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(54) **Sound-proofing screen for erecting along a traffic road or the like.**

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Description

The invention relates to a soundproofing wall for erecting along a traffic road or the like, said wall comprising a support construction consisting of vertical posts being regularly spaced along the wall and being connected to the ground and a number of beams extending horizontally between said posts, said posts and beams serving to support sound absorbing plates, the one vertical surface of each of said plates being supported by a closed panel and the other vertical surface, directed to the source of sound, being supported by a more or less open construction.

Such a soundproofing wall is known by NL-A-8 601 015. In case of this known wall the sound absorbing plates at the same time serve as the material in which plants are growing. To that end the surface of the plates, directed to the source of sound are covered by perforated plates through the openings of which the plants extend outwardly.

A disadvantage of this is, that the sound absorbing qualities of the plates will be influenced by the presence of the roots of the plants and the necessary water in said plates. Further the plates can hardly be protected against atmospheric influences.

It does not make any difference when in stead of said perforated plate a netting is used as known by AT-B-385 067 and WO-A-8 401 791. In both these cases the netting only serves to confine the material in which the plants are growing.

Another type of a sound-proofing screen is known by the European patent 0,128,245. In case of this known screen use is made of plants of willows or the like, which are planted close to one another in the soil so as to form a closed wall after some time.

The height of such a wall and the sound-absorbing capacity of it are limited.

The object of the invention is to remove these disadvantages and to that end a wall according to the invention is characterized in that at the side of the wall directed to the source of sound, a netting is present which is positioned at a distance from the plane of the support construction and is serving to support growing plants. By this the sound absorbing qualities of the sound absorbing plates are not influenced by the presence of plants. Primarily the plants serve to hide the support construction with the sound absorbing plates from view and further the plants take care for a "labyrinth working" so that reflection of sound is highly prevented.

To protect the sound absorbing plates against atmospheric influences these preferably will be wrapped in an acoustic open foil.

Because the sound-absorbing plates as such will have less strength they will be supported by netting at the side of the sound source and by corrugated panels at the other side.

When both sides of the wall have to be sound-

absorbing the corrugated panels will have to be positioned between two sound absorbing plates, while in the other case the corrugated panels are forming an outside of the wall.

In this case the corrugated panels can be made of fiber cement, eternite, zinked steel or the like.

In case of the wall according to the invention it can be favourable when the netting is closer to the plane of the support construction at the upper side than at the lower side.

In connection with the available space this, however, will not always be possible. In particular the netting will have a mesh opening size of 100 to 200 mm, so that it gives a sufficient support for the plants at the one side and that it is as less as possible disturbing the sound-absorbing of the wall at the other side.

Now the invention is described by referring to an embodiment shown in the drawing, in which:

Fig. 1 schematically shows a perspective view of a sound-proofing screen according to the present invention in which various parts are left out and the screen is shown from the side of the sound source;

Fig. 2 schematically shows a perspective view of the other side of the screen of Fig. 1;

Fig. 3 schematically shows a vertical cross section over a sound-proofing screen according to the Figs. 1 and 2; and

Fig. 4 shows a horizontal cross section over a part of the screen according to the Figs. 1-3.

The sound-proofing screen shown in the drawing comprises the posts 1 which by means of a concrete base 2 and adjusting means not further described, are connected to the ground. The beams 3 are extending between the posts 1. Brackets 4 are extending from the posts and serve to support the wooden lathes 5 to which the netting 6 is fixed, which serves to support the vegetation 7.

As in particular appears from Fig. 4 corrugated panels 8 and sound-absorbing plates 9 are mounted between the posts 1 and the beams 3. The sound absorbing plates 9 e.g. consist of plates of rockwool 10 with around it a wrapping 11 of an acoustic open foil. The sound-absorbing plates 9 are supported by means of netting 12 at the side opposite to the corrugated panel 8.

As in particular appears from Fig. 4 the corrugated panels 8 and the sound absorbing plates 9 are supported by means of two angle profiles 13 and 14 which near the posts 1 are fixed by means of wedges 15.

