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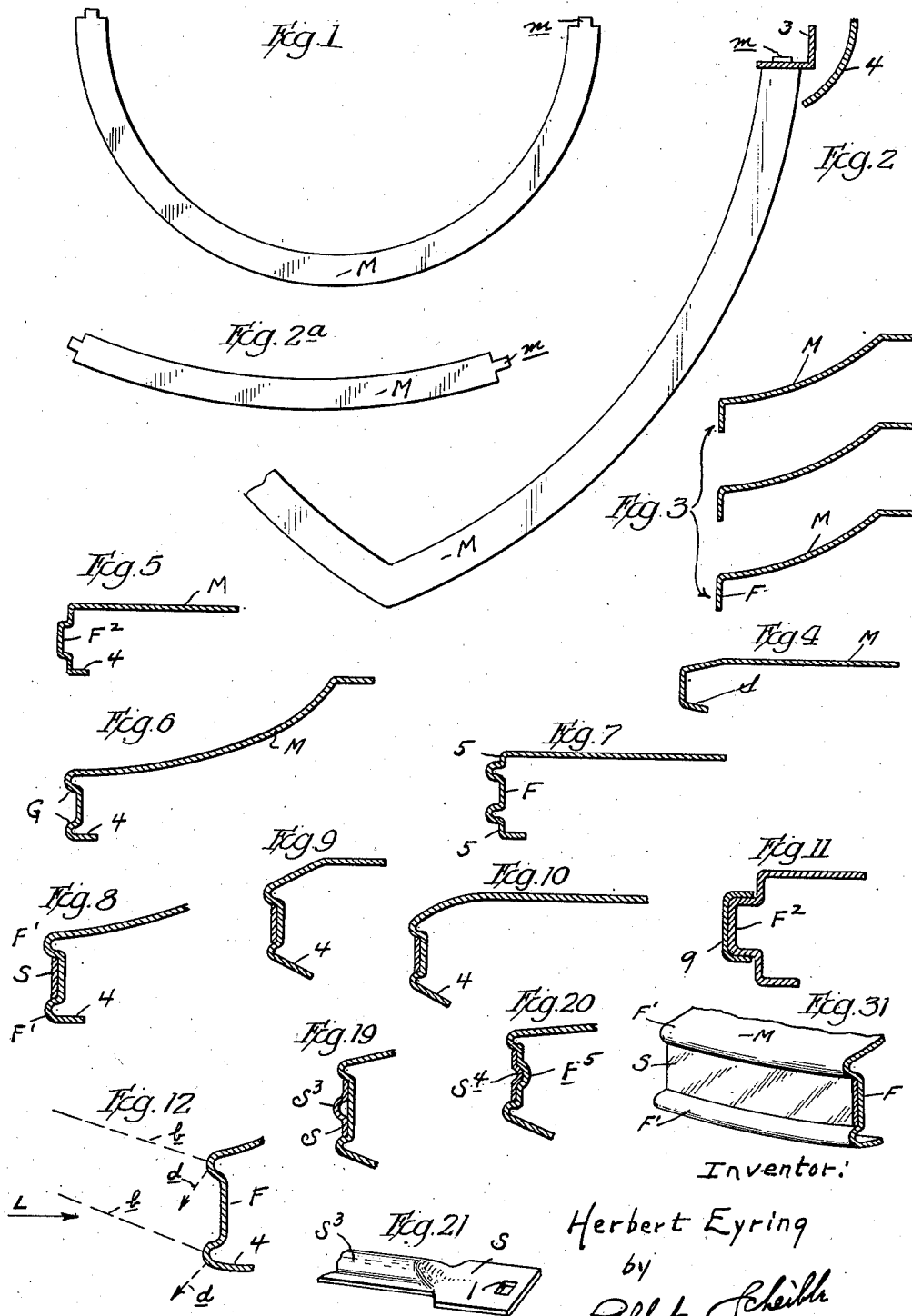
H. EYRING

2,123,003

ORNAMENTED GRILLE BLADE

Filed April 23, 1937

2 Sheets-Sheet 1



Inventor:

Herbert Eyring

by

Albert Scheibel
Attorney

July 5, 1938.

