

April 21, 1931.

J. V. PETRELLI

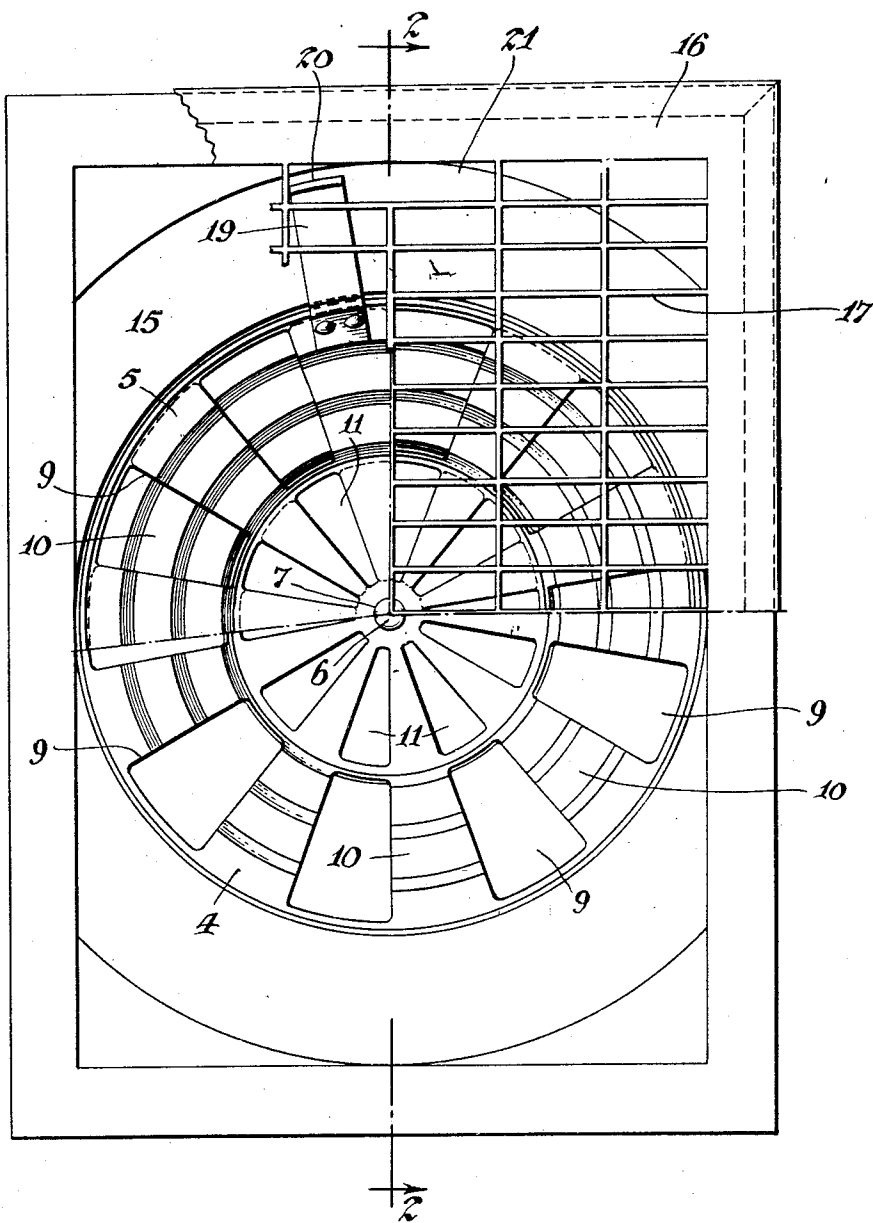
1,801,568

REGISTER OR DAMPER

Filed Jan. 9, 1930

2 Sheets-Sheet 1

Fig. 1.