Fig. 4 shows a cross section over a sound-proofing screen which serves to absorb the sound coming from a source which is only present at one side of the screen, to wit the side of the netting 12.

When the wall has to be suitable to absorb the sound of two sources, present at both sides of the screen, a sound absorbing plate 9 will also be present

at the other side of the corrugated panel 8 with the netting 12 against it.

All these possibilities, however, will be obvious for the expert and need no further elucidation. Also it will be obvious that only a possible embodiment of a sound-proofing screen according to the invention is shown in the drawing and is described above and that many modifications can be applied without leaving the inventive concept as defined in the claims.

Claims

1. Sound proofing wall for erecting along a traffic road or the like, said wall comprising a support construction consisting of vertical posts (1) being regularly spaced along the wall and being connected to the ground and a number of beams (3) extending horizontally between said posts, said posts (1) and beams (3) serving to support sound absorbing plates (9), the one vertical surface of each of said plates being supported by a closed panel and the other vertical surface, directed to the source of sound, being supported by a more or less open construction, characterized in that at the side of the wall directed to the source of sound, a netting (6) is present which is positioned at a distance from the plane of the support construction (1,3) and is serving to support growing plants.

2. Sound-proofing screen according to claim 2, characterized in that the sound-absorbing plates (9) are wrapped in an acoustic open foil (11).

3. Sound-proofing screen according to claim 1 or 2, characterized in that the sound-absorbing plates (9) are supported by netting (12) at the side of the sound source and by corrugated panels (8) at the other side.

4. Sound-proofing screen according to claim 3, characterized in that the corrugated panels (8) are made of fiber cement, eternite, zinked steel or the like.

5. Sound-proofing screen according to one of the preceding claims, characterized in that the netting (6) is positioned closer to the plane of the support construction (1,3) at the upper side than at the lower side.

6. Sound-proofing screen according to one of the preceding claims, characterized in that the netting (6) has a mesh opening size of 100 to 200 mm.

Patentansprüche

1. Schallschutzwand zur Errichtung längs einer Verkehrsstraße oder dergleichen, wobei die Wand eine Stützkonstruktion aufweist, bestehend aus vertikalen Stützen (1), die regelmäßig im Abstand längs der Wand angeordnet und mit der Erde verbunden sind, und einer Anzahl von Trägern (3), die sich horizontal zwischen den Stützen erstrecken, wobei die Stützen (1) und die Träger (3) der Halterung von schallabsorbierenden Platten (9) dienen und die eine vertikale Oberfläche jeder der Platten von einem geschlossenen Feld gehalten wird und die andere vertikale Oberfläche, welche der Schallquelle zugewandt ist, von einer mehr oder weniger offenen Konstruktion gehalten ist, dadurch gekennzeichnet, daß an der Seite der der Quelle des Schalls zugewandten Wand ein Netzwerk (6) vorhanden ist, welches in einem Abstand von der Ebene der Stützkonstruktion (1, 3) angeordnet ist und der Abstützung von wachsenden Pflanzen dient.

2. Schallschutzschirm nach Anspruch 1, dadurch gekennzeichnet, daß die schallabsorbierenden Platten (9) in einer akustisch offenen Folie (11) eingewickelt sind.

3. Schallschutzschirm nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die schallabsorbierenden Platten (9) durch ein Netzwerk (12) an der Seite der Schallquelle und durch gewellte oder gerippte Felder (8) an der anderen Seite gehalten sind.

4. Schallschutzschirm nach Anspruch 3, dadurch gekennzeichnet, daß die gewellten oder gerippten Felder (8) aus Faserzement, Eternit, verzinktem Stahl oder dergleichen hergestellt sind.

5. Schallschutzschirm nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Netzwerk (6) dichter an der Ebene der Stützkonstruktion (1, 3') an der oberen Seite als an der unteren Seite angeordnet ist.

6. Schallschutzschirm nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Netzwerk (6) eine Maschenöffnungsgröße von 100 bis 200 mm hat.

