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SELF ADJUSTING SCREEN DOOR GRILLE AS AN ARTICLE OF MANUFACTURE

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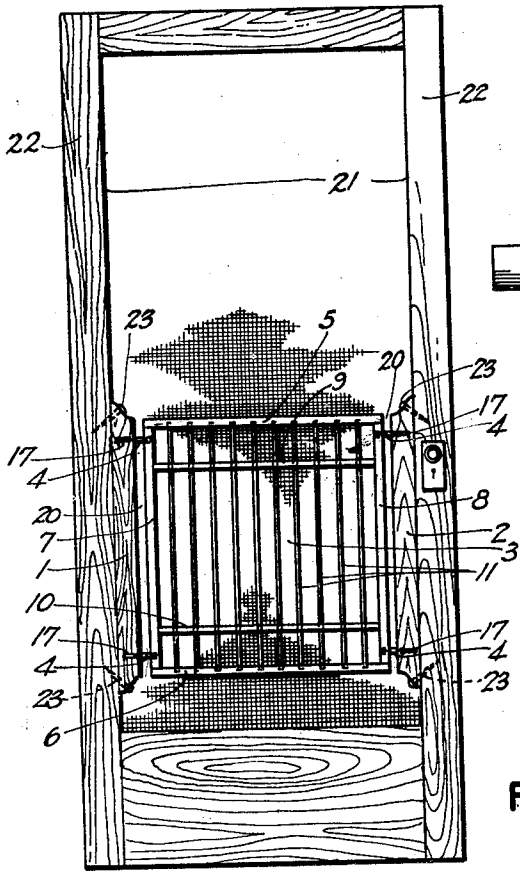


FIG. 1.

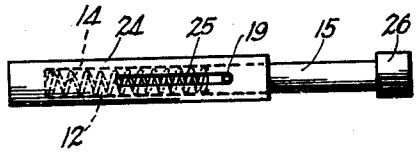
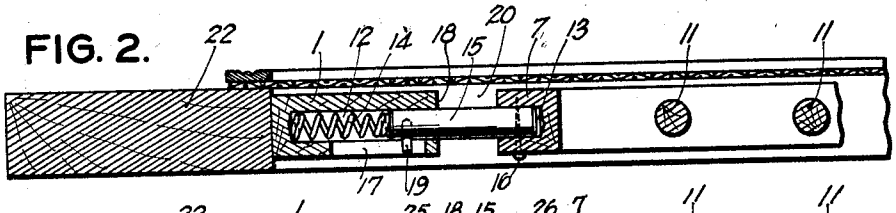


FIG. 4.

FIG. 2.



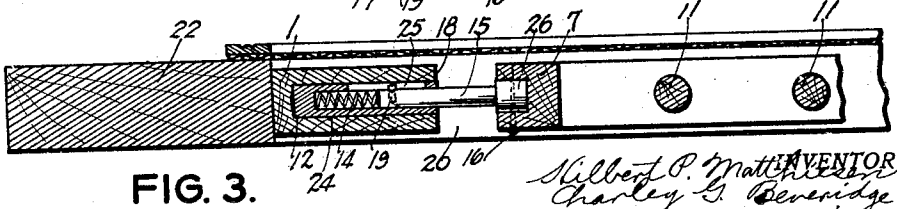


FIG. 3.

INVENTORS
Gilbert P. Matthiesen
Charley G. Beveridge
BY
Loyd J. Miller
ATTORNEY

Patented Apr. 7, 1931 1,799,308

UNITED STATES PATENT OFFICE

HILBERT P. MATTHIESEN AND CHARLEY G. BEVERIDGE, OF OKLAHOMA CITY, OKLAHOMA

SELF-ADJUSTING SCREEN-DOOR GRILLE AS AN ARTICLE OF MANUFACTURE

Application filed September 13, 1929. Serial No. 392,388.

Our invention relates to door grilles having incorporated therewithin means for adjustably fitting doors or other frames having openings of various widths.