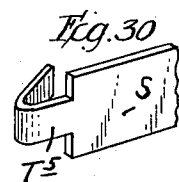
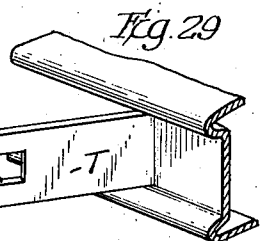
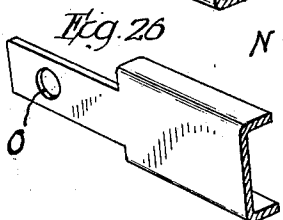
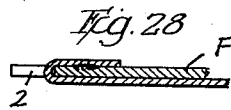
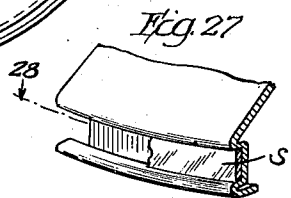
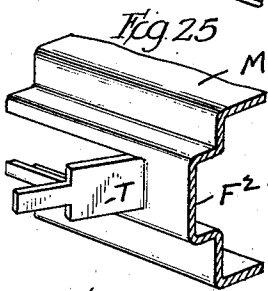
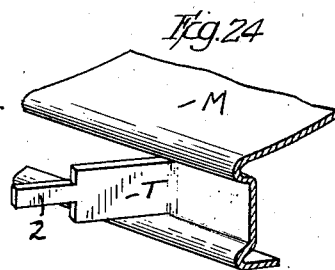
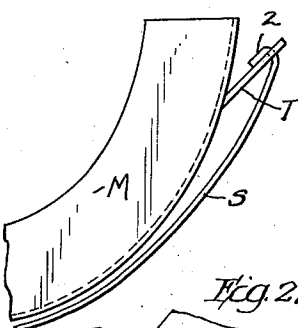
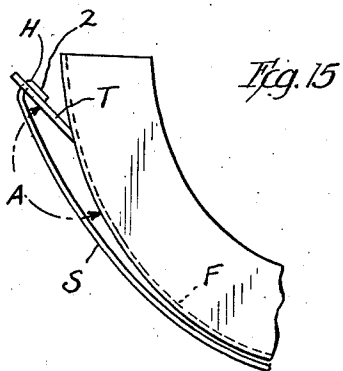
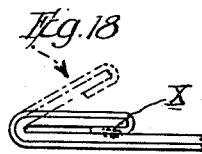
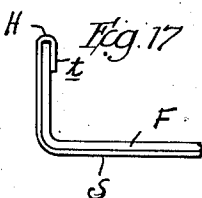
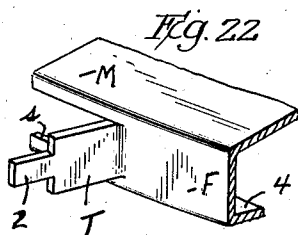
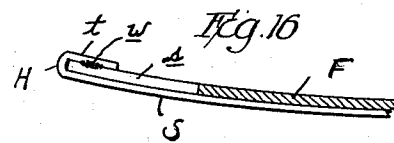
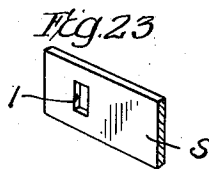
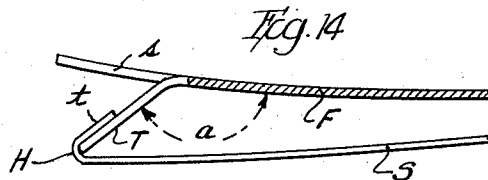
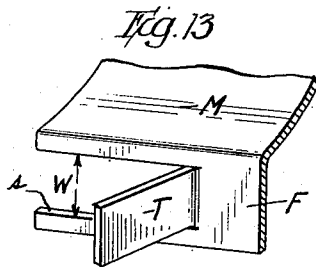
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ORNAMENTED GRILLE BLADE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,123,003