Revendications

1. Mur anti-bruit destiné à être érigé le long d'une route de circulation ou analogue, ledit mur comprenant une structure support constituée de poteaux verticaux (1) qui sont régulièrement espacés le long du mur et qui sont fixés au sol, et d'un certain nombre de poutres (3) s'étendant horizontalement entre les

bits poteaux, lesdits poteaux (1) et poutres (3) servant de support à des plaques anti-bruit (9), l'une des surfaces verticales de chacune desdites plaques étant supportée par un panneau fermé et l'autre surface verticale, dirigée vers la source de bruit, étant supportée par une structure plus ou moins ouverte, caractérisé en ce que

du côté du mur dirigé vers la source de bruit, se trouve un treillis (6) qui est placé à une certaine distance du plan de la structure support (1, 3) et qui est utilisé pour supporter des plantes qui y croissent.

2. Ecran anti-bruit selon la revendication 1, caractérisé en ce que les plaques anti-bruit (9) sont enveloppées dans une feuille ouverte du point de vue acoustique (11).

3. Ecran anti-bruit selon la revendication 1 ou 2, caractérisé en ce que les plaques anti-bruit (9) sont supportées par un treillis (12) du côté de la source de bruit et par des panneaux ondulés (8) de l'autre côté.

4. Ecran anti-bruit selon la revendication 3, caractérisé en ce que les panneaux ondulés (8) sont faits de fibrociment, d'éternite, d'acier galvanisé ou analogue.

5. Ecran anti-bruit selon l'une quelconque des revendications précédentes, caractérisé en ce que le treillis (6) est placé plus près de la structure support (1, 3) au droit de son côté supérieur qu'au droit de son côté inférieur

6. Ecran anti-bruit selon l'une quelconque des revendications précédentes, caractérisé en ce que le treillis (6) a une dimension d'ouverture de maille de 100 à 200 mm.

