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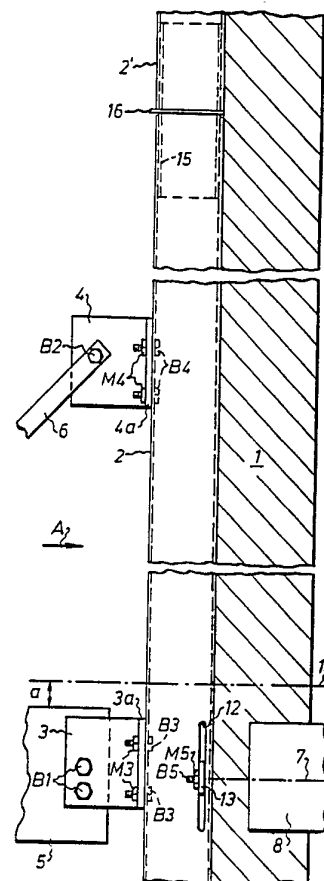
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(54) Title: SUPPORT COLUMN FOR MOUNTING A PLATFORM, SUCH AS A BALCONY PLATFORM, ON A WALL

(57) Abstract

A support column for mounting a platform (5), such as a balcony platform, on a wall (1), comprises mountings (3, 4) for mounting of the platform, and fittings (12, 13, B5, M5) for substantially vertical fitting of the support column on the wall. The support column consists of a pipe (2) having a flat surface for engaging the wall (1). The pipe (2) comprises fixing means (10, 11) which are adapted to fix the mountings (3, 4) to the pipe (2) on a vertically variable level. The fittings (12, 13, B5, M5) comprise a slot (12) extending through the pipe substantially parallel to the flat surface, and a bar (13) which is inserted in the slot (12) and adapted to be fixed to the wall (1) on both sides of the pipe, and the height of which is considerably smaller than the height of the slot.



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SUPPORT COLUMN FOR MOUNTING A PLATFORM, SUCH AS A
BALCONY PLATFORM, ON A WALL

The present invention relates to a support column for mounting a platform, such as a balcony platform, on a wall, said support column having mountings for mounting of said platform and fittings for substantially
5 vertical fitting of said support column on the wall.

A prior art support column of this type for mounting a balcony platform and its use are described in detail below with reference to Fig. 1 in the accompanying drawings.

10 Fig. 1 shows three support columns 2 arranged successively along a load-bearing wall 1. For each support column 2, the mountings comprise two flanges 3 and 4 which are connected with the support column and project therefrom. One flange 3 should be connected with
15 a balcony platform 5, for example by means of bolts, and the other flange 4 constitutes a mounting for a connecting rod 6 associated with the balcony platform 5. The fittings of the prior art support column 2 comprise two mounting bolts which in Fig. 1 are represented by the
20 longitudinal axis 7 of one mounting bolt; a mounting element (not shown) arranged at the lower end of the support column 2 and having holes for the mounting bolts; and connecting flanges (not shown) mounted at the lower end of the support column 2 and adapted to inter-
25 connect, by means of bolts, two successively arranged support columns. The mounting bolts should be fixed in a floor slab 8 in the house on whose wall 1 the support column 2 and the balcony platform 5 are to be mounted. To this end, a recess 9 is formed in the wall opposite
30 the floor slab 8, said recess extending to the floor slab. Subsequently, a hole for each mounting bolt is drilled in the floor slab 8. As will appear below, these two holes must be drilled in the same relative

position as the holes in the mounting element arranged at the lower end of the support column. The mounting bolts are fixed in the respective holes, and this can be carried out in various ways. Normally, use is made of a chemical anchor inserted in the hole. The chemical anchor consists of a glass ampoule filled with a binder which is released and distributed around the mounting bolt in the hole thereof, as the mounting bolt, when inserted into the hole, crushes the glass ampoule. After the mounting bolts have been fixed, i.e. in case chemical anchors are used, after the binder has set, the recess 9 formed in the wall 1 is filled by casting, and the mounting bolts project from the wall 1.

Before being fitted on the wall, the support column 2 is cut at its upper end, such that its length corresponds to the vertical distance between two successive floor slabs 8 in the house. When fitted, the support column 2 is arranged so that the projecting mounting bolts are inserted in the holes in the mounting element arranged at the lower end of the support column. To fix the support column 2, nuts are positioned on the mounting bolts and tightened. If the support column 2, as is usually the case and as shown in Fig. 1, is one of a plurality of identical support columns 2 which are vertically aligned and each of which corresponds to one storey in the house, the support column is assembled with the upper end of the subjacent support column, by means of the connecting flanges and their bolts which are inserted in holes formed both in the connecting flanges and in the upper end of the subjacent support column.

