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(54) Clamp for placing straight-flight stairs

(57) Clamp (1) which allows to construct straight-flight stairs by keeping the walls of the steps immobilized while said step is filled with a matrix, said clamp (1) comprising a support element (2) and a bracket (3), wherein said support element (2) in turn comprises a horizontal (4) and a vertical (5) segment which allow the horizontal (6) and vertical (7) segments of a bracket (3) to slide inside them, as well as including screws (8,9) for adjusting the vertical (5) and horizontal (4) segments of the support element (2) against the vertical (7) and horizontal (6) segments of each bracket (3).

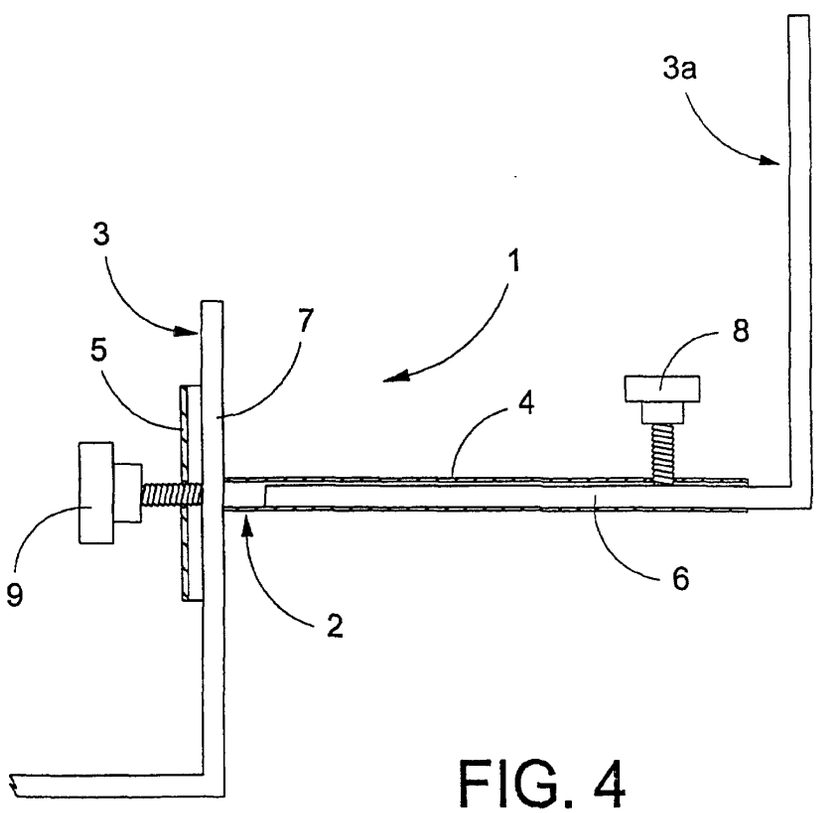

FIG. 4

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Description

[0001] The present invention relates to a clamp for placing straight-flight stairs.

[0002] A method is known for placing stairs in which these are begun by their bottom part. Each step comprises a vertical wall and a top horizontal wall, as well as a filling with a matrix such as concrete, which requires a certain time to set.

[0003] Therefore, it is necessary to use a device to keep in place the walls of the step while said step is filled with the matrix. This is performed step by step, until the top of the staircase is reached. Finally, the support devices are removed from the steps after the matrix has set.

[0004] Clamps are known for placing stairs having steps with an overhang, which comprise a horizontal segment that rests on the horizontal wall of the step below it, a tightening element attached to the jut of said lower step and a vertical segment meant to support the vertical wall of the adjacent step above it.

[0005] However, in placing straight-flight stairs in which the steps do not overhang these clamps are not suitable, as the structure of the stairs does not permit their adjustment.

[0006] The purpose of the present invention is to solve the aforementioned drawbacks, providing a number of advantages described hereunder.

[0007] This purpose and further objectives described below are solved by a clamp for placing straight-flight stairs in accordance with the invention with a simple and inexpensive construction.

