this invention. The frame 21 has front blades 22 arranged length-

wise. The operating hand knobs 23 and 24 are shown located upon the exterior of the register frame. In the Fig. 9, knob 23 reciprocates sliding plate 25 having the bent plate rack 26 engaging the teeth of the gear segment 27. The segment has the stationary eyelet pivot 28 attached to the wall 29 of the frame, and the movable similar pivot connected with the blades shifting bar 31 and marked 30. In Fig. 9 two series of pivoted blades are represented. The blades of the upper series bear the reference number 32. Of the lower set of blades operating devices, the sliding plate 33 has the bent plate rack 34 engaging the teeth of the gear segment 35. The segment 35 has the pivot eyelet 36 in connection with the frame 29, and a like eyelet 37 connects with the blades shifting bar 38. In Fig. 9 the pivotal blades 32 of the upper series are shown at ninety degrees from their closed positions, and the blades of the lower series 39 are shown fully raised.

It will be noted in Figs. 4, 7 and 8, that the opposite edges 40 and 41 of the blades 6 are inclined to the body of the blade in opposite directions. When the blades are shut as illustrated in Fig. 7, the slanting edges come closely one upon another. The construction is important. The applicant has tested the louvers or blades of a number of registers of different manufacturers and finds that they all whistle as the air passes, especially if not tightly closed. Applicant has found by trial that this invention will not produce a whistling sound whatever may be the positions of the blades, and this desired operation is due to the construction shown and described herein.

In operation, it is thought to be shown by the drawings Figs. 1 to 8, that the pivotal blades may be raised from their closed positions into any desired angle with the plane of the front of the register frame and the stationary blades therein. In the modified form of the invention,

the pivotal blades may be adjusted to direct air in the same direction through the front blades, or in varying and different directions from each other.

The construction of the pivotal connections in this invention is found to create ample friction to hold the blades in adjusted positions.

Having now described this invention, I claim:

1. In a register, a register frame, a series of blades pivotally carried by the frame, means for operating the pivotal blades including a gear segment provided with teeth, the said segment being pivotally attached to the said frame, a blades shifting bar pivotally connected with the blades individually and with the said segment, a sliding plate located upon the inner surface of the frame, a bent plate secured to the said sliding plate and constructed with spaced openings in the bend thereof adapted to engage the teeth of the said segment to rock the segment when the said sliding plate is moved, and an operating hand knob carried exteriorly by the said frame and connected with the said sliding plate to reciprocate the plate.
2. In a register, a register frame, a series of stationary front blades in the frame, a series of pivotal rear blades in the frame, means for operating the pivotal blades including a gear segment provided with teeth, said segment being pivotally attached to the frame, a blades shifting bar pivotally attached to the said pivotal rear blades individually and to the said gear segment, a sliding plate carried by the frame and having secured thereto a bent metal plate constructed with spaced openings in the bend thereof adapted to engage the teeth of said gear segment thereby rocking the segment when the said sliding plate is moved, and an operating hand knob carried externally by the frame and connected with the said sliding plate to operate the same.

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