As will be appreciated, a series of support columns 2 are fitted on each side of the balcony platforms 5.

As appears from what has been said above, both the load directed away from the wall and the downwardly directed, vertical load are taken up by the mounting bolts fixed in the floor slab 8. The vertical force

exerted upon the mounting bolts and the underlying wall material therefore is considerable. The recess 9 formed in the wall 1 must therefore be filled with a material of high bearing capacity and high strength. As mentioned above, the mounting bolts fixed by casting in the wall 1 and the holes in the mounting element arranged at the lower end of the support column 2 must be accurately fitted to each other. Such fitting is provided already as the holes are drilled in the floor slab 8, and the drilling operation must therefore be carried out in a most precise and time-consuming manner. Finally, the support column 2 described above also suffers from the disadvantage that it must be cut at its upper end in a highly accurate fashion so as to be correctly positionable, since the connecting flanges and their holes provide but small length tolerances.

The object of the present invention is to provide a support column of this type which is especially adapted to mount a balcony platform and by means of which the drawbacks stated above can be easily obviated.

According to the present invention, this object is achieved by a support column which is of the type mentioned by way of introduction and characterised in that it consists of a pipe having a flat surface for engaging the wall, that said pipe comprises fixing means which are adapted to fix the mountings to said pipe on a vertically variable level, and that the fittings comprise a slot extending through said pipe substantially parallel to said flat surface, and a bar which is inserted in said slot and adapted to be fixed to said wall on both sides of the pipe, and the height of which is considerably smaller than the height of said slot.

Since the fittings and the fixing means of the mountings are arranged in this manner and thus provide considerable flexibility in the vertical direction, the support column can be designed as a module of uniform

length, and the drilling of holes in the floor slab can be effected in a simple manner, without necessitating exact positioning of the holes in the vertical direction. As a result of this flexibility in the vertical direction, the support column can be mounted on and supported by a base or bracket arranged in advance and, consequently, the means, such as mounting bolts, by which the support column is fixed to the wall, need not take up any vertical load, and the recess formed in the wall need not be filled with a particularly strong material.

In a preferred embodiment, the fixing means comprise a series of keyhole-shaped recesses which are adapted to receive the heads of bolts attached to said mountings.

The invention will now be described in greater detail with reference to the accompanying drawings in which:

Fig. 1 is a schematic view of the above-described use of three prior art support columns,

Fig. 2 illustrates a support column according to the present invention, which is fitted on a wall, and

Fig. 3 shows the support column in Fig. 2 in the direction of arrow A.

In the following description of the inventive support column, reference is made to Figs 2 and 3 in which parts directly corresponding to parts shown in Fig. 1 have been provided with the same reference numerals as in Fig. 1.

"Horizontal" and "vertical", as well as "upper" and "lower" are used below and in the claims with reference to the Figures, i.e. with regard to the position of the support column when fitted on a wall.

The support column according to the present invention is adapted to be used in principally the same manner as the prior art support column described above, and thus the use thereof will appear from Fig. 1.

The support column 2 illustrated in Figs 2 and 3 is made up of a galvanised steel pipe of square cross-

5

section. The support column 2 is fitted on a wall 1. The support column 2 has a lower vertical flange 3 which, by means of bolts B1, is connected with a balcony platform 5 so as to mount the same. The support column 2 also has an upper vertical flange 4 which, by means of a bolt B2, is connected with a connecting rod 6 associated with the balcony platform 5, so as to supplement the mounting of the balcony platform 5.

The lower flange 3 and the upper flange 4 each constitute one leg of separate square elbows whose other leg 3a and 4a, respectively, is, in a manner described in detail below, attached to the support column 2 by means of bolts B3 and B4, respectively, extending through holes in the other leg, and nuts M3 and M4, respectively, which are screwed to said bolts. To attach the square elbows in this manner, the support column 2 has two sets of keyholes 10 and 11 which are dimensioned such that the heads of the bolts B3 and B4 can be inserted in prior art manner into the upper part of the holes but are secured in the lower part thereof. The mutual distance between the keyholes 10 and 11 of each set equals the distance between the holes for the bolts B3 and B4, respectively, in the other leg 3a and 4a, respectively. As will be apparent, the two square elbows can thus be attached to the support column 2 on a vertically variable level. The support column 2 shown in Figs 2 and 3 has four keyholes 10 and 11 in each set. In the embodiment shown, the two lower keyholes and, respectively, the two upper keyholes in each set of holes have been selected for attaching the lower and the upper square elbow.