[0008] The clamp for placing straight-flight stairs object of this invention comprises a support element and a bracket, such that this support comprises in turn a horizontal segment and a vertical segment which allow, respectively, the displacement of the horizontal segment of a bracket and the vertical segment of the bracket of the step immediately below.

[0009] With this construction the segments of each bracket may be inserted to a greater or lesser extent in the segments of the support segment, depending on the width and height of the steps. Therefore, this type of clamp can be adapted to different step sizes in straight-flight stairs.

[0010] Additionally, as each bracket is joined by one end to the support beneath it and by its other end to the upper adjacent support, a number of clamps are provided joined by pairs along the entire length of the staircase. This structural arrangement provides homogeneity and stability of the steps during the placing process for the stairs.

[0011] Advantageously, the clamp comprises two screws for adjusting the corresponding two sectors of the bracket according to the size of the steps.

[0012] Thus, the clamps can be attached after they have been placed and adapted to the size of the steps.

[0013] Further characteristics and advantages of the present invention will become apparent in view of the following description of a preferred and non-limiting example, made with reference to the accompanying drawings where for purposes of illustration only the following is shown:

[0014] Figure 1 shows an elevation view of the support; Figure 2 shows a side view of the bracket; Figure 3 shows a plan view of the support; Figure 4 shows a support coupled to two brackets; and Figure 5 shows a straight-flight stair with several connected clamps in a working position.

[0015] With particular reference to figures 1 and 4, the clamp (1) is seen to comprise a support (2) and a bracket (3). The support (2) comprises a horizontal segment (4) and a vertical segment (5) that respectively allow to displace the horizontal segment (6) of a bracket (3a) and the vertical segment (7) of the bracket (3) corresponding to the step immediately below.

[0016] Additionally, there are two screws (8) and (9) for adjusting, respectively, the horizontal segment (6) and the vertical segment (7) of each bracket, according to the size of the steps.

[0017] As shown in figure 5, the construction of a straight-flight staircase (10) is begun by the bottom, step by step. Each step (11) comprises a horizontal wall (12), a vertical wall (13) and a filler with a matrix (14).

[0018] The first step (11) is placed by attaching the first bracket (3) to the floor by a matrix or by any other means. Then the vertical wall (13) of said first step (11) is placed against the vertical wall (7) of said bracket.

[0019] After this the matrix (14) is poured and the horizontal wall (12) of the first step (11) is placed. Then the first support element (2) is attached to the first bracket (3), introducing and sliding its vertical segment (7) in the vertical segment (5) of the first support element (2). Thus, the support element (2) will rest against the horizontal wall (12) of the first step (11). In addition, the vertical segment (5) meets the end of the horizontal wall (12), acting as a stop.

[0020] A screw (9) is used to adjust the vertical wall (7) of the first bracket (3) to the vertical wall (5) of the support element (2). In addition, the horizontal segment (6a) of the second bracket (3a) is adjusted to the horizontal segment (4) of the support element (2) by means of a screw (8).

[0021] The second step (11a) is set by inserting the horizontal segment (6a) of a second bracket (3a) in the horizontal segment (4) of the first support element (2). After this the vertical wall (13a) of said second step 811a) is placed and a similar process is followed as when placing the first step (11).

[0022] After the second step (11a) is placed, the following steps (11b, 11c, etc.) are placed with their corresponding clamps (1a, 1b, etc.).

[0023] This provides a staircase with a given number of steps and with the corresponding clamps suitably placed for their support, with each clamp attached to the upper adjacent clamp.

[0024] Finally, after the matrix has set the clamps are removed, revealing the finished stairs.

[0025] The fact that the clamps are attached to each other by pairs facilitates their instalment and ensures the correct positioning and securing of the walls of the steps.

[0026] In addition, the brackets allow adapting the support elements to the size of the steps, as the segments of these brackets may slide into the support elements and the final position can be set by the screws.

[0027] The details and accessory elements used in the clamp for placing straight-flight stairs of the invention, as well as the materials employed, can be replaced by other technically equivalent ones as long as the essence of the invention and the scope thereof, as defined by the following claims, are not affected.