ORNAMENTED GRILLE BLADE

Herbert Eyring, North Olmsted, Ohio, assignor to
The Globe Machine & Stamping Company,
Cleveland, Ohio, a corporation of Ohio

Application April 23, 1937, Serial No. 138,531

9 Claims. (Cl. 189—82)

My invention relates to sheet metal grille blades, particularly suitable for constituent elements of a grille spanning part or all of an opening through which air flows either into or out of the shell or hood which houses both the radiator and the engine of an automobile. When such a grille is to be used on a passenger car, it also has recently become customary to have each blade present a frontal portion of considerably greater width than the thickness of the main part of the blade, so that the widened blade front portions reduce the visibility of the radiator or other structural parts behind the grille.

To further enhance this effect of widened blade front portions, it has also been customary to have either part or all of the outer face of such a blade front portion contrasting with the usual black coating on the more rearward main part of the blade, as for example by chrome-plating such blade front portions or by attaching a chrome-plated (or stainless steel) strip or slitted tube to the outwardly disposed edge portion of the blade. In practice, such a blade-front brightening is particularly effective when the brightened part has a width less than the width of the blade front and allows the blade front to present less bright portions at opposite sides of the said brightened part for contrasting with the latter.

The just recited effect has heretofore been obtained by making each blade of a bright metal, applying a dark coating material to the entire front of the blade, then wiping the freshly applied coating off a medial strip of the blade front so as to expose the bright metal again, and buffing this bright medial strip portion after the coating has dried on the blade front parts at opposite sides of the said bright strip portions.

In practice, this procedure consumes considerable time for insuring a clean-edged medial strip portion through the wiping operation, and the buffing also has to be done quite carefully to avoid having it remove portions of the dark coating adjacent to the two edges of the said medial portion, thereby requiring an amount of skilled labor which undesirably increases the total cost of the resulting ornamented blade.

To reduce this cost, it has heretofore been proposed to ornament each blade front (after this has received the dark coating desired for the longitudinal edge parts of that front) by attaching a separately formed and narrower strip of bright metal to this blade front, which attaching may be effected by welding the end portions of such a strip to the said blade front. However, owing to its resiliency, such a strip will not

readily keep its entire rear face in flatwise contact with the blade front during the attaching, and any slipping of the welding tools may easily cause the strip to bow farther away from the said front; thereby causing a gap which, even if it does not mar the appearance of the resulting ornamental blade, will allow dust to accumulate and disfigure the blade front. This difficulty has been found particularly serious when the blade front is longitudinally convexed.

My present invention aims to overcome the above recited objections to the heretofore proposed blade ornamentations manufactured by both of the above recited methods, when the fronts of the blades are forwardly convexed longitudinally of the blades; and by providing novel blade-front sections and ornamenting expeditious strip-attaching methods which will tension each ornamenting strip during its attachment, so as to hold the entire effective length of the ornamenting strip firmly against the blade front and in the proper position for exposing contrasting blade front portions at each side of the said strip.

Furthermore, my invention aims to provide blade-front sections which will produce contrasting high light and shadow effects with a uniform (as for example black or colored) frontal surface finish even when the blade front has no ornamenting strip attached to it, and which blade fronts also can cheaply be further enhanced in their appearance by attaching auxiliary strips to them.

Illustrative of the here involved problems and of the manner in which I accomplish the above recited objects,

Fig. 1 is a plan view of an arcuate grille blade designed for a frontal radiator grille and presenting the main blade portion approximately horizontally.

Fig. 2 is a fragmentary plan view of a grille blade designed for a similar positioning and having its front shaped as a gothic arch, including sectioned portions of the grille frame to which one end of the illustrated blade is fastened and of the radiator shell portion which conceals the attaching of the illustrated blade end to the said frame.

Fig. 2a is a plan view of a grille blade of relatively slight curvature.

Fig. 3 is a cross-section showing three superposed and unornamented approximately horizontal grille blades such as those of Figs. 1 and 2, as heretofore in use.

