

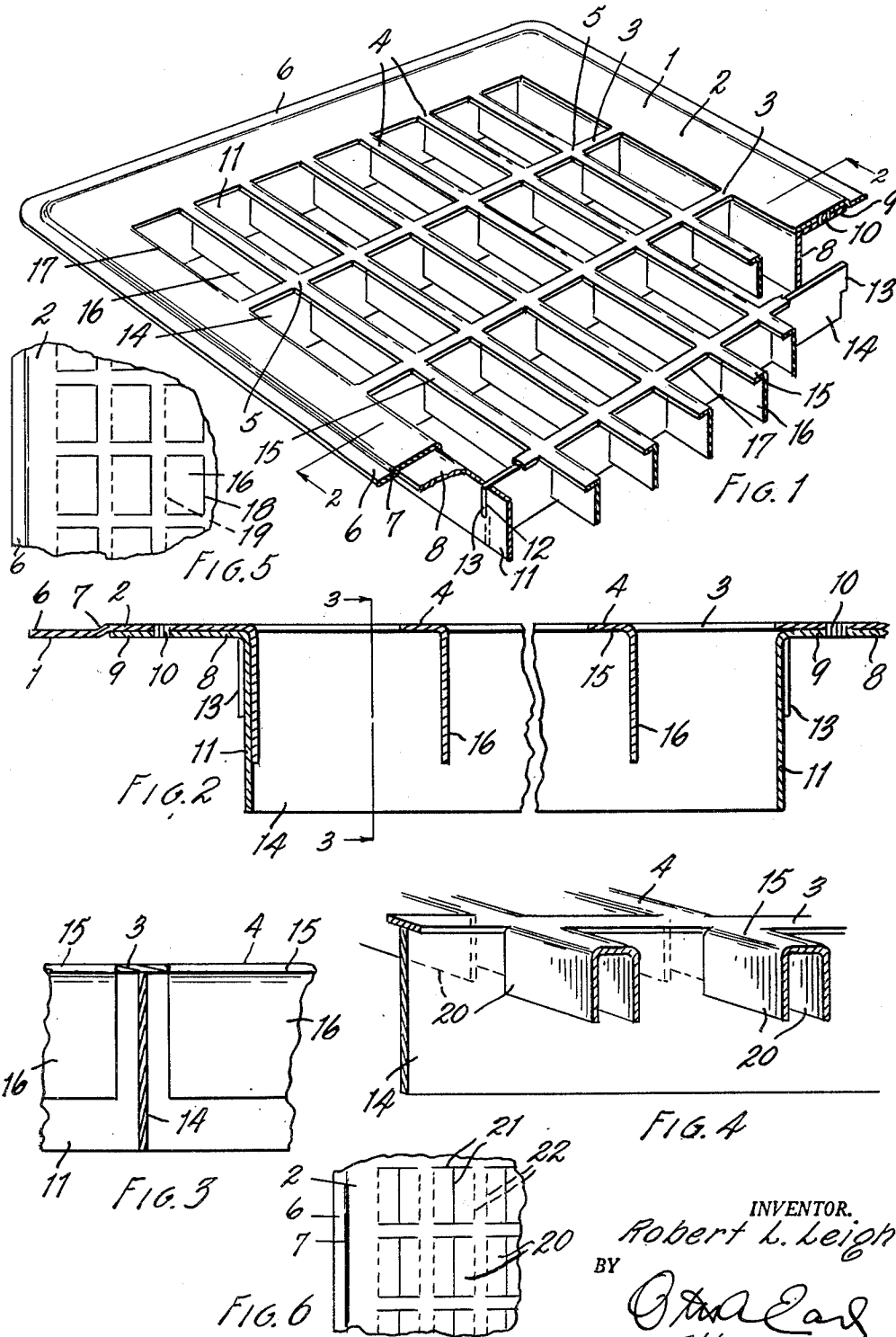
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GRILLE

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GRILLE

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This invention relates to improvements in registers or grilles.

