Dec. 23, 1952 T. R. CUTCHIN ET AL 2,622,676

ORNAMENTAL GRILLWORK

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Fig. 1

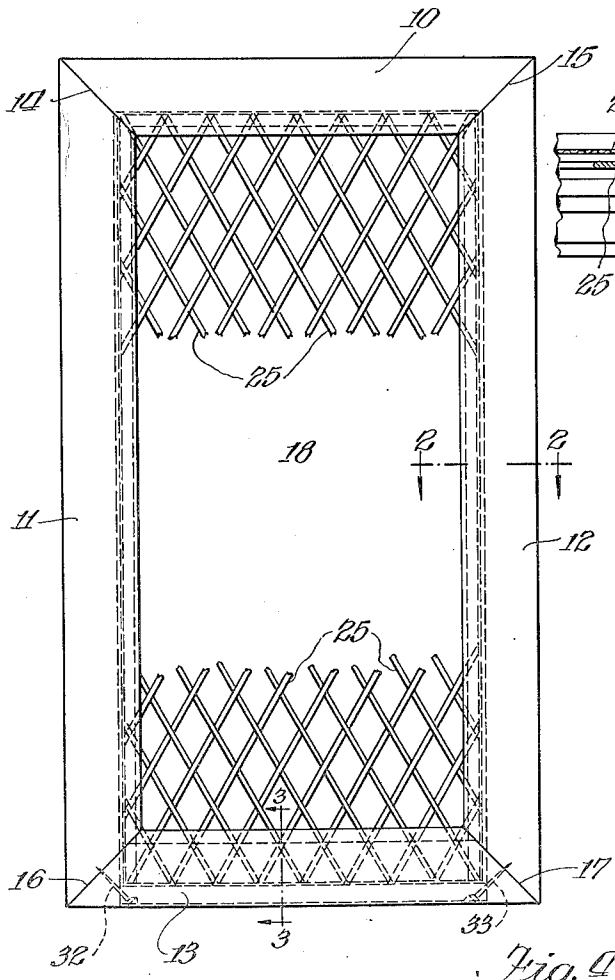
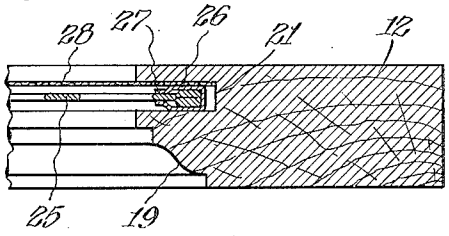


Fig. 2



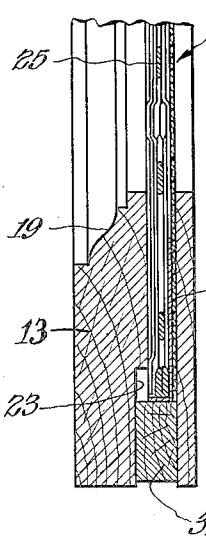
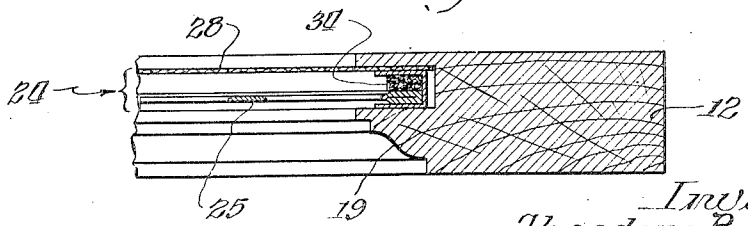


Fig. 3

Fig. 4



Inventors:
Theodore R. Cutchin
Walter H. Friedrich
By: Clarence J. Loftus
Attorney

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ORNAMENTAL GRILLWORK

Theodore R. Cutchin, Roanoke, and Walter H. Friedrich, Fort Wayne, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware

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The present invention relates to ornamental grillework and more specifically to a specific construction of an ornamental grille particularly adapted to use in modern radio or television cabinets.

It is the primary object of the invention to provide an ornamental grille of novel design and construction which is more attractive to the eye than the types of grilles previously employed, yet wherein the grille is stronger and more rugged than the previously known types and less subject to rattling and vibration.

Another important object of the invention is the provision of a grille having the characteristics noted above, yet wherein the several parts of the grillework are so designed and assembled that the grillework and the ornamental grille cloth associated therewith may be easily removed and replaced in its frame in the event that the structure of the grille should become accidentally damaged or for cleaning.

