Dec. 21, 1926. 1,611,735

M. M. GARLAND

REGISTER

Filed March 26, 1926 2 Sheets-Sheet 1

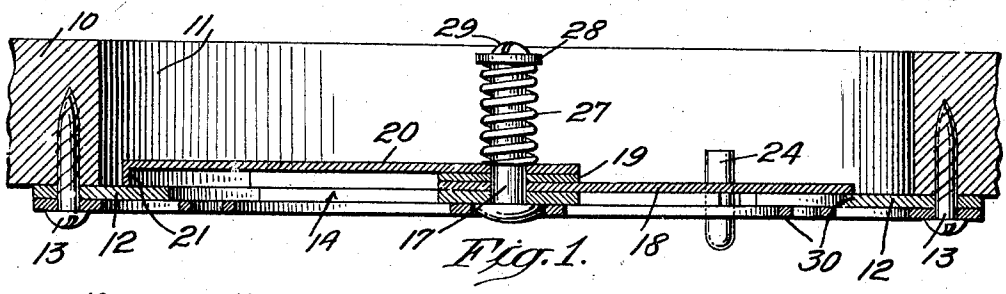


Fig. 1.

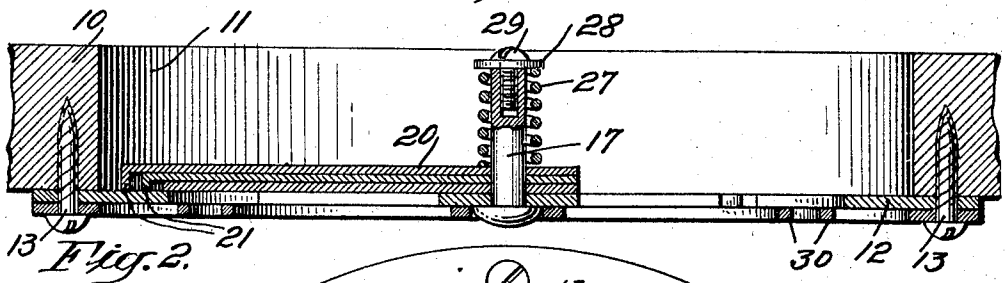


Fig. 2.