Fig. 4 is a cross-section of a grille-blade of the

same class, having a rearwardly directed stiffening flange at the free edge of its frontal portion.

Figs. 5 and 6 are cross-sections of my novel grille blades having frontal portions formed so that, even without an auxiliary ornamenting strip, the blade fronts are decidedly more ornamental than those of Figs. 3 and 4 respectively, and so that the differences in the reflection of light from vertically differing blade front portions also catches the eye of the viewer.

Fig. 7 shows a still different cross-section from the sections of Figs. 5 and 6, designed for the same effects.

Figs. 8 and 9 are enlarged sections, respectively allied to Figs. 6 and 4, with the blade fronts longitudinally grooved and with an ornamenting strip disposed in each groove.

Fig. 10 shows a variation of the blade of Fig. 9.

Fig. 11 is an enlargement of Fig. 5, including a channel-sectioned ornamenting strip attached to the frontal portion of the blade.

Fig. 12 is an enlarged section of the front of the blade of Fig. 6, with dotted lines showing the direction in which light is reflected toward an observer in front of the blade for producing high-light effects, and also indicating portions which present contrasting shadow effects to the same observers.

Fig. 13 is an enlarged perspective view of an end portion of the forward part of a blade shaped as in Fig. 3, showing the providing of a bendable finger for engaging a hook end formed on a strip which is to ornament the front of the said blade.

Fig. 14 is a section taken along the line 14—14 of Fig. 13 and showing a hook-ended ornamented strip as it appears when first attached to the finger shown in Fig. 13.

Fig. 15 is a fragmentary plan view of a blade shaped as in Fig. 1 and provided at each end with a finger as in Fig. 13, including the corresponding ornamenting strip as it appears before the strip is tensioned.

Figs. 16, 17 and 18 show the effect of bending the finger of Fig. 14, or each finger of Fig. 15, to obtain a gradually increasing tensioning of the ornamenting strip.

Figs. 19 and 20 are cross-sections of the forward portions of blades equipped with ornamenting strips according to my invention, showing the use of strips which have only their two side portions flat.

Fig. 21 is a perspective view of an end portion of an ornamenting strip suitable for use as part of the blade and strip assembly of Fig. 19 when the blade front has finger portion similar to that shown in Fig. 22.

Fig. 22 is an enlarged perspective view of an end part of the forward part of a blade shaped like that of Fig. 4, showing the bendable finger as having a narrowed tip.

Fig. 23 shows an end portion of an ornamenting strip suitable for interlocking with the narrowed tip of the finger of Fig. 22.

Fig. 24 is an enlarged perspective view of an end part of the forward portion of the blade of Fig. 6, showing this as provided with a strip-engaging finger after the manner of Fig. 22.

Fig. 25 is a perspective view allied to Fig. 24 but showing the frontal blade part of a section like that of Fig. 5.

Fig. 26 is a perspective view of an end portion of an ornamenting strip suitable for use with

the blade end of Fig. 25 to produce the assembly shown in section in Fig. 11.

Fig. 27 is an enlarged perspective view of an end portion of a blade provided with a flat ornamenting strip and arranged for having a hook end of the said strip interlock with a rigid portion of the frontal part of the blade, with the hooking part of the strip omitted.

Fig. 28 is an enlarged section taken along the line 28—28 of Fig. 27, showing the fastening of the strip to the blade end portion.

Fig. 29 is a fragmentary perspective view allied to Fig. 24, showing the bendable finger part of the blade front as provided with an end notch for receiving a hook-formed end of an ornamenting strip, and Fig. 30 is a perspective view of a strip end suitably formed for this purpose.

In Figs. 3 and 4 the conventional blade sections are illustrated as they appear when the main blade parts M extend substantially horizontally, while the blade front portion F depends vertically. In Fig. 4 the blade also includes a flange s extending rearwardly from what would be the free (or lower) edge of the blade front of Fig. 3, which flange adds stiffness to the blade front to resist a possible flexing of the latter during the tensioning of an ornamenting strip when such a strip is applied to the blade front according to my invention.