It is a further object of the invention to provide an ornamental grillework that is not only attractive, rugged and replaceable, but is at the same time well adapted to economical manufacture by mass production factory methods. Specifically this involves the provision of a grille assembly having a reduced number of parts as compared with conventional structures, yet so designed as to be suited to production by automatic machine methods with a minimum of hand labor. In addition, it involves the provision of a grille structure wherein the method of assembly is such that there is little likelihood of damaging the individual parts in the assembly operation so that waste due to rejects is largely eliminated.

Before describing the structural details of the preferred embodiment of the present invention it is believed pertinent to point out that, notwithstanding the great activity in the radio art over the last several decades, the structural characteristics of the speaker grilles conventionally employed have remained substantially the same. This is true despite the fact the construction of these grilles has been recognized as a difficult, wasteful and expensive operation. It is accordingly submitted that the fact that no economical and efficient ornamental grille has heretofore been developed is an indication that the problem involved is a complex one, and one to which no obvious solution has been apparent.

In the conventional method of assembly the various parts, such as the metal grille, grille cloth, etc. are separately laid in a rabbeted cut in a wooden frame, and since each item must

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be tightly secured and then covered by a thin wooden molding, the entire assembly operation is difficult and slow. More serious, however, is the fact that in such an operation there is always danger of splitting the wood, which not only results in a total waste of the workman's time but also destroys the materials involved. Even when completed, a grille constructed according to these old teachings is somewhat less than satisfactory since it is almost impossible to replace any member without completely destroying the entire construction. Consequently, it is entirely impractical to replace a grille that has been damaged or to remove a grille or grille cloth for cleaning.

The present invention is a direct departure from prior teachings, both as to structure and as to method of assembly, and results in a construction which is not only stronger, less subject to rattling and more easily assembled, but in addition entirely does away with the delicate wooden molding heretofore ordinarily employed. In addition it is so designed and constructed that the grille and grille cloth may be easily and quickly removed for cleaning or replacement if required.

The manner in which the teachings of this invention are presently commercially employed is illustrated in the drawing of the present specification wherein

Fig. 1 is a front elevation view of a grille frame constructed in accordance with these teachings;

Fig. 2 is a detail sectional view through one of the side members of the frame and is taken substantially on the plane of the line 2—2 of Fig. 1;

Fig. 3 is a detail sectional view through the bottom member of the frame and is taken substantially on the plane of the line 3—3 in Fig. 1; and

Fig. 4 is a detail sectional view similar to Fig. 2 but of a slightly modified form of the invention.

The structure here disclosed comprises in general a cabinet grille made up of the main frame of wooden construction with a groove around the grille opening and a lattice metal grillework mounted in a subframe adapted to be removably seated in a groove of the main frame. Specifically, the main frame is illustrated as comprising a top member 10, vertical side members 11 and 12 and a horizontal bottom member 13. These frame members may be joined in any conventional manner as by mitering their ends and uniting them on the lines 14, 15, 16 and 17 and, if desired, the inner edges of the frame members

adjacent the grille opening 18 may be ornamental contoured as indicated at 19. The top member 10 and side members 11 and 12 include a groove 21 on the side adjacent the grille opening, and the bottom member 13 is provided with a slot 22 in registry with the grooves 21 of the side members. This slot extends completely through to the bottom surface of the frame, and if desired, the lowermost portion of this slot may be enlarged as indicated at 23 (Fig. 3).

The grille panels, generally indicated at 24, include a lattice work made up of plurality of individual metal strips 25 which may be interlaced in any desired design. The ends of each of the strips 25 extend into a subframe comprising a thin sheet metal channel 26, which extends entirely around the grille. In the preferred embodiment of the invention the inner edges 27 of the channel 26 are crimped into tight engagement with the ends of the strips 25 of the grille, so that the entire grille is held together as a pre-assembled unit.

The ornamental grille cloth 28 may be secured in any conventional manner, but is preferably adhesively mounted on the rear surface of the metal panel 26 so that it is co-extensive with the grille work but spaced slightly behind the strips 25. The grille panel, or subframe, is assembled in the wooden frame of the grille by inserting the entire panel into the slot 23 and sliding it upwardly until the top and sides of the metal channel 26 are firmly seated in the groove 21 along both sides and along the top of the frame. The grille is held in position by a cleat 31 inserted in the enlarged portion 23 of the slot 22 in the lower frame member, and the cleat is secured in any convenient manner, as by the wood screws 32 and 33.

In the form of the invention shown in Fig. 4 the construction is the same except that a space 34, which may be thick strip of felt, is inserted in the subframe channel 26 behind the metal strips 25.

