

The present invention relates to a sound installation for a television set.

5 Present-day aesthetic considerations on the subject of television sets, in particular of television sets with screens which are almost flat and of large dimensions, dictate cabinets having "sound columns" of very narrow width on each side of the cathode-ray tube.
10 However, it is known that, in order to reproduce the low frequencies of the sound spectrum correctly, it is necessary to use loudspeakers of large dimensions, preferably circular or elliptical loudspeakers. Such loudspeakers can not be housed in these narrow sound
15 columns. The problem is currently resolved either by using base loudspeakers which are too small or of very elongate shape, or by connecting external loudspeakers arranged in baffles independent of the television set. Hence, for stereophonic reproduction, two such baffles
20 are required.

Sound installations of television sets are also known in which the base loudspeakers are arranged in acoustic enclosures housed within the cabinet. In order to be able to use base loudspeakers of adequate
25 dimensions (with a diameter generally greater than 10 cm), these enclosures have to be arranged in an available space of the cabinet which is sufficiently large, that is to say to the rear of the cabinet or on the side walls of this cabinet. However, it results
30 from the choice of such locations that the loudspeakers and the deflector of the cathode-ray tube are too close together, and spurious vibration results on the walls on which the enclosures are fixed.

The subject of the present invention is a sound
35 installation for a television set which makes it possible to use bass loudspeakers of adequate dimensions and which has practically no interference due to the loudspeakers, while providing good sound reproduction.

40 The sound installation of a television set in



accordance with the invention includes at least one enclosure arranged in the cabinet of the television set, under the cathode-ray tube and close to the front panel, preferably close to one corner of the cabinet, this (these) enclosure(s) including at least one loudspeaker reproducing at least the low part of the sound spectrum, this loudspeaker being turned downwards. Preferably, the enclosure is completely closed and includes a vent hole turned towards the front panel of the cabinet of the television set.

The present invention will be better understood on reading the detailed description of an embodiment, taken by way of non-limiting example, and illustrated by the attached drawing, in which:

- Figure 1 is a front view of a sound installation in accordance with the invention, the front panel of the cabinet being removed, and

- Figure 2 is a view of the installation of Figure 1, in section along II-II.

The invention is described below by reference to a stereophonic installation for a television set, but, obviously, it could apply to a monophonic installation.

The sound installation described below includes two completely closed enclosures 1, 2 fixed on the bottom 3 of the cabinet of the television set. In order to simplify the drawing, only a part of the television set has been represented, in particular the front part of the cabinet and of the glass bulb of the cathode-ray tube. This installation uses a cabinet such that its lower wall 3 is sufficiently distant from the lower part of the skirt 4 of the cathode-ray tube to allow vent tubes formed with the enclosures 1, 2 (described below) to pass, and to house these enclosures under the front part 5 of the cone of the cathode-ray tube. Advantageously, the distance between the wall 3 and the skirt 4 is at least about 5 cm, and preferably at least about 10 cm.

In order to allow the forward wave from the



loudspeakers contained in these enclosures 1, 2 to exit, the cabinet rests on feet 6 making it possible to raise the lower face of the cabinet of the television set by at least about 1 cm with respect to the support on which the television set is placed. Obviously, if the television set is intended to be placed on a support which is sufficiently open, these feet can be omitted.

The enclosures 1, 2 are fixed as close as possible to the front panel 7 of the television set.

The enclosures 1, 2 each include a loudspeaker 8, 9, respectively.

These loudspeakers 8, 9 are of the type reproducing the low and medium frequencies of the sound spectrum. The loudspeakers intended for reproducing the high frequencies of the sound spectrum do not need to be arranged in the enclosures, and, because they are generally of small dimensions, they can be fixed to the rear face of the front panel 7, for example on each side of the cathode-ray tube, or in the upper corners of this front panel. Obviously, if sufficient space is available within the cabinet of the television set, enclosures of larger dimensions can be produced and, for example, one loudspeaker for the low frequencies and another for the medium frequencies can be housed in each of them. In any case, the loudspeaker or loudspeakers have their aperture turned downwards. The enclosures 1 and 2 and the cabinet therefore have a corresponding aperture 10, 11 in their lower wall.

