Feb. 9, 1932. T. OLINGER 1,844,520

REGISTER APPLIANCE

Filed May 26, 1930

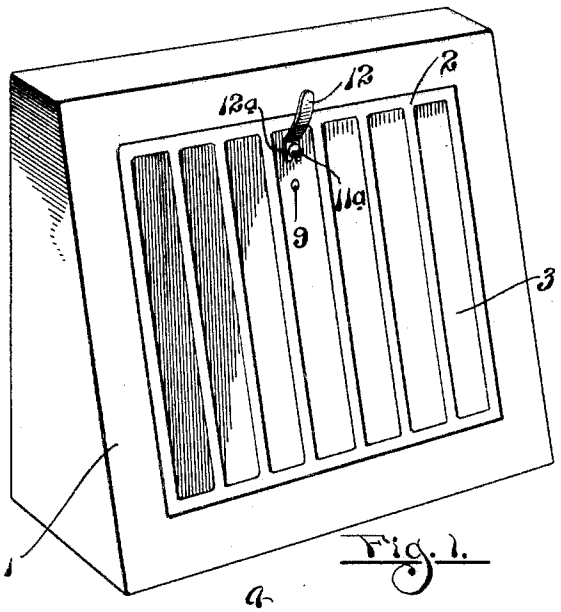


Fig. 1.

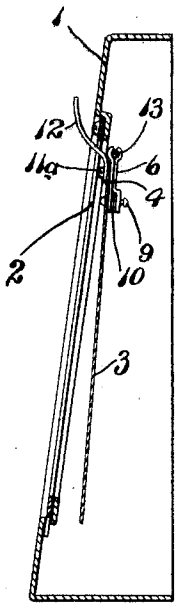


Fig. 2.

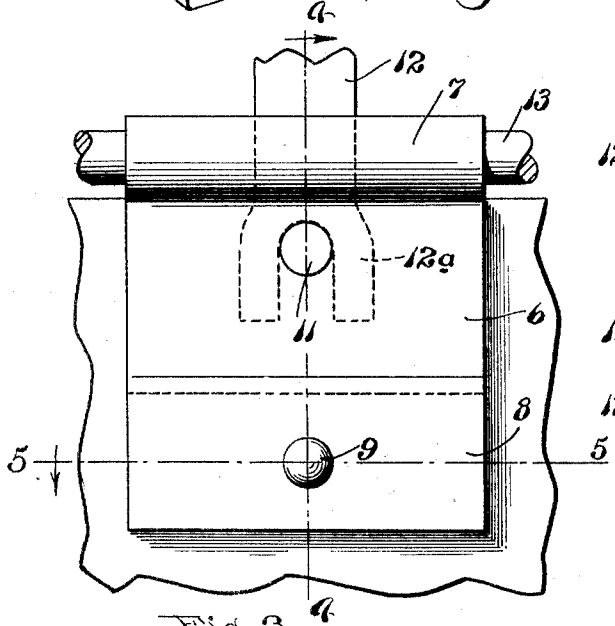


Fig. 3.

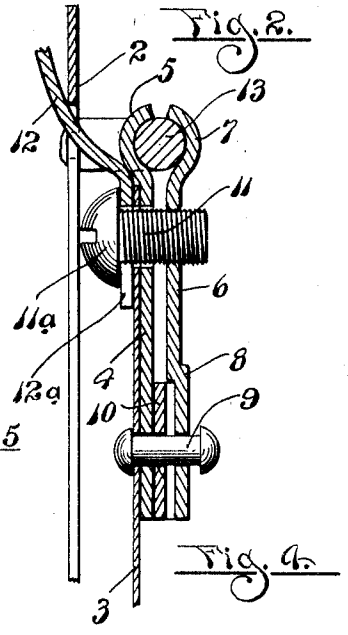


Fig. 4.

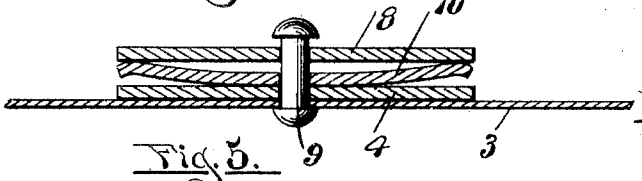


Fig. 5.

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UNITED STATES PATENT OFFICE

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REGISTER APPLIANCE

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This invention relates to a furnace hot air register appliance, being more particularly concerned with a mounting for a back plate in a register, the adjustment of which controls the quantity of warm air permitted passage through the register. The back plate is mounted for swinging movement about a horizontal axis below which it depends and is frictionally held in any position to which it is moved, being movable toward or away from a grille in front of the back plate which is of an open formation for warm air passage.

The pivotal frictional mounting of the back plate, usually upon a fixed rod, is of a character in which there is liability of wear so that the friction tends to become lessened and there is danger that the back plate will not stay in the positions to which it is adjusted but will, through gravity, overcome the friction and cause the back plate to move to or toward closed position. When the register leaves the factory, or at least after it is installed in a house, the adjustment of the back plate is correct but after use the hinge or pivotal mounting wears, thus lessening the friction so that the hinge becomes loose and then the back plate will close by gravity necessitating further adjustment to hold it open which frequently entails the services and expense of a service man. It is a primary object and purpose of the present invention to provide a particularly simple, novel and effective structure which will maintain a constant friction and takeup against ordinary wear indefinitely without further adjusting after the register is properly installed and at the same time provide the usual means of adjustment which the installer is accustomed to.

