May 7, 1929. A. J. FILKINS 1,711,523

FLOOR VENT

Filed March 18, 1927

Fig. 1

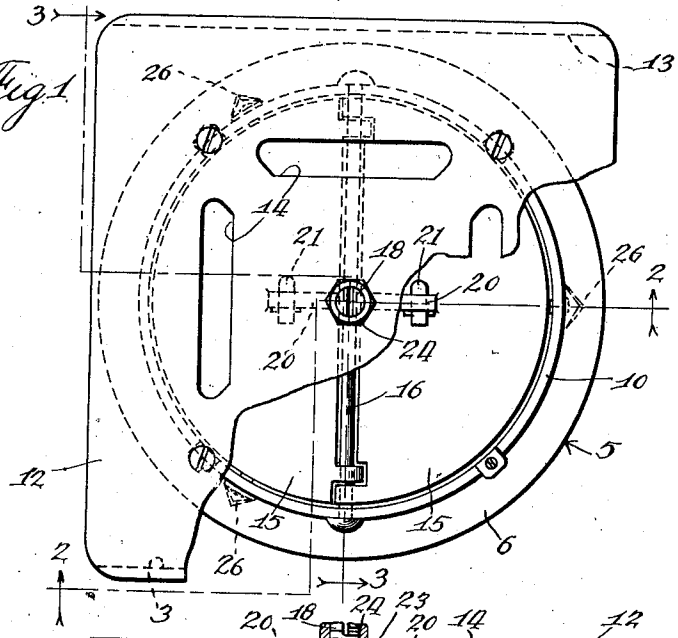


Fig. 2

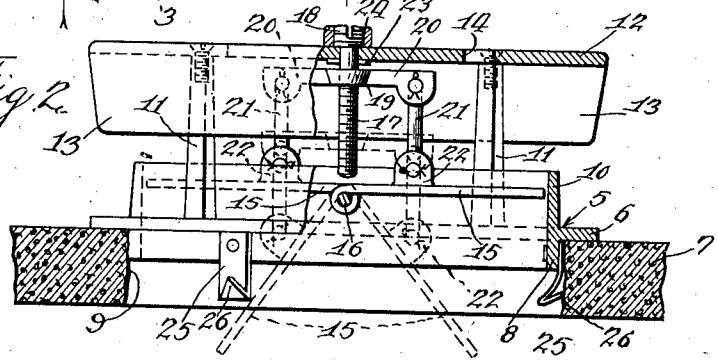
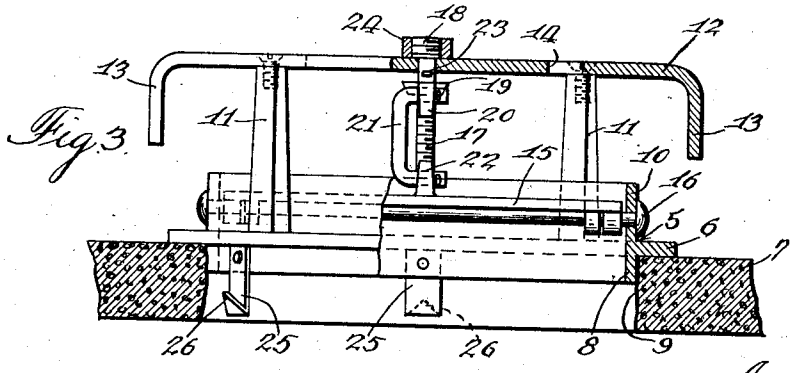


Fig. 3



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UNITED STATES PATENT OFFICE.

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FLOOR VENT.

Application filed March 18, 1927. Serial No. 176,435.

This invention relates to floor vents and is particularly adapted for use in floors of theaters, auditoriums and the like, wherein the seats are placed side by side in rows transversely to the aisles.

One of the objects of the present invention is to provide a novel construction and arrangement of devices for controlling the passage of air through the vent.

Another object of the invention is to provide an efficient and conveniently actuated means for regulating the air controlling devices.

Another object of the invention is to provide for effectually and positively securing said regulating means and air controlling devices in desired position.

Another object of the invention is to provide a floor vent which will permit of desired positioning of the device and proper distribution of the air, thereby eliminating discomfort to persons seated near the vent.

A further object of the invention is to provide a simple, though efficient, construction and arrangement for removably securing the vent in position in a floor aperture, and to improve devices of this character in sundry details hereinafter described and particularly pointed out in the appended claims.

