June 27, 1933. L. D. HARNETT 1,915,994

DAMPER

Filed Feb. 21, 1931 2 Sheets-Sheet 1

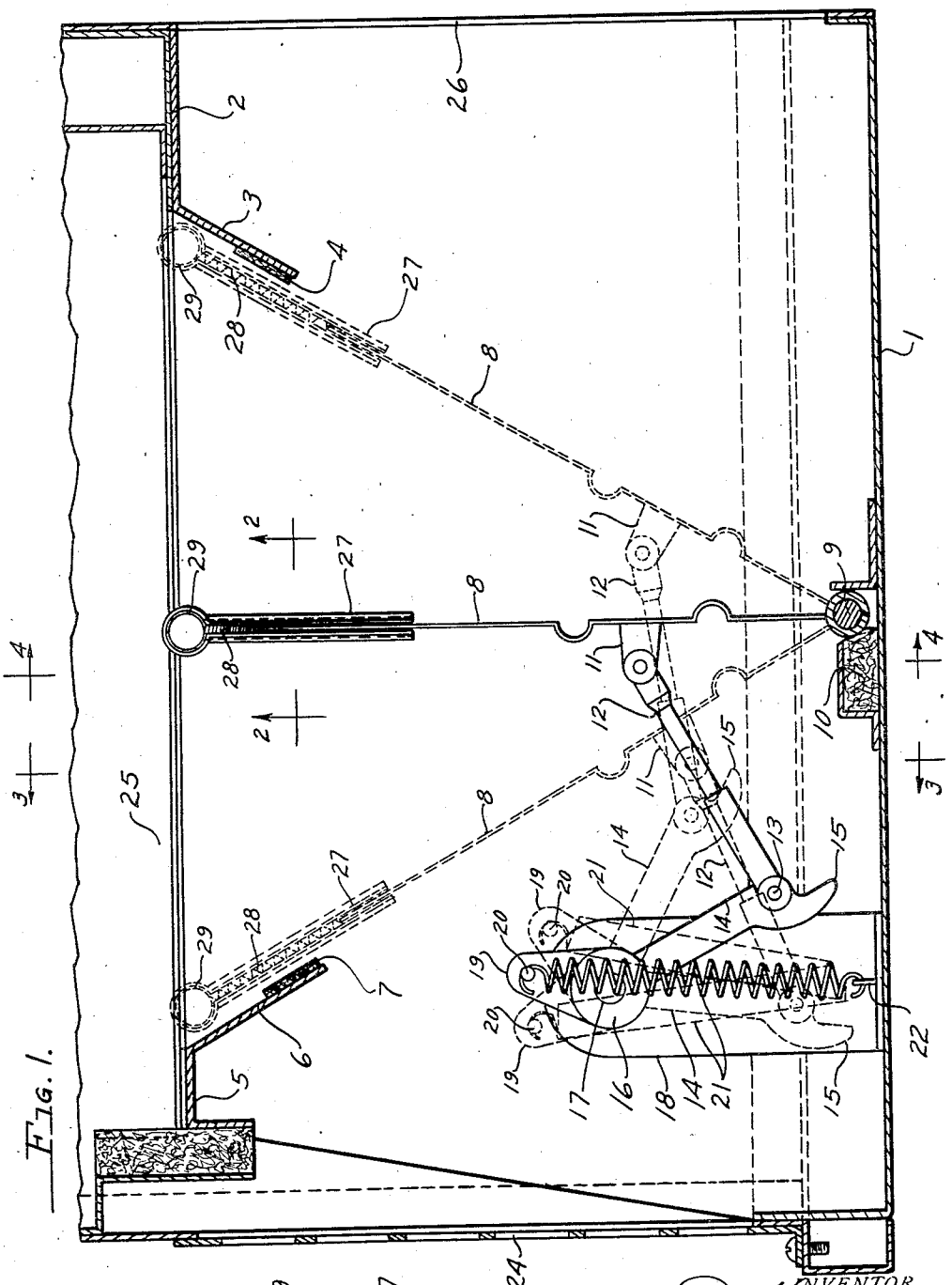


FIG. 1.