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FIG. 1

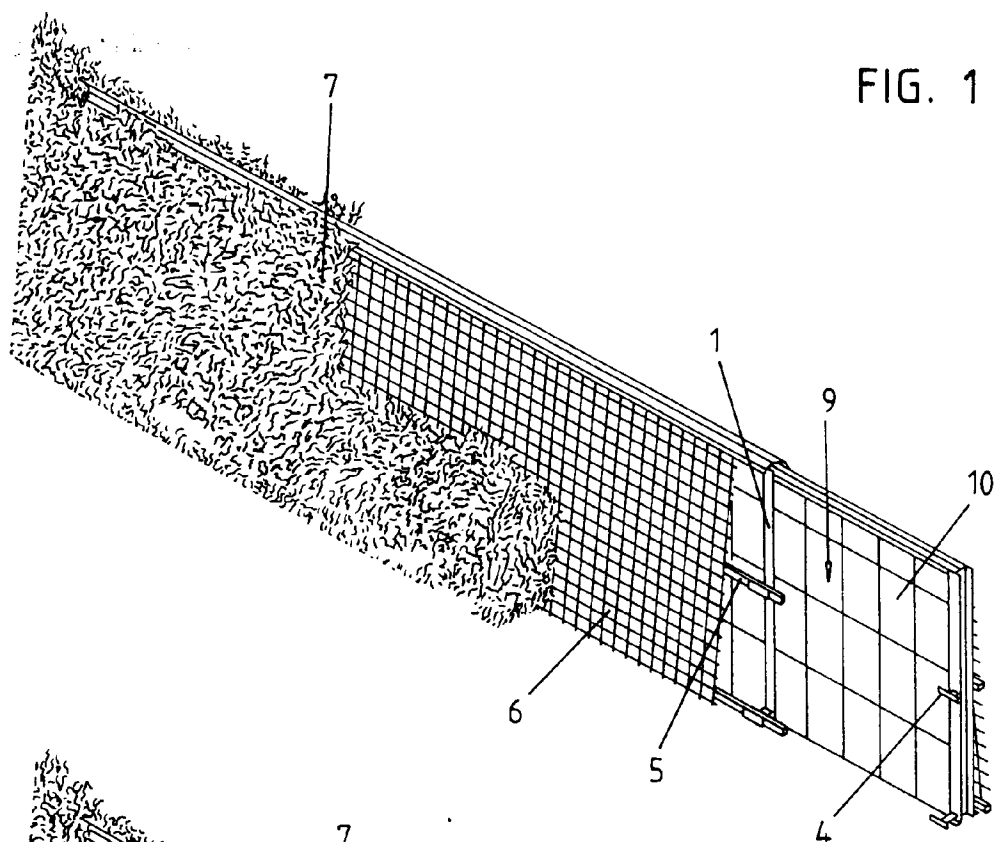
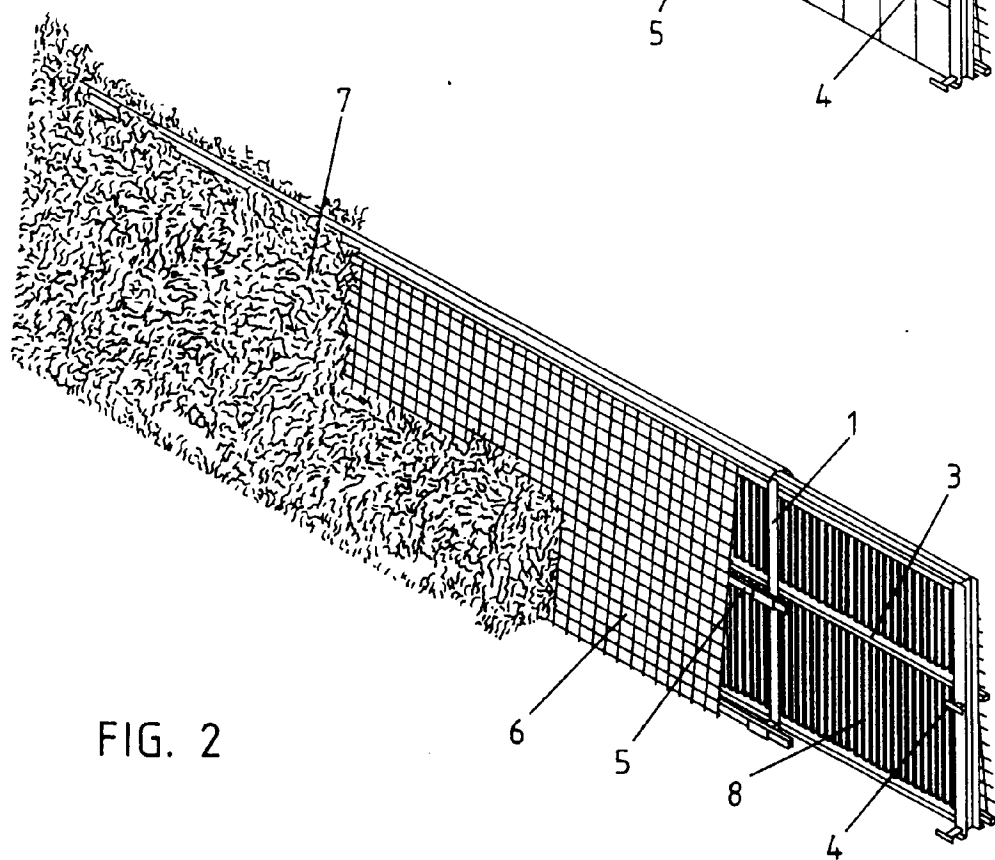


