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(54) **Mounting profile for suspension mounting of tiles on an external wall**

(57) Device for mounting of facade covering tiles (20) of the type that on their back side (26) have a downwardly directed supporting ledge (21) and on their front side (25) have a lap (22) and a downwardly directed tongue (23) and that are adapted to be arranged the one over the other on a facade of a building (30) with vertically adjacent tiles (20) overlapping each other at their upper and lower edges on such a way that the tongue (23) of each upper tile extends into the lap (22) of the downwards adjacent tile, which device comprises an elongated mounting profile (1) with a substantially plane waist (2) and a pair of flanges (3), arranged at opposite edges of its long side, each having an inner flange part (4) that is connected to the waist (2), and a discontinuous outer flange part (5) that extends from the waist (2) along a supporting plane (S) for supporting the back sides (26) of the facade covering tiles (20) and that present uniformly distributed mounting hooks (6) for carrying the facade covering tiles (20) by their supporting ledges (21). Further, at least one of the outer flange parts (5) comprises locking flanges (7) for locking the facade covering tiles (20) in the horizontal direction and prevent them from moving sideways, wherein the locking flanges (7) extend from the corresponding flange (3) inwards along the supporting plane (S) towards the centre of the waist and comprises an outwardly bent end part (8) arranged to bear on an inner side edge (24) of a tile (20), and wherein the waist (2) and the flanges (3) jointly form a vertical lead channel for leading down any moisture that enters between the inner side edges (24) of two tiles (20).

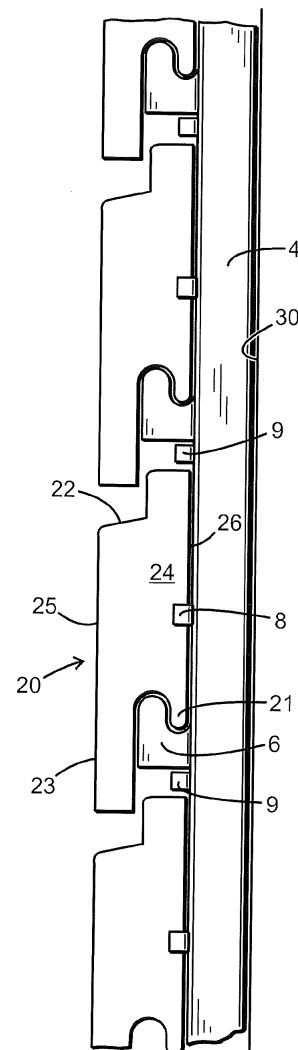


FIG. 2

Description

[0001] The invention relates to a mounting profile that is arranged to be attached in a vertical position on a facade of a building for suspension mounting of tiles on an external wall, especially tiles of the type that includes horizontally elongated facade covering tiles of a stone material.

[0002] Such facade covering systems are known from e.g. EP 1 027 507 B1 and EP 0 556 264 B1.

[0003] The tiles or stones that are covered by this description have a rectangular form and usually have a larger width than height. In a widely used embodiment the stones measures 600*100 mm, but there is also a demand for larger stones, why stones with double the height, i.e. which measures 600*200 mm have been made available.

[0004] The weight of the stones makes sure that once they are mounted they are well anchored on the profile and may normally not be affected by bad weather. The only thing that normally can get them out of position is shocks and impacts, especially such that they are affected upwards or to the side. In EP 0 556 264 B 1 a locking flange is described that is arranged to prevent the tiles from being lifted out of position. However, there is still no existing solution that prevents the stones from being moved in the lateral or horizontal direction.

[0005] In the facade covering systems according to the prior art the stones are mounted with a certain gap between them. There is a vertical overlap in that the lowest part of a tile rests on the upper edge of the closest underlying stone such that moisture and the like is prevented from entering between the stones. Such an overlap does however not exist in the horizontal direction and normally there is hence a vertical gap between the stones in which moisture may penetrate.

[0006] The invention provides a mounting profile and a facade covering system that includes improvements with respect to the prior art considering the lateral positioning and with respect to the moisture prevention.