Advantageously, the loudspeakers 8, 9 are arranged respectively at the left hand and right hand ends of the enclosures 1, 2. Also advantageously, vent holes 12A, 13A are formed in the front walls of the enclosures 1, 2, and they are linked by tubes 13, 14 having substantially the same diameter as those at similar orifices 12B, 13B (only 13B is visible on the drawing) formed in the front panel of the cabinet. These vent holes may be formed in the regions of the front walls of the enclosures 1, 2 which are close to



the middle of the front panel, the tubes 12, 13 then being close to one another. If the enclosures 1, 2 are produced by moulding of plastic, for example in two half-shells, the tubes 12, 13 are formed integrally with these enclosures. Obviously, the orifices of the front panel in which the tubes 12, 13 open out may be masked by a decorative grille and these tubes are not necessarily straight and of constant cross-section. The vent holes could be formed on another wall of the enclosures and be linked to orifices arranged differently, for example on the side walls of the cabinet.

As stated above, the enclosures 1, 2 are advantageously produced from plastic, in two half-shells. After fixing the loudspeakers onto the lower half-shells, the upper half-shells are put in place and welded to the lower half-shells by any appropriate process. The enclosures thus obtained are fixed, for example by screwing or clipping, onto the lower wall of the cabinet of the television set. Obviously, the enclosures can be manufactured from other materials and be constructed in different ways, for example so as to be assembled by clipping.

Hence, by virtue of the invention, the considerable spacing between the loudspeakers and the deflector of the cathode-ray tube avoids practically any electromagnetic disturbance of the image. Moreover, because the loudspeakers are arranged in an enclosure which opens out to the outside of the cabinet of the television set, the acoustic waves from the loudspeakers do not propagate within the cabinet, and there is therefore no risk of vibration of the components of the television set.



CLAIMS

1. Sound installation for a television set, characterized in that it includes at least one enclosure (1, 2) arranged in the cabinet of the television set, under the cathode-ray tube and close to the front panel, this (these) enclosure(s) including at least one loudspeaker (8, 9) reproducing at least the low part of the sound spectrum, this (these) loudspeaker(s) being turned downwards.
2. Installation according to Claim 1, characterized in that the enclosure (the enclosures) is (are) arranged close to one corner of the cabinet.
3. Installation according to either of Claims 1 and 2, characterized in that each enclosure is completely closed.
4. Installation according to Claim 3, characterized in that each enclosure includes a vent hole (12A, 13A).
5. Installation according to Claim 4, characterized in that the vent hole is linked by a tube (12, 13) to a corresponding orifice formed in the front panel.
6. Installation according to one of the preceding claims, characterized in that each enclosure is produced from plastic in two parts assembled after fixing the loudspeaker(s).

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ABSTRACT
SOUND INSTALLATION FOR A TELEVISION SET

The installation of the invention includes completely closed enclosures (1, 2) in each of which is fixed a base loudspeaker (8, 9) turned downwards, these enclosures being arranged under the cathode-ray tube and including a vent hole (12, 13) opening out into the front panel.