To provide for an expeditious attaching of such a strip even to a blade of the conventional section of Fig. 3, I first deform two blade front portions, respectively at or near the two ends of the blade front F, so as to present two oppositely directed tabs or fingers T, each of which extends at a forwardly open oblique angle A (Fig. 15) to the unaltered part of the blade front adjacent to the base of the finger. The simple punch-press operation needed for this purpose also forms a slot s behind each such finger, as shown for one of them in Fig. 13, through which slot the finger can subsequently be bent rearwardly about its basal juncture with the blade front.

Then I bend the two end portions of the corresponding strip S so as to form two hooks H having their openings facing each other, the strip preferably being a width W corresponding to that of the slots W (Fig. 13) left in the blade front by the forming of the said fingers. With the hook-ended strip of a suitable length, each such hook end can readily be hooked manually over the tip of a finger T while the main parts of the ornamenting strip near the fingers are disposed in a curve of considerably larger radius than the blade front, as shown for example in Fig. 14.

When a hook portion of the strip is then gripped and forced toward the adjacent slotted part of the blade front, so as to bend the finger back into the position out of which it was formed, the strip is tensioned; and the hook also can readily be squeezed during the same operation, so as to dispose the end part of the strip and the adjacent portion of the blade front as shown in Fig. 16. When this has been done at each end of the strip, the pull due to the tensioning is exerted parallel to the blade front, and no longer can tend to bend the fingers back to their initial position, and the thus directed pull is unlikely to have an unbending effect on the hook part of the strip, but the latter effect can be positively avoided by welding the hook tip t to the finger T as indicated by the weld-marking W in Fig. 16. Consequently, the mere bending of each finger back

into alinement with the adjacent part of the blade front will suffice when the blade fronts and the corresponding ornamenting strips are comparatively short.

5 However, when the length of the needed strip is considerable, I preferably continue the rearward bending of each finger (along with the adjacent part of the ornamenting strip) to the position of Fig. 17, and thereafter to that of Fig. 18 in which the finger is folded near to the rear face of the blade front so that the tip may engage the rear face of the blade front F and may (if desired) be welded to the latter as shown at X in that figure.

15 However, the just described bending of each finger into and through the corresponding slot can only be effected speedily if the ornamenting strip does not slide or shift vertically (or transversely of the blade front) on the finger so as to have the strip catch on a part of the blade front above the slot. To avoid this, I desirably provide each finger and the adjacent strip end with interengaging portions to prevent such a shifting, as by punching a slot 1 in the strip near each end thereof as shown in Fig. 23, and by forming each finger so as to present a narrowed tip portion 2 of a cross-section approximating that of the just recited slot, as shown in Figs. 22 and 30.

20 With these provisions, and with the said slots positioned so that they will be in the bight portions of the hooks on the strip, each tip 2 of a finger can readily be slid through such a slot to interlock the strip end and the adjacent finger against relative shifting, thereby insuring the proper positioning of the end portions of the ornamenting strip with respect to the blade front.

25 In practice, I have found that the desirable lengths for the bendable fingers can easily be determined experimentally so as to select these lengths according to the needed lengths of the ornamenting strips and the extent to which the blade front is longitudinally convexed. However, with blades of any considerable length, a positive determined positioning of the major portion of each ornamenting strip with respect to the longitudinal (or illustrated upper and lower) edges of the blade front is also essential, particularly with long blades, because the resiliency of a suitable metal strip may spring this edgewise so as to dispose its edges in curved surfaces instead of planes.

30 In view of this, and also in many cases for further enhancing the appearance of the strip-ornamented blade, I desirably form the frontal portion of such a blade with a longitudinal groove with which at least the rearward portion of the ornamenting strip extends. With the walls G (Fig. 6) of such a groove spaced by a width approximating, but not less than, that of the ornamenting strip, these groove walls will positively hold the strip in its proper position both during the attaching of the strip to the blade and thereafter in the resulting assembly, the latter being shown for example in Figs. 8, 9 and 10.