Short description

[0007] The invention relates to a device for mounting of facade covering tiles of the type that on its back side have a downwardly directed supporting ledge and on its front side ahead of the supporting ledge has a lap and a downwardly directed tongue and that are adapted to be arranged the one over the other on a facade of a building with vertically adjacent tiles overlapping each other at their upper and lower edges in a such a way that the tongue of each upper tile extends into the lap of the downwardly adjacent tile, which device comprises an elongated mounting profile with a substantially plane waist and a pair of flanges, arranged at opposite edges of the long sides of the waist, each having an inner flange part that is connected to the waist, and a discontinuous outer flange part that extends from the waist along a supporting

plane for supporting the back sides of the facade covering tiles and that presents uniformly distributed mounting hooks to carry the facade covering tiles by their supporting ledges. At least one of the outer flange parts comprises locking flanges for locking the facade covering tiles in the horizontal direction and prevent them from moving sideways, wherein the locking flanges extend from the respective flange in the supporting plane inwards towards the centre of the waist and comprises an outwardly bent end part that is arranged to bear on an inner side edge of a tile, wherein the waist and the flanges jointly form a vertical lead channel for conveying any moisture that enters between the inner side edges of two adjacent tiles.

[0008] By means of the device according to the invention the object is achieved that the arranged tiles are prevented from moving sideways. Further, the fact that the locking flanges are directed inwards towards the centre of the mounting profile, contributes to that the existing gap between two adjacent tiles is centered with respect to the vertical lead channel that is formed by the waist and the flanges, such that moisture is prevented from entering between two mounting profiles.

[0009] Other advantages of the invention will appear from the detailed description and from the dependent claims.

Short description of the figures

[0010] Below the invention is described in terms of specific embodiments with reference to the accompanying drawings, of which:

- Figure 1 shows a view of a mounting profile according to one embodiment of the invention;
- Figure 2 shows a vertical side section of the mounting profile shown in figure 1 with tiles arranged upon it;
- Figure 3 shows a horizontal section from below of the mounting profile shown in figure 1 with tiles arranged upon it.

Detailed description of the shown embodiments

[0011] In the following detailed description an embodiment of a device according to the invention is described, which is constituted by an elongated mounting profile 1 arranged to carry rectangular facade covering tiles 20, see especially figure 2.

[0012] Each facade covering tile 20 has a rectangular front side 25 that is adapted to be face out from a building and constitute the visible facade of the building. The back side 26 of the tile has a downwardly directed supporting ledge 21 for suspension mounting of the tile and on the front side of the tile there is a lap 22 and a downwardly directed tongue 23. The facade covering tiles 20 are adapted to be placed the one over the other on a facade

of a building 30 with vertical adjacent tiles 20 overlapping each other with their upper and lower edges in such a way that the tongue 23 of each tile extends into the lap 22 of the downwardly adjacent tiles. Such tiles are known per se and are therefore not described in detail here.

[0013] The invention relates to a mounting device that in figure 1 is exemplified by an elongated mounting profile 1 of sheet metal with a substantially plane waist 2 and a couple of flanges 3, which are arranged on opposite sides thereof. The flanges 3 have an inner flange part 4 each, which is connected to the waist 2, and a discontinuous outer flange part 5 that extends in parallel with the waist 2 and forms a supporting plane (S) for supporting the back side 26 of the each facade covering tile 20. Mounting hooks 6 are uniformly distributed for carrying the facade covering tiles 20 by their supporting ledges 21.

[0014] In the shown embodiment, mounting hooks are arranged as bent sections of the discontinuous outer flange part 5. Conventionally, the mounting hooks have instead been arranged as an extension of the inner flange part 4. Such an arrangement is feasible within the scope of the invention, but it would imply that the wastage resulting from the cutting around the mounting hooks 6 would increase. Further, it is advantageous that the mounting hook is placed in the centre of the outer flange part 5, as the support of the supporting plane S for the tiles 20 is thereby ameliorated.

[0015] In accordance with the invention at least one of the outer flange parts 5 comprises locking flanges 7 for locking the facade covering tiles 20 horizontally and prevent them from moving sideways after having been mounted. In the shown embodiment, locking flanges 7 extend from both flanges 3 inwards towards the centre of the waist 2. The locking flanges 7 each comprise an outwardly bent end part 8 arranged to bear on the inner side edge 24 of a tile 20 and thus prevent that the tile moves sideways. The waist 2 and the flanges 3 jointly define a space that forms a vertical lead channel for leading away moisture that enters between the inner side edges 24 of two tiles 20.

