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(54) A FRONT DRESSING PANEL FOR A LOUDSPEAKER CABINET

(71) I, YOSHITATSU KAWAHARA, of No. 3601, Jindaiji-machi, Chofu-shi, Tokyo, Japan, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a front dressing panel for use in constructing a loud-speaker cabinet by being mounted so as to cover the speaker aperture while allowing the sound to emerge through said aperture. The cabinet may be that of a radio-receiving set or of any other device in which a loud speaker is housed in cabinet.

It is common practice to cover the speaker opening in the front of such cabinets with a cloth web which transmits the sound, excludes dust and contributes to the appearance of the cabinet. Such a cloth web is hermed herein "dressed cloth". In one form of construction the speaker aperture is in a base plate, e.g. of wood, across which the dressing cloth is attached so as to cover that aperture, the resulting assembly forming a so-called "front dressing panel" which provides or covers an opening in the front of the cabinet. If the dressing cloth is attached only round the edge of the aperture in the base plate, e.g. by sticking or nailing, certain disadvantages result.

Thus, when the cloth is put over the base plate, it must be held under tension in both directions until it has been stuck or otherwise attached to the base plate and the grain of the cloth must be appreciably aligned to give the desired appearance. Hence, the production of a dressing panel made in this way is troublesome and time-consuming. Furthermore, the cloth is apt to become loosened by absorbing the moisture from the atmosphere, since it is not backed, and to become frayed at its edges.

The present invention provides a dressing panel which can be constructed quickly and without difficulty and which avoids the defects referred to above.

The invention provides a front dressing panel for use in the construction of a loud-speaker cabinet by being mounted so as to

cover the loud-speaker aperture while allowing the sound to emerge therefrom, said panel comprising a sheet of plastics material which can be moulded under heat and pressure, the sheet having perforations each of diameter within the range 1 to 10 mm, the total area of the perforations amounting to 40 to 70% of the total area of the sheet (including that of the perforations), and a dressing cloth covering one surface of said sheet and bonded thereto under heat and pressure by means of a synthetic resin bonding agent. The front dressing panel of this invention may be formed under heat and pressure into a three dimensional shape. This possibility is one of the advantages of the invention.

Various synthetic resins are suitable for the construction of the base plate, especially acrylonitrile-butadiene-styrene copolymer resin, polystyrene and polyvinyl chloride.

The plastics base plate may be cut from a sheet of appropriate thickness (preferably 0.3 to 2.0 mm) and punched to provide the perforations referred to above. If the total area of the perforations were less than 40% of the area of the plate, the passage of sound would be obstructed, whereas if the total area of the perforations were more than 70% of the area of the plate, the strength of the plate would be reduced.

The dressing cloth may be woven, braided or non-woven.

Various synthetic resins may be employed as the binding agent in this invention, the most effective resins being vinyl acetate polymers and acrylate polymers. The bonding process may be carried out, for example, at a temperature of 120—145°C.

The accompanying drawings show by way of example various embodiments of the invention.

Fig. 1 is a partly broken-away front view of a dressing panel according to the invention;

Fig. 2 is a cross-sectional view of the panel of Fig. 1;

Fig. 3 is an enlarged sectional view of a front dressing panel of Figs. 1 and 2;

Fig. 4 is a side view of a front dressing

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panel which has been formed under heat and pressure into a three-dimensional shape;

Fig. 5 is a cross-sectional view taken on the line V—V in Fig. 4;

5 Fig. 6 is a partly broken away front view showing another embodiment in which a front dressing panel similar to that of Fig. 1 has been formed under heat and pressure into a curved shape, and

10 Fig. 7 is a cross-sectional view taken on the line VII—VII in Fig. 6.

In the drawings a dressing panel 1 comprises a plastics base plate 2 having perforations 3, and a dressing cloth 4. Figs. 1 and 2 show the construction of a front dressing panel 1 comprising a plastics base plate 2 having perforations 3 and a dressing cloth 4. In bonding together the plastics base plate 2 and the dressing cloth 4 by assembling them with the binding agent (not shown in the drawing) in between the surfaces to be united and pressing them together at an elevated temperature (preferably 120—145°C) the plastics base plate 2 is softened by heat which assists the bonding and the dressing cloth 4 is partially forced into the perforations 3 as shown in Fig. 3. In order to improve its appearance the shape of the panel may be altered by moulding at an elevated temperature. It may, for example, in this way be given a curved shape as shown in Figs. 4 and 5 or a corrugated shape as shown in Figs. 6 and 7. The panel can also be embossed to create a pattern effect.