The support column 2 is formed with a vertical slot 12 extending through the support column in parallel with the flat rear face thereof which engages the wall 1. A stainless steel flat bar 13 which is inserted edgewise into the slot 12, is on both sides of the support column 2 fixed to the wall 1 by means of mounting bolts B5 which

extend through holes in the flat bar, and by means of nuts M5 which are screwed to the mounting bolts. The mounting bolts B5 are inserted in holes in the floor slab 8 and fixed therein in the manner described by way of introduction, by means of chemical anchors. The height of the flat bar 13 is, as illustrated, considerably smaller than the height of the slot 12, which makes the vertical position of the support column 2 adjustable. The holes for the mounting bolts B5 are drilled in the centre portion of the floor slab 8, i.e. on the level 7. When drilled, the position of the holes in the vertical direction need not be accurately fitted, since the vertical position of the support column 2 can be adjusted by means of the slot 12.

By specified building standards, a balcony platform 5 should be mounted at a predetermined distance a from a floor 14 arranged on the floor slab 8. This can be provided in a most simple manner, since the vertical position of the balcony platform 5 can be adjusted both by choosing the appropriate pair of keyholes 10 for the flange 3 and by adjusting the vertical position of the support column 2 by means of the slot 12.

The support column 2 carries, at its upper end, a coupling sleeve 15 of galvanised steel. The outer dimensions of the coupling sleeve 15 correspond to the inner dimensions of the square pipe 2. The coupling sleeve 15 has a central flange 16 which engages the upper end of the support column 2 and supports an identical support column 2' arranged above the support column 2. As shown in Fig. 2, the coupling sleeve 15 is inserted in the upper end of the support column 2 and in the lower end of the support column 2'. To adjust the vertical position of the support column 2', spacer members of suitable thickness are arranged on the flange 16. Such spacer members may consist of short pieces of a square pipe having the same dimensions as the square pipe from which the support columns 2 and 2'

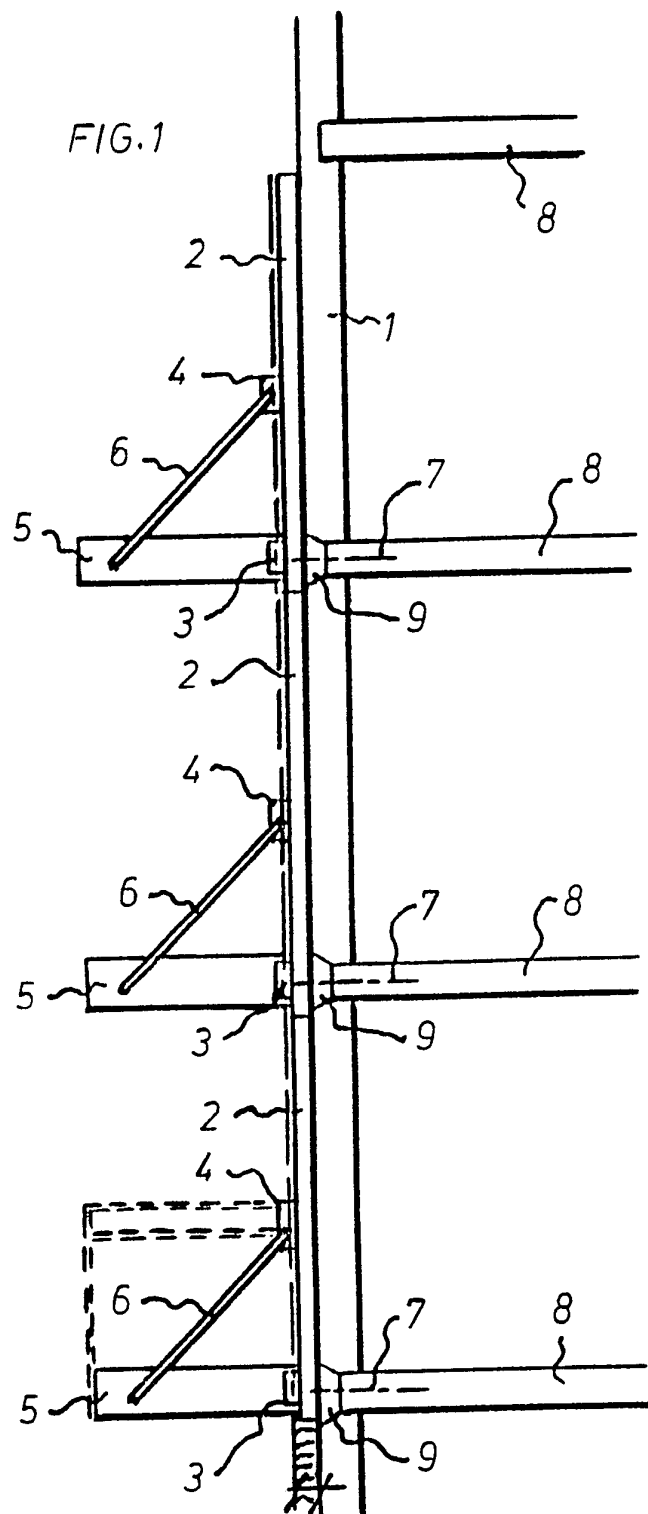
are made.