My invention attains these ends in a practical and effective manner as will be understood from the following description of the invention, taken in connection with the accompanying drawings, in which,

Fig. 1 is a perspective view of a furnace register having my invention incorporated therein.

Fig. 2 is a vertical section therethrough.

Fig. 3 is a fragmentary enlarged rear elevation illustrative of the pivotal mounting of the back plate on an overhead trunnion rod from which it is suspended.

Fig. 4 is a fragmentary vertical section substantially on the plane of line 4—4 of Fig. 3, and

Fig. 5 is a horizontal section substantially on the plane of line 5—5 of Fig. 3.

Like reference characters refer to like parts in the different figures of the drawings.

The register casing of sheet metal, indicated at 1, has an opening in its front side, inset in which is an open grille 2 the design of which may be greatly varied but through which the warm air passes to a room. The back plate 3 is a plate of sheet metal and lies back of the grille 2. With my invention, at the rear side of the back plate and at its upper edge portion, substantially midway between its vertical edges, a member 4 in the form of a flat plate of metal is permanently secured, the upper part of which, above the back plate, is formed with a concaved seat portion 5, as best shown in Fig. 4. Associated with the member 4 and back of the same is a second member 6 of flat metal which likewise at its upper edge portion is formed with an oppositely disposed concaved seat section 7.

The lower part of the member 6 is pressed rearwardly and offset as indicated at 8. A pin 9, having heads at both ends, passes through the back plate 3, the member 4 and the lower offset portion 8 and also through a curved leaf spring 10 which is mounted between the parts 4 and 6 and within the recess provided by the off-set at 8 so that it will not turn about the pin 9.

A screw 11, having a head 11*a*, passes freely through openings made in the back plate and the member 4 and threads through a threaded opening in the plate 6. An operating handle 12 is formed at its lower end with a bifurcated or divided section 12*a* permitting the same to be inserted between the head 11*a* and the front side of the back plate 3, straddling the screw threaded shank 11 whereby the handle is secured to the back plate and extends upwardly and forwardly through an opening in the grille 2 to a posi-

tion where it is readily accessible for normal operation.

This construction described is mounted on a horizontal rod 13 which at its ends is turned forwardly and permanently secured to the grille. The two upper concaved clamping sections 5 and 7 of the members 4 and 6 engage against the front and rear sides, respectively, of the rod 3 and on tightening the screw 11 bear thereagainst with greater or less force dependent upon the extent that the screw is tightened and at the same time the spring 10 is tensioned. The head 11a of the screw is readily accessible from the front of the register and quickly operated by a screwdriver and the tension substantially instantly adjusted at any time it becomes desirable to do so.

It is also evident that the assembly of the back plate with the supporting rod 13 is very simple and easily accomplished while the attachment of the operating handle 12 can be done instantly. The spring 10 has the effect of causing the pressure upon the rod 13 to be a yielding and not a binding pressure, thereby insuring constant friction as the pivotal bearing wears on the rod.

The construction described is very practical for the purposes for which it has been designed. There are various modifications in the detail of structure which can be resorted to. For instance, instead of a flat leaf spring extending the width of the plate 6, a coiled compression spring having a limited number of coils may be interposed between the parts in place of the leaf spring 10, and the outwardly pressed or offset portion 8 will not need to extend the full width of the member 6 but only be pressed outwardly enough to receive the coiled spring, a coil spring being the full equivalent to a leaf spring in this relation. Accordingly, the invention is not to be limited to the specific detail described but is to be considered comprehensive of all forms of structure coming within the scope of the claims appended hereto.

I claim:

1. In a register, a horizontal supporting rod, a back plate below said supporting rod, a member secured to the back plate and formed at its upper portion to engage against a side of the rod, a second member disposed substantially parallel to the first member and formed at its upper portion to engage against the opposite side of the rod, spring means between said members at their lower portion tending to separate the same, and a headed screw passing freely through said back plate and first member and threading through the second member a short distance below the supporting rod.

2. In a furnace register, a grille, a horizontal supporting rod secured to said grille back of and near the upper portion thereof, a back plate back of said grille below the supporting rod, a member of flat metal permanently secured to the rear side of the back plate and at its upper portion formed to bear against the front side of the rod, a second member of flat metal back of the first member formed at its upper end portion to engage against the rear side of the rod, yielding means between said members adjacent their lower edges tending to separate the same, and means manually operable from the front through said grille for drawing said members toward each other adjacent their upper portions a short distance below the supporting rod.

3. In a furnace register, an open grille, a horizontal supporting rod secured to and spaced from the rear side of the grille adjacent its upper edge, a back plate located back of the grille, a clamping member permanently secured to the back blade, said clamping member having an upper portion engaging one side of the supporting rod, another clamping member located back of the first clamping member and having its upper edge portion engaging against the opposite side of the supporting rod and its lower portion offset, a pin headed at both ends passing through the back plate and the lower portions of said clamping members, yielding pressure means between the lower portions of the clamping members and abutting the said offset, said pressure means tending to move the same apart, and a headed screw extending freely through the back plate and the clamping member secured thereto and threading through the rear clamping member a short distance below the supporting rod.

In testimony whereof I affix my signature.

THOMAS OLINGER.