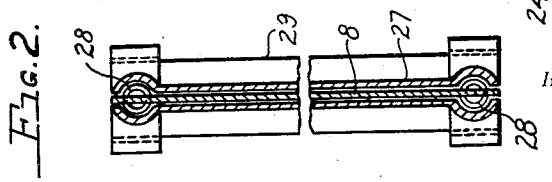


FIG. 2.

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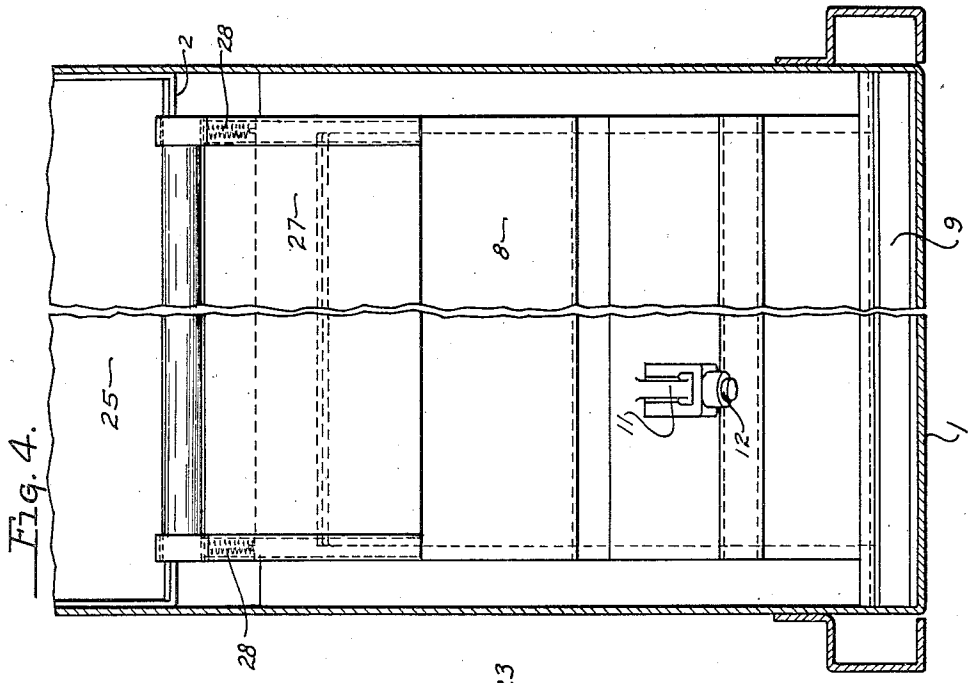


Fig. 4.

