No. 663,994. Patented Dec. 18, 1900.

I. E. KUHLMAN.

REGISTER.

(Application filed Apr. 25, 1900.)

(No Model.)

Fig. 1.

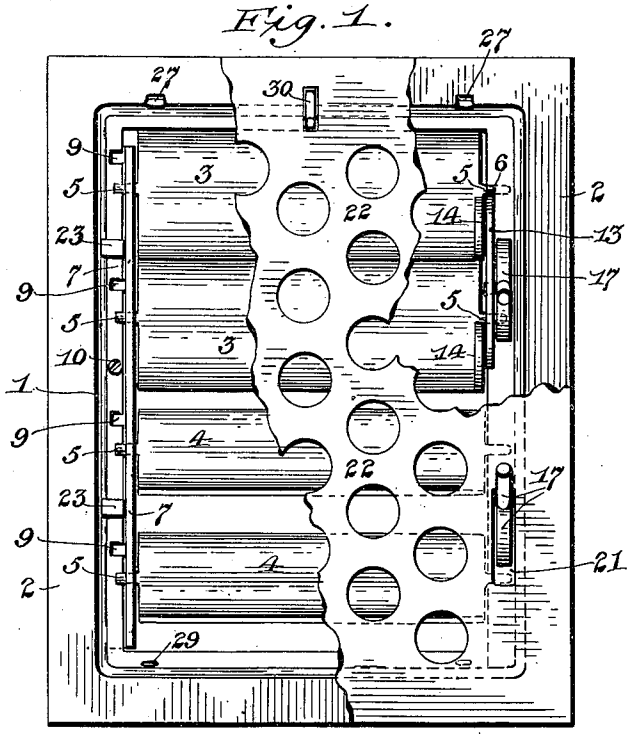


Fig. 2.

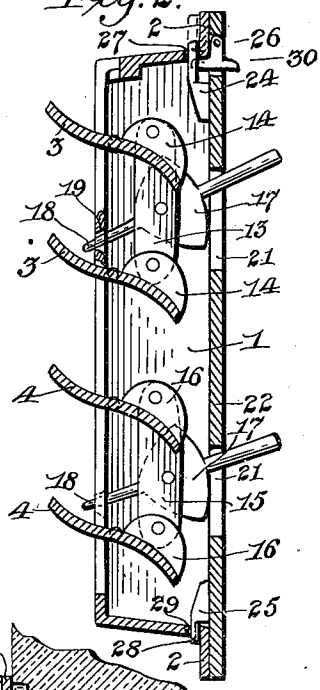


Fig. 3.

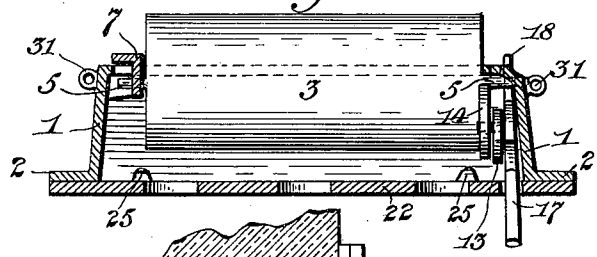


Fig. 5.

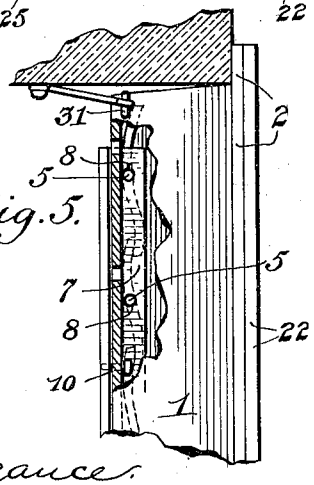
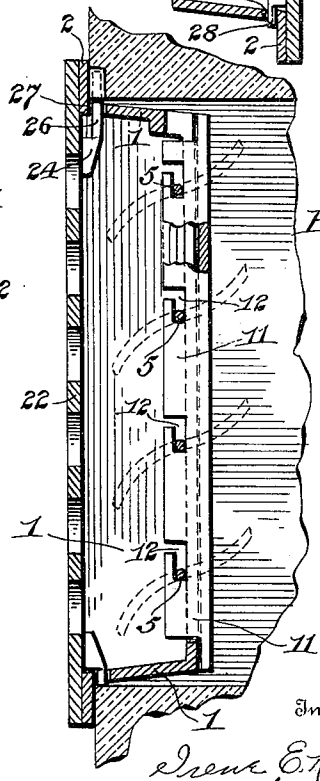


Fig. 4.



Witnesses

Severance.

