(No Model.)

# R. S. T. CISSEL.

## HOT AIR REGISTER.

No. 479,586. Patented July 26, 1892.

Fig. 1.

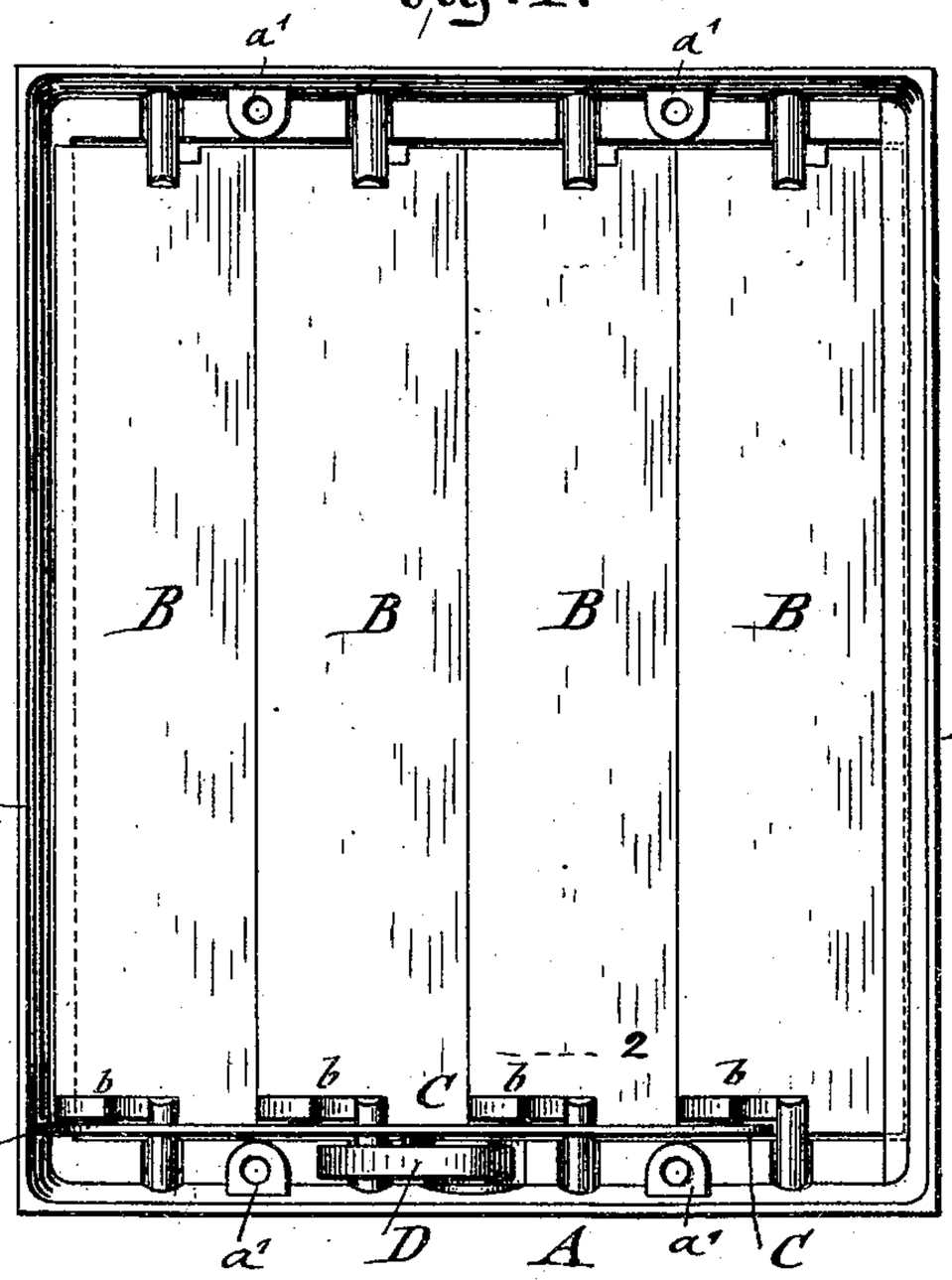



Fig. 5.

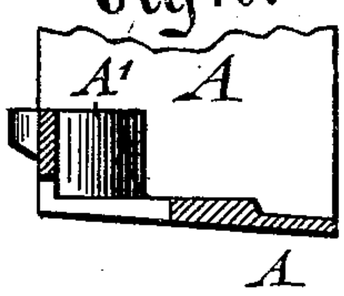



Fig. 6.

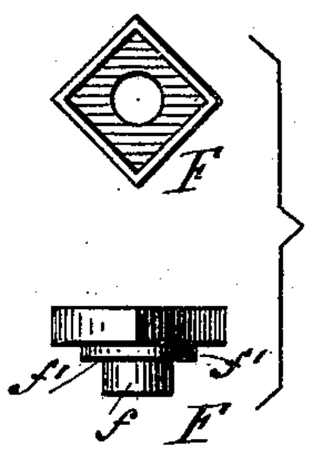



Fig. 4.