[0016] In the shown embodiment the outer flange parts 5 comprise opposed locking flanges 7 of equal length for positioning the facade covering tiles 20 horizontally such that the space between two adjacent tiles are centered with respect to the corresponding mounting profile 1 and opens substantially in line with the waist 2 of the mounting profile 1, as is shown in figure 2. The length of the locking flanges 7 is such with respect to the waist 2 of the mounting profile that a small gap, in the range of 5-10 mm, is formed between the end parts 8 of two opposed locking flanges 7.

[0017] In a not shown embodiment the length of the locking flanges 7 is instead such with respect to the waist 2 of the mounting profile that the outwardly bent end part 8 of the locking flanges 7 in the horizontal direction is positioned at or near the centre of the waist 2 of the mounting profile. In such an embodiment the tiles are adapted to be arranged from opposite direction against

the end part 8, wherein the distance between two adjacent tiles 20 that bear on opposite sides of the outwardly bent end part 8 is governed by the thickness of the end part 8. When the end part of the locking flange is positioned substantially centrally on the waist 2 of the mounting profile, the tiles 20 will also be centered with respect to the corresponding mounting profile 1 such that the space between them will end up along the centre of the waist 2 of the mounting profile 1. By providing the end part 8 of the locking flanges 7 with a supplementary flange of desired length (not shown) adapted to be located between two tiles 20 the gap between two tiles 20 may be regulated to a desired width.

[0018] As is apparent from figures 1 and 2, the mounting profile 1 further comprises a vertical locking flange 9 in order to prevent that the tiles may be vertically moved after that they have been mounted.

[0019] In order to simplify the transport of the mounting profiles 1 and decrease the space that they demand during transportation, the mounting profiles are arranged to be at least partly bent on location. Hence, the locking flanges are preferably not bent until after transportation of the profiles. Therefore and due to the fact that the inner flange part 4 and the mounting hooks 6 are inclined, the profiles may placed inside each other, wherein the space needed for them is heavily reduced.

[0020] Above, the invention has been described with reference to shown and not shown embodiments. These embodiments are however not limiting for the invention, which instead is only limited by the appended claims.

Claims

1. Device for the mounting of facade covering tiles (20) of the type that on their back side (26) have a downwardly directed supporting ledge (21) and on their front side (25) have a lap (22) and a downwardly directed tongue (23) and that are adapted to be arranged the one over the other on a facade of a building (30) with vertically adjacent tiles (20) overlapping each other at their upper and lower edges in such a way that the tongue (23) of each upper tile extends into the lap (22) of the downwards adjacent tile, which device comprises an elongated mounting profile (1) with a substantially plane waist (2) and a pair of flanges (3), arranged at opposite edges of its long side, each having an inner flange part (4) that is connected to the waist (2), and a discontinuous outer flange part (5) that extends from the waist (2) along a supporting plane (S) for supporting the back sides (26) of the facade covering tiles (20) and that present uniformly distributed mounting hooks (6) for carrying the facade covering tiles (20) by their supporting ledges (21), **characterised in that** at least one of the outer flange parts (5) comprises locking flanges (7) for locking the facade covering tiles (20) in the horizontal direction and prevent them from moving

sideways, wherein the locking flanges (7) extend from the corresponding flange (3) inwards along the supporting plane (S) towards the centre of the waist and comprises an outwardly bent end part (8) that is arranged to bear on an inner side edge (24) of a tile (20), and wherein the waist (2) and the flanges (3) jointly form a vertical lead channel for leading down any moisture that enters between the inner side edges (24) of two tiles (20).

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2. Device according to claim 1, **characterised in that** each outer flange part (5) comprises opposed locking flanges (7) of equal length for positioning the facade covering tiles (20) in the horizontal direction such that the gap between two adjacent tiles (20) is centered with respect to the corresponding mounting profile (1) and ends up substantially centrally with respect to the waist (2) of the mounting profile (1).

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3. Device according to claim 1, **characterised in that** the length of the locking flanges (7) is such with respect to the waist (2) of the mounting profile that the outwardly bent end part (8) of the locking flange (7) is such positioned in the horizontal direction that it is substantially in line with the centre of the waist (2) of the mounting profile, wherein two adjacent tiles that bear on opposite sides of the outwardly bent end part (8) is centered with respect to the corresponding mounting profile (1) such that the gap between them ends up centrally with respect to the waist (2) of the mounting profile (1).