FIG. 2



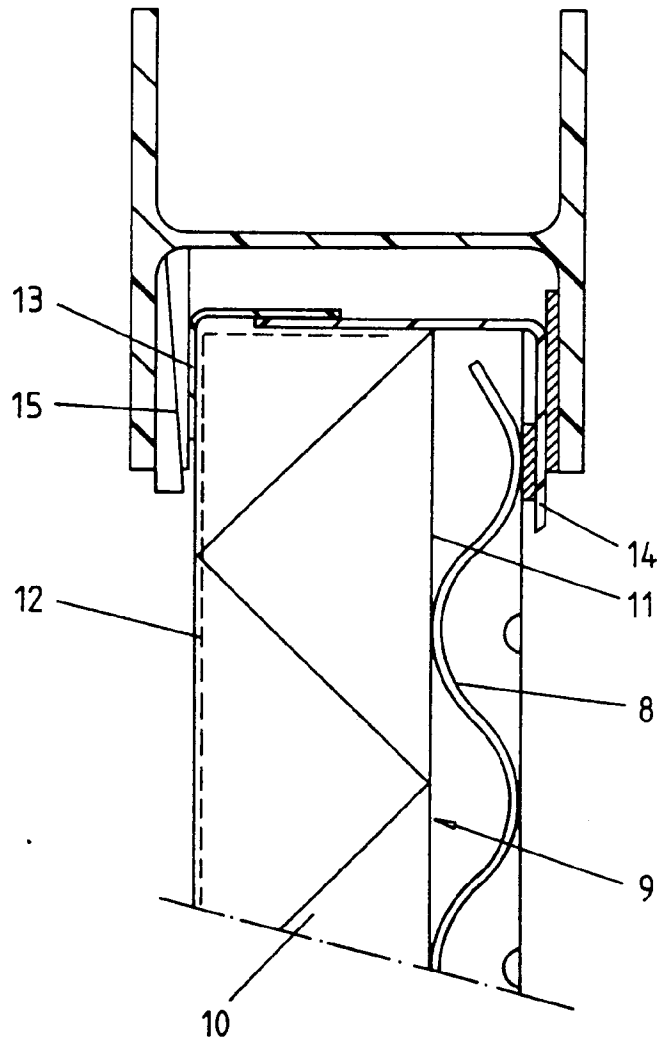
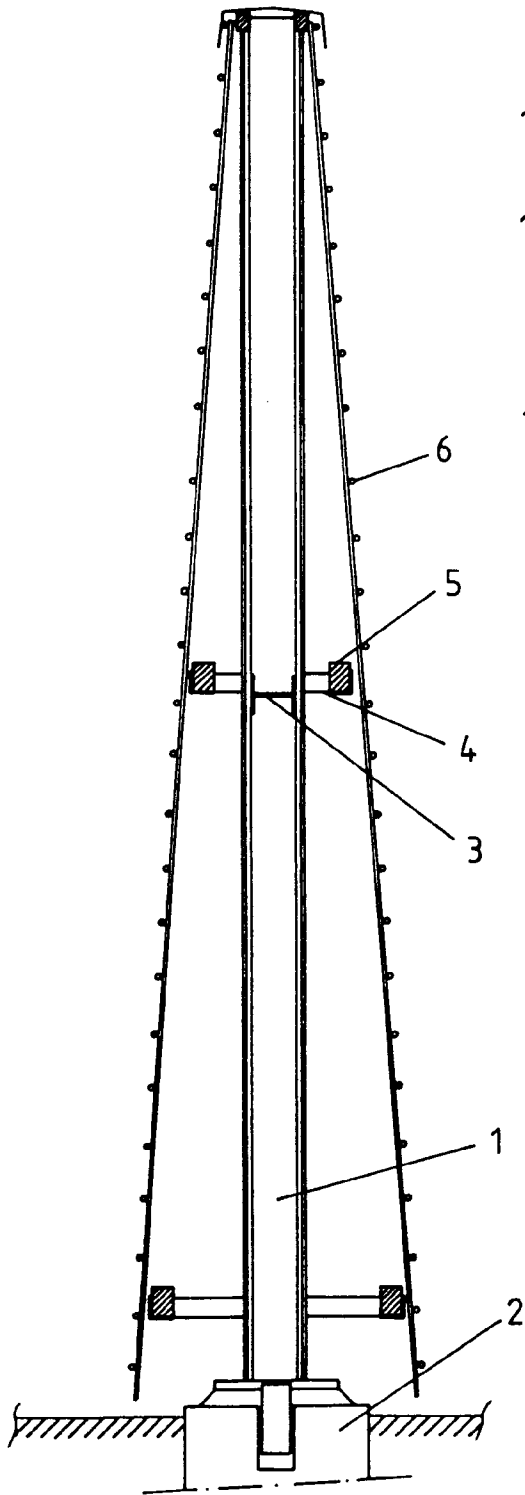


FIG. 4

FIG. 3