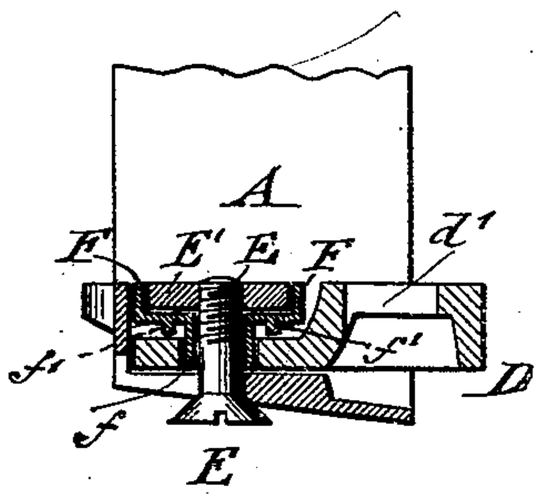



Fig. 2.

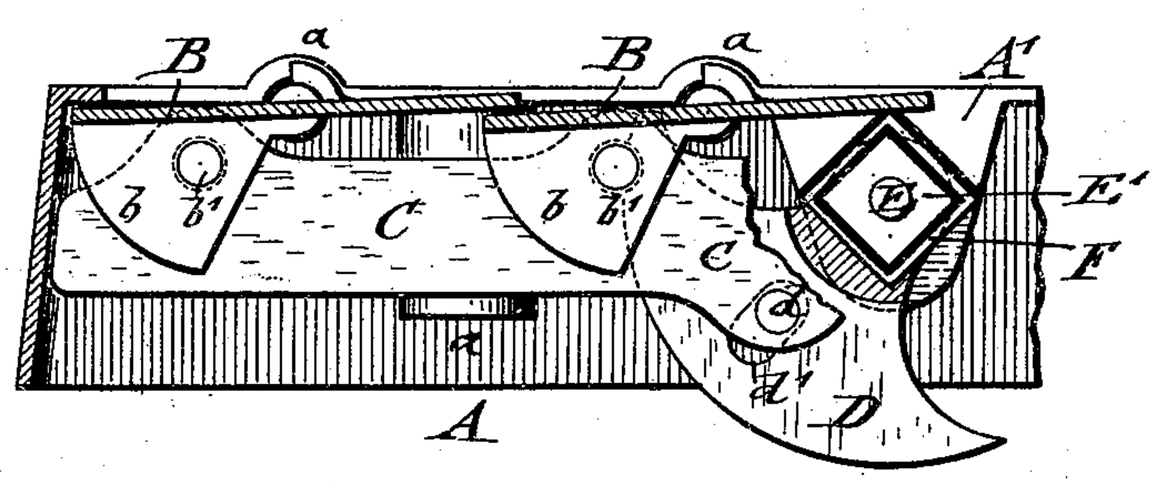
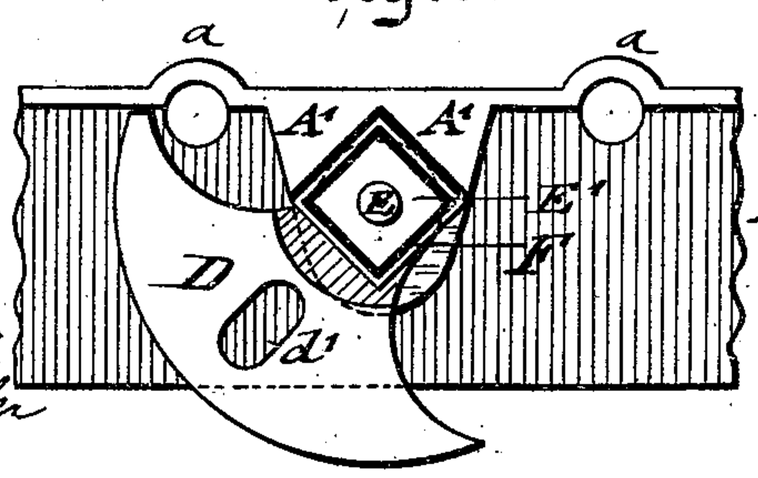



Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 479,586, dated July 26, 1892.

Application filed December 22, 1890. Serial No. 375,444. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD S. T. CISSEL, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Hot-Air Registers, of which the following is a specification.

This invention relates to improvements in hot-air registers of that class in which the slats are pivoted to the supporting-frame and adjusted by means of a connecting-rod pivoted to one end of the slats and operated by a segmental lever which is fulcrumed to the supporting-frame; and it consists of a hot-air register the pivoted slats of which are eccentrically connected by a governing-rod, which is operated by a segmental lever that is pivoted to the supporting-frame and retained by a nut which is seated in a sheet-metal box having a central bushing for the screw-pivot and a raised concentric friction-flange, said box being seated in an angularly-recessed boss of the supporting-frame, which boss serves to prevent the axial turning of the box and screw-nut and the playing loose of the screw-pivot.