As a result of the above-described possibilities of adjusting the vertical position of the support column 2 and the means arranged thereon, the support
5 column can be mounted on and supported by a base or bracket arranged at the lower portion of the wall 1. In that case, the mounting bolts B5 need not take up any vertical load.

CLAIMS

1. A support column for mounting a platform (5),
such as a balcony platform, on a wall (1), said support
column having mountings (3, 4) for mounting of said
platform, and fittings (12, 13, B5, M5) for substantially
5 vertical fitting of said support column on the wall,
c h a r a c t e r i s e d in that it consists of a
pipe having a flat surface for engaging said wall (1),
that said pipe comprises fixing means (10, 11) which
are adapted to fix said mountings (3, 4) to said
10 pipe on a vertically variable level, and that said
fittings (12, 13, B5, M5) comprise a slot (12) extending
through said pipe substantially parallel to said flat
surface, and a bar (13) which is inserted in said
slot (12) and adapted to be fixed to said wall (1)
15 on both sides of the pipe, and the height of which
is considerably smaller than the height of said slot.

2. The support column as claimed in claim 1,
c h a r a c t e r i s e d in that said fixing means
comprise a series of keyhole-shaped recesses (10, 11)
20 which are adapted to receive the heads of bolts (B3,
B4) attached to said mountings (3, 4).