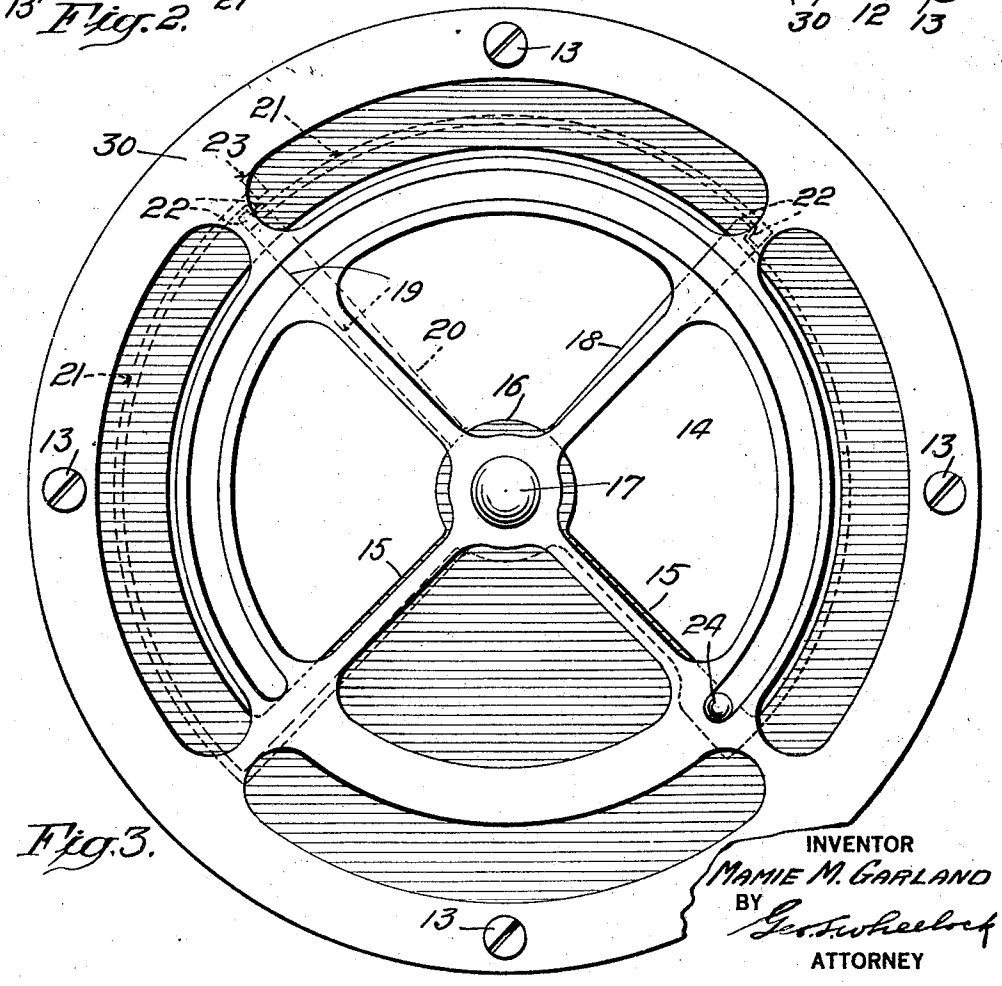


Fig. 3.

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Fig. 4.

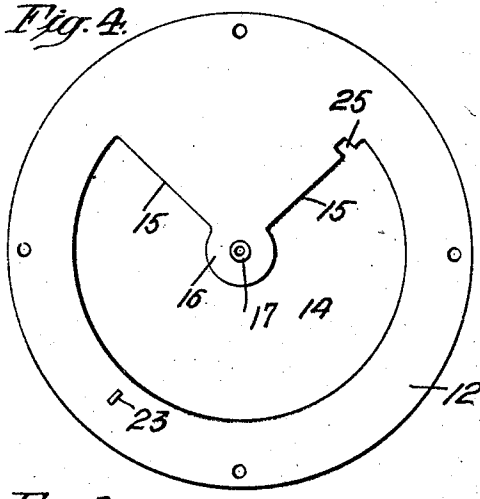


Fig. 7.

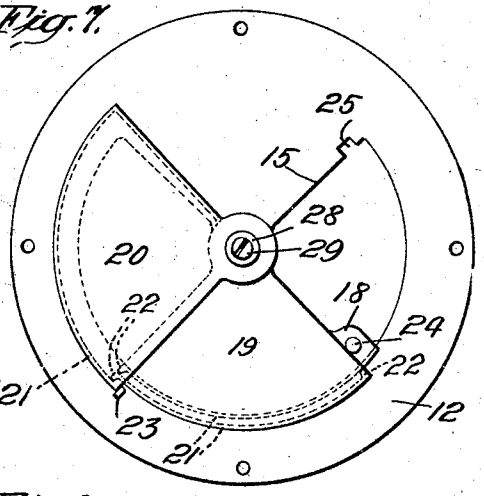


Fig. 5.

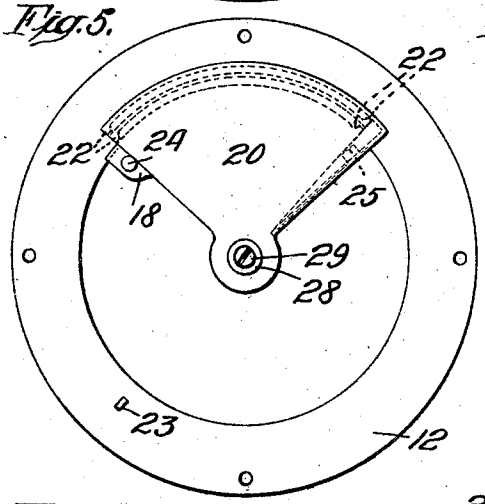


Fig. 8.

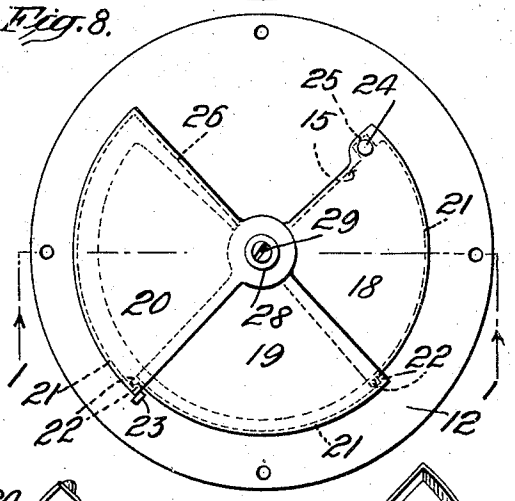


Fig. 6.