Geo. P. Kingsbury

Inventor

Irene E. Kuhlman

by Munn & Fennick & Crowell

her Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

IRENE E. KUHLMAN, OF WILKES-BARRÉ, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO RICHARD A. PITTACK, OF SAME PLACE.

REGISTER.

SPECIFICATION forming part of Letters Patent No. 663,994, dated December 18, 1900.

Application filed April 26, 1900. Serial No. 14,351. (No model.)

To all whom it may concern:

Be it known that I, IRENE E. KUHLMAN, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Registers; and I do hereby declare the following to be 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.

My invention relates to improvements in registers, and particularly to those which are adapted for use in connection with hot-air flues.

It consists in a register having a frame and detachable front, a series of pivoted slats or dampers mounted in the said frame, movable means for holding the ends of the dampers upon one side of the frame in position, the shape of the dampers being such as to prevent substances from falling into the flue, and means for operating the dampers to open and close the register.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and specifically claimed.

In the accompanying drawings, Figure 1 represents a front elevation of a register constructed in accordance with my invention, a portion of the front plate being broken away to show the manner of mounting the slats or dampers. Fig. 2 represents a longitudinal vertical section through the said register, showing the means for operating the dampers. Fig. 3 is a transverse cross-section through the register, further illustrating the removable means for holding the dampers in position. Fig. 4 represents a vertical longitudinal section through a wall-register, showing another removable means for holding the dampers in position. Fig. 5 represents a detail view, partially in elevation and partially in section, of one corner of my improved register.

My invention is designed with the purpose in view of forming such devices so that they can be put together or taken apart without the use of bolts and screws or like removable fixtures. The register is also so formed that the slats or dampers will prevent foreign articles from entering and falling into the flues when the same is used for a wall-register. The register is further constructed so that a portion of the dampers may be opened at a time, if desired, so as to partially admit of heat or air passing through the register. With these purposes in view my improved register comprises an inclosing frame, as 1, having flanges upon its front edge to engage the floor or wall where the flue is located. The sides of the frame 1 preferably taper slightly away from the front flanges 2, so that the frame can be readily inserted in the mouth or entrance of a flue. Mounted in the frame 1 are a series of slats or dampers, as 3 3 and 4 4, each of which is provided upon its ends with trunnions or journal-pins, as 5 5, adapted to engage bearings upon one side, which are formed in the frame, as 6, and in the other side bearings which are formed in a removable bar or piece, as 7. The rear edges of the frame are preferably turned inwardly a slight distance, so as to form supports for the parts of the register. The removable piece or bar 7 upon one side of the register when the same is to be used in a floor-register is preferably angle-shaped on cross-section, one flange being arranged to project forward into the frame 1 and having a series of apertures, as 8 8, formed therein, serving as journal-bearings for the trunnions 5 of the dampers. The rear flange of the bar 7 preferably lies parallel with the rear turned-in edge of the frame 1 and is held in place against the same by the ends of the trunnions 5, which project in front of the said turned-in rear frame portion, as clearly seen in Figs. 1, 3, and 5. The rear flange of the frame is also provided with a series of notches 9 9, arranged a little above the normal position of each of the trunnions 5. The parts are made sufficiently loose, so that the bar 7 may be reciprocated sufficiently to bring the trunnions 5 in coincidence with the recesses or notches 9. When the trunnions thus register with the said notches, the bar 7 may be pushed rearwardly, carrying the trunnions and dampers with it upon that side of the register until the said bar is clear of the rear flange of the frame. The said bar may then be removed from the damper-

trunnions, and any one or all of the said dampers can be easily taken from the frame 1. This is a very useful and convenient construction when one or more of the dampers become broken or injured, as it enables one to remove the damper and insert a new one in place without difficulty. When the dampers are to be replaced, the trunnions are inserted in the apertures 8 of the bar 7, and the bar is then raised, so as to pass the trunnions through the notches 9 to the forward surface of the frame-flange. The bar is then permitted to drop into its normal position, the trunnions sliding down the front face of the said frame-flange and being locked thereby in position. A set-screw or pin may then be passed through apertures in the rear flange of the frame and the bar 7, as at 10, to prevent the bar from being accidentally lifted or moved longitudinally. While this style of bar may be used for either a wall-register or a floor-register, yet I preferably employ it in floor-registers. When using the registers in wall-flues, so that the same stand upright, I employ a different-shaped locking-bar, as 11, (shown in Fig. 4 of the drawings,) which bar is provided with a series of bayonet-shaped slots or recesses, as 12 12, adapted to receive the ends of the damper-journals 5. In using a bar of this character it is not necessary to form notches in the rear flange of the frame 1, as the trunnions can be inserted in the upper ends of the bayonet-notches 12 in front of said flange and be permitted to drop to the lower ends of said notches for locking their parts in place. The front edges of either the bar 7 or 12 may be braced by means of abutment-blocks, as 23 23, secured to the frame 1.

