May 26, 1942. J. F. FARMER 2,284,410

ADJUSTABLE END SLIDE GRILLE

Filed Aug. 22, 1940

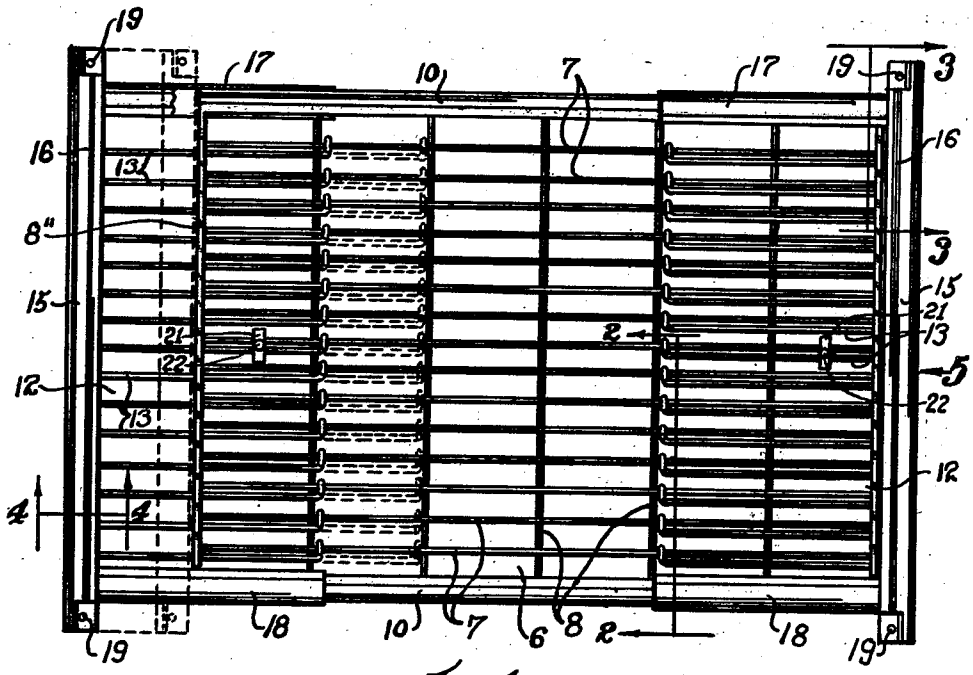


Fig. 1

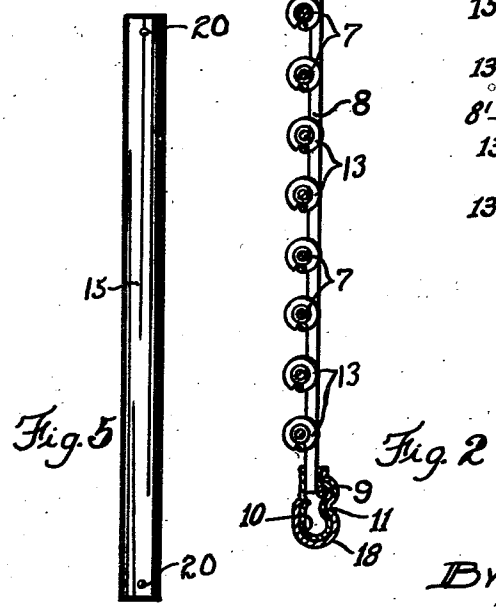


Fig. 2

Fig. 5

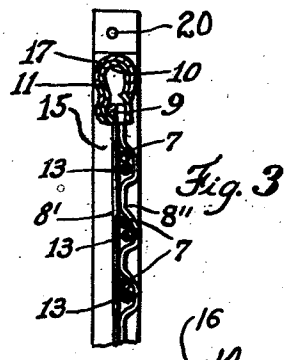


Fig. 3

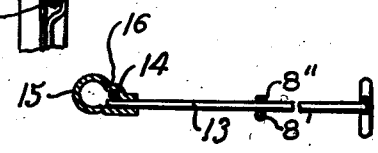


Fig. 4

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## ADJUSTABLE END SLIDE GRILLE

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7 Claims. (Cl. 20—71)

This invention relates to grilles for use in windows, doors and the like which will be neat in appearance and inexpensive in manufacture and in which it will be adjustable in its width to fit a wide range of door or window openings.