In the accompanying drawings, Figure 1 represents a front elevation of my improved hot-air register. Fig. 2 is a horizontal section of the same, with parts broken away, on the line 2 2, Fig. 1. Fig. 3 is a detail top view of the operating-lever and its connection with the frame of the register, the governing-rod and the slats being detached. Fig. 4 is a vertical transverse section of the lever and its pivot connection with the supporting-frame; and Figs. 5 and 6 are respectively a vertical transverse section of the supporting-frame with the operating-lever and its pivot removed and a top and side view of the sheet-metal box for retaining the screw-nut of the screw-pivot of the operating-lever.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the exterior supporting-frame of my improved hot-air register, which frame is provided with the usual socket-recesses *a* for the pivots of the slats B B and with lugs *a'*, through which the fastening-screws of the frame are passed. The lower ends of the slats B are provided with laterally-projecting lugs *b*, which are connected by a governing rod or bar C, that is provided with pivots *b'*, which fit into holes of the projecting lugs of the slats B, said pivots being arranged eccentrically to the pivots on which the slats swing in the frame. The governing-rod C is again connected by a pivot *d* with the slot *d'* of a segmental lever D, which is applied to a screw-pivot E, on which the lever D swings when the slats are to be operated by means of the governing-rod C and moved in one or the opposite direction, according as it is desired to open or close the same. The screw-pivot E is retained in the frame A and lever D by a screw-nut E'.

All the parts so far described are well known and are in general use in hot-air registers.

The new features of my construction consist in the arrangement of a sheet-metal box F for the screw-nut E' of the screw-pivot E, which box is of square shape and of a size corresponding to that of the screw-nut E', the box being provided with a central bushing *f*, that extends around the shank of the screw-pivot E' into the hole of the lever D, as shown clearly in Fig. 4.

At the under side of the sheet-metal box F is arranged a circular rim or flange *f'*, which is concentric to the bushing and which bears on the top part of the shank of the lever D and exerts a certain degree of friction on the same, so that the lever is held in any position to which it is placed. The sheet-metal box F prevents the unscrewing of the nut E' and acts in the nature of a nut-lock on the same.

To prevent the axial turning of the box F, the same is seated in an angularly-recessed boss A', that is made integral with the supporting-frame A, as shown in Figs. 3 and 5. This boss retains the box and screw-nut in position and prevents the playing loose of the same when operating the slats of the register. The screw-pivot E is inserted through a hole in the shank of the operating-lever D and the bushing of the box C into the screw-nut E' and screwed into the nut until the box is tightly adjusted on the lever D. When in this position, the detaching of the screw-pivot from the screw-nut is prevented by its inclosing box and the recessed boss of the supporting-frame, so that the connection of the oper-

ating-lever with the supporting-frame is not only produced by a single screw-pivot, but at the same time a frictional action is produced by the box on the lever, so that the same is prevented from wabbling and retained in any position to which the same is adjusted either in opening or closing the register.

When the register is not in a horizontal position in the floor, the recessed boss A′ imparts sufficient strength to the outer frame to resist the pressure exerted by the foot on the segmental lever, so as to permit the opening or closing of the register without injury to the frame or to the sheet-metal boss in which the screw-nut is supported.

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

1. In a hot-air register, the combination, with a supporting-frame having an angularly-recessed boss, of slats pivoted to said frame, a governing-rod pivoted eccentrically to said slats, an operating-lever pivoted to the governing-rod, a screw-pivot passed through the supporting-frame and the shank of the operating-lever, a nut engaging said screw-pivot, and a centrally-perforated sheet-metal box passed over said screw-pivot and lying between the operating-lever and the nut within the recessed boss of the supporting-frame, said box having upturned flanges embracing the sides of the nut and a concentric flange on its under side, substantially as described.

2. In a hot-air register, the combination of a supporting-frame having an angularly-recessed boss, slats pivoted to said frame, a governing-rod pivoted eccentrically to said slats, an operating-lever pivoted to the governing-rod, a screw-pivot passed through a slot in the supporting-frame and the shank of the operating-lever, a nut engaging said screw-pivot, and a centrally-perforated sheet-metal box passed over said screw-pivot and lying between the operating-lever and the nut and seated in the recessed boss of the supporting-frame, said box having upturned flanges embracing the sides of the nut and provided upon its under side with a central bushing surrounding the screw-pivot and a raised concentric flange exerting a frictional action on the operating-lever, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

RICHARD S. T. CISSEL.

Witnesses:

PAUL GOEPEL,

CHARLES SCHROEDER.