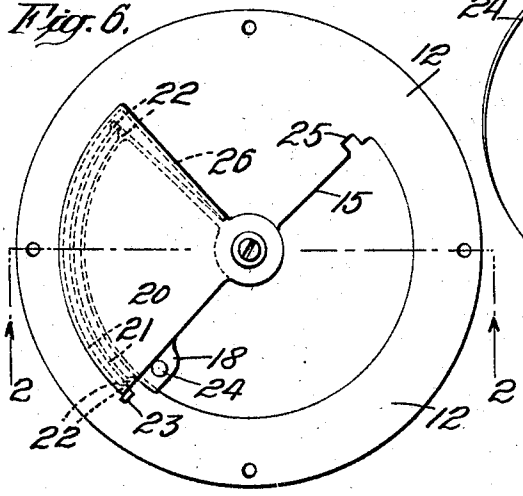
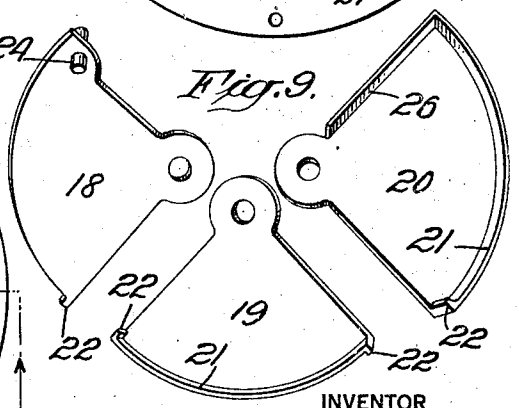


Fig. 9.



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UNITED STATES PATENT OFFICE.

MAMIE M. GARLAND, OF CHICAGO, ILLINOIS, ASSIGNOR TO GARLAND VENTILATOR COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

REGISTER.

Application filed March 26, 1926. Serial No. 97,533.

This invention relates to improvements in registers for ventilation ducts and has particular reference to adjustable registers for use in motor vehicles, railway cars, motor boats, and the like, including buildings.

An important object of the invention is to provide a ventilator register with an adjustable closure means of such a character as to obtain a relatively large opening as compared with the area of the ventilation duct.

Another object is to provide such a device with a plurality of cooperating closure plates in frictional engagement and wherein the tension may be varied, as desired.

Another object is to provide such a device wherein the register may be entirely and tightly closed, and wherein definite stops are provided to limit the movement of the closure plates.

Another object is to provide such a device which will be simple in construction, strong and durable in service and an improvement in the art.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawings wherein a preferred embodiment of the invention is shown by way of illustration.

In the drawings, Figure 1 is a longitudinal sectional view through a register embodying the invention and showing the parts in closed position, the section being taken on line 1—1 of Figure 8;

Figure 2 is a similar view showing the register partly open, said section being taken on the line 2—2 of Figure 6;

Figure 3 is an elevation of the register and ornamental grille;

Figure 4 is a detail elevation of the apertured plate used in the register;

Figure 5 is a similar view showing the closure plates mounted upon the apertured plate and with the register fully opened;

Figures 6 and 7 are views similar to Figure 5, showing intermediate positions of the closure plates;

Figure 8 is a view similar to Figure 5, with the register entirely closed; and

Figure 9 is a view showing the separated closure plates in perspective.

The invention may be applied to any ventilation duct but is more particularly adaptable for use with motor vehicles. In Figures 1 and 2 the roof, side wall, or other part of a motor vehicle is designated by the reference character 10, said part being provided with the ventilation duct 11 of any desirable proportions and here shown as being circular in outline. The outer end of the duct 11 may be equipped with a suitable cowl or other well known form of ventilator, if desired, while the register forming the present invention is applied to the inner end of the duct. A main plate 12 is secured by screws 13 or other suitable fastening means to the roof or wall 10, said plate being of a larger area than the ventilation duct 11 and provided with an aperture 14, preferably of sector shape, having converging edges 15 which terminate in a central enlargement 16, as best shown in Figure 4. Mounted in the central enlargement 16 is a pivot post 17 to which is pivoted a plurality of closure plates 18, 19 and 20. The closure plates are also preferably of sector shape and smaller than the aperture 14, and said plates are superimposed upon one another and relatively movable so as to selectively cover or uncover the aperture 14.

As best shown in Figures 2 and 8, the closure plates are similar in outline but are of varying size and are provided on their arcuate edges with flanges 21 which engage the inner surface of the apertured plate 12 outside of the aperture 14. In this manner the closure plates are capable of spanning the aperture 14, and furthermore are capable of relative telescopic movement about the pivot post 17. Suitable means are provided to limit the relative movement of the closure plates, said means being preferably in the form of interengaging abutments 22 by means of which the closure plates are always maintained in overlapping relationship. A suitable stop member 23 is formed on or secured to the plate 12 and is disposed in the path of movement of the closure plate 20. Attached to the plate 18 is a handle member 24 by which the device may be operated, said handle member being adapted to fit into a notch 25

in the plate 12 to limit its movement, and the closure plate 20 is provided with a radial flange 26 to insure a tight closing of the register.

