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(54) **Stairway**

(57) A stairway presents a plurality of steps (10) fixed to two reciprocally parallel side flanks (2) by means of corresponding fastening screws (11) arranged orthogonally to the side flanks (2) themselves; each side flank (2) being defined by at least two substantially flat sup-

porting plates (3), each of which is provided with a plurality of teeth (5) shaped so as to engage corresponding recesses (7) obtained in the other supporting plate (3) and to lock the supporting plates (3) therebetween in two reciprocally orthogonal directions (6, 9).

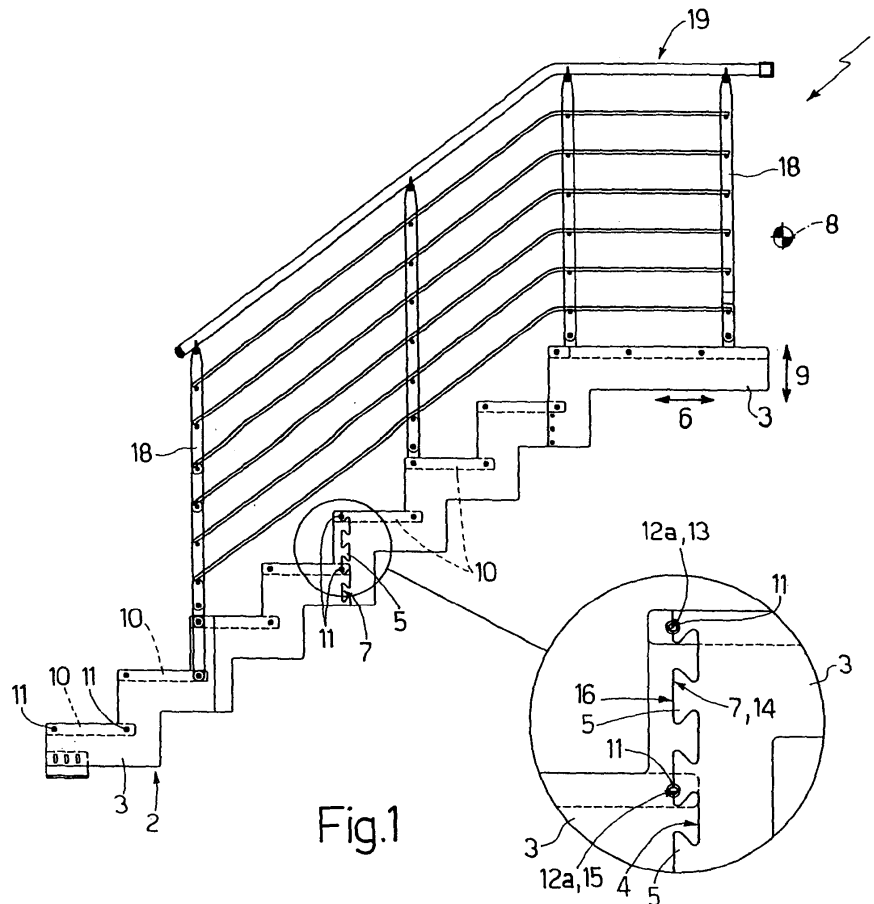


Fig.1

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Description

[0001] The present invention relates to a stairway.

[0002] Specifically, the present invention relates to a stairway of the type comprising a plurality of steps fixed to two side flanks, which are formed of metallic material, extend in corresponding substantially vertical, reciprocally parallel retaining planes, and each comprises at least two corresponding, substantially flat supporting plates, each of which is substantially step-shaped, and is provided with a plurality of reciprocally parallel teeth protruding from the supporting plate itself.

[0003] Following a displacement of the supporting plates in a first horizontal direction parallel to the side flanks, the teeth of each supporting plate slidingly engage corresponding recesses obtained in the other supporting plate so as to reciprocally lock the supporting plates in a second vertical direction orthogonal to the first direction.

[0004] The supporting plates of each side flank are reciprocally locked in the first direction by means of at least one locking plate arranged in contact with the supporting plates and fixed to the supporting plates themselves by means of fastening screws.

[0005] The known stairways of the above-described type present some drawbacks, mainly deriving from the fact that the locking of the supporting plates in the first direction implies the use of the mentioned locking plates, a relatively complex structure and assembly of such stairways, and relatively high costs of the stairways themselves.

[0006] It is an object of the present invention to provide a stairway which is free from the above-described drawbacks and which is simple and cost-effective to implement.