The further object is to provide a grille that will have a planar side between the frame to pass over stiles or paneling as in doors, without interference, and to provide holes in the frame of the grille in two directions at right angles to each other for the passage of nails or screws in either direction for the fastening of the grille according to the requirements of the window or door.

I accomplish the above and other objects which will hereinafter appear by the mechanism illustrated in the accompanying drawing, in which

Fig. 1 is a view in side elevation of my grille, with one of its adjustable ends at its innermost limit and with the other end at its outermost limt of adjustment, the top horizontal and adjustable frame member being broken away in part and sectioned to show the inner frame member;

Fig. 2 is a fragment in section on the line 2—2 of Fig. 1 looking in the direction of the arrows;

Fig. 3 is a like section on the line 3—3 of Fig. 1;

Fig. 4 is a detail in section on the line 4—4 of Fig. 1; and

Fig. 5 is an end elevation of the grille looking in the direction of the arrow 5 in Fig. 1.

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

The grille filler 6 comprises a series of parallel horizontal rods 7, which are welded, soldered or otherwise fastened to a plurality of vertical rods 8 all laid on the same side of the rod assembly 7. Similar rods 9 (see Fig. 2) are laid at right angles to the rods 8 on the opposite sides of rods 8 from rods 7, and are welded, soldered or otherwise fixed to the rods 8, there being one rod 9 so secured to rods 8 at each end of said rods on top and bottom of the filler 6.

The vertical rod 8' at the ends of the horizontal rods 7 are on the same side as the rods 8. The ends of the rods 7, opposite the rods 8', are covered by a narrow flat strip of metal 8'' looped over the rod ends and soldered to the ends and to the rod 8' with sufficient looseness in the loop to enable a second rod to slide through the loop. This strip 8'' greatly stiffens and strengthens the ends of the grille.

Tubes 10, split longitudinally on one side with flange extensions on each side of the split as shown in Fig. 2, have corrugations 11 extending longitudinally of one of said flanges on each tube. One of these tubes 10 is slipped endwise on the wire rods 9 which enter a corrugation 11 with the ends of rods 8 in the split between the flanges of the tubes. The ends of rods 8 may be welded or otherwise fastened to the tube if desired but in practice the withdrawal of the tubes 10 is prevented by friction.

This completes the structure of the filler 6. The tubes 10 in practice are formed out of metal strips.

The grille is made adjustable in width, or horizontal direction, by providing the filler with adjustable ends 12, 12. As the two ends 12 are alike in construction and operation, except one is in reverse order to the other, a description of one will suffice for both.

A series of rods 13, one for each rod 7 of the filler, is passed across the inner side of its adjacent rod 8' under the loop of strip 8'' and across the inner side of the next vertical rod 8, and withdrawal is prevented by the inner ends of the rods 13 being bent in a loop around their adjacent rods 7, as shown in Figs. 1 and 2. A rod 14 crosses the outer ends of the rods 13 and is welded to them as shown in Fig. 4. Then a tube 15, split along one side and having flanges with a corrugation or channel 16 in one of the flanges, as described for tube 10, is slid over wire 14 and the ends of rods 13 as shown in Fig. 4. To each end of the tube 15, short tubes 17 and 18 are welded, and slide over their adjacent tubes 10 as shown in Figs. 1, 2 and 3. The tubes 17 and 18 are substantially of the same length as the rods 13.

The ends of the tubes 15 are extended past tubes 17 and 18 and have perforations 19 and 20 at right angles to each other for the passage of nails or screws used in fastening the grille to window or door, the two directions being alternate ones for use according to the support to which the grille is fastened.

In the operation of my invention, the ends 15 may be drawn out from or pushed in toward the filler 6, limited by the distance of travel permitted by the loops on the rods 13, which is the distance between the adjacent pairs of rods 8 as shown by broken lines in Fig. 1. As best shown in Fig. 2, the loops and horizontal wires are on one side of the vertical wires 8 leaving the other side planar between the frame to fit closely against a similar supporting surface on door or window. The rods 13 are locked to the rods 7

by a clamp 21, tightened by a screw 22 as shown in Fig. 1.

While I have herein shown and described my invention in the one particular form, 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 filler comprised of a series of horizontal rods, vertical rods, one at each end of the horizontal series and a plurality of intermediate vertical rods between the end rods, all of said rods being rigidly attached at their intersections, rails secured to the top and bottom edges of the filler, rod extensions for the horizontal rods, each looped at its inner end around an adjacent horizontal rod and slidable thereon between a pair of intermediate vertical rods, a strip looped over the rod extensions and adjacent horizontal rods and fastened at the ends of the loops to the end vertical rods, and a vertical member to which the outer ends of the rod extensions are fastened.