Claims

1. Clamp for placing straight-flight stairs, **characterized in that** it comprises a support element and a bracket, with the support element consisting of a horizontal segment and a vertical segment which respectively allow the displacement of the horizontal wall of a bracket and the vertical wall of the bracket corresponding to the step immediately below.

2. Clamp for placing straight-flight stairs, as claimed in claim 1, **characterized in that** it includes two screws for respectively adjusting the two segments of the bracket according to the size of the step.

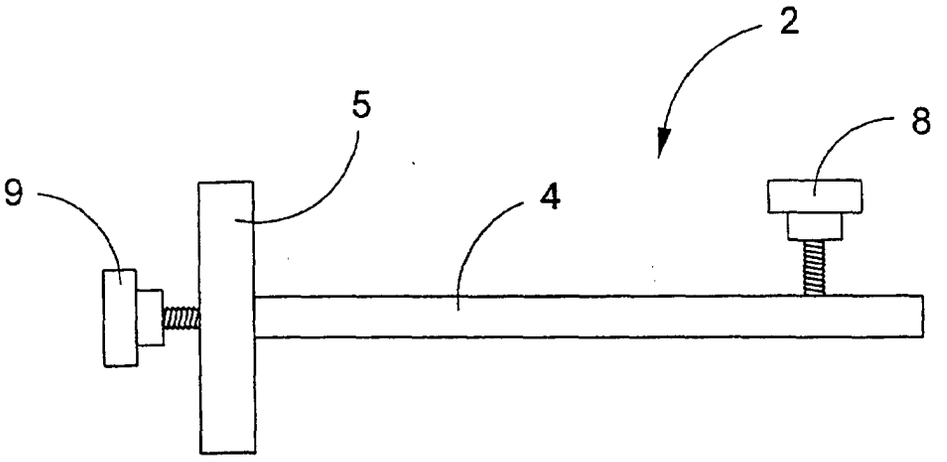


FIG. 1

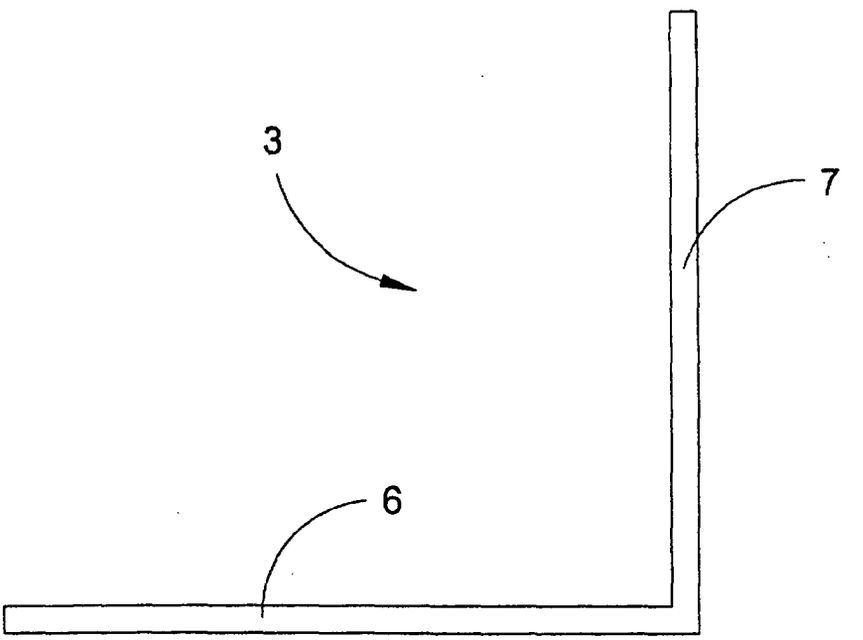


