Nov. 18, 1941. J. F. FARMER 2,262,800

CENTER ADJUSTABLE GRILLE

Filed Feb. 19, 1940 2 Sheets-Sheet 1

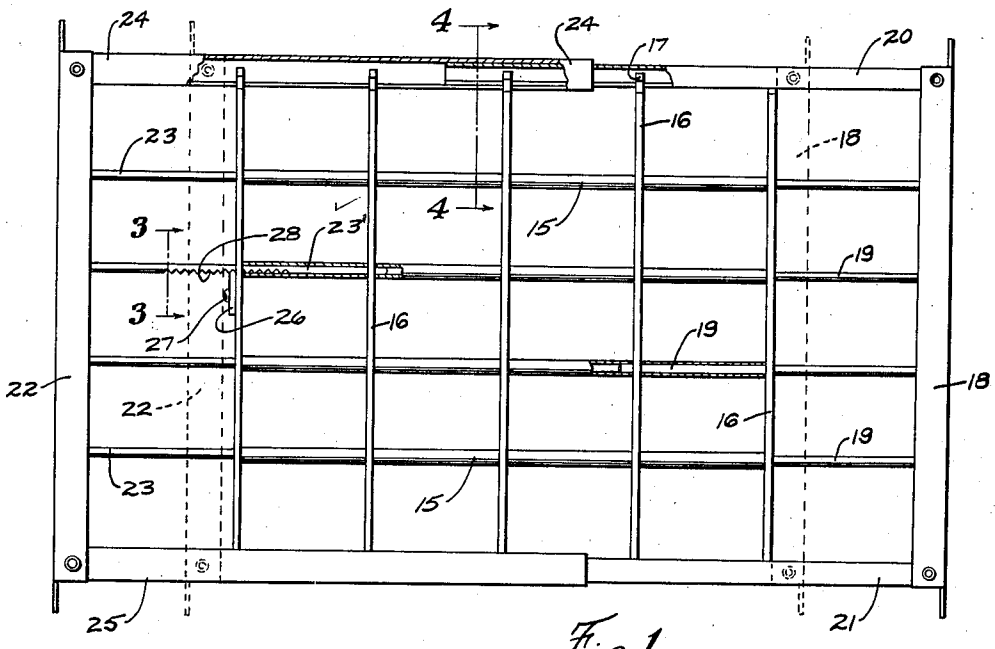


Fig. 1

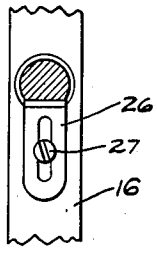


Fig. 3

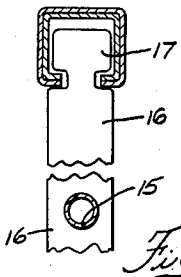


Fig. 4

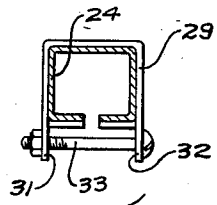


Fig. 6



Fig. 2

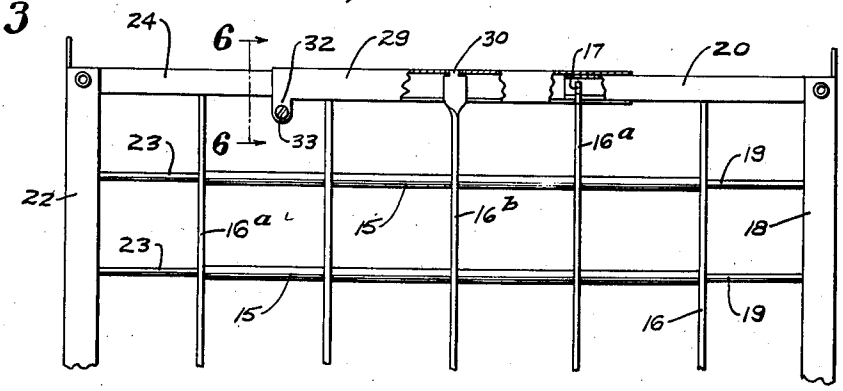


Fig. 5

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CENTER ADJUSTABLE GRILLE

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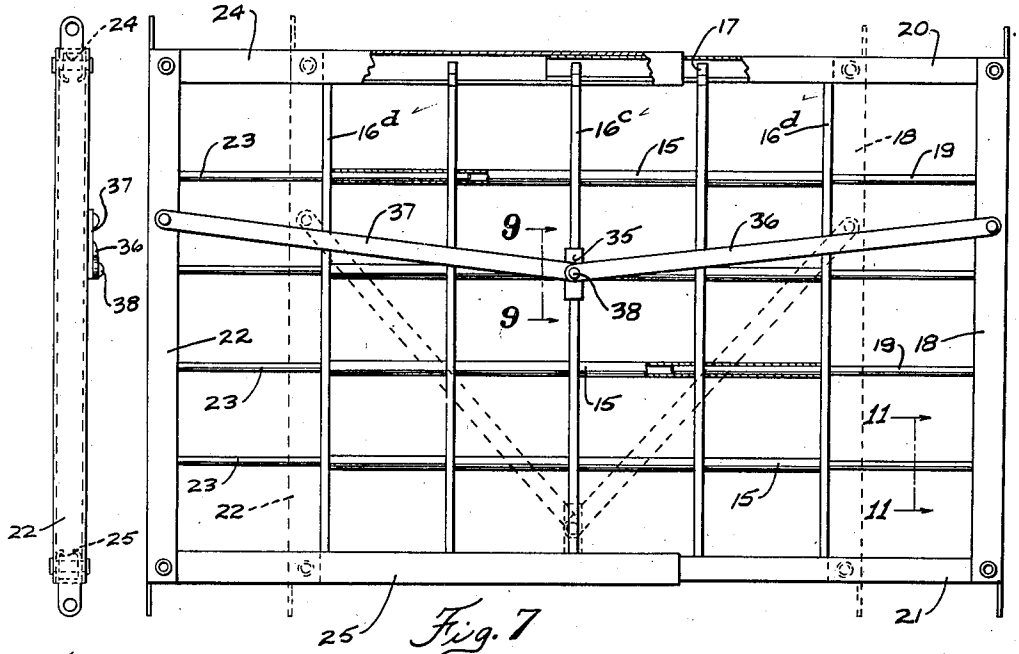


Fig. 7

Fig. 8

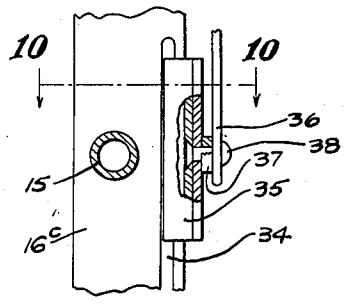


Fig. 9

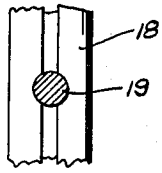


Fig. 11

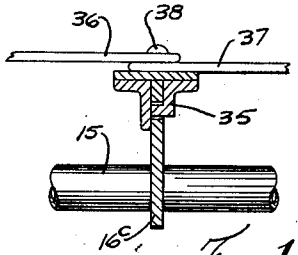


Fig. 10

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UNITED STATES PATENT OFFICE

2,262,800

CENTER ADJUSTABLE GRILLE

John F. Farmer, Indianapolis, Ind.

Application February 19, 1940, Serial No. 319,601

2 Claims. (Cl. 20—71)

This invention relates to an adjustable screen door or window grille which may be adjusted to different widths of openings. A primary object of the invention is to provide a grille of the adjustable type to have a very simple and yet a structurally strong construction wherein there is a floating central grille portion that may be centered relative to extensible end portions. A further primary object of the invention is to provide an extensible grille structure wherein the major portion thereof is rigidly formed to have constant size openings therethrough whereby pivot and hinge connections are avoided.

