Dec. 24, 1929. J. V. PETRELLI 1,740,626

SLIDING REGISTER

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Fig. 1.

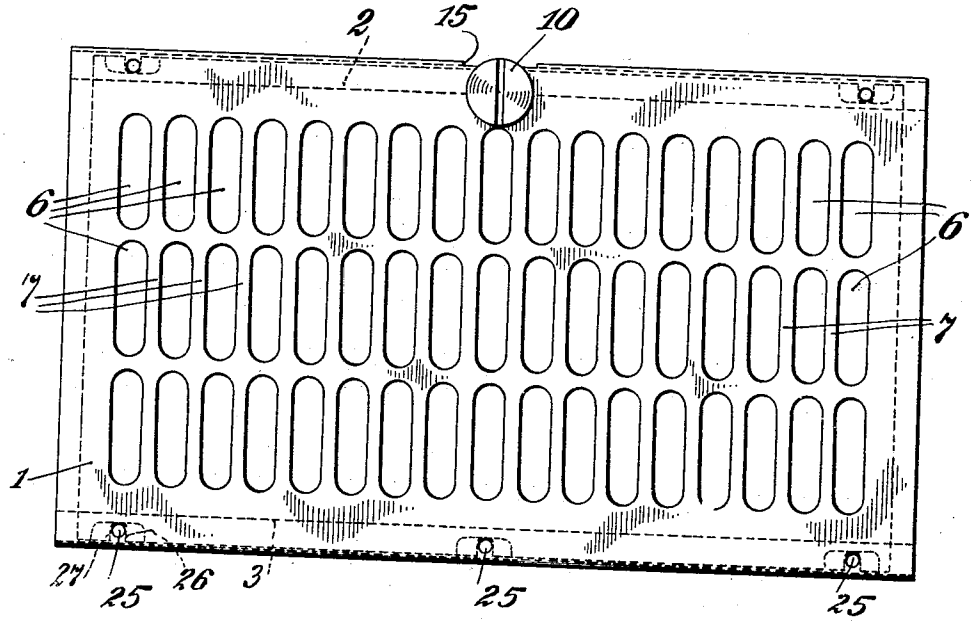


Fig. 2.

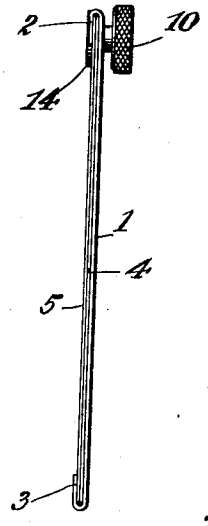
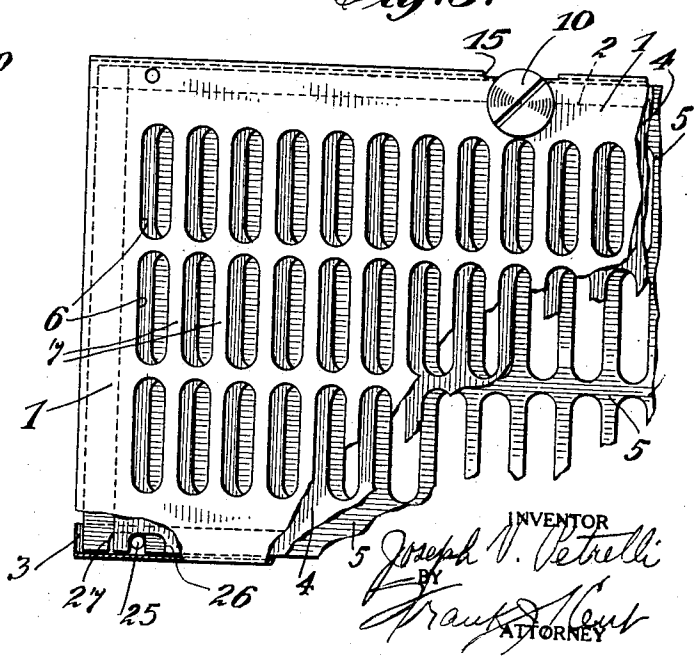


Fig. 3.



INVENTOR

Joseph V. Petrelli

BY

Frank A. Hunt

ATTORNEY

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Fig. 4.