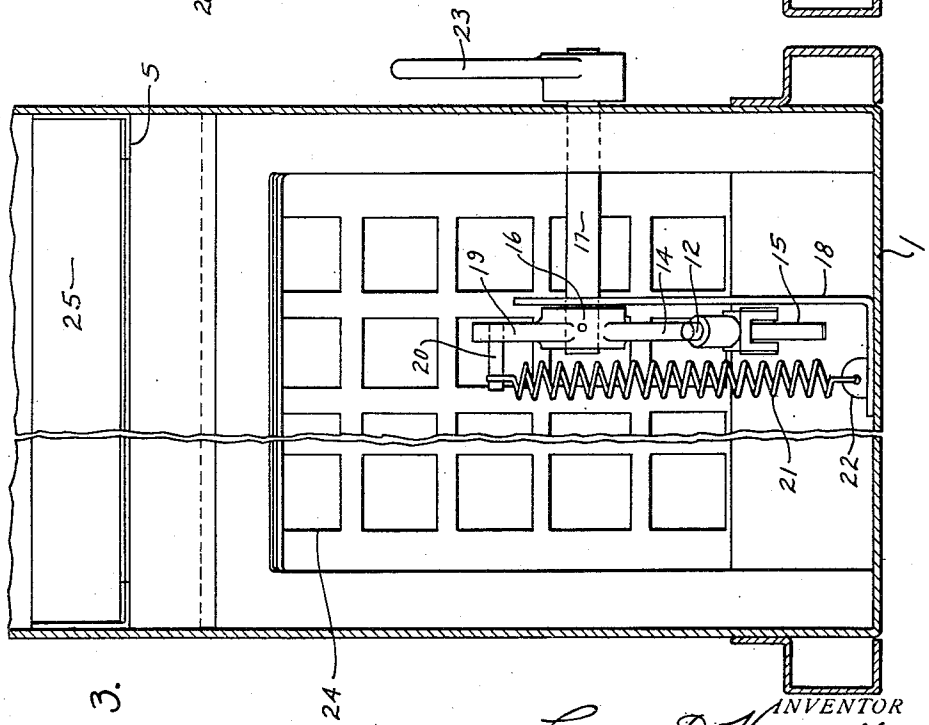


Fig. 3.

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Patented June 27, 1933 1,915,994

UNITED STATES PATENT OFFICE

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DAMPER

Application filed February 21, 1931. Serial No. 517,536.

This invention relates to improvements in damper mechanisms to be used in the bottom of intake units.

It is particularly the object of this invention to provide, in connection with a damper, means to extend the length of the damper so that as the damper swings the free end thereof will contact with the surface constituting the part of the passageway in which the damper operates.

It is particularly the object of this invention to provide, in connection with a damper, means for extending the length of the damper and provide means to make a contact so that air will not pass around the end of the damper.

It is also an object of this invention to provide, in connection with a damper, sliding means having a felt roll or felt rolls thereon to continuously engage the bottom side of a filter member associated with the passageway closed by the damper.

It is the main object of this damper, with its slidable extension, to seal off the space between the damper blade and the bottom of the filter as the damper travels through an arc in the passageway adjacent the filter.

It is one of the primary objects of this invention to prevent the air from blowing through the intake opening and thence upwardly over the top of the damper blade, and down through the passageway and out into the room through the recirculating grill. By the present arrangement it is possible to place this damper so as to recirculate any given proportion of the room air and at the same time to seal off the outside wind pressure.

These and other advantages will appear from the following description taken in connection with the drawings.

Referring to the drawings:

Figure 1 is a vertical section through the lower end of a ventilating unit, showing the air passageway and the damper therein.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a section on the line 4—4 of Figure 1.

The numeral 1 is used to designate a casing or the lower end of a casing used as part of a ventilating and air conditioning unit. Extending from one side of the casing is a ledge 2, which has extending downwardly therefrom an extension 3. On this extension is a felt pad 4. A similar ledge 5 extends from the opposite side of the casing and has a downwardly extending part 6 which has a pad 7 thereon, similar to the pad 4.

Suitably pivoted to the floor of the casing is a damper 8. This damper is pivoted to the floor at the point indicated by the numeral 9, and has adjacent one side thereof a packing 10 to prevent the passage of air around the lower end of the damper. Extending from one side of the damper is a lug 11 which has pivoted thereto one end of a link 12. The other end of this link is pivoted at 13 to an arm 14. The arm 14 extends beyond the pivot 13 in the form of a stud 15. This stud 15 engages the link 12 to prevent the bending of the arm 14 and link 12 beyond a certain extent at the pivot 13.

The end of the arm 14 remote from the pivot 13 has a sleeve 16 thereon which fits over and is fastened to a shaft 17. This shaft is supported in one wall of the casing and by a support 18. Extending from the sleeve 16 is a short arm 19, which has extending laterally therefrom a lug 20. Over this lug engages one end of a spring 21, the other end of which is attached to a bracket 22 on the bottom or floor of the casing. The spring 21 acting on the arms 19 and 14 and link 12 tends to hold the damper in one of the two positions shown in dotted lines in Figure 1. On the end of the shaft 17, outside of the casing, there is a handle 23 for rocking the shaft 17 and the parts connected therewith. The object of this shaft and the link 12 and arm 14 is to shift the damper from one position to another. In Figure 1 the damper is shown in a vertical, upright position with the roll on the end thereof contacting with the filter. In dotted lines the damper is shown in various positions, in one of which

the air is substantially cut out from entering through the casing, while in the other position it permits the air to freely pass into the casing, up through the filter.