FIGURE 1

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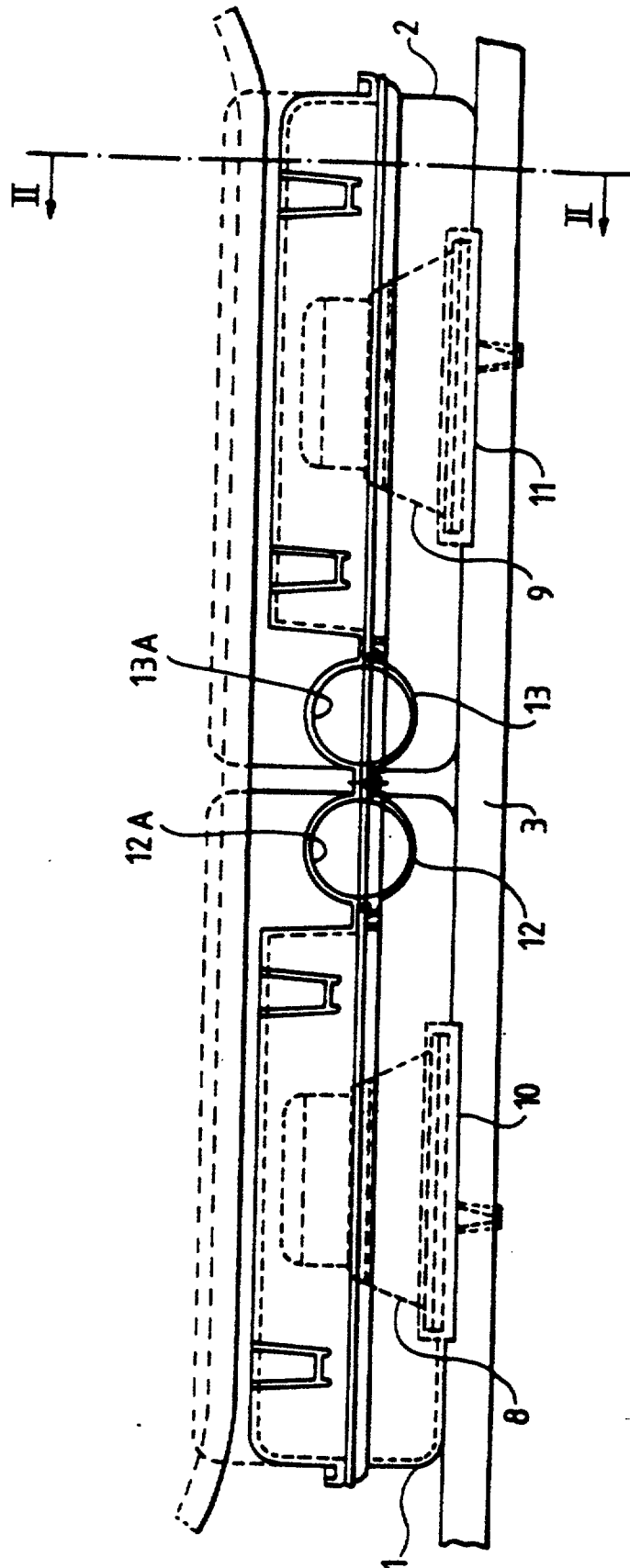


FIG. 1

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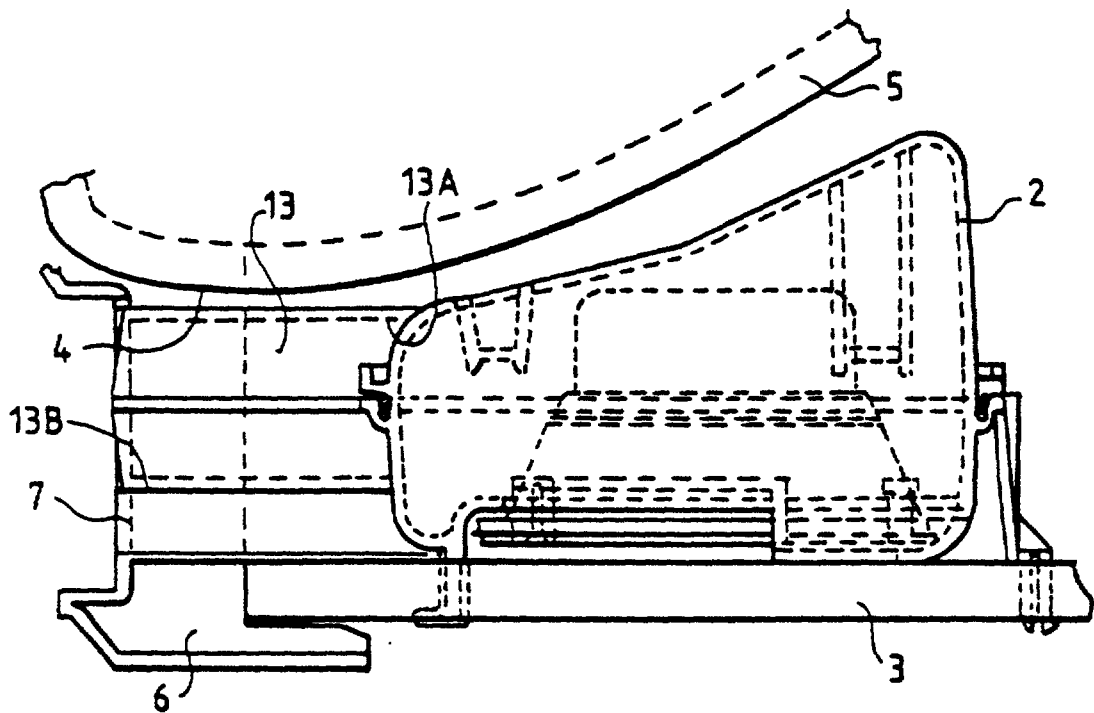


FIG. 2

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Sound installation for a television.