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4. Device according to any of the preceding claims, **characterised in that** the mounting hooks (6) from part of the discontinuous outer flange parts (5) and that a section of the outer flange parts (5) extend between the inner flange part (4) and the mounting hook (6), which section form part of the supporting plane (S) and is arranged to support the back sides (26) of the facade covering the tiles (20).

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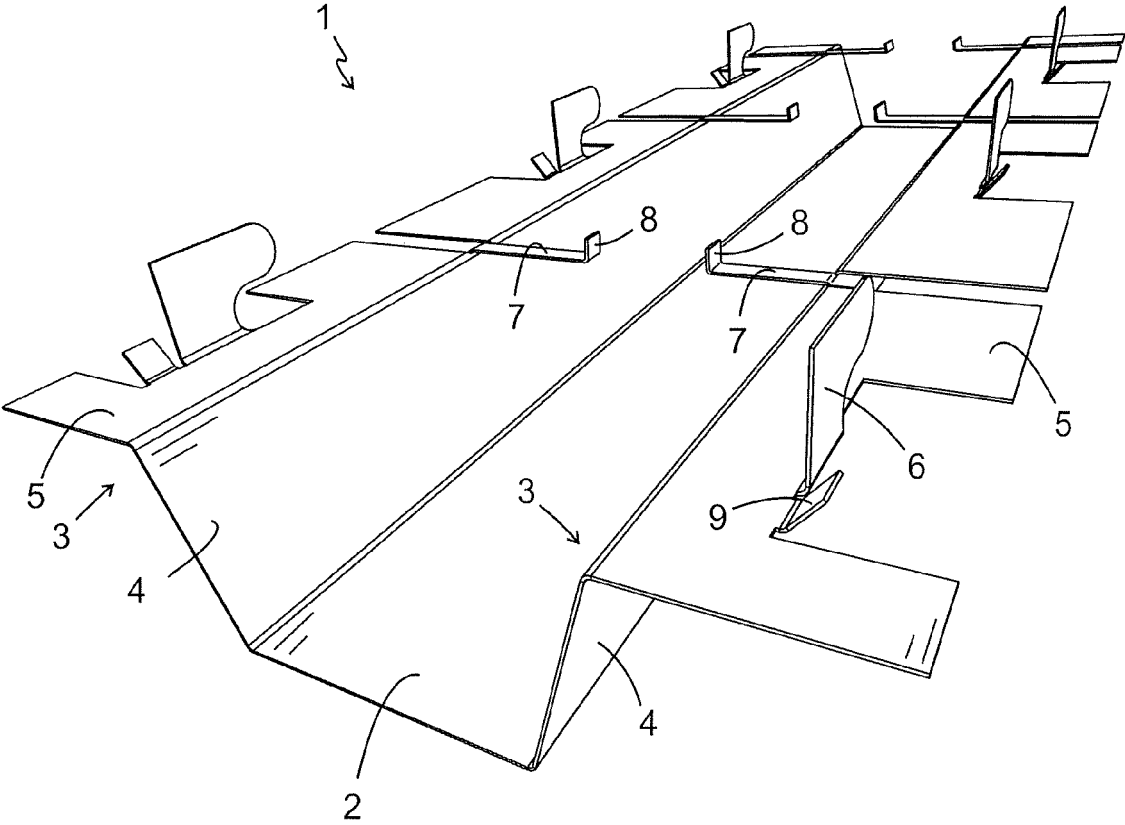


