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