[0007] According to the present invention there is provided a stairway as claimed in the attached claims.

[0008] The present invention will now be described with reference to the accompanying drawings, which illustrate a non-limitative embodiment thereof, in which:

figure 1 is a side view, with parts enlarged for the sake of clarity, of a preferred embodiment of the stairway of the present invention; and

figure 2 is a side view of a detail of the stairway in figure 1.

[0009] With reference to figures 1 and 2, numeral 1 indicates, as a whole, a stairway comprising two side flanks 2 (only one of which is shown in figure 1) extending in substantially vertical, reciprocally parallel retaining planes. Each flank 2 comprises, in this case, two flat supporting plates 3 formed of metallic material and substantially step-shaped.

[0010] Each plate 3 is limited by a substantially vertical end face 4, which faces the face 4 of the other plate 3, and is provided with a plurality of reciprocally parallel teeth 5, which protrude in a substantially horizontal direction 6, are distributed along the face 4 and, in this

case, are dovetail-shaped. Each tooth 5 is separated from each adjacent tooth 5 by a corresponding recess 7, also dovetail-shaped.

[0011] Following a displacement of the plates 3 with respect to each other in a direction 8 substantially horizontal perpendicular to the plates 3 and to the plane of the sheet in figure 1, the teeth 5 of each plate 3 slidingly engage the recesses 7 of the other plate 3 so as to allow the dovetail shape of the teeth 5 and of the recesses 7 to lock the plates 3 therebetween both in the direction 6 and in a substantially vertical direction 9 orthogonal to the directions 6 and 8.

[0012] The stairway 1 further comprises a plurality of substantially flat, horizontal steps 10, which extend between the side flanks 2 in the direction 8, and are distributed along the side flanks 2 themselves. Each step 10 is fixed to each flank 2 by means of at least two fastening screws 11, each of which extends through a corresponding hole 12 obtained through the corresponding flank 2, and engages the step 10 itself to lock the corresponding flank 2 in the direction 8.

[0013] Regarding the above, it is worth specifying that some holes 12 (hereinafter indicated by numeral 12a) are made at the coupling between the plates 3 and each comprises a first corresponding substantially semi-cylindrical portion 13 obtained through a bottom wall 14 of a corresponding recess 7 and a second corresponding substantially semi-cylindrical portion 15 obtained through a head surface 16 of the corresponding tooth 5.

[0014] Each plate 3 is further provided with at least one fastening bracket 17, which protrudes upwards from the plate 3 in the direction 9 to allow the fastening to the plate 3 itself of a vertical upright 18 of a protective railing 19 of a known type.

[0015] The stairway 1 presents some advantages mainly deriving from the fact that the shape of the teeth 5 and of the recesses 7 allows to reciprocally lock the plates 3 both in the direction 6 and in the direction 9 without requiring the use of further fastening members. Consequently, the stairway 1 presents considerably reduced costs, implies a relatively simple assembly and furthermore allows to reduce costs and volumes for storage and shipment.

Claims

1. A stairway comprising two side flanks (2), which extend in corresponding substantially vertical, reciprocally parallel retaining planes, and each comprises at least two corresponding, substantially flat supporting plates (3); a plurality of steps (10) fixed to the side flanks (2) themselves; first coupling means (11) to lock the supporting plates (3) on the steps (10) in a first direction (8) substantially orthogonal to said retaining planes; and for each side flank (2), second coupling means (5, 7) to reciprocally lock the corresponding supporting plates (3) in a second and a

third direction (6, 9) substantially orthogonal to each other and to said first direction (8), the second coupling means (5, 7) comprising, for each supporting plate (3), a plurality of teeth (5) protruding from the supporting plate (3) itself for engaging corresponding recesses (7) obtained in the other supporting plate (3); and **characterised in that** the teeth (5) and the recesses (7) are shaped so as to lock the supporting plates (3) therebetween, both in the second direction (6) and in the third direction (9).