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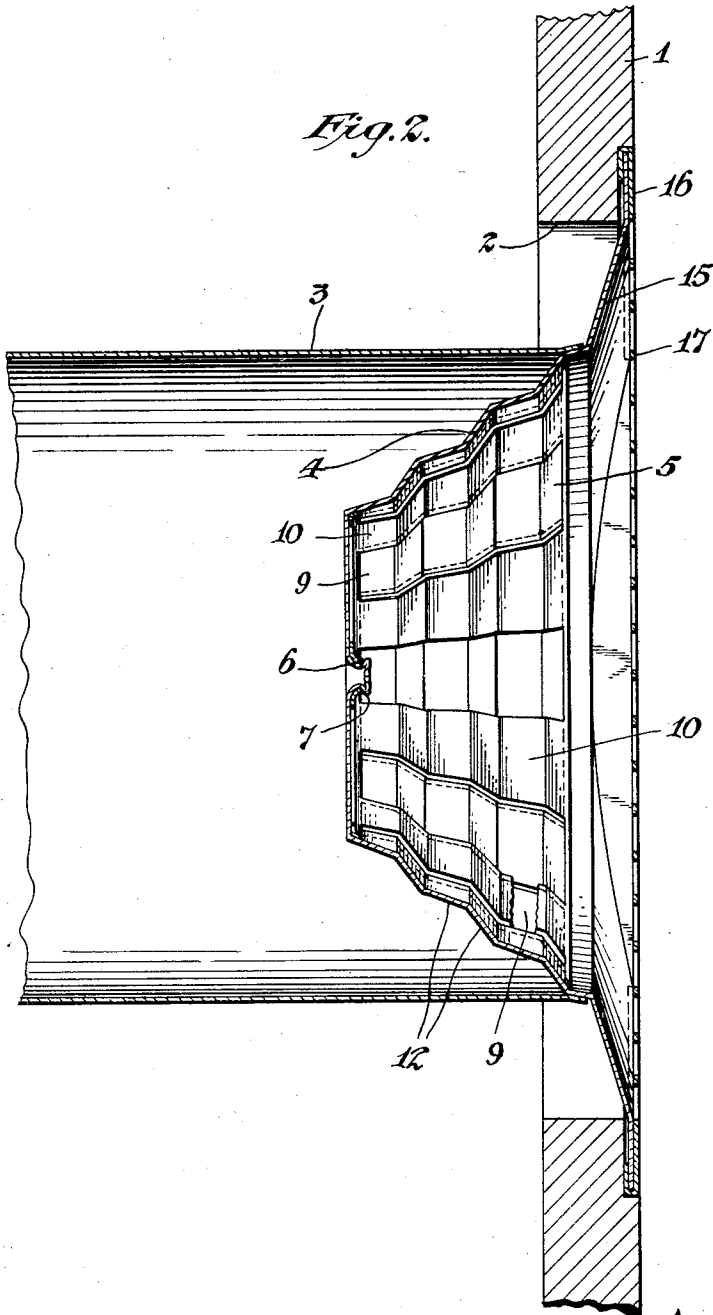
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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REGISTER OR DAMPER

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My invention relates to registers or dampers, and its general object is to provide in connection with sliding or rotary shutter devices, controlling passage of air or gas to or from a flue or conduit, for greatly increased maximum volume of gas flow as compared with structures or arrangements previously known.

The nature and advantages of the invention will be sufficiently understood from the following description of it as embodied in a register, to control the discharge of gas, such as hot air, from a heating flue.

As briefly described, the invention consists in relatively fixed and slidable, or specifically, revoluble, plate or shutter devices having generally radial slots or air passages and of generally deeply dished or approximately conical form, and extending into the flue, so that when the movable device or shutter is in full open position with its slots fully registering with those of the fixed member, a total maximum air passage is provided of much greater area than can be provided in flat shutter arrangements of practical form, and approximately equal to the cross sectional area of the conduit itself.

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 representative embodiment. After considering this example, skilled persons will understand that many variations may be made without departing from the principles disclosed, and I contemplate the employment of any structures that are properly within the scope of the appended claims.