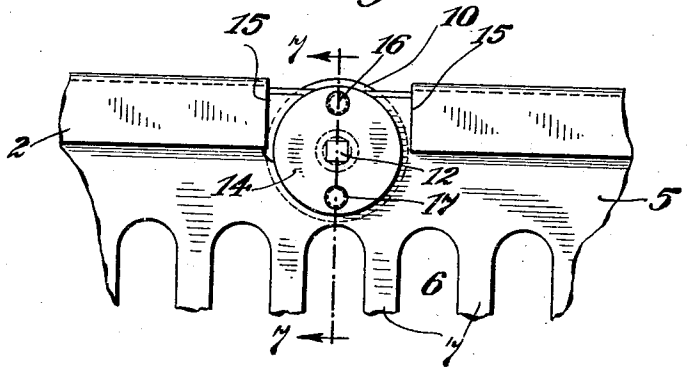


Fig. 5.

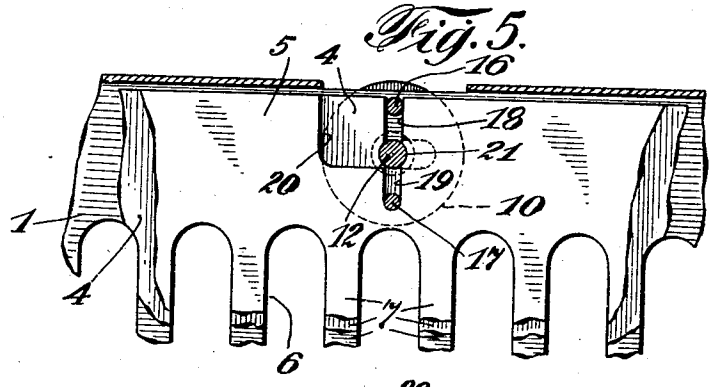


Fig. 6.

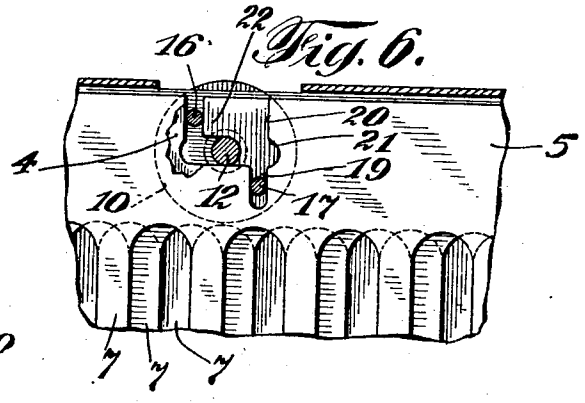
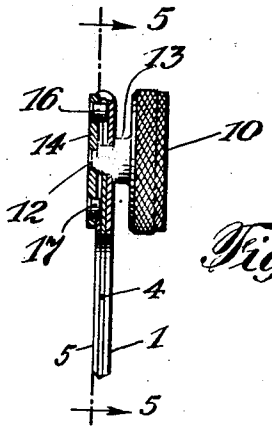


Fig. 7.



Joseph V. Petrelli INVENTOR

BY

Frank A. Hunt ATTORNEY

Patented Dec. 24, 1929

1,740,626

UNITED STATES PATENT OFFICE

JOSEPH V. PETRELLI, OF NEW ROCHELLE, NEW YORK

SLIDING REGISTER

Application filed May 31, 1928. Serial No. 281,638.

My invention relates to registers, such as are used as adjustable discharge-controllers for hot-air flues, and also adapted or adaptable for use as dampers for various purposes.

The principal object is to secure, in an appliance of this class in which the movable damper element is of the sliding type, thus avoiding the complication and relatively high cost of pivoted shutters and the like, a large maximum opening, with or without complete closing of the discharge area; and this is accomplished by providing two movable, apertured plates or screens, in cooperation with a fixed, apertured plate or screen, with controlling means for simultaneously sliding the two movable plates in opposite directions, in opening or closing.

The characteristics and advantages of the invention are further sufficiently explained in connection with the following detail description of the accompanying drawing, which shows one preferred embodiment. After considering this example, skilled persons will understand that many variations may be made, and I contemplate the employment of any structures that are properly within the scope of the appended claims.

Fig. 1 is a front elevation of a register, embodying the invention in one form.

Fig. 2 is a left-end elevation.

