April 5, 1955 H. G. CLARKE 2,705,449

REGISTER

Filed Sept. 4, 1953

Fig. 1

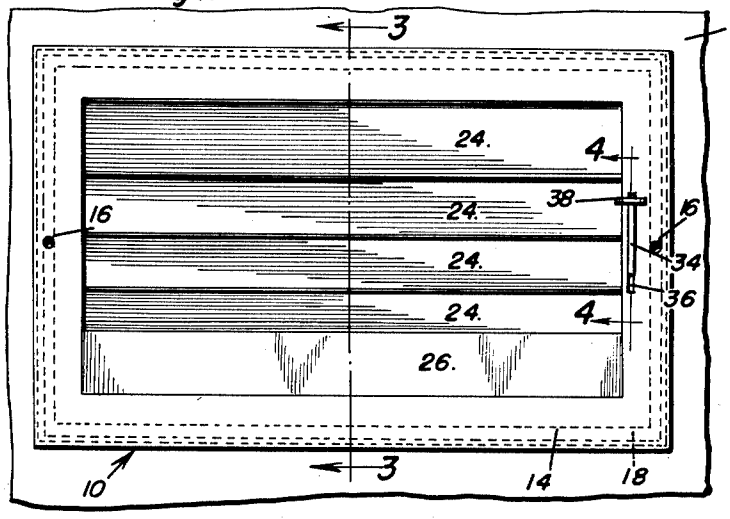


Fig. 5

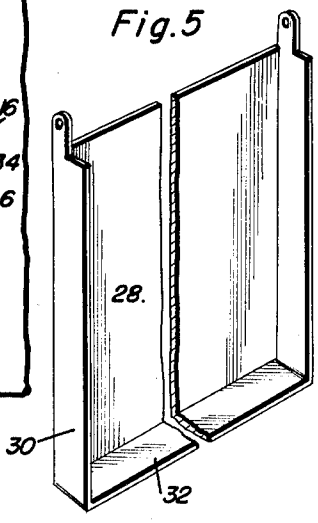


Fig. 2

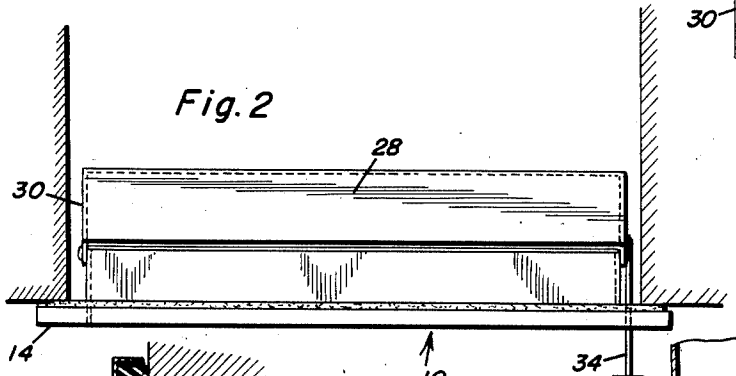


Fig. 3

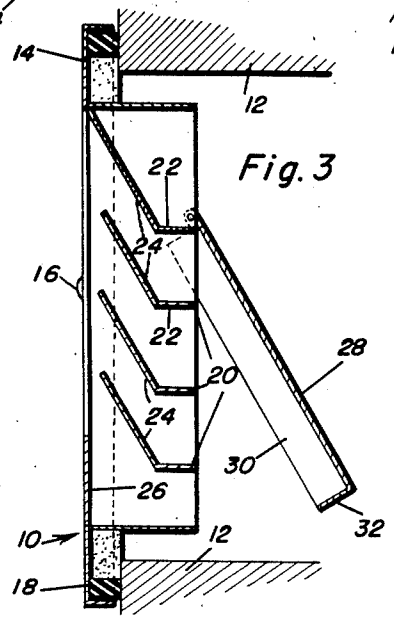
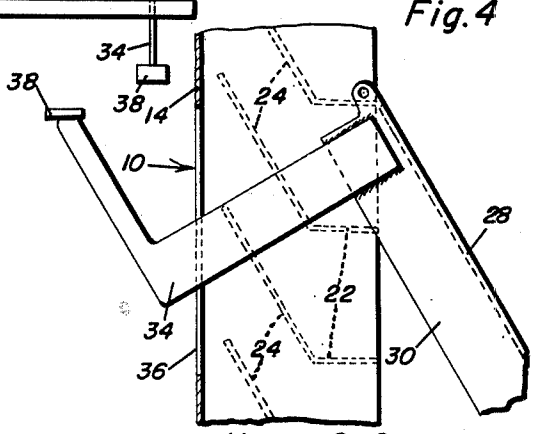


Fig. 4



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REGISTER

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Application September 4, 1953, Serial No. 378,484

1 Claim. (Cl. 98—106)

This invention relates to a register and more particularly to a register having means for deflecting air passing therethrough upwardly, and a control for regulating the velocity of the air discharged from the register.

An object of this invention is to provide a register which will cause an even and draft-free upward distribution and diffusion of cold or hot air emitting from a standard heating duct opening.