The present invention relates to a sound installation for a television set.

Present-day aesthetic considerations on the subject of television sets, in particular of television sets with screens which are almost flat and of large dimensions, dictate cabinets having "sound columns" of very narrow width on each side of the cathode-ray tube. However, it is known that, in order to reproduce the low frequencies of the sound spectrum correctly, it is necessary to use loudspeakers of large dimensions, preferably circular or elliptical loudspeakers. Such loudspeakers can not be housed in these narrow sound columns. The problem is currently resolved either by using base loudspeakers which are too small or of very elongate shape, or by connecting external loudspeakers arranged in baffles independent of the television set. Hence, for stereophonic reproduction, two such baffles are required.

Sound installations of television sets are also known in which the bass loudspeakers are arranged in acoustic enclosures housed within the cabinet. In order to be able to use bass loudspeakers of adequate dimensions (with a diameter generally greater than 10 cm), these enclosures have to be arranged in an available space of the cabinet which is sufficiently large, that is to say to the rear of the cabinet or on the side walls of this cabinet. However, it results from the choice of such locations that the loudspeakers and the deflector of the cathode-ray tube are too close together, and spurious vibration results on the walls on which the enclosures are fixed.

The subject of the present invention is a sound installation for a television set which makes it possible to use bass loudspeakers of adequate dimensions and which has practically no interference due to the loudspeakers, while providing good sound reproduction.

The sound installation of a television set in accordance with the invention includes at least one enclosure arranged in the cabinet of the television set, under the cathode-ray tube and close to the front panel, preferably close to one corner of the cabinet, this (these) enclosure(s) including at least one loudspeaker reproducing at least the low part of the sound spectrum, this loudspeaker being turned downwards. Preferably, the enclosure is completely closed and includes a vent hole turned towards the front panel of the cabinet of the television set.

The present invention will be better understood on reading the detailed description of an embodiment, taken by way of non-limiting example, and illustrated by the attached drawing, in which:

- Figure 1 is a front view of a sound installation in accordance with the invention, the front panel of the cabinet being removed, and

- Figure 2 is a view of the installation of Figure 1, in section along II-II.

The invention is described below by reference to a stereophonic installation for a television set, but, obviously, it could apply to a monophonic installation.

The sound installation described below includes two completely closed enclosures 1, 2 fixed on the bottom 3 of the cabinet of the television set. In order to simplify the drawing, only a part of the television set has been represented, in particular the front part of the cabinet and of the glass bulb of the cathode-ray tube. This installation uses a cabinet such that its lower wall 3 is sufficiently distant from the lower part of the skirt 4 of the cathode-ray tube to allow vent tubes formed with the enclosures 1, 2 (described below) to pass, and to house these enclosures under the front part 5 of the cone of the cathode-ray tube. Advantageously, the distance between the wall 3 and the skirt 4 is at least about 5 cm, and preferably at least about 10 cm.

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In order to allow the forward wave from the loudspeakers contained in these enclosures 1, 2 to exit, the cabinet rests on feet 6 making it possible to raise the lower face of the cabinet of the television set by at least about 1 cm with respect to the support on which the television set is placed. Obviously, if the television set is intended to be placed on a support which is sufficiently open, these feet can be omitted.

The enclosures 1, 2 are fixed as close as possible to the front panel 7 of the television set.

The enclosures 1, 2 each include a loudspeaker 8, 9, respectively.

These loudspeakers 8, 9 are of the type reproducing the low and medium frequencies of the sound spectrum. The loudspeakers intended for reproducing the high frequencies of the sound spectrum do not need to be arranged in the enclosures, and, because they are generally of small dimensions, they can be fixed to the rear face of the front panel 7, for example on each side of the cathode-ray tube, or in the upper corners of this front panel. Obviously, if sufficient space is available within the cabinet of the television set, enclosures of larger dimensions can be produced and, for example, one loudspeaker for the low frequencies and another for the medium frequencies can be housed in each of them. In any case, the loudspeaker or loudspeakers have their aperture turned downwards. The enclosures 1 and 2 and the cabinet therefore have a corresponding aperture 10, 11 in their lower wall.