The objects of our invention are to provide an article of this class which is new, novel, practical and of utility; which will serve the purposes usual to other door grilles; which when manufactured in a given width will fit any one of a number of doors each having openings of differing widths, within certain limitations, and which when manufactured in a few certain standard widths, will fit in doors having openings of many differing widths; which will be relatively inexpensive in manufacture, which may be stocked as merchandise; which will be so simple in installation that it may be installed by a person unskilled in the use of woodworking tools; which may be installed upon doors which have been racked or warped out of square; which will not be affected by the expansion or contraction of the door frame; which will be neat in appearance; which will be strong and durable; which may instantly be placed in or removed from an open door way, if desired, to prevent ingress or egress of small children or the like; which primarily is designed for disposal upon the lower portion of a screen door to protect the door's screen mesh; which will be efficient in accomplishing all the purposes for which it is intended.

Screen door grilles and other door grilles are not new. Both are in common use. Due, however, to the many varying widths of door ways and to the further varying widths of the material forming the screen door frames, it has been found impractical to manufacture, and for the dealer to carry on hand, stocks of screen door grilles. Even if so manufactured and stocked, each individual screen door upon which a grille is to be placed provides a problem in fitting which could only be met by a mechanic equipped with various tools.

Our self adjusting screen door grilles will render practical the mass production of such grilles and permit the dealer with a small stock of grilles of different width, to supply economically the demands of his customers for the fitting of same to doors of many differing widths.

With these and other objects in view as will more fully appear, our invention consists in the construction, novel features, and combination of parts hereinafter more fully described, pointed out in the claims hereto appended, and illustrated in the accompanying one-sheet drawing, of which,

Figure 1 is a front elevation of one of our grilles disposed upon a usual screen door;

Figure 2 is a fragmentary sectional view showing the self adjusting means as employed in the grille shown in Figure 1;

Figure 3 is a fragmentary sectional view showing another embodiment of the self adjusting means; and

Figure 4 is an elevational view of the adjusting means shown in Figure 3.

Like characters of reference designate like parts in all the figures.

It is understood that various changes in the form, proportion, size, shape, weight and other details of construction, within the scope of our invention may be resorted to without departing from the spirit or broad principle of our invention and without sacrificing any of the advantages thereof; and it is also understood that the drawings are to be interpreted as being illustrative and not restrictive.

A practical embodiment of the invention as illustrated in the drawings comprises:

A pair of cleats, indicated by the numerals 1 and 2, respectively, a grille 3, and a plurality of spring controlled adjusting suspension means 4.

The said cleats 1 and 2 are preferably of wood, and their usual dimensions might approximate ¾″x2¼″x27″, though these dimensions might easily vary in any degree to conform to a desired type of construction. The grille may be of any approved type, but in the embodiment here shown comprises a frame consisting of a top cross-member 5, a bottom cross-member 6 and left and right vertical members 7 and 8, respectively. Another pair of cross members 9 and 10, respectively, parallel the said members 5 and 6 and are disposed thereinbetween. A plurality of

slender cylindrical wooden rods 11 pass vertically through spaced perforations in the said cross members 9 and 10, and are received into similarly spaced recesses in the top and bottom frame members 5 and 6.

The grille 3 is held in self adjusting suspension between the said cleats 1 and 2. The manner of such suspension will here be disclosed in detail, as upon this feature depends our claims for novelty and usefulness. At a point adjacent the upper end portion of the cleat 1, the latter is bored partly through from its edge as shown at 12 in Fig. 2. Alined with the said bore 12 in cleat 1 is a short bored recess 13 in the upper end portion of the vertical member 7 of said grille. A compression spring 14 is disposed within the rearmost portion of said bore 12. A cylindrical plunger 15, preferably of hardwood, slidably projects from within said perforation 12, outwardly, to be received at its other end portion within the bored recess 13 in grille frame member 7. A pin 16 through said member 7 and the embraced end portion of the plunger 15, secures the latter thereto. Through the surface of the said cleat 1 and extending into the said bore 12 is a narrow slot shown as 17. Slot 17 is much less in width than the diameter of the said compression spring 14, is alined longitudinally center to center with said bore, but is not so long as the latter, and is set back approximately a half inch from the forward edge 18 of the cleat 1. After assembling the compression spring 14 and the rear end portion of the plunger 15 within said bore 12, said plunger is pushed backwardly against the compression of the said spring to a position in which the rear end portion of the plunger is exposed to view through the said slot 17. In this position a pin 19 is inserted laterally into the exposed end portion of the said plunger 15, adjacent said compression spring. The said pin 19 is set into the plunger 15 in such a manner as to leave its head portion extending outwardly into the slot 17, but not entirely through and to the outer edges of said slot. Said pin 19 thus acts as a stop to the extreme outward travel of the plunger, and the slot 17 serves as a travel race for said pin 19. In the embodiment of the device as shown in Fig. 1, four of the self-adjusting suspension means of the character just described, are employed. Two of which are disposed upon each side of the grille. Each one of the suspension means is disposed adjacent a corner of the grille. It will be obvious that, if desired, a larger number of the said suspension means may be used upon each side of the grille.

