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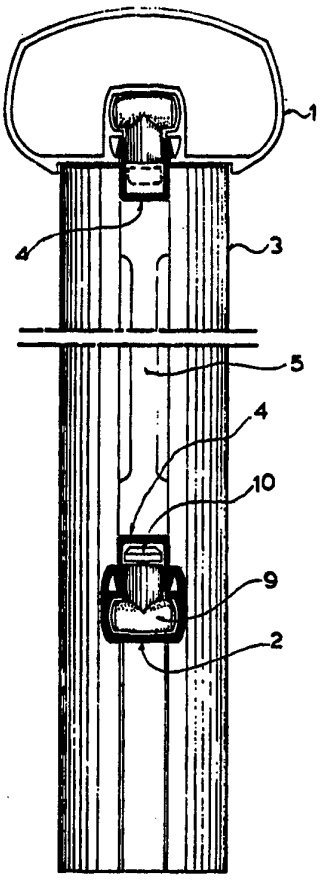
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(54) Title: ALUMINIUM SELF-ASSEMBLING RAILING SYSTEM

(57) Abstract

The railing consists of eight basic parts. It consists of four profiles of aluminium and four specially formed attachments from molten aluminium which are connected and supported by each other without using screws, rivets, weldings or any other type of connectors, which operate with the use of screws. The rail element (5) goes to the flatings of the hand rail (1) and the guide (2) and revolves by 1/4 of the circle the total support of all the rail elements (5) is completed with the special lid (4) where the extension of the head (9) of the rail element (5) fits tightly in the inside part of the special lid (4).



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ALUMINIUM SELFASSEMBLING RAILING SYSTEM

The invention reffers to a constructing system of aluminium selfassembling railings.

Up to now the technology of constructing railings haven't had anything to present like this specific system. All the usual constructing systems of aluminium railings are using connectors , Weldings or screws rivets etc. Those kind of constructing systems are time consuming and as a result cost a lot. Furthermore , a great disadvantage is that the welding and the screws are visible and as time goes by they start to loosen which results in the lack of safety because of the electrolusis which is created at the connecting points of screws with the aluminium.

This invention, as descriped below intends and succeeds in solving all these basic disadvantages by using a completely new system which constitutes a new technical rule in the technology of constructing railings.

The advantages of this invention are the following.

1st Easy and fast to assemble the railings

2nd Avoidance of electrolysis, as a result of the absence of metallic parts in the aluminium and for that we have endurance in time

3rd Absence of screws, rivets and weldings on the rail

4th Lower constructive cost

5th Definately safe

6th Excellent optical result

A way of performing this invention is being described below with references to sketches which very clearly explain and describe a very specific practice of this system

Where as, sketch 1 show the four basic profiles of this system.

(1) Hand rail, (2) guide , (3) column, (4) special lid

Sketch number 2 shous the four basic attachments of the system, (5) rail element, (6) hand rail connector (7) guide connector, (8) ground support.

Sketch Number 3 shows in cut the assembling railing. Sketch number 4 shows the railing us front sight. The sketches show an aluminium self assembling railing system, four aluminium profiles and four well formed attachments, from molten aluminium which "cooperate" and are "supported" by each other as explained below;

The hand rail (1) is supported with the columns (3) by suing the connector (6). The quide (2) is supported with the columns (3) by using the connector (7). The columns (3) are supported on the ground with the ground supports (8).The rail element (5) has a special head (9) with an extension (10) The edges of the rail element (5) are going to the specific flattings (11) of the hand rail (1) and the quide (2) Then the rail element (5) revolves by 1/4 of circle. In this way all the rail elements (5) are placed between hand rail and quide. Their complete support and the fixed distance between the rail elements (5) is depended on the section of the special lid (4) which are being clasped by turns , in the hand rail (1) in the

quide (2) in the column (3) in the edges and finally between the elements. The extension (10) at the head of the elements (9) are fitting in the inside of the special lid (4) and in that way they are completely immobilized , without the slightest danger of being votated or even moved.

For the case of railing stair the rail elements (5) are going like in the above example and they we give the nexessary bending to the rail, in which the extensions (10) of the head (9) the rail element (5) are going on the flattings (11) of the hand rail (1) and the quide (2) and in that way we prevent the rotation of the rail elements (5) with the special lids (4) we get successful avoidance of any possible side movements of the rail elements (5) and also completely immobility in any case of aluminium railing stairs

These upper basic profiles and attachments can be constructed in every desired form shape and size from variens materials and are beeing assembed as shown in the sketches The abilities of detailed changes are not shown or descriped in these specific description and sketches furthermore it is easy to make specific and detailed changes by modifying the form of the profiles and attachments or even their function. These changes are possible without having to change the basic rules of the invention by which we succeed to assemble and hold all the parts of the railings without using rivets , screws weldings, or even special holes in the railing profiles.