Advantageously, the loudspeakers 8, 9 are arranged respectively at the left hand and right hand ends of the enclosures 1, 2. Also advantageously, vent holes 12A, 13A are formed in the front walls of the enclosures 1, 2, and they are linked by tubes 13, 14 having substantially the same diameter as those at similar orifices 12B, 13B (only 13B is visible on the drawing) formed in the front panel of the cabinet. These vent holes may be formed in the regions of the

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front walls of the enclosures 1, 2 which are close to the middle of the front panel, the tubes 12, 13 then being close to one another. If the enclosures 1, 2 are produced by moulding of plastic, for example in two half-shells, the tubes 12, 13 are formed integrally with these enclosures. Obviously, the orifices of the front panel in which the tubes 12, 13 open out may be masked by a decorative grille and these tubes are not necessarily straight and of constant cross-section. The vent holes could be formed on another wall of the enclosures and be linked to orifices arranged differently, for example on the side walls of the cabinet.

As stated above, the enclosures 1, 2 are advantageously produced from plastic, in two half-shells. After fixing the loudspeakers onto the lower half-shells, the upper half-shells are put in place and welded to the lower half-shells by any appropriate process. The enclosures thus obtained are fixed, for example by screwing or clipping, onto the lower wall of the cabinet of the television set. Obviously, the enclosures can be manufactured from other materials and be constructed in different ways, for example so as to be assembled by clipping.

Hence, by virtue of the invention, the considerable spacing between the loudspeakers and the deflector of the cathode-ray tube avoids practically any electromagnetic disturbance of the image. Moreover, because the loudspeakers are arranged in an enclosure which opens out to the outside of the cabinet of the television set, the acoustic waves from the loudspeakers do not propagate within the cabinet, and there is therefore no risk of vibration of the components of the television set.

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CLAIMS

1. Sound installation for a television set, characterized in that it includes at least one enclosure (1, 2) arranged in the cabinet of the television set, under the cathode-ray tube and close to the front panel, this at least one enclosure including at least one loudspeaker (8, 9) reproducing at least the low part of the sound spectrum, this at least one loudspeaker being turned downwards, and in that the enclosure includes a vent hole (12A, 13A) opening out to the outside of the cabinet of the television set.
2. Installation according to Claim 1, characterized in that the vent hole is linked by a tube (12, 13) to a corresponding orifice formed in the front panel.
3. Installation according to Claim 2, characterized in that each enclosure is completely closed.
4. Installation according to one of the preceding claims, characterized in that the enclosure is arranged close to one corner of the cabinet.
5. Installation according to one of the preceding claims, characterized in that each enclosure is produced from plastic in two parts assembled after fixing the loudspeaker.



* C L M S *

REPLACEMENT SHEET

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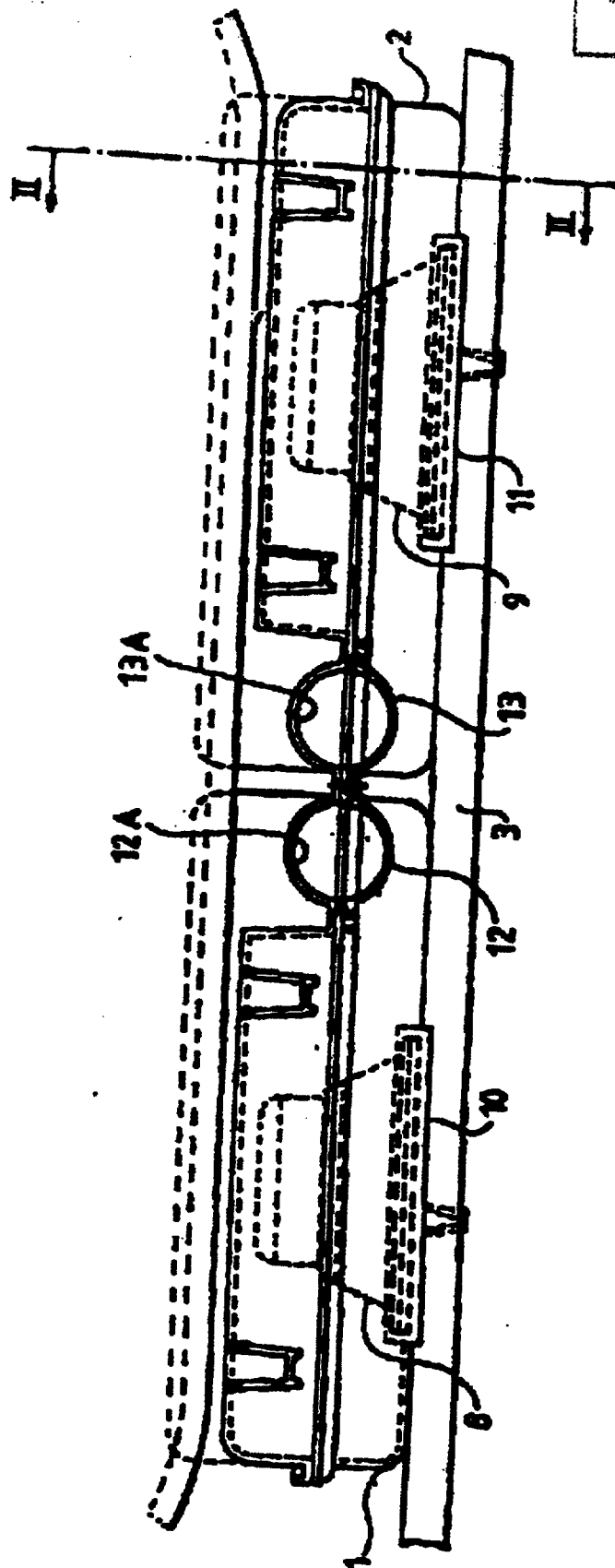