One embodiment of the invention is shown for illustrative purposes in the accompanying drawing, in which

Fig. 1 is a plan view of my improved floor vent in which a portion of the cap is broken away to illustrate the position and manner of mounting the devices for controlling the passage of air through the vent.

Fig. 2 is a side elevation, partly in section, of the parts shown in Fig. 1, taken approximately as indicated by the line 2—2 of Fig. 1, and showing the air controlling devices in full and dotted lines.

Fig. 3 is a side elevation, partly in section, as viewed from a point substantially ninety degress removed from the view point of Fig. 2, and taken approximately as indicated by the line 3—3 of Fig. 1.

In the illustrative embodiment, an open base member or floor frame 5 is shown in the present instance of annular or ring-shaped formation having a flange 6 adapted to rest on the surface of the floor 7, a depending flange 8 for positioning the frame or ring 5 in an aperture 9 formed in the floor, and having an upstanding flange 10 provided with a plurality of suitably spaced vertically disposed uprights 11 adapted to support and have secured thereto a vent cap 12, the said cap being provided at oppositely disposed edges thereof with depending flange portions 13, thereby forming a cap of inverted substantially U-shaped cross-section, the purpose of which is to control the direction of air currents passing from the vent. It will be observed that by such a construction, the vent may be positioned in the floor in a manner to cause the inverted channel of the cap 12 to extend longitudinally of the row of seats beneath which it is placed, thereby causing the air currents passing through the vent to be directed by the cap 12 and its flange portions 13 longitudinally of the row of seats and not against the legs and feet of persons seated adjacent the vent, as is the case in vents at present in use.

If desired, the cap 12 may be provided with a plurality of relatively small openings 14 for permitting a small though sufficient portion of the air coming through the vent to pass upwardly therefrom in a manner to change the air immediately above the vent.

For effectually controlling the passage of air through the vent, a damper or valve is provided, which is shown, in the present instance, as a plurality of semi-circular damper sections 15 pivotally connected preferably at their adjacent edge portions to a rod 16 mounted in the upstanding flange 10 of the floor ring 5 and extending substantially centrally across the opening in the said ring in such a manner that when the damper sections 15 are swung to a horizontal position on opposite sides of the rod 16, the opening in the ring 5 will be substantially closed against the passage of air therethrough.

For suitably regulating the position of the damper sections 15 in a manner to control the passage of air through the ring 5, a bolt 17 having a slotted head 18 is mounted to rotate freely in an opening formed in the cap 12, the portion of the bolt 17 below the cap being threaded to co-operate with a screw-threaded opening formed in a yoke 19, the said yoke 19 having oppositely disposed arms 20, the outer ends of which are connected by means of links 21 with ears 22

formed on the upper sides of the damper sections 15. It will be observed from the foregoing description that when the bolt 17 is rotated, the yoke 19, by reason of its screw-threaded engagement with the bolt, will be moved upwardly or downwardly and the damper sections 15 will be swung about their pivotal connection with the rod 16, as indicated in Fig. 2, in a manner to close or vary the ventilating opening through which the air may circulate, thereby controlling the passage of air through the vent.

To lock the bolt 17 against rotation and thereby secure the damper sections 15 in any desired adjusted position, the bolt 17 is provided, in a plane just beneath the lower face of the cap 12, with an aperture adapted to receive a laterally extending pin or the like, such as a cotter pin 23, and the slotted head 18 of the bolt is screw-threaded to receive lock nut 24. It will be observed that after adjusting the damper sections 15 to the desired position, the bolt 17 may be locked against rotation and the sections 15 secured in such position, by holding the bolt against rotation and turning the nut 24 down onto the head 18 and against the cap 12, thereby drawing the pin 23 snugly against the underside of the cap and clamping the cap securely between the pin 23 and nut 24.

To provide for removably securing the ring 5 in the floor aperture 9, the depending flange 8 is provided with a plurality of suitably spaced resilent clips or fingers 25 having outwardly and upwardly projecting pointed hook portions 26, the clips or fingers 25 being adapted to yield when inserted, together with the flange 8, within the floor opening 9, and the pointed hook portions 26 to engage the vertical edge portion of the floor 7 forming the opening 9 therein, in a manner to resist the accidental displacement or removal of the ring 5 with respect to the floor opening.

It will be observed from the foregoing description that the present invention provides a novel construction and arrangement for controlling and regulating the passage of air through the vent, securing the controlling and regulating devices in desired position, and wherein a proper and desirable distribution of the air is obtained.

Furthermore, the present invention provides a simple and efficient construction, whereby the vent may be removably secured to the floor aperture, and also provides improvements in vents of this character in sundry details hereinafter more definitely pointed out in the appended claims.