For the mass production of all the former attachments the construction of dies and menlds is needed. The special

lid (4) is being cut in 90° angle for the case of ground railing and the length of it determines the distance between the rail elements (5) . The special lid (4) in the case of stairs is being cut in proportial degrees which will tally with the angle of the stair , in order to succeed the tally of the special lid (4) with the flat part of the rail element (5)

CLAIMS

1: Aluminium selfassembling railing system which is characterized from the fact that it consists from aluminium profiles; the hand rail (1) the quide (2), the column (3) and the special lid (4); also from attachments from molten aluminium, the rail element (5) , the hand rail connectror (6) the quide connector (7) and the ground support (8). These profiles are well fromed and they cooperate and connected to each other withourt been relded and without using other security means in flat surfaces and in stairs with different bendings.

2: Rail element (5) according to pretension 1 which is characterized from the fact that is has a specific head (9) in its two edges, with an extension (10) made from the same material which goes and rotates on the flattings 911) of the hand rail (1) and the quide (2) and it is beeing immobilized by the special lid (4)

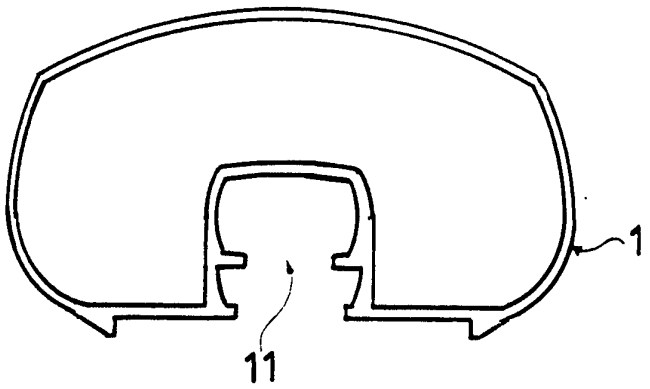


Fig:1

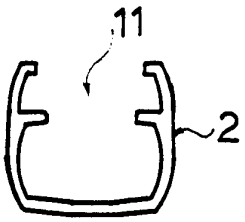


Fig:2

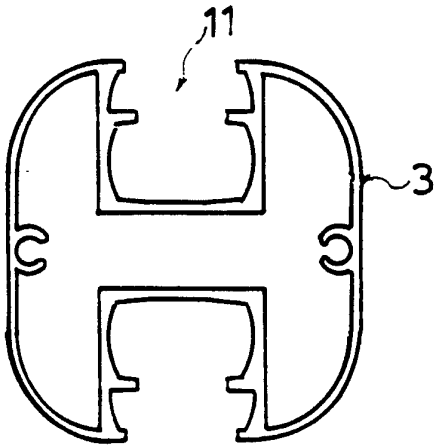


Fig:3

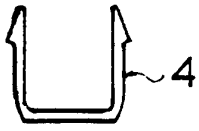


Fig:4

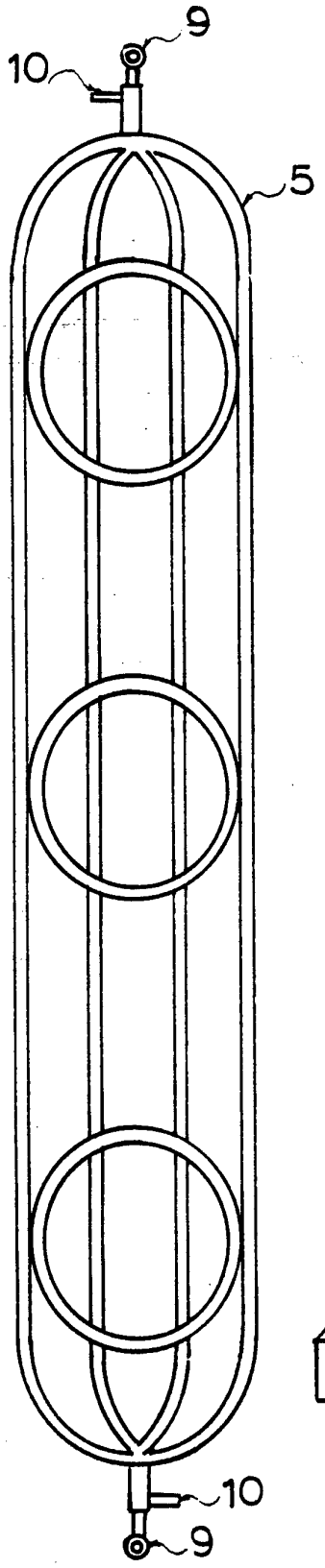


Fig:5

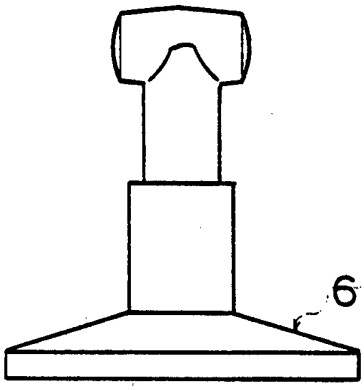


Fig:6

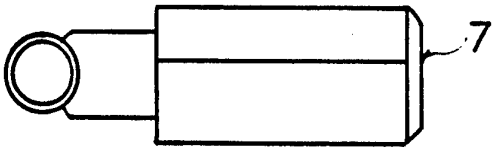


Fig:7