Fig. 3 is a partial front elevation, with parts broken away, for explanatory purposes.

Fig. 4 is an enlarged detail, in rear elevation.

Fig. 5 is a section at 5—5, Fig. 7.

Fig. 6 is another similar view, showing another operative position.

Fig. 7 is a section at 7—7, Fig. 4.

A main or front plate 1 may be secured in any suitable way in the desired location, as for example at the outlet end of a hot-air flue. This plate has its upper and lower margins 2 and 3 turned back and inwardly, forming flanges which provide channels to receive upper and lower margins of a front sliding plate 4 and a rear sliding plate 5. The plates are in flatwise contact, and they all have symmetrically arranged apertures 6 separated by septums 7. When the plates are so positioned that the septums are completely aligned or over-lapped, as in Figs. 1 and 4, the apertures are also aligned and provide the maximum discharge area, which by the use of two sliding plates may be equal to approximately ⅔ the total area of the front or fixed plate, when the septums are one-half the width of the openings, or by making the septums slightly narrower in proportion, the maximum opening area may be correspondingly increased, with sacrifice in such cases of total closing, which is not always necessary or desirable.

A knurled operating knob 10 has a stud-shaft 12 revolubly mounted in a hole in the front plate. As shown, this knob is at the top of the register, but could as well be at the bottom. The shaft has an annular shoulder 13 engaging the front face of plate 1, and at its rear end is connected to a disc 14 which overlies the rear face of the rear movable plate 5. Flange 2 is cut away, as at 15, to accommodate the disc.

Pins 16 and 17 are secured in and project forwardly from, disc 14, for operating plates 4 and 5, respectively. Pin 16 acts in a vertical slot 18 of plate 4, and pin 17 acts in a vertical slot 19 of plate 5, the front end of this pin extending only to the plane of the forward face of plate 5 so that it does not conflict with plate 4; while plate 5 above slot 19 has a wide aperture 20, permitting all necessary movements of plate 5 and of pin 16 without any interaction between them. This aperture 20 also has an enlargement 21 to accommodate a segment of shaft 12 when plate 5 is in one extreme position (Fig. 5), and slot 18 has a horizontal extension 22 to accommodate shaft 12.

Stops may be provided to limit plate movements, such as pins 25 secured in plate 1 and its flanges 2 and 3, and cooperating with slots 26 and 27 in edges of plates 4 and 5, respectively.

When knob 10 is rotated, pins 16 and 17 act as cams in their respective vertical slots 18 and 19, to move plates 4 and 5 simultaneously in opposite directions to an extent permitted by stop pins 25. Thus in the position of Fig. 5 the septums of all the plates are aligned or superposed, giving full opening of the register, and in the other extreme position (Fig. 6)

the septums of plates 4 and 5 are in relatively staggered positions, overlying and completely (or nearly completely) closing the openings of front plate 1; and of course, by proper manipulation of the knob, any intermediate positionings of the plates may be obtained, to give different partial "openings" of the register.

I claim:

1. A register or damper comprising two movable plates and a relatively fixed plate, all having septums located between relatively wide openings, an operating shaft revolubly mounted in the fixed plate, a knob on one end thereof, a disc at the other end of the shaft, and pins on the disc engaging in slots of the respective movable plates.

2. A register or damper comprising two movable plates and a relatively fixed plate, all having septums located between relatively wide openings, an operating shaft revolubly mounted in the fixed plate, a knob on one end thereof, a disc at the other end of the shaft, and pins on the disc engaging in slots of the respective movable plates, the movable plates being additionally apertured to accommodate the shaft.

3. A register or damper comprising two movable plates and a relatively fixed plate having marginal flanges providing guides for the movable plates, all of the plates having septums located between relatively wide openings, an operating shaft revolubly mounted in the fixed plate, a knob on one end thereof, a disc at the other end of the shaft, and pins on the disc engaging in slots of the respective movable plates.

4. A register or damper comprising two movable plates and a relatively fixed plate having marginal flanges providing guides for the movable plates, all of the plates having septums located between relatively wide openings, an operating shaft revolubly mounted in the fixed plate, a knob on one end thereof, a disc at the other end of the shaft, and pins on the disc engaging in slots of the respective movable plates, the movable plates being additionally apertured to accommodate the shaft.

In testimony whereof I affix my signature.

JOSEPH V. PETRELLI.