The main objects of this invention are:

First, to provide an improved register or grille well adapted for use in heating and ventilating systems and the like which may be formed of sheet metal and at the same time is strong and rigid, is attractive in appearance and has the appearance of strength and rigidity although made of light stock.

Second, to provide a register or grille having these advantages which may be very economically produced and is light in weight.

Other objects and advantages pertaining to the details and economies of my invention will be apparent from a consideration of the following description and claims.

A structure embodying the features of the invention is clearly illustrated in the accompanying drawings in which:

Fig. 1 is a fragmentary perspective view of a register embodying my invention, parts being broken away and other parts being shown in section to more fully disclose structure.

Fig. 2 is an enlarged fragmentary view in section on a line corresponding to 2—2 of Fig. 1.

Fig. 3 is a fragmentary view on a line corresponding to line 3—3 of Fig. 2.

Fig. 4 is a fragmentary view partially in section illustrating a modified form or embodiment of my invention.

Fig. 5 is a fragmentary plan view of the blank from which the front or face portion of the register of Fig. 1 is formed and illustrating the slitting of the blank and the bending lines thereof.

Fig. 6 is a fragmentary plan view of the blank from which the modification of Fig. 4 is formed with the slitting and folding lines thereof indicated.

While the embodiments illustrated are designed as floor registers it should be understood that the structure may be adapted as wall registers or as grilles for other purposes. Referring to the embodiment illustrated in Figs. 1, 2, 3 and 5, 1 designates a face unit or member comprising a front border frame 2 and crossing sets of grid bars 3 and 4 formed integrally with the border frame member 2. These grid bars are co-planar and are integrally connected at their crossing points 5. The front border frame member 2 desirably has a downwardly offset outer edge portion 6 providing a shoulder 7 spaced from the edge.

I provide a rear border frame member designated generally by the numeral 8 this being of

angular cross section and also formed of sheet metal stock. This rear border frame member is disposed with its angle facing outwardly and rearwardly and with its upper outwardly projecting arms 9 disposed against the under side of the front border frame member 2 and fixedly secured thereto desirably by spot welding, as indicated at 10.

The outer edges of the arms 9, about the shoulder 7 of the front border frame member. The rear border frame member is so proportioned that its rearwardly projecting arms 11 are flush with the inner edges of the front border frame. The rearwardly projecting arms 11 of the rear border frame are provided with slots 12 adapted to receive the tongues or tenons 13 on the ends of the flat truss bars 14 which are disposed below and in supporting relation to the grid bars 3. These truss bars 14 are desirably formed as sheet metal stampings and are desirably of the same width as the rearwardly projecting arms 11 of the rear border frame member.

The reaches 15 of the other set of grid bars, that is, the bars 4, are provided with rearwardly projecting flanges 16 which reinforce the bars 4 and also add to the appearance of weight as well as strength. These flanges 16 in the preferred embodiment are preferably of the same width as the openings 17 between the reaches of the grid bars 4. In manufacturing, the sheet of metal is slit on the lines 18 (see Fig. 5) and the flange portions 16 turned downwardly on the dotted lines 19. In the embodiment shown in Fig. 4 the reaches 15 of the grid bars 4 are provided with downturned flanges 20 on both edges thereof. In the manufacture of that structure the stock is slit at 21 and turned downwardly on the dotted lines 22. Otherwise the structure is the same as that of the preferred embodiment.

In both structures the parts may be formed of quite light, sheet metal stock but when they are assembled as illustrated, a strong and rigid register or grill results and one which has an attractive appearance both from the standpoint of design and the suggestion or appearance of strength and weight.