In the drawings:

Fig. 1 is a front elevation of a register embodying the invention in one form, with some parts broken away.

Fig. 2 is a section at 2—2, Fig. 1.

In Fig. 2, 1 is a room wall having an aperture 2, and 3 is an air flue or conduit leading to the aperture.

The register comprises a stationary plate 4 and a relatively slidable or, specifically as shown, a relatively revoluble plate or shutter 5. Each of these plates is deeply dished or

concave, and specifically they are of approximately conical, stepped form, the shutter plate being of form complementary to the fixed plate and fitting closely its inner face and secured revolubly, as by a stud formation 6 in the rear, flat portion of the fixed plate and engaging in an aperture in the center of the rear portion of the movable plate or shutter, which is secured against forward displacement as by a bead 7 pressed or otherwise formed on the stud 6.

Each of the plates is formed in its side portions with a plurality of spaced slots 9. In order to secure maximum opening, the slots may be of width equal to that of the intermediate portions 10. Other slots or air openings 11 may be formed in the rear, flat plate portions.

In order to still further increase the available passage area, the sides of the dished or conical portions of the plates are preferably made in step form, as indicated at 12, Fig. 2.

The dished or conical register structure proper may, as shown in Fig. 2, be inserted within the end of the flue 3, where it is entirely out of the way and causes no undesired projection of the register structure into the room.

Any desired formation of the front portion of the structure may be provided. In the present example, the front or face portion of the register is rectangular, and consists of a slightly dished portion 15 of the fixed plate, with an edge finishing plate or strip 16 which is secured to the wall about the opening 2, as usual. The finishing plate may be formed with a grid 17 which substantially conceals the register plates from view. The revoluble plate or shutter is provided with a handle piece 19, bent at 20 to provide a handle extending through an aperture 21 in the grid long enough to permit movement of the movable plate from full open to full closed position.

It will be evident that when the register is in full open position, the slots or air passages in the fixed and movable plates are in complete registry with each other, and that the maximum total air passage area thus provided is much greater than with flat plates or

area equal to the cross-sectional area of the flue, so that the maximum flow of air may be obtained without increasing the over-all dimensions of the shutter plates proper beyond
5 that of the cross-sectional area of the flue.

I claim:

1. A register comprising relatively fixed and movable dished plates adapted for insertion in the flue and having air slots in the
10 dished portions affording large total maximum air passage area, the plates also having substantially flat inner portions provided with air passages.

2. The combination with a flue of a register including relatively fixed and revoluble
15 complementally shaped plates having deeply dished portions extending within the flue, said dished portions having spaced slots affording total maximum air passage area
20 approximately equal to the sectional area of the flue, the plates also having rear, substantial flat portions provided with spaced air slots.

3. The combination with a flue of a register including relatively fixed and revoluble
25 complementally shaped plates having deeply dished portions extending within the flue, said dished portions having spaced slots affording total maximum air passage area
30 approximately equal to the sectional area of the flue, the dished portions of the plates being in sinuous or step form to additionally increase the effective maximum air passage area.

35 4. The combination with a flue of a register including relatively fixed and revoluble complementally shaped plates having substantially conical portions extending within the flue, said conical portions having spaced
40 slots affording total maximum air passage area approximately equal to the sectional area of the flue.

5. The combination with a flue of a register including relatively fixed and revoluble
45 complementally shaped plates having substantially conical portions extending within the flue, said conical portions having spaced slots affording total maximum air passage area
50 approximately equal to the sectional area of the flue, the plates also having rear substantial flat portions provided with spaced air slots.

6. The combination with a flue of a register including relatively fixed and revoluble
55 complementally shaped plates having substantially conical portions extending within the flue, said conical portions having spaced slots affording total maximum air passage area
60 approximately equal to the sectional area of the flue, the conical portions of the plates being in sinuous or step form to additionally increase the effect maximum air passage area.

In testimony whereof I affix my signature.

JOSEPH V. PETRELLI.