FIG. 2

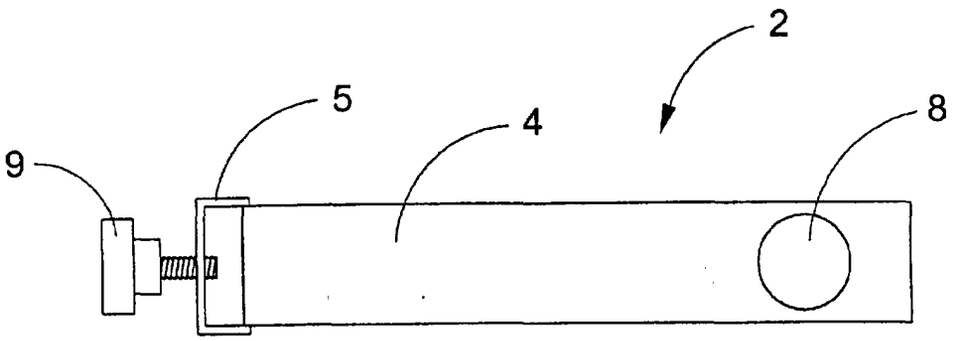


FIG. 3

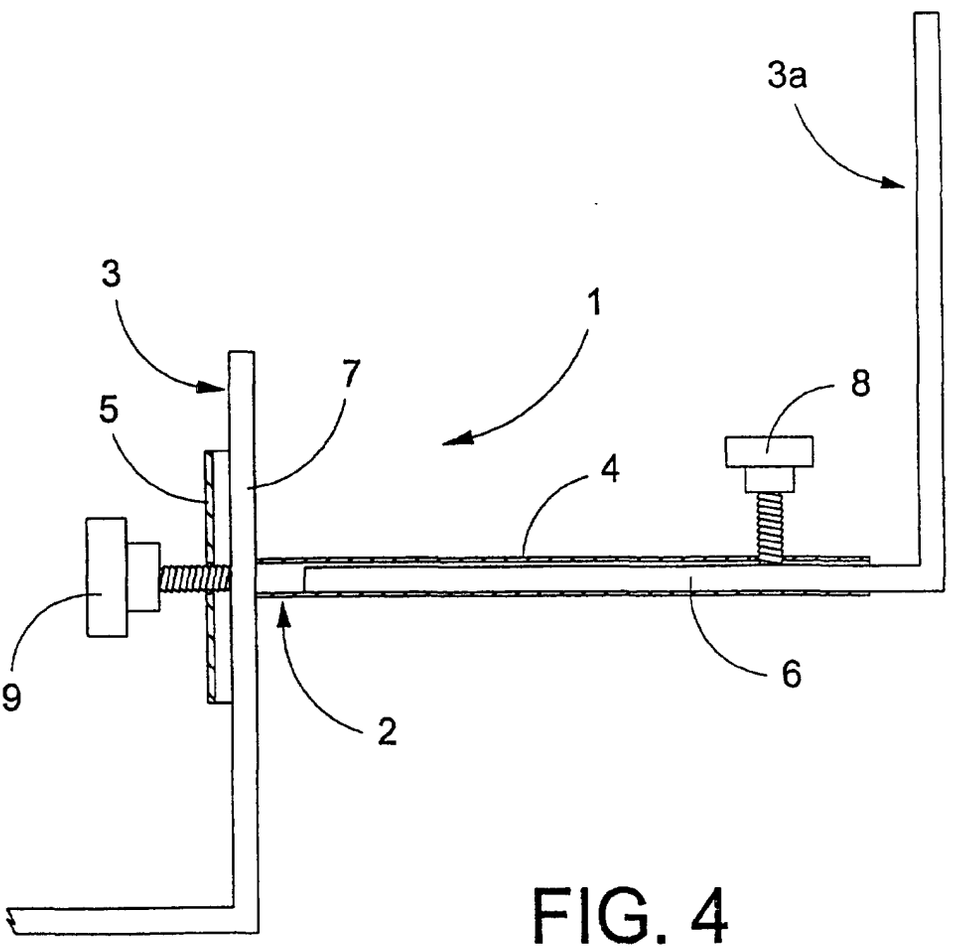
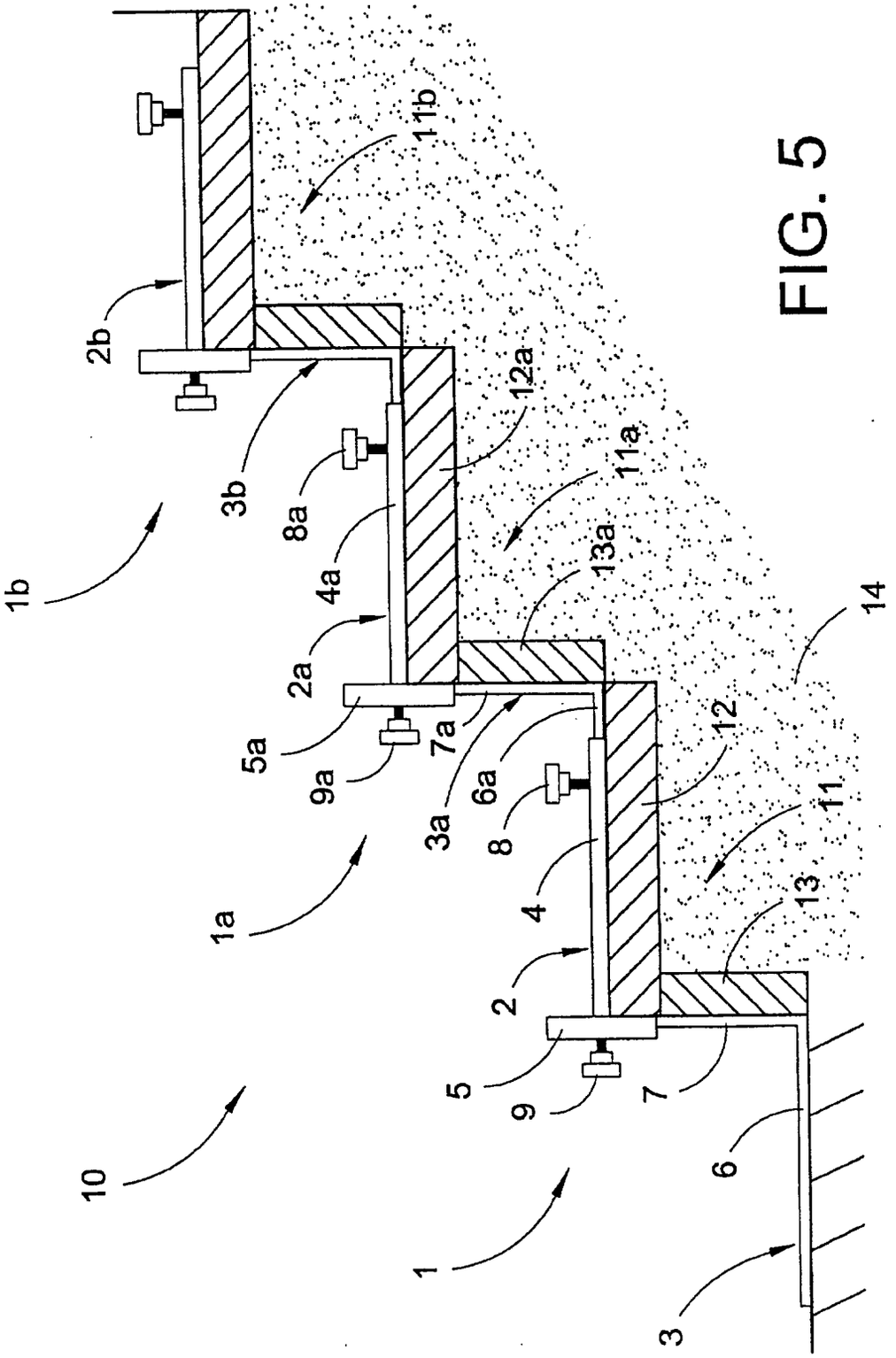


FIG. 4


1b
2b
3b
8a
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9a
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6
3
1
10
1a
11b
12a
11a
13a
14
12
11
13

FIG. 5