35 To further enhancing the ornamenting effect, I desirably make the said frontal groove of a depth considerably greater than the thickness of the ornamenting strip—as shown for example in Figs. 8 to 10,—and shape the section of the blade front portions F¹ above and below the said strip as half-sections of a tube. By doing this with a blade in which the axis of the groove is substantially horizontal, I obtain the additional light and shade contrasts indicated in Fig. 12 when the blade is viewed by an observer from a somewhat

higher elevation, such as his eyes will have when the blade is associated with the radiator or hood of a car and when the observer is either standing or riding.

40 Thus rays of light projected by the headlight of another car in the general direction of the line L of Fig. 12 will be partly reflected along lines such as b toward the observer to produce the effect of high light lines or stripes longitudinal of the blade front. However, other portions of the light will be reflected away from the observer (as along the lines d) so that the blade parts which effect this reflection of the light will give a shadow effect which, by its contrast, intensifies the apparent brightness of the said high-light portions. Consequently, these bright light portions catch the eye of the observer and combine with the brightness of the ornamenting strip (which in practice can be of a comparatively cheap stainless metal, such as steel alloyed with a smaller total percentage of nickel and chromium) so as to reduce the visual acuity of the observer sufficiently for deterring his view of any car parts which he otherwise could readily see through the spaces between the fronts of consecutive blades.

45 Fig. 30 is a perspective view of a forward portion of a thus constructed blade which combines the heretofore recited features of having an ornamenting strip rigidly held against its front, positively preventing this strip from shifting either upward or downward, stiffening the blade front to permit the strip to be tensioned, and producing contrasting high-light and shadow effects on portions of the blade front above and below the ornamenting strip.

50 Since the just recited effective concealing of what is behind the grille will allow superposed and generally horizontal blades to be more widely spaced from one another than those of Fig. 3, as is believed obvious that the use of blade fronts such as those of Fig. 6, or ornamentations thereof as in Fig. 30, my invention permits a corresponding reduction in the cost of grille spanning a given air outlet or inlet area. So also, the same effect is particularly advantageous when the blades have their main parts (and hence their blade fronts) substantially upright.

55 Moreover, many changes from the heretofore described details may be made without departing either from the spirit of my invention or from the appended claims. For example, Fig. 11 shows the midwidth portion F² as embossed forwardly, Fig. 25 shows a bendable finger as formed from a part of this forwardly embossed portion, and Fig. 26 shows one end of the channel-sectioned ornamenting strip which fits over the said blade portion F².

60 Fig. 7 shows a modification of Fig. 8, in which the blade front also includes narrow upright frontal portions 5 respectively above and below the upper and lower groove-bordering ribs F¹.

65 Fig. 19 shows the ornamenting strip as having a central longitudinal bead S³ to change its appearance, and Fig. 21 shows a perspective view of an end part of the same strip.

70 Fig. 20 shows the ornamenting strip as formed to present a mid-width longitudinal channel S⁴ which is seated in a corresponding grooved part F⁵ of the blade front.

75 So also, while I have heretofore described my novel blades as used in connection with automobiles, it should be obvious that the same advantages would result when they are used as grilles in other connections.

Likewise, the interlatching of a bendable finger with a strip end may be effected by providing the free end of the finger with a notch N (as in Fig. 29) for receiving the narrowed hook T⁵ (Fig. 30) of the corresponding strip end, and in practice a round perforation O (as in Fig. 26) may be substituted for the slot I in Fig. 23.

In practice, the end parts of grille blades for radiator grilles are usually concealed, and the concealing means can readily hide both the otherwise visible slots in the ends of the blade fronts and the adjacent parts of the frame and grille. For example, Figs. 1 and 2 showed each end of the main blade part M (or blade proper) as having a projecting finger which is clinched through a slot in the corresponding part of the grille frame 3 in the manner well known in this art. When the complete grille is then installed in the car the radial shell part 4 of Fig. 2, which has the aperture guarded by the grille, effects the just recited concealing.