2. A stairway according to claim 1, wherein the teeth (5) and the recesses (7) are substantially dovetail-shaped.
3. A stairway according to claim 1 or 2, wherein the teeth (5) of each supporting plate (3) protrude from a substantially vertical end face (4) of the supporting plate (3) itself.
4. A stairway according to any of the preceding claims, wherein each supporting plate (3) is substantially step-shaped.
5. A stairway according to any of the preceding claims, wherein the teeth (5) are slidingly coupled with the corresponding recesses (7) in said first direction (8).
6. A stairway according to any of the preceding claims, wherein the first coupling means (11) comprise, for each step (10), at least two fastening screws (11), which extend through the side flanks (2), and engage the step (10) itself parallelly to the first direction (8).
7. A stairway according to claim 6, wherein each side flank (2) presents a plurality of holes (12) engaged by corresponding said fastening screws (11); each hole (12a) of at least part of the holes (12) comprising a first portion (15) obtained through a corresponding tooth (5) and a second portion (13) obtained through the corresponding recess (7).
8. A stairway according to claim 7, wherein the first portion (15) is obtained through a head surface (16) of said tooth (5) and the second portion (13) is obtained through a bottom wall (14) of said recess (7).

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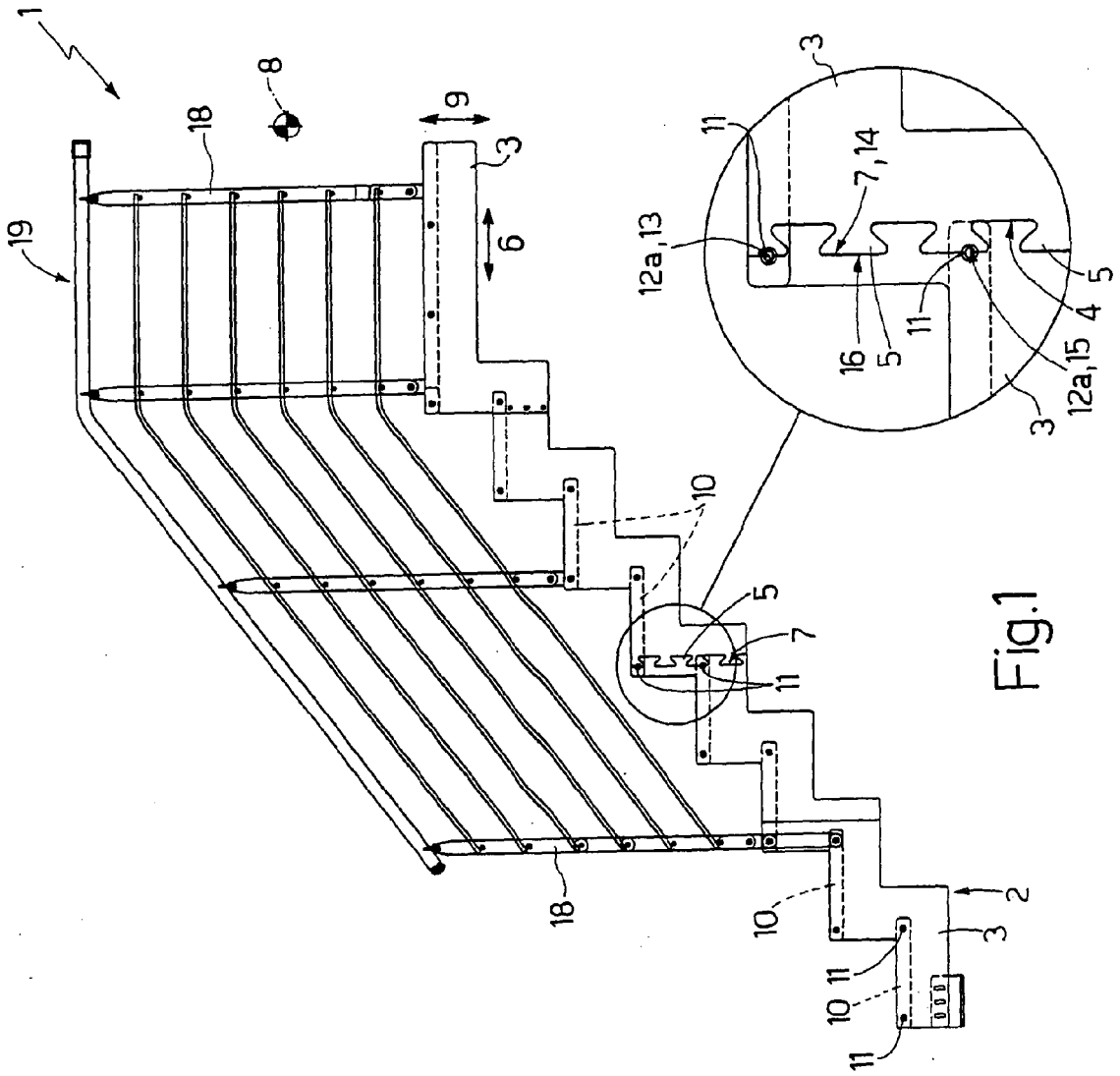