2. In an adjustable grille, a filler comprised of a series of horizontal rods, vertical rods, one at each end of the horizontal series and a plurality of intermediate vertical rods between the end vertical rods and terminating at each end across respective top and bottom horizontal rods, all of said rods being rigidly attached at their intersections, longitudinally split tubular rails having flanges on each side of the split and having one of the flanges longitudinally channeled, said rails being attached to the filler by said channels on the flanges engaging the horizontal rods at the edges of the filler, rod extensions for the other of the horizontal rods, each extension looped at its inner end around an adjacent horizontal rod and slidable thereon between a pair of intermediate vertical rods, and a vertical member to which the outer ends of the rod extensions are fastened.

3. In an adjustable grille, a filler comprised of a series of horizontal rods, vertical rods, one at each end of the horizontal series, a reinforcing strip crossing the horizontal rods on the opposite sides of the horizontal rods from the vertical end rods and fixed to each of said end vertical rods, and a plurality of intermediate vertical rods between the end vertical rods and terminating at each end across top and bottom rods, all of said rods being rigidly attached at their intersections, longitudinally split tubular rails having flanges on each side of the split and having one of the flanges longitudinally channeled, said rails being attached to the filler by said channel on the flanges engaging the top and bottom rods, rod extensions for the horizontal rods, each extension looped at its inner end around an adjacent horizontal rod and slidable thereon between a pair of intermediate vertical rods and under said reenforcing strip, and a vertical member to which the outer ends of the rod extensions are fastened.

4. In an adjustable grille, a filler comprised of a series of horizontal rods, vertical rods, one at each end of the horizontal series, and a plurality of intermediate vertical rods between the end vertical rods and terminating at each end across respective top and bottom horizontal rods, all of said vertical end rods being rigidly attached at their intersections, the top and bottom horizontal rods of the filler being on opposite sides of the filler from the other of the horizontal rods therebetween, longitudinal split tubular rails having flanges on each side of the split and having one of the flanges longitudinally channeled, said rails being attached to the filler by said channel on the flanges engaging the top and bottom rods, rod extensions for the other of the horizontal rods, each extension looped at its inner end around an adjacent horizontal rod and slidable thereon between a pair of intermediate vertical rods, and a vertical member to which the outer ends of the rod extensions are fastened.

5. In an adjustable grille, a filler comprised of a series of horizontal rods, vertical rods, one at each end of the horizontal series, a reinforcing strip crossing the horizontal rods on the opposite sides of the horizontal rods from the vertical end rods and fixed to each of said end vertical rods, and a plurality of intermediate vertical rods between the end vertical rods and terminating at each end across respective top and bottom horizontal rods, all of said rods being rigidly attached at their intersections, the top and bottom horizontal rods of the filler being on opposite sides of the filler from the other of the horizontal rods therebetween, longitudinal split tubular rails having flanges on each side of the split and having one of the flanges longitudinally channeled, said rails being attached to the filler by said channel on the flanges engaging the top and bottom rods, rod extensions for the other of the horizontal rods, each extension looped at its inner end around an adjacent horizontal rod and slidable thereon between a pair of intermediate vertical rods and under said reenforcing strip, a rod crossing the outer ends of the rod extensions and welded thereto, and a split tubular member having flanges on each side of the split and channeled on one of the flanges applied to the rod extension ends with the rod thereon located in the channel, and tubular extensions sliding on the top and bottom rails of the filler and secured to the tubular member on the rod extensions.

6. In a grille, a plurality of rods with their ends in a row, a rod crossing the plurality of rods at their ends and welded at the intersection, and a tube split longitudinally and flanged on each side of the split, one of the flanges having a longitudinal channel, said tube being introduced over the last rod and the rod ends with the last rod slidingly mounted in the channel.

7. In a grille, a filler comprising a series of parallel spaced apart rods, and a plurality of rods crossing the first series and welded thereto at their intersections, the outside rods of the second series being on the opposite side of the first series from the intermediate rods therebetween of the second series, and a tube for each of said outside rods split longitudinally and flanged on each side of the split, one of the flanges having a longitudinal channel, said tubes being introduced over a respective outside rod and rod ends of the first series with the outside rod in the channel.

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