At one side of the casing there is an inlet 26 through which the air passes to go through the casing into the building to which the ventilating and conditioning unit is applied. Immediately above the ledges 2 and 5 there is a filter 25. The purpose of this filter is to condition the air as it passes therethrough before it enters into the room. Means for heating and creating a current are located above the filter. The side of the casing opposite the inlet 26 may be opened for recirculating purposes, as indicated by the numeral 24.

When the damper is against the pad 4 air is cut off from entering the casing from the outside, and air in the room may be recirculated. When the damper is in the upright position, as shown in Figure 1, air may enter through the entrance or inlet 26 and there may be a recirculation of air through the opening 24. When the damper rests upon pad 7 there is no recirculation of air but all the air is taken from the outside through the filter, and into the room through the ventilating and conditioning unit.

On the upper end of the damper is a member 27 telescoping over the end of the damper, and is adapted to move longitudinally up and down with respect to the damper. Between the edge of the damper and a suitable part of the extension is a spring 28, which tends to hold the outer roll part of the extension in contact with the filter 25. On the outer edge of the extension member are one or more felt rolls 29, suitably attached to the body part of the extension 27. These felt rolls, contacting with the lower part or surface of the filter, will prevent the air from passing between the rolls and the filter so that the passage or circulation of air is absolutely controlled, so that it cannot pass around the damper and pass from the entrance 26 through the outlet or recirculating opening 24. While these rolls are here shown and described as being composed of felt, any other suitable material may be used, the purpose being to form a close contact between the upper edge of the damper and the lower surface of the filter 25.

I desire to comprehend within my invention such modifications as may be embraced within my claims and the scope of my invention.

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

1. In a ventilating apparatus, in combination with a casing having an inlet and an outlet, a filter in said outlet, a damper in said casing adapted to move along said filter, and a felt roll on one end of said damper to engage the filter as it moves along the filter.

2. In a ventilating apparatus, in combination with a casing having an inlet and an outlet, a filter in said outlet, a damper pivoted at one end in said casing opposite the filter, and a felt roll slidably mounted on the other end of said damper and adapted to contact with the filter as the damper moves.

3. In a ventilating apparatus, in combination with a casing having an inlet and an outlet, a filter in said outlet, a damper pivoted at one end in said casing opposite the filter, and an extension member on the other end of said damper adapted to engage the filter during the swing of the damper on its pivot.

4. In a ventilating apparatus, an air passageway having a filter member across it, and means to restrict said passageway comprising an extensible member adapted to move along the surface of the filter.

5. In a ventilating apparatus, an air passageway having a filter across it, a damper pivoted at one end in the passageway for swinging movement in the passageway, and extension means on the other end of said damper to engage the filter as the damper swings.

6. In a ventilating apparatus, an air passageway having a filter across it, and means to move along the surface of the filter to restrict said passageway, said means comprising a damper having a spring-operated extension engaging the filter.

7. In a ventilating apparatus, an air passageway having a filter across it, and swinging means in said passageway adapted to move along the surface of the filter to restrict said passageway, said swinging means comprising a spring-pressed extension for engaging the filter.

8. In a ventilating apparatus, an air passageway having a filter therein, and swinging means in said passageway to restrict it, said means comprising a pivoted section and a section slidably mounted on the pivoted section for engaging the filter.

9. In a ventilating apparatus, an air passageway having a filter therein, a damper pivoted in said passageway, and a spring-pressed extension on said damper adapted to move along the filter as the damper swings on its pivot.

10. In a ventilating apparatus, an air passageway having a filter therein, a damper pivoted in said passageway, and a spring-pressed extension on said damper adapted to move along the filter as the damper swings on its pivot, said extension having a felt margin for engagement with the filter.

In testimony whereof, I affix my signature.

LEWIS D. HARNETT.