I claim as my invention:

1. The combination with a grille blade which has its frontal face portion longitudinally bowed forwardly, of a metal blade-ornamenting strip extending longitudinally of the blade and presenting its rear face to the said frontal portion, the said strip having its end portions in hooking engagement with blade portions respectively near the opposite ends of the blade, and the part of the strip between the said end portions being under tension so as to clamp the said strip part rearwardly against the frontal portion of the blade.

2. A combination of a grille blade and a blade-ornamenting strip as per claim 1, in which at least one of the said hookingly engaged blade portions is a finger extending at a forwardly open oblique angle to the adjacent part of the blade front before the said hooking engagement is effected, the said finger being thereafter bent rearwardly to effect the said tensioning.

3. A combination of a grille blade and a blade-ornamenting strip as per claim 1, in which the said strip and the frontal portion of the blade have longitudinally extending and relatively interengaging surface portions, the interengagement of which prevents the strip from shifting with respect to the blade in directions parallel to the axis of curvature of the blade front.

4. In combination, a grille blade having its frontal face portion longitudinally convexed forwardly, and having each end part of the said frontal portion formed to present a finger initially extending at a forwardly open oblique angle to the part of the said frontal portion which is adjacent to the base of the said finger; and an ornamenting strip extending in front of the said frontal blade portion, and having its end portions bent rearwardly to form hooks, the spacing between the bights of the two hooks being such that the two hooks can manually be hooked respectively over the free ends of the said fingers when the latter are in their said oblique-angled positions and while the strip is untensioned; the said fingers being bendable about their base ends so that each finger and the strip part hooked over the tip of the finger can be bent rearwardly to tension the strip so as to draw the part of the

strip between the said finger base ends tightly against the frontal face portion of the blade.

5. A grille blade and ornamenting strip assembly as per claim 4, in which the tip of each finger and the strip part hooked over that finger have interengaging portions for preventing a movement of the strip with respect to the finger in directions transverse of the face of the strip.

6. The combination with a sheet metal grille blade including as one element a longitudinally forwardly bowed frontal portion, of a strip-like ornamenting element extending longitudinally of the blade and presenting its rear face to the said frontal portion, the said strip element having its end portions in hooking engagement with blade portions respectively near the opposite ends of the blade, and the part of the strip element between the said end portions being tensioned so as to cause substantially the entire length of the said strip element to bear against the frontal portion of the blade; one of the said elements being formed to present channel walls extending longitudinally of the said strip element and engaging oppositely directed longitudinal face portions of the other element to prevent a relative shifting of the mid-length portions of the said two elements.

7. A sheet metal grille blade comprising a main blade portion, a relatively narrower frontal portion extending approximately at right angles to the said main portion, the said main portion being forwardly bowed longitudinally of the blade; the said frontal portion of the blade having an end part thereof formed to present a finger initially extending forwardly from the general frontal surface of the said blade portion and away from the mid-length of the said surface; and the said frontal blade portion initially presenting a slot from which the finger has been punched out; and an ornamenting strip having one end thereof attached to the other end part of the said frontal portion of the blade and having the other end of the strip interlocked with the tip of the said finger, the said finger and the strip portions adjacent thereto being thereafter bent rearwardly through the said slot to dispose them behind the part of the blade front adjacent to the base of the said finger.

8. An ornamented grille blade comprising a main blade part having a forwardly convexed front edge, and a flange-like blade front extending approximately at right angles to the said main blade part from the said front edge of the main blade part and longitudinally curved similarly to the said front edge; an ornamenting strip extending longitudinally of, and bearing rearwardly against, the said blade front; and means fastening the end portions of the said strip to the blade front; the said means being constructed for tensioning the said strip to hold the strip tightly against the blade front.

9. An ornamented grille blade as per claim 8, in which the blade also includes a second flange extending rearwardly from longitudinal edge of the blade front opposite the said front edge of the main blade part, the said second flange serving to stiffen the blade front for resisting the effect of the said tensioning of the strip.

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