Tension means are provided in the form of a coil spring 27 surrounding the pivot post 17 and compressed between an adjustable washer 28, held by a set screw 29, and the uppermost closure plate 20. In this manner the flanges 21 of the plates 19, 20, as well as the arcuate edge of the plate 18, are effectively held in frictional contact with the inner surface of the apertured plate 12, and the tension may be varied as desired by adjustment of the set screw 29. By way of enhancing the appearance of the device a suitable grille 30 may be disposed outwardly of the apertured plate 12, said grille being preferably secured by the fastening elements 13 which mount the plate 12 on the roof or wall 10.

In use the register may be opened to the full extent of the aperture 14 or it may be entirely closed or adjusted to any intermediate degree of opening, as desired. As shown in Figure 6, the closure plates may be moved about the pivot 17 to uncover approximately two-thirds of the aperture 14, whereupon the stop member 23 prevents further movement of the closure plate 20. Upon continued movement applied to the handle member 24, the closure plates 18 and 19 move relatively to the closure plate 20 and are capable of such continued movement until they reach the position shown in Figure 7, whereupon the interengagement of certain of the abutments 22 prevent further movement of the closure plate 19. Thereafter, the closure plate 18 is capable of independent movement until it reaches the position shown in Figure 8, whereupon the aperture 14 is completely covered by the plates 18, 19 and 20. It will be obvious that in view of the telescopic arrangement of the closure plates the register is capable of maximum opening, which is particularly desirable in motor vehicles and other similar environments where space available for such a device is limited. While three closure plates have been illustrated and described herein, it is of course to be understood that any number of such plates may be used dependent upon the particular design, and the cooperation of the parts will be the same regardless of the number of such closure plates.

From the foregoing it will be evident that an improved ventilator register has been provided which is extremely simple in construction and consequently economical to manufacture. The device will be efficient in use, strong and durable in service, and of such a neat appearance as to be highly desirable for its purpose. The invention is of course susceptible of many modifications and the right is herein reserved to make such changes as fall within the scope of the appended claims without departing from the spirit of the invention.

Having thus described the invention, what is claimed is:

1. A ventilator register of the character described, comprising an apertured plate, a plurality of superimposed closure plates pivoted to the apertured plate and movable relative to each other, said closure plates being provided with edge flanges for engaging the surface of the apertured plate, and varying in size in such manner as to be capable of telescopic movement to cover or uncover the aperture.

2. A ventilator register of the character described, comprising an apertured plate, a plurality of superimposed closure plates pivoted to the apertured plate and movable relative to each other, said closure plates being provided with edge flanges for engaging the surface of the apertured plate, and varying in size in such manner as to be capable of telescopic movement to cover or uncover the aperture, and said plates being further provided with stop means to limit their relative movement.

3. A ventilator register of the character described, comprising an apertured plate, a plurality of superimposed closure plates pivoted to the apertured plate and movable relative to each other, said closure plates being provided with edge flanges for engaging the surface of the apertured plate, and varying in size in such manner as to be capable of telescopic movement to cover or uncover the aperture, and adjustable tension means for effecting frictional contact of said edge flanges on the surface of the apertured plate.

4. A ventilator register of the character described, comprising an apertured plate, a plurality of sector shaped closure plates pivoted to said apertured plate to span the aperture, said closure plates having arcuate edge flanges engaging the surface of the apertured plate, and varying in size in such manner as to be telescopically nested together, an operating handle attached to one of the closure plates, and interengaging stop members for limiting the relative movement of the plates.

5. In combination with a ventilation duct, a register including a fixed plate having a substantially sector shaped opening, a pivot post secured to said plate at the apex of the sector shaped opening, a plurality of sector shaped closure plates superimposed for relative movement about the pivot post, said closure plates having arcuate edge flanges for engaging the surface of the apertured plate outwardly of the aperture, a handle to one of the closure plates for operating the same, means for limiting the relative movement of the plates, and a coil spring surrounding the pivot post for effecting fric-

tional contact of the arcuate edge flanges on the surface of the apertured plate.

6. A ventilator register of the character described, comprising an apertured plate, a plurality of superimposed closure plates pivoted to the apertured plate and movable relative to each other, said closure plates being disposed in successive planes parallel to that of the apertured plate, and successively increasing in size and provided with overlapping edge flanges adapted to engage the surface of the apertured plate, and interengaging abutments carried by said flanges for limiting the relative movement of said closure plates.

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