FIG. 1

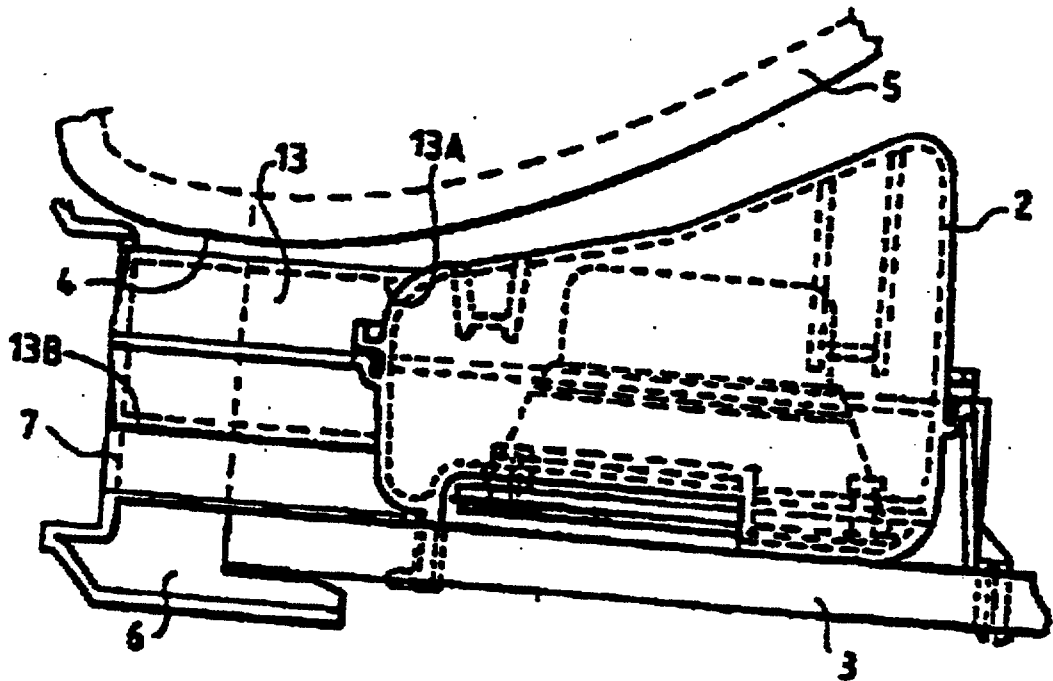
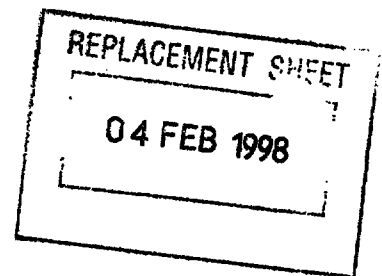


FIG. 2

ABSTRACT

SOUND INSTALLATION FOR A TELEVISION

The installation of the invention includes completely closed enclosures (1, 2) in each of which is fixed a base loudspeaker (8, 9) turned downwards, these enclosures being arranged under the cathode-ray tube and including a vent hole (12, 13) opening out into the front panel.

FIGURE 1