Another object of the present invention is to provide a register wherein the resultant angle of discharge of air from the register prevents direct contact of the air with the wall adjacent the register.

A further object of the present invention is to provide a register having uniquely designed vanes therein which control the resultant angle of discharge of air from the register, which prevents the velocity effect or air stream from being projected into the human occupancy area, thereby greatly reducing and minimizing drafts, inasmuch as it is well known and old in the art that the conventional register will discharge air horizontally or toward the floor at high velocity, causing the draft to be noticed even at a considerable distance from the register.

A further object of the present invention is to provide a register which will not require any changes in the existing duct system of an air distribution system.

A still further object of the present invention is to provide a register having a damper mounted at the rear thereof, which controls the velocity of the air discharged from the register.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a vertical front view of a register forming the subject of this invention;

Figure 2 is a top view of the register forming the subject of this invention;

Figure 3 is a sectional view taken substantially along the section line 3—3 of Figure 1;

Figure 4 is a sectional view taken substantially along the section line 4—4 of Figure 1; and

Figure 5 is a perspective view of the damper pivotally secured to the rear of the frame.

Referring now more specifically to the accompanying drawings, it will be seen that the improved register forming the subject of this invention includes, as shown in Figure 1, a frame **10** adapted to be secured to a wall **12**.

The frame **10** is a rectangular structure having front and rear edges with an outwardly extending flange **14** secured to the front edge thereof. The frame **10** is secured to the wall by means of screws **16** extending through the flange at the mid point of the sides of the frame and into the wall **12**. The frame **10** is sealed against the wall **12** by means of a gasket **18** secured to the rear side of the flange **14** and abutting the face of wall **12** when the register is mounted thereon.

The frame **10** is provided with a plurality of vanes **20** disposed in vertically spaced relationship therein.

Each of the vanes **20** has a horizontally disposed rear portion **22** extending forwardly from the rear edge of the frame **10** and a front portion extending forwardly and upwardly from the front edge of the horizontal portion **22**. The front portion **24** extends at an angle of approximately 30° to the vertical plane through the front edge of the horizontal portion **22**.

The front edge of the upwardly extending portion **24** of the uppermost vane is attached to the front edge of the frame at the top thereof. The lower vanes each terminate rearwardly of the front edge of the frame. The front edge of each of the upwardly extending portions **24** of the lower vanes extends above the horizontal plane of the horizontal portion **22** of the vane directly above it. This prevents the flow of air from passing through the register in a horizontal plane.

The lowermost vane is positioned so that its horizontal portion **22** is spaced above the bottom of the frame. A vertical baffle plate **26** is secured to the front edge of the frame at the bottom thereof. The vertical baffle **26** directs the air passing between the lowermost horizontal portion **22** and the bottom of the frame upwardly at an angle of 90°. The front portions **24** of the vanes **20** direct the air upwardly at an angle of 60°. The resultant air stream caused by the vertical baffle **26** and the front portions **24** will be at some angle between the 90° angle and the 60° angle. The air will thus not come in contact with the wall **12** and likewise not be projected into the human occupancy area of a room which would cause a definite draft over the occupants. By the unique and unusual design of the vanes, such air is not discharged directly to the human occupancy zone, but in a resultant proper upward angular direction, thereby greatly reducing and minimizing drafts in the human occupancy zone. A damper is pivotally secured to the rear edge of the frame **10** adjacent the connection of the horizontal portion **22** of the uppermost vane. The damper **28** is provided with forwardly extending flanges at the sides thereof, and a forwardly extending flange **32** at the lower end thereof, the flanges **30** and **32** being adapted to overlie the sides and bottom of frame **10** to provide a seal with the frame **10** when the damper **28** is in closed position. Means is provided for positioning the damper between a closed and an open position. This means comprises an L-shaped lever arm secured at one end of the upper end of one of the flanges **30** and extending through a slot **36** in the flange **14** at a point closely adjacent the connection of flange **14** to the frame **10**. The other end of the control arm **34** is provided with a knob **38** which provides an actuating surface for the lever **34**. The lever **34** fits tightly in the slot **36** and the pivotal connection of the damper **28** to the frame **10** is also a tight fit so that the damper **28** will be frictionally held in adjusted position.

The velocity of air discharged from the register is controlled by adjusting the position of the damper **28**. The cutting down of the opening in the back of the register will increase the velocity of the air discharged and enlarging the opening in the back of the register will decrease the velocity of the air discharged from the register. The greater the velocity of air discharged will cause the air to attain a higher point within the room before being dissipated.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

A register comprising a frame having front and rear edges, an outwardly extending flange on said frame at

the front edge thereof, a plurality of horizontally disposed vanes mounted in said frame in vertical spaced relationship, a damper pivotally mounted on said frame at the rear edge thereof and actuating and positioning means operatively connected to said damper and extending in front of said frame, said vanes having a horizontal portion extending forwardly from the rear edge of said frame and an upwardly extending portion extending forwardly of said horizontal portion, the horizontal portion of the lowermost vane being spaced above the bottom of the frame, and a vertical baffle secured to the bottom of the frame at the front thereof, said

baffle extending above the plane of the horizontal portion of the lowermost vane.

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