These and other objects and advantages of the invention will become apparent to those versed in the art in the following description of the invention as illustrated in the accompanying drawings, in which

Fig. 1 is a front elevation of a structure embodying the invention with the grille in an extended position;

Fig. 2, an end elevation;

Fig. 3, a detail in section on an enlarged scale on the line 3—3 in Fig. 1;

Fig. 4, a detail in section on an enlarged scale on the line 4—4 in Fig. 1;

Fig. 5, a front elevation of the upper portion of a structure showing a modified form of the invention;

Fig. 6, a detail in section on an enlarged scale on the line 6—6 in Fig. 5;

Fig. 7, a side elevation of a further modified form;

Fig. 8, an end elevation of that modified form;

Fig. 9, a detail in section on an enlarged scale on the line 9—9 in Fig. 7;

Fig. 10, a detail in section on an enlarged scale on the line 10—10 in Fig. 9; and

Fig. 11, a detail in section on an enlarged scale on the line 11—11 in Fig. 7.

Like characters of reference indicate like parts throughout the several views in the drawings.

Referring first to that form of the invention as illustrated in Figs. 1–6, I form a central major grille section comprising a plurality of vertically spaced apart tubes 15, herein shown as four in number, the number, of course, varying with the desired spacing and the height of the grille made. These tubes 15 are threaded through vertical bars 16, the bars 16 being spaced apart one from the other and the tubes 15 being fixed relative to the bars 16 by any suitable means, such as by welding or brazing or a forced fit. Preferably, although not necessarily so, there is a bar 16 at both terminal ends of the respective tubes 15.

The upper and lower ends of the bar 16 are uniformly formed to have a T-head 17, as best shown in Fig. 4, creating slots or notches across the bar 16 in each case, one slot on each side thereof. These notches are in horizontal alignment both transversely and longitudinally of all of the bars 16.

An end grille section is formed to have a vertical end rail 18 from which extend horizontally a plurality of rods 19 spaced apart one from the other to align axially with the tubes 15, there being one rod 19 for each tube 15. The rod 19 is formed to fit with a sliding fit into the tube 15 in each instance. From the top and bottom ends of the end rail 18 extend horizontally in parallel alignment with the rod 19 the top and bottom rail sections 20 and 21 respectively. These rail sections 20 and 21 are hollow and have a slot formed in their opposing faces. The heads 17 of the bars 16 enter from the free ends of these rails 20 and 21 to have their neck portions within the slots of the two rails so that the notches in the bars 16 are freely engaged by the inturned edges of the rails, these edges forming the margins of the slots.

Another end grille section is formed to consist of the vertical end rail 22 from which extend rods 23 in spaced apart relation to enter in telescoping manner within the respective tubes 15. Top and bottom rail sections 24 and 25 extend horizontally from the upper and lower ends respectively of the end rail 22 and are hollow and are telescoped over the ends of the rails 20 and 21 respectively. The heads 17 of the bars 16 are received within the rails 24 and 25, these rails being slotted throughout their opposing faces to have the edge portions forming the slots engaging within the notches in the bars 16 that define the heads 17.

These notches in the bars 16 are sufficiently high as to permit the two thicknesses of metal forming the telescoping rails to travel freely through those notches in the telescoping zones. The respective rods 19 and 23 are secured in fixed manner by their outer ends to the respective end rails 18 and 22 and the top and bottom rail sections extending from those end rails are preferably fixed thereto without any hinging action.

With this structure, it is possible to shift the end grille sections out to some such positions as indicated by the solid lines in Fig. 1 and to push them in to the fully retracted positions as indicated by the dash lines where the end rails 18

and 22 would be substantially against the outermost bars 16. It is obvious that the central grille section carrying the vertical bars 16 may be shifted along the rods 19 and 23 in either direction when either or both rails 18 and 22 are extended from the end bars 16. In order that this central grille section may be centered between the end rails, a number of devices may be employed for that purpose, a simple one being that of a latch member 26 mounted on an end bar 16 by any suitable means such as by a rivet or a screw 27 through a slot in the latch member 26 whereby the latch member may be shifted upwardly to engage selectively in any one of a plurality of serrations or notches 28 in one of the rods, a rod 23' in the present example.