FIG. 1

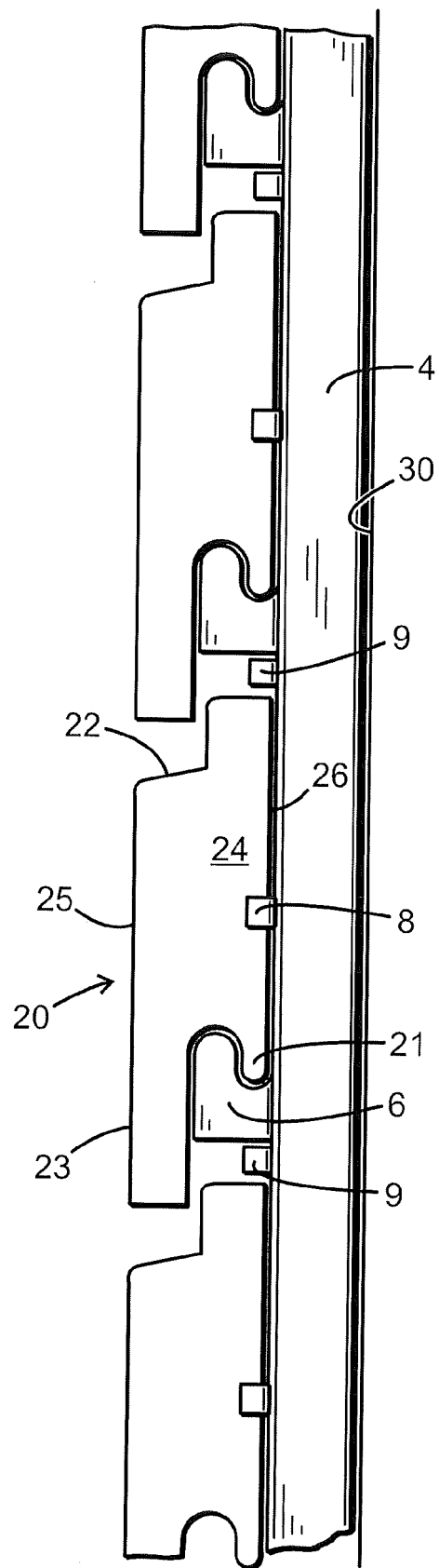


FIG. 2

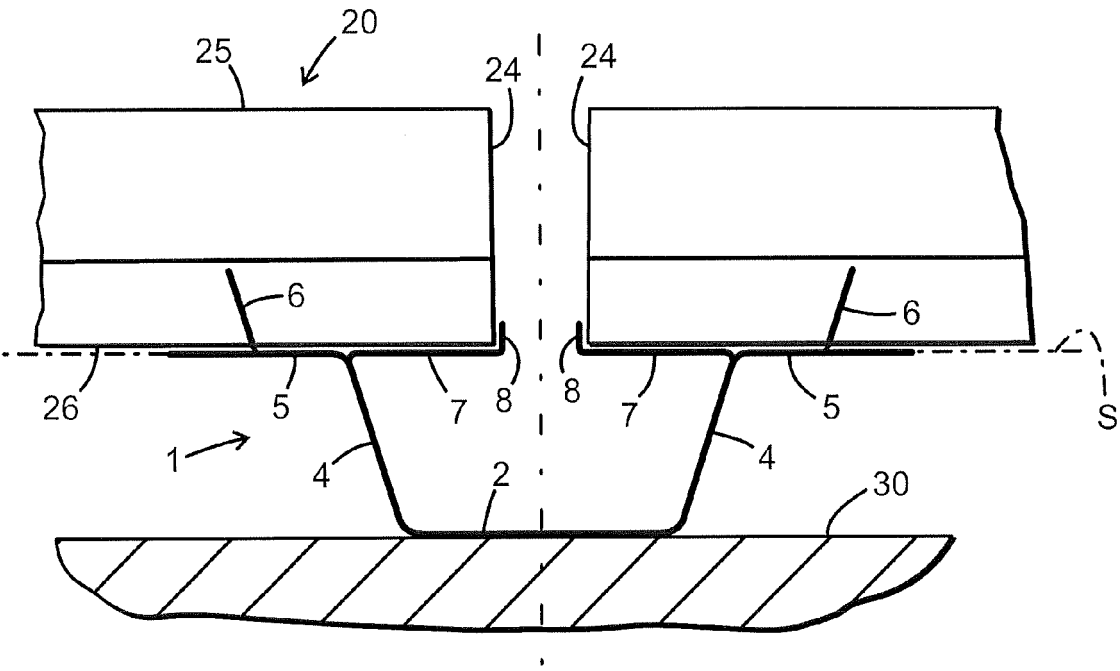


FIG. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1027507 B1 [0002]
- EP 0556264 B1 [0002]
- EP 0556264 A [0004]