As will be noted in Figs. 1 and 2, and also in Fig. 3, an open space shown as 20 is left between the cleat members and the grille, proper. This open space 20, will vary in width with the width of the opening shown as 21, between the side frame members 22 of the screen upon which our adjustable grille is disposed. The varying of the width of these openings 20 which is permitted by the projection or retraction of the plunger 15, while the grille is still held in suspension between the said cleats, permits any one of our adjustable grilles to be used with any one of a number of different screen doors having within certain limitations, varying widths of openings 21 between the said frames 22. Moreover any ordinary distortion of said openings 21, from square will be compensated by said springs 14 and plungers 15.

In installation of our grilles, a size will be selected approximating the width between frame members of the door to be fitted. Said grille, assembled completely as heretofore described, including the said cleats, springs and plungers will be transported to the screen door to be fitted. The outer edge of cleat 1 will be positioned upon the inner edge of the left side of said door frame member 22. Said cleat member 2 will be placed adjacent the inner edge of the right one of said door frame members 22. A slight pressure to the left upon the right edge of said cleat member 2, will cause said plungers 15 to recede into their respective bored recesses 12, and said cleat 2 may then be readily snapped into place against the inner edge of said frame members 22. The driving of four screw nails 23, one each through the beveled and perforated ends of the cleats 1 and 2 into the said frame members 22, completes the installation. As shown in Fig. 1 the grille will be suspended centrally between said cleats, due to the equality of spring tension upon its sides.

Another embodiment of our device is shown in Figs. 3 and 4, wherein the plunger 15 and spring 14 are provided with a cylindrical housing 24. In this embodiment of the spring suspension means, the housing 24 is provided with a slot shown as 25, therethrough, similar to and for the same purpose as the said slots 17 in cleats 1 and 2. The forward end of the plunger 15, in this embodiment is provided with a head 26. In the use of this embodiment of the spring suspension means, the said cleats 1 and 2 are provided adjacent each end portion with a bored recess 12, and said grille members with a bored recess 13 as heretofore described, but of larger diameters, respectively, the diameter of the bores 12 being sufficient to accommodate the housings 24, and the recesses 13 accommodating the said plunger heads 26, respectively. With the housing 24 installed in the said enlarged recesses 12, further installation and operation of the grille will be as previously described.

Obviously, the invention is susceptible of embodiment in forms other than that which is illustrated in the accompanying drawings and described herein, and applicable for uses and purposes other than as detailed, and we

therefore consider as our own all such modifications and adaptations and other uses of the form of the device other than as herein described as fairly fall within the scope of our invention.

Having thus described our invention what is clamed and desired to be secured by Letters Patent, is:

1. A device, as described, as an article of manufacture, embodying two vertical strips adapted to be rigidly attached to the inner edges of the side frame members of a door, a door grille adapted to be permanently attached resiliently between the edges of said strips, coil spring means including a plunger carried by each corner portion of said grille for positioning said grille between said strips in a manner permitting its movement with relation to said strips, only in alinement therewith.

2. A device, as described, as an article of manufacture, embodying two vertical strips, a door grille adapted for disposition between the edges of said strips, said strips adapted to be rigidly attached to the inner edges of the side frame members of a door, each of said strips having a plurality of spaced lateral first bores in its free edge portion and a like plurality of slots through its side, each slot longitudinally communicating with one of said first bores, said grille having a like plurality of lateral second bores in the outer edge portions of its side members alined with said first bores, a plurality of coiled springs, one each in each of said first bores, a like plurality of plungers, one end of each rigidly disposed in one of said second bores, its other end extending into one of said first bores and contacting and compressing one of said springs, said plungers each having a pin protruding laterally to within one of said slots, said pins respectively for slidably positioning said plungers within said first bores.

HILBERT P. MATTHIESEN.
CHARLEY G. BEVERIDGE.