Obviously, the present invention is not limited to the precise construction and arrangement shown and described, as the same may be variously modified without departing from the spirit and scope of the invention as set forth in the appended claims. Moreover, all the features of the invention need not be used conjointly, as the same may be used to advantage in variously different combinations and sub-combinations.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a floor vent, the combination of a floor ring, a damper pivotally mounted therein, a cap rigidly mounted on said ring and spaced therefrom, means rotatably mounted in said cap and extending outwardly therefrom for adjusting the position of said damper, and clamping means co-operable with said adjusting means and cap for securing said damper in adjusted position.

2. In a floor vent, the combination of a floor ring, a damper comprising a plurality of sections pivotally mounted in said ring independently of each other, a perforated cap mounted on said ring and spaced therefrom, means mounted in said cap and operably connected with said sections for adjusting the sections with respect to said ring, and means for securing said sections in adjusted position.

3. In a floor vent, the combination of a circular floor ring, a damper comprising a plurality of sections pivotally mounted in said ring independently of each other, a rectangular cap of inverted U-shaped cross section rigidly mounted on said ring and spaced therefrom, means rotatably mounted in said cap in a manner to extend outwardly therefrom and operatively connected with said sections for adjusting the sections with respect to each other and to said ring, and means co-operable with said adjusting means and cap for securing said sections in adjusted position.

4. In a floor vent, the combination of a floor frame, means associated therewith for securing said frame to the floor, a damper comprising a plurality of sections pivotally mounted on a common pivot positioned in said frame and in a manner to be moved independently of each other, a cap rigidly mounted on said frame, a yoke connected to said sections, means mounted in said cap and co-operable with said yoke for adjusting said sections with respect to said frame, and means for securing said sections in adjusted position.

5. In a floor vent, the combination of a floor frame, resilient means associated therewith for securing said frame to the floor, a damper comprising a plurality of sections pivotally mounted on a common pivot positioned in said frame and in a manner to be moved independently of each other, a cap of inverted U-shaped cross section rigidly mounted on said frame, a yoke pivotally connected to said sections, means rotatably mounted in said cap for raising and lowering said yoke in a manner to adjust said

sections with respect to said frame, and locking means co-operable with said rotatable means and cap for securing said sections in adjusted position.

6. In a floor vent, the combination of a floor frame, a plurality of damper sections pivotally mounted on a common axis supported in said frame and in a manner to be moved independently of each other, a cap rigidly mounted on said frame, a yoke, a plurality of links connected to said sections and yoke, a bolt rotatably mounted in said cap and having screw threaded engagement with said yoke for raising and lowering said yoke to adjust said sections with respect to said frame, said bolt having a portion extending outwardly beyond said cap, and means co-operable with said outwardly extending portion and said cap for securing said sections in adjusted position.

7. In a floor vent, the combination of a circular open floor frame adapted to be positioned in a floor opening, resilient hook members mounted on said frame and adapted to engage the wall of said floor opening, a plurality of semi-circular damper sections positioned in the opening of said frame and pivotally mounted on a common axis supported in said frame and in a manner to be moved independently of each other, a cap rigidly mounted on said frame and spaced therefrom, a yoke having a screw-threaded opening therein, a plurality of links pivotally connected to said sections and yoke, a screw-threaded portion positioned centrally of and loosely mounted to rotate freely in said cap, the threads of said bolts being adapted to co-operate with the threads of said yoke in a manner to raise and lower the yoke to adjust the said sections in the opening of said frame, a pin extending through said bolt below said cap, a screw threaded head portion formed on said bolt above said cap, and a jam or lock nut having screw threaded engagement with said head and co-operable with said pin and cap for locking said bolt against rotation and securing said sections in adjusted position.

8. In a floor vent, the combination of a floor ring, a plurality of damper sections pivotally mounted in said ring, a cap mounted on said ring and spaced therefrom, a yoke having a screw threaded opening therein, a plurality of links pivotally connected to said sections and yoke, a screw threaded bolt loosely mounted to rotate freely in said cap and positioned centrally thereof, the threads of said bolt being adapted to co-operate with the threads of said yoke in a manner to raise and lower the yoke to adjust said sections with respect to said frame, a pin extending through said bolt below said cap, a slotted screw threaded head portion formed on said bolt above said cap, and a nut having screw threaded engagement with said head and co-operable with said pin and cap for locking said bolt against rotation and securing said sections in adjusted position.

In testimony whereof I have signed my name to this specification, on this 28th day of February, A. D. 1927.

ARTHUR J. FILKINS.