I have illustrated and described my invention in two commercially desirable embodiments thereof. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I

claim as new and desire to secure by Letters Patent is:

1. In a grille, the combination of a face member comprising a front border frame member and crossed sets of spaced parallel grid bars formed integrally with the border frame member and integrally joined at their crossing points, a rear border frame member of angle section disposed on the rear side of the front border frame member with its angle facing rearwardly and outwardly, and with its outwardly projecting arms against the rear side of the front border frame member and fixedly secured thereto, and with its rearwardly projecting arms aligned with the inner edges of the front border frame member, one pair of opposed arms of said rearwardly projecting arms having vertical slots therein aligned with one set of grid bars, and truss bars disposed edgewise below such set of grid bars in supporting relation to the rear sides thereof and provided with tongues supportingly engaged in said slots in said pair of opposed arms, the reaches of the other set of grid bars having rearwardly turned flanges on at least one edge thereof, another pair of opposed arms of said rearwardly projecting arms closing the space between the outer ends of the rearwardly turned flanges at the ends of said other set of grid bars, the front border frame having rearward offsets therein engaging the outer edges of the outwardly projecting arms of the rear border frame.

2. In a grille, the combination of a face member comprising a front border frame member and crossed sets of spaced parallel grid bars formed integrally with the border frame member and integrally joined at their crossing points, a rear border frame member of angle section disposed on the rear side of the front border frame member with its angle facing rearwardly and outwardly, and with its outwardly projecting arms against the rear side of the front border frame member and fixedly secured thereto, one pair of opposed rearwardly projecting arms of said rear border frame member having vertical slots therein aligned with one set of grid bars, and truss bars disposed edgewise below such set of grid bars in supporting relation to the rear sides thereof and provided with tongues supportingly engaged in said slots in said pair of opposed arms, the reaches of the other set of grid bars having rearwardly turned flanges on at least one edge thereof, another pair of opposed rearwardly projecting arms of said rear border frame member closing the space between the outer ends of the rearwardly turned flanges at the ends of said other set of grid bars.

3. In a grille, the combination of a front border frame member of sheet metal and crossing sets of spaced co-planar parallel grid bars formed integrally therewith and integrally united at their crossing points, an auxiliary member border frame disposed on the rear side of said front border frame member and fixedly secured thereto and having a rearwardly projecting flange extending rearwardly from the inner edges of the

front border frame member, said flange on one pair of opposed sides of said auxiliary border frame being slotted in alignment with one set of grid bars, and flat truss bars disposed edgewise below such set of grid bars in supporting relation thereto and having tongues at their ends engaging said slots, the reaches of the other set of grid bars having rearwardly projecting integral flanges on one edge thereof corresponding in width to the width of the openings between the last mentioned set of grid bars, said flange on another pair of opposite sides of said auxiliary border frame closing the space between the outer ends of the flanges at the ends of said other set of grid bars.

4. In a grille, the combination of a front border frame member of sheet metal and crossing sets of spaced parallel grid bars formed integrally therewith and integrally united at their crossing points, an auxiliary member border frame disposed on the rear side of said front border frame member and fixedly secured thereto and having pairs of opposed rearwardly projecting flanges, one pair of opposed flanges on said auxiliary border frame being slotted in alignment with one set of grid bars, and truss bars disposed below such set of grid bars in supporting relation thereto and having their ends engaging said slots, the reaches of the other set of grid bars having rearwardly projecting integral flanges on one edge thereof of a width corresponding to the width of the openings between the grid bars of such set, another pair of opposed flanges on said auxiliary border frame closing the space between the outer ends of the grid bar flanges at the ends of said other set of grid bars.

5. In a grille, the combination of a front border frame member of sheet metal and crossing sets of spaced parallel grid bars formed integrally therewith and integrally united at their crossing points, an auxiliary member border frame disposed on the rear side of said front border frame member and fixedly secured thereto and having pairs of opposed rearwardly projecting flanges, one pair of opposed flanges on said auxiliary border frame being slotted in alignment with one set of grid bars, and truss bars disposed below such set of grid bars in supporting relation thereto and having their ends engaging said slots, the reaches of the other set of grid bars having rearwardly projecting integral flanges, another pair of opposed flanges on said auxiliary border frame closing the space between the outer ends of the grid bar flanges at the ends of said other set of grid bars.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
812,158	Tuttle	Feb. 6, 1906
1,117,568	Hart	Nov. 17, 1914
1,251,018	Hart	Dec. 25, 1917
1,988,728	Green	Jan. 22, 1935