35 Since the plastics sheet becomes softened by heat in the binding step, and the bonding is effected over the whole surface of the

dressing cloth, that cloth does not become loosened from the plastics base plate or frayed at the edge of that plate or crumpled.

WHAT I CLAIM IS:—

1. A front dressing panel for use in the construction of a loud-speaker cabinet by being mounted so as to cover the loud-speaker aperture while allowing the sound to emerge therefrom, said panel comprising a sheet of plastics material which can be moulded under heat and pressure, the sheet having perforations each of diameter within the range 1 to 10 mm, the total area of the perforations amounting to 40 to 70% of the total area of the sheet (including that of the perforations), and a dressing cloth covering one surface of said sheet and bonded thereto under heat and pressure by means of a synthetic resin bonding agent.

2. A front dressing panel as claimed in claim 1, which has been formed into a three-dimensional shape by moulding at an elevated temperature and under pressure.

3. A front dressing panel as claimed in claim 1 or 2, wherein the plastics base plate has a thickness of 0.3 to 2.0 millimeters.

4. A front dressing panel, substantially as described with reference to Figures 1 to 3, Figures 4 and 5 or Figures 6 and 7 of the accompanying drawings.

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panel which has been formed under heat and pressure into a three-dimensional shape;

Fig. 5 is a cross-sectional view taken on the line V—V in Fig. 4;

5 Fig. 6 is a partly broken away front view showing another embodiment in which a front dressing panel similar to that of Fig. 1 has been formed under heat and pressure into a curved shape, and

10 Fig. 7 is a cross-sectional view taken on the line VII—VII in Fig. 6.

In the drawings a dressing panel 1 comprises a plastics base plate 2 having perforations 3, and a dressing cloth 4. Figs. 1 and 2 show the construction of a front dressing panel 1 comprising a plastics base plate 2 having perforations 3 and a dressing cloth 4. In bonding together the plastics base plate 2 and the dressing cloth 4 by assembling them with the binding agent (not shown in the drawing) in between the surfaces to be united and pressing them together at an elevated temperature (preferably 120—145°C) the plastics base plate 2 is softened by heat which assists the bonding and the dressing cloth 4 is partially forced into the perforations 3 as shown in Fig. 3. In order to improve its appearance the shape of the panel may be altered by moulding at an elevated temperature. It may, for example, in this way be given a curved shape as shown in Figs. 4 and 5 or a corrugated shape as shown in Figs. 6 and 7. The panel can also be embossed to create a pattern effect.

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dressing cloth, that cloth does not become loosened from the plastics base plate or frayed at the edge of that plate or crumpled. 40

WHAT I CLAIM IS:—

1. A front dressing panel for use in the construction of a loud-speaker cabinet by being mounted so as to cover the loud-speaker aperture while allowing the sound to emerge therefrom, said panel comprising a sheet of plastics material which can be moulded under heat and pressure, the sheet having perforations each of diameter within the range 1 to 10 mm, the total area of the perforations amounting to 40 to 70% of the total area of the sheet (including that of the perforations), and a dressing cloth covering one surface of said sheet and bonded thereto under heat and pressure by means of a synthetic resin bonding agent. 45 50 55

2. A front dressing panel as claimed in claim 1, which has been formed into a three-dimensional shape by moulding at an elevated temperature and under pressure. 60

3. A front dressing panel as claimed in claim 1 or 2, wherein the plastics base plate has a thickness of 0.3 to 2.0 millimeters.

4. A front dressing panel, substantially as described with reference to Figures 1 to 3, Figures 4 and 5 or Figures 6 and 7 of the accompanying drawings. 65

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