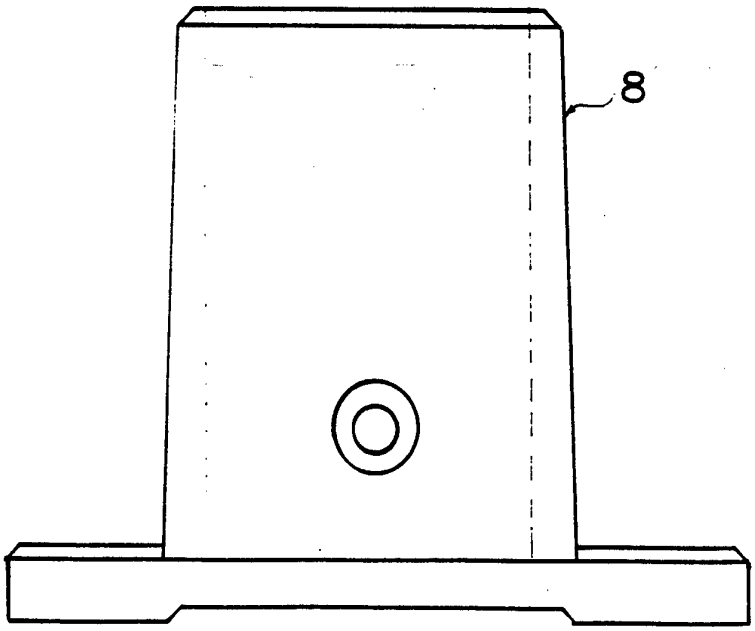


Fig:8

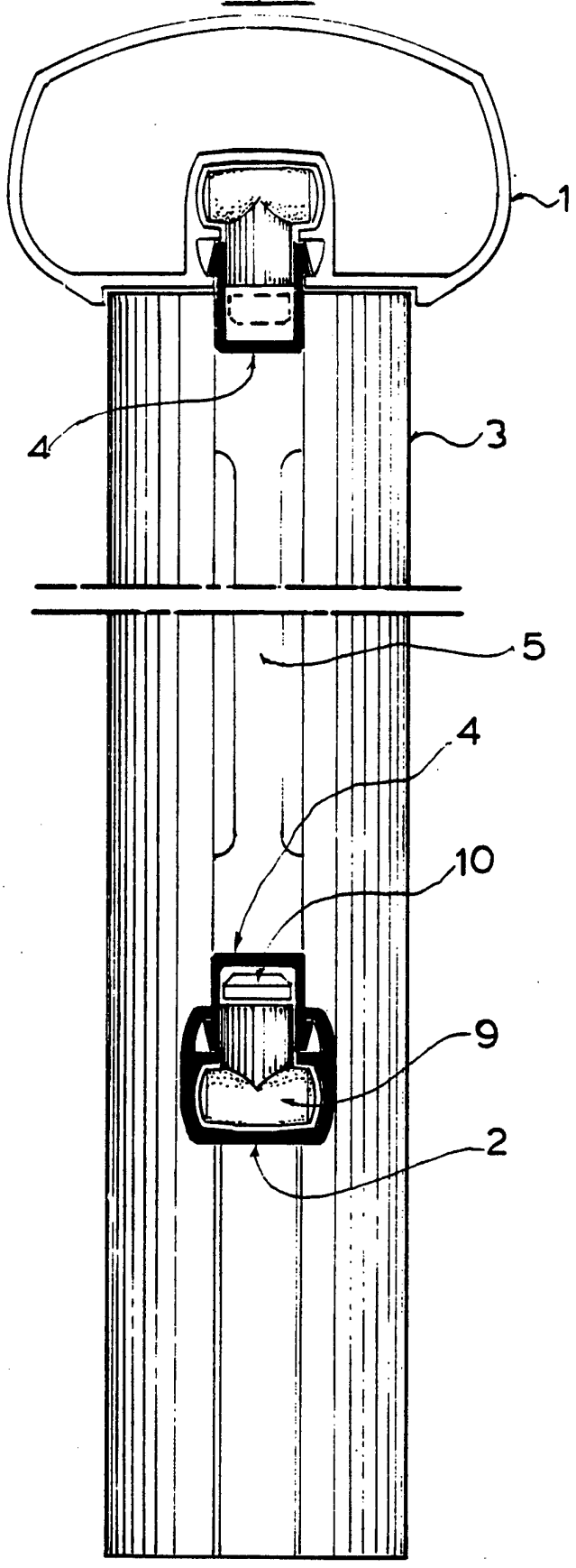


Fig 9

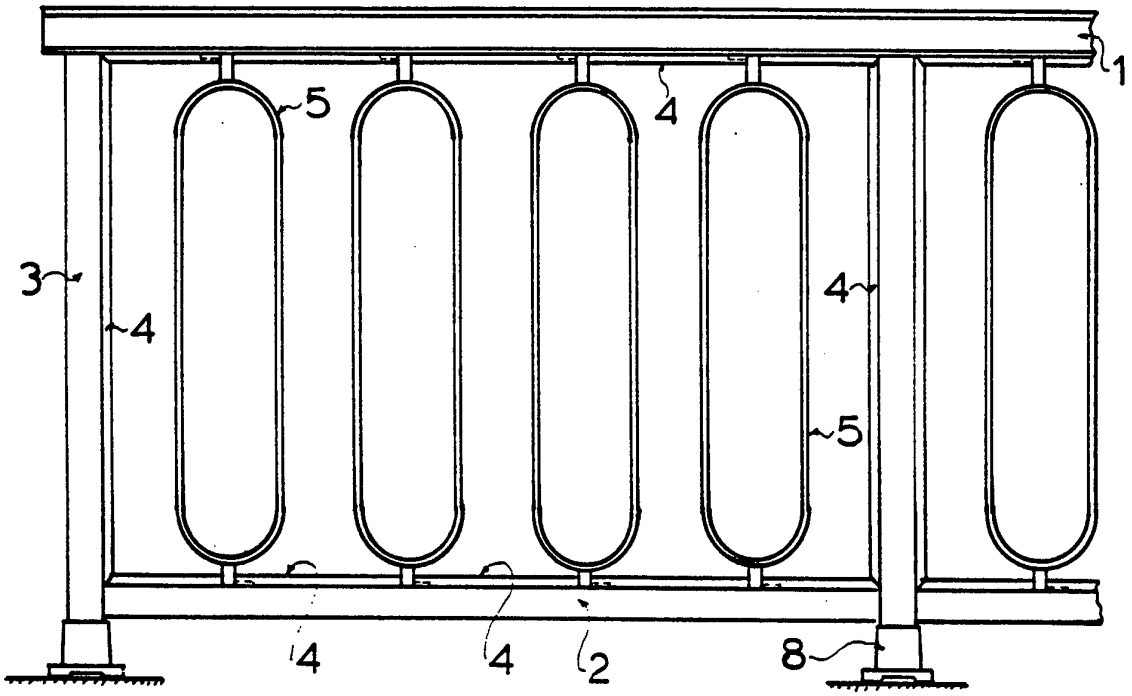


Fig 10

INTERNATIONAL SEARCH REPORT

Inte nal Application No
PCT/GR 96/00011

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 E04F11/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 E04F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,4 346 872 (TORNYA) 31 August 1982 see column 2, line 46 - column 6, line 2; figures 1-14	1
A	FR,A,2 690 185 (BEZAULT) 22 October 1993 see page 2, line 20 - page 4, line 28; figures 1,2	1,2
A	EP,A,0 123 764 (DANTE) 7 November 1984 see page 2, line 1 - page 3, line 91; figures 1-10	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4346872	31-08-82	AU-B- 524516	23-09-82
		AU-B- 4908479	28-02-80
FR-A-2690185	22-10-93	NONE	
EP-A-0123764	07-11-84	NONE	