From the foregoing it will be evident that the teachings of the present invention mark a forward step in the art to which this invention relates in several important respects. It is first to be noted, of course, that since the metal channel 26 of the subframe is securely clamped to the individual metal strips 25 of the grille, and the entire subframe is snugly held in the outer wooden frame by the two wood screws 32 and 33, that all parts of the structure are so firmly secured together that there is no tendency for vibration or rattling. In addition, it will be seen that in the event of accidental damage to the grille or grille cloth it may easily and quickly be replaced. It follows, of course, that the entire subframe of the grille may be removed for cleaning and replaced without difficulty.

In addition, it is noted that the present structure eliminated the need of individually securing the grille and grille cloth to the wooden frame, and also does away with any necessity of the conventional thin wooden molding strips that are ordinarily required. This is a feature of importance in itself, not only due to the fact that the assembly of these moldings is difficult and involves the danger of splitting of the molding or the frame, but also for the reason that the unfortunate tendency of thin molding strips to warp and buckle after a period of use is entirely avoided.

It is also to be noted that the physical structure of each of the component parts of the assembly is such that the parts are well adapted to mass production methods by automatic machine tools, and it follows that the production of grilles according to the present teaching requires a minimum employment of hand labor. This is true, not only of the metal parts, but also of the main wooden frame which may be cut, planed, grooved, mitered and formed on conventional wood working machines without the necessity of painstaking fitting operations.

As heretofore stated, the specific form of the invention chosen as illustrative of the inventive concept is the present preferred form as now commercially manufactured. It is recognized, however, that various modifications of the precise structure illustrated may be indulged in without departing from these teachings or sacrificing all of the advantages inherent in the present inventive concept; and it is accordingly pointed out that the scope of the inventive thought is not limited to the precise structure shown but extends to any variations or modifications thereof within the scope of the appended claims.

Having thus described the invention, what we claim as new and desire to protect by United States Letters Patent is:

1. In an ornamental grille for radio cabinets, the combination of a main frame consisting of a pair of substantially parallel vertical side members and horizontal top and bottom members extending between said side members; a continuous uninterrupted groove extending across the lower edge of the top member and downwardly along the opposite inner edges of both of said side members, and a slot extending completely through the bottom member below and in registry with said groove; a removable grille panel movably mounted in the main frame through said slot and within said grooves, said grille panel comprising a rectangular sheet metal channel having a latticed grillework consisting of a plurality of narrow metal strips with their ends secured in said channel and a grille cloth co-extensive with said grillework and secured to said channel; together with a removable cleat mountable within the slot in the lower horizontal frame member, and screw threaded means to press said cleat into engagement with the grille panel to secure the panel in the grooves of the frame.

2. In an ornamental grille for radio cabinets, the combination of a main frame consisting of a pair of substantially parallel vertical side members and horizontal top and bottom members extending between said side members; a continuous uninterrupted groove extending across the lower edge of the top member and downwardly along the opposite inner edges of both of said side members, and a slot extending completely through the bottom member below and in registry with said groove; a removable grille panel movably mounted in the main frame through said slot and within said grooves, together with a removable cleat mountable within the slot in the lower horizontal frame member, and screw threaded means to press said cleat into engagement with the grille panel to secure the panel in the grooves of the frame.

3. In an ornamental grille for radio cabinets, the combination of a main frame consisting of a pair of substantially parallel vertical side members and horizontal top and bottom members extending between said side members; a groove along the opposing inner edges of at least two of said members, and a removable grille panel

mounted within said grooves, together with means to secure the panel in the grooves of the frame.

4. In an ornamental grille for radio cabinets, the combination of a main frame including a central opening having a groove extending across at least two of the opposite inner edges of said opening, and a slot extending completely through a member of the frame and in registry with said groove; a removable grille panel adapted to be inserted in the main frame through said slot and received within said groove, together with means to close the slot in the frame, and means to secure the grille panel in the grooves of the frame.

5. A removable grille panel for radio cabinets comprising an open metal grillework, a subframe consisting of a sheet metal channel extending around the grillework with the edges of the grillework extending into the open side of the channel, the edges of said channel being in crimped engagement with the edges of the grillework; and a grille cloth extending across and coextensive with said grillework and adhesively secured to said channel.

6. A removable grille panel for radio cabinets comprising a grillework of separate metal strips interlaced with each other, a subframe consisting of a sheet metal channel extending around the grillework, the ends of the individual metal strips extending into the open side of the channel, means for retaining the ends of the metal strips in the channel, and a grille cloth secured to said channel and extending across said grillework.

7. The method of making an ornamental grille for radio cabinets consisting of the steps of assembling a rectangular wooden frame, forming a groove internally of said frame, separately assembling a latticed metal grille, a grille cloth, and a subframe therefor into a grille panel; sliding said grille panel into assembled relationship with the grooved wooden frame, and securing said grille panel in said frame.

THEODORE R. CUTCHIN.
WALTER H. FRIEDRICH.

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