Referring to that modified form as indicated in Fig. 5, instead of having the rails 20 and 24 telescope with each other, a central intermediate rail portion 29 telescopes by its respective ends with the ends of the rails 20 and 24. Then at least one of the vertical bars 16[a], herein shown as the central bar 16[b], has its ends twisted to permit the full width of the bar to be entered through the longitudinal slot formed in the underside of the rail 29 and to have that bar 16[b] carried on upwardly to engage by any suitable means in a fixed manner with the top wall of the rail. In the present form, a reduced neck 30 is formed on the upper end of the bar 16[b] and entered in a hole provided in the top side of the rail 29 so that the intermediate rail portion 29 must move with that central grille portion made up of the tubes 15 and vertical bars. In using this form, a simple positioning of the central grille portion is had by carrying portions of the center rail 29 downwardly in the nature of ears 31 and 32 to have a bolt 33 pass therethrough under the rail 24 and be drawn up snugly so as to bind the rail 29 on the rail 24 and thereby prevent longitudinal movement therebetween.

Referring now to that form of the invention as shown in Figs. 7–11, the same construction is employed as above indicated in reference to the center grille portion and the two end extension sections of Figs. 1 to 4. In this form, however, the center major section is permanently centered between the end rails 18 and 22 instead of having to be manually adjusted to the center position.

In this modified form, the center bar 16[c], Fig. 9, is made to be wider than the other bars 16[d] in order to provide a vertical slot 34 between the tubes 15 and an outer edge of the bar. A slide 35 made up in any suitable manner is provided with means to engage the bar 16[c] in a sliding manner through the slot 34 so that the travel of the slide 35 is confined to vertical movement. A pair of connecting bars 36 and 37 are pivotally connected to the slide 35 by any suitable means, such as the rivet 38, and extend therefrom one to each side thereof outwardly and slightly upwardly to be rockably attached by their outer ends to the respective vertical rails 18 and 22.

Then when the rails 18 and 22 are pulled outwardly to the solid line positions, these connecting bars 36 and 37 will approach a straight line position carrying the slide 35 toward the upper end of the slot 34. Conversely, when the rails 18 and 22 are pushed inwardly to the dash line positions, Fig. 7, the connecting bars 36 and 37 cause the slide 35 to travel downwardly to bring the connecting bars 36 and 37 into a V-like formation. Throughout this range of travel, since the bars 36 and 37 are of equal lengths between their pivot connections, the central major part of the grille will remain equally spaced from the end rails 18 and 22.

As indicated in Fig. 11, the rods 19 may enter the end rails, such as the rail 18, through a central vertical slot, the slotted portion being notched out to fit around the rod 19 in each instance and then the rod secured to the rail 18 by any suitable means, such as welding or brazing.

While I have herein shown my invention in the best form as now known to me, it is obvious that structural variations may be employed without departing from the spirit of the invention and I, therefore, do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claims.

I claim:

1. In an adjustable grille, a central rigid grille comprising flat spaced vertical members notched on their ends to form heads, and tubular spaced horizontal members intersecting the vertical members and fixed in relation to each other at their intersections, a pair of end sections each comprising an end vertical rail and a plurality of spaced horizontal members fixed to their respective rails, and telescoping each with one of said tubular spaced horizontal members of the central grille, top and bottom horizontal tubular rails crossing said central grille and attached to said respective end vertical rails, said horizontal tubular rails telescoping in top and bottom pairs, said tubular rails being slotted longitudinally on their inner sides and the heads of said central grille vertical members slidingly engaged within the horizontal tubular rails through their slots.

2. In an adjustable grille, a central rigid grille comprising flat spaced vertical members notched on their ends to form heads, and tubular spaced horizontal members intersecting the vertical members and fixed in relation to each other at their intersections, a pair of end sections each comprising an end vertical rail and a plurality of spaced horizontal members fixed to their respective rails, and telescoping each with one of said tubular spaced horizontal members of the central grille, top and bottom horizontal tubular rails crossing said central grille and attached to said respective end vertical rails, said horizontal tubular rails telescoping in top and bottom pairs, said tubular rails being slotted longitudinally on their inner sides and the heads of said central grille vertical members slidingly engaged within the horizontal tubular rails through their slots, and means to lock the central grille against movement relative to one of the end sections.

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