Fig.1

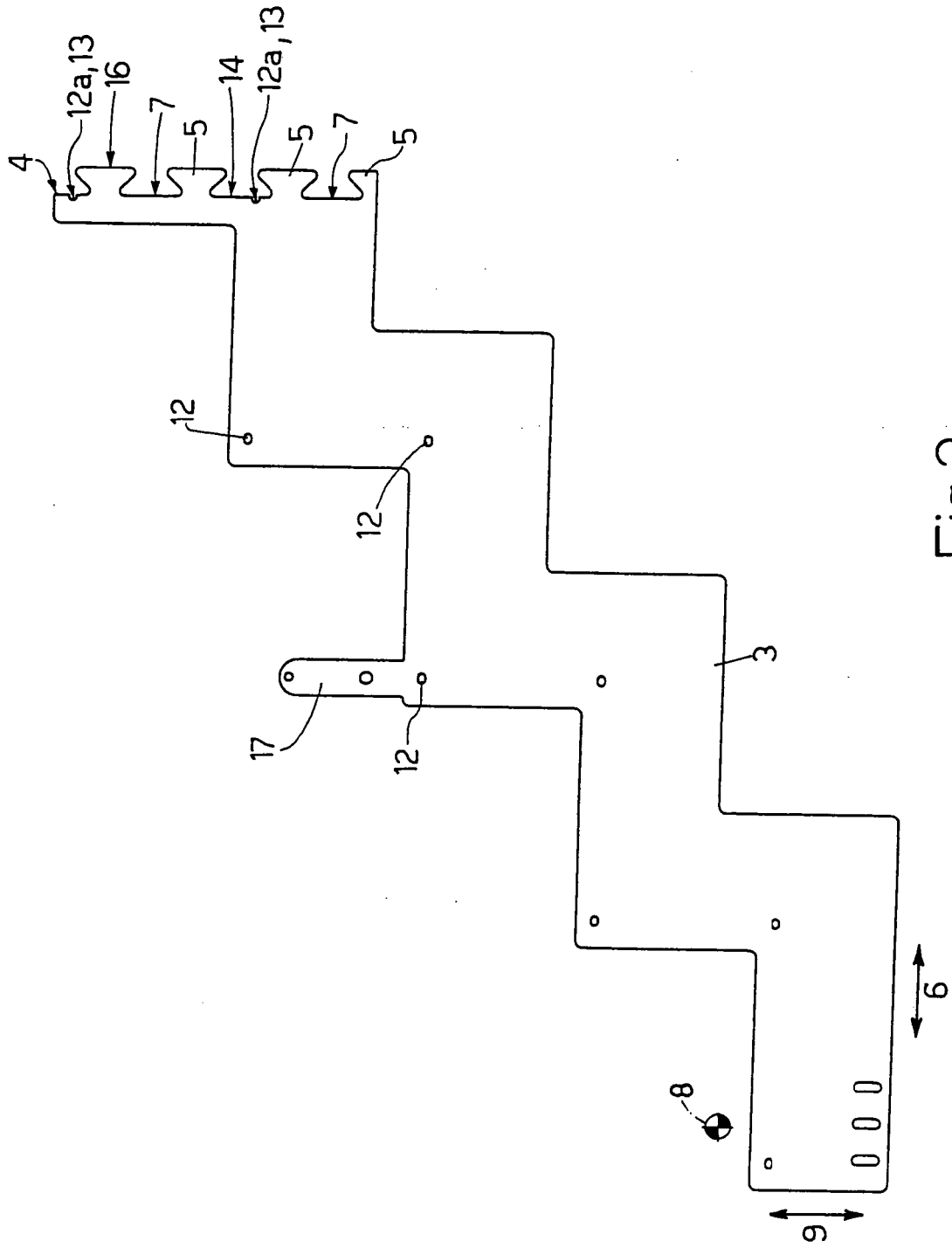


Fig.2



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A	* page 3, line 26 - line 29 * * page 4, line 14 - line 16 * * figure 2 * * page 12, line 3 - line 8 *	7	
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 11 December 2007	Examiner Bouyssy, Vincent
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04/C01)



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<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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ANNEX TO THE EUROPEAN SEARCH REPORT
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