The dampers are preferably operated in such a manner that some of them may be opened, if desired, without opening all of them. Thus, for example, as shown in the drawings, the dampers 3 3 are pivotally joined together by a connecting rod or bar, as 13, the said bar being pivoted to projections 14 upon the said damper. The dampers 4 4 upon the other end are joined by a connecting-rod 15, pivotally attached to projections 16, secured to the ends of said dampers 4. Each of the connecting-bars 13 and 15 is pivotally attached to an operating-lever, as 17. These levers 17 are preferably made large at their central portions and are reduced at their ends. One of the reduced ends, as 18, is passed through an opening 19 in the frame 1, while the outer reduced end of each lever 17 is made in the shape of a handle and is adapted to pass through slots 21 21, formed in the front plate 22 of the register. By moving these handles the dampers may be opened or closed as desired. It will be seen that the dampers 3 3 may be opened while the dampers 4 4 remain closed, or the dampers 4 4 may be opened without opening the dampers 3 3, or, upon the other hand, all of the dampers may be closed by operating handles of each of the levers 17.

As seen in Fig. 2 of the drawings, the dampers are preferably formed upon compound curves in cross-section, so that the said dampers have an approximately **S** shape and so overhang each other that when the dampers are opened any substances or foreign articles which might accidentally get through the front plate of the register will be warded off and not permitted to enter the flue. While this construction is very effective for the purpose just named, yet the shape of the dampers is not such as to prevent a suitable quantity of air passing through the register. Dampers of this shape also fold together well when they are closed, as seen in Fig. 5 of the drawings, said dampers making snug joints with each other for excluding air.

The manner of attaching the front 22 of the register also forms an important feature of my device and consists in the use of lugs or attaching projections, as 24 24 and 25 25. The lugs 24 24 are secured near the upper edge of the front 22 and are made with comparatively long engaging locking ends, as 26 26, which are adapted to be inserted in apertures 27 27, formed in the frame 1. The lugs 25 25 at the other end of the front plate are provided with comparatively short locking ends, as 28 28, and are adapted to enter recesses 29, formed in the frame 1. By inserting the lugs 24 first and pushing them as far into the recesses 27 as they will go the lugs 25 may be inserted in the recesses 29. Then by moving the plate back to a normal position the lugs 25 will so support the same in position that the said front plate will be firmly locked in position. The plate may be readily removed by moving the said front plate longitudinally again, so as to release the lugs 25, after which the lugs 24 may be withdrawn from the apertures 27. In order to prevent the plate from becoming accidentally disengaged, I preferably employ a small latch or bolt, as at 30, which may be pushed inwardly, so as to engage the inner surface of the frame 1 and prevent any longitudinal movement of the front plate 22.

When the register is employed in a wall-flue, it may be provided with attaching eyes or lugs, as at 31 31, through which a wire or band of metal may be passed to secure the register in place in said flue.

From the above description it will be apparent that my improved register is well adapted for accomplishing the purposes above named and that its parts are exceedingly simple and not likely to get out of order easily. It will be noted also that the parts of the register can be separated and put together again without the use of bolts or screws.

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

1. A register, comprising an inclosing frame, dampers or slats mounted therein having supporting-journals at their ends, a removable reciprocable locking-bar adapted to engage the said supporting-journals upon one side of

the register and lock the same against a flange upon the frame, whereby they are removably locked in place, and means independent of the locking-bar for operating the said damper.

2. A register, comprising an inclosing frame, dampers pivotally journaled therein, a longitudinally-movable locking-bar for pivotally supporting the journals of dampers upon one side of the register, whereby the dampers may be readily removed and replaced in case of any damage occurring to any of them, and means independent of said locking-bar for operating the dampers.

3. A register, comprising an inclosing frame, dampers mounted therein having journals, the journals engaging apertures formed in one side of the frame at one end of each damper, a movable locking-bar, angular in cross-section, and having open notches for receiving the said journals at the other end of each damper, the said locking-bar loosely engaging a flange upon the frame, the construction being such that the locking-bar will removably hold the dampers in place.

4. A register, comprising an inclosing frame having rear flanges extending inwardly, dampers having journals at their ends adapted to engage bearings upon one side of the frame, and a locking-bar engaging said journals upon the other side of said frame, the said locking-bar being provided with bayonet-slots, the construction being such that by inserting the journals of the dampers in the bayonet-slots they may be caused to lock the locking-bar as well as the dampers in position upon the rear flange of the frame, and abutment-blocks for bracing the front edge of the locking-bar.

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

IRENE E. KUHLMAN.

Witnesses:
H. J. KUHLMAN,
B. F. COCHRAN.