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2/2

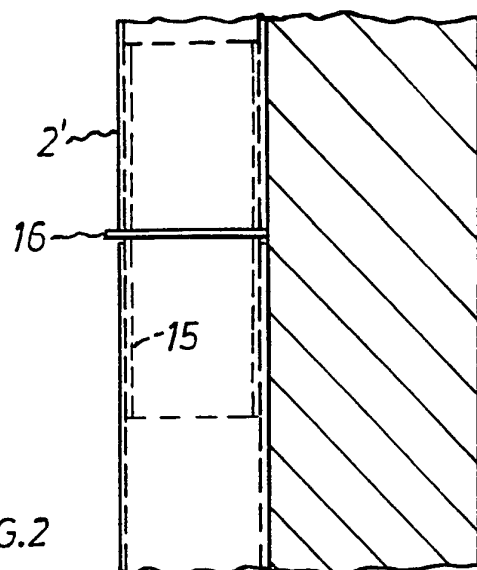


FIG. 2

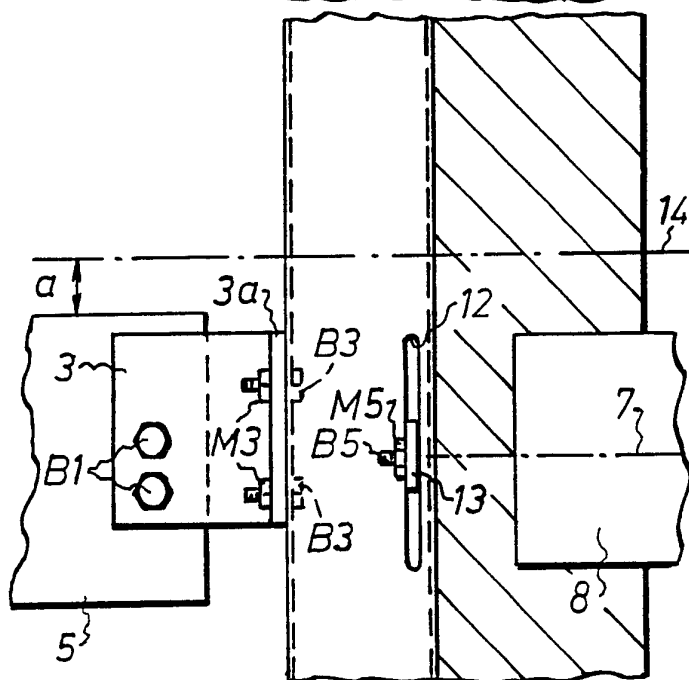
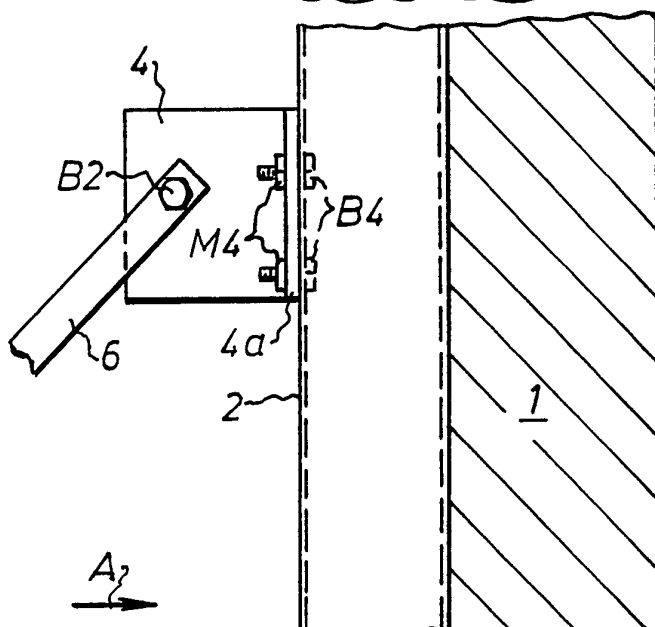
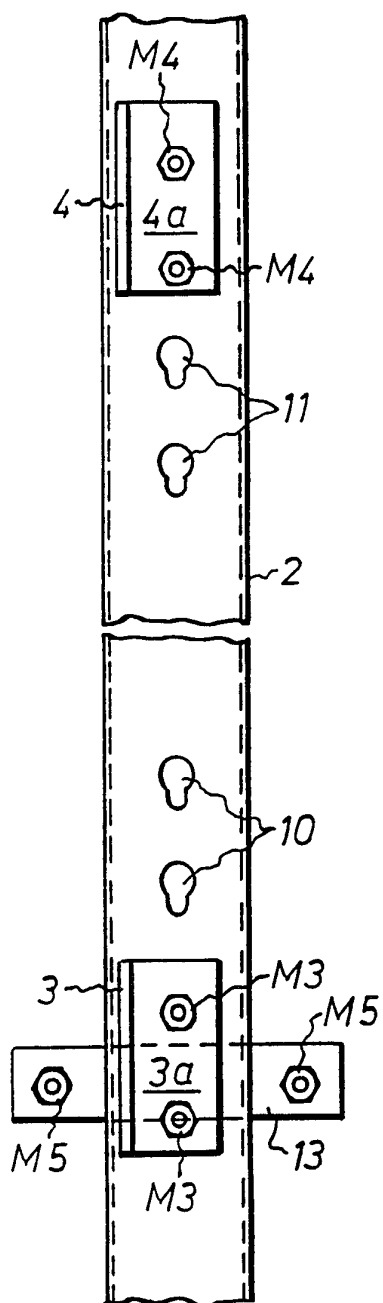
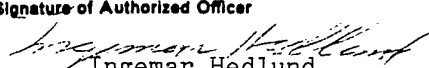


FIG.3



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE89/00197

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) *		
According to International Patent Classification (IPC) or to both National Classification and IPC 4		
E 04 B 1/00, E 04 G 23/02		
II. FIELDS SEARCHED		
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Classification System ¹	Classification Symbols	
IPC 4	E 04 B; E 04 G	
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Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *		
SE, NO, DK, FI classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁸		
Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	DE, A1, 3 401 873 (BAUMANN, W) 1 August 1985	
A	EP, A1, 0 227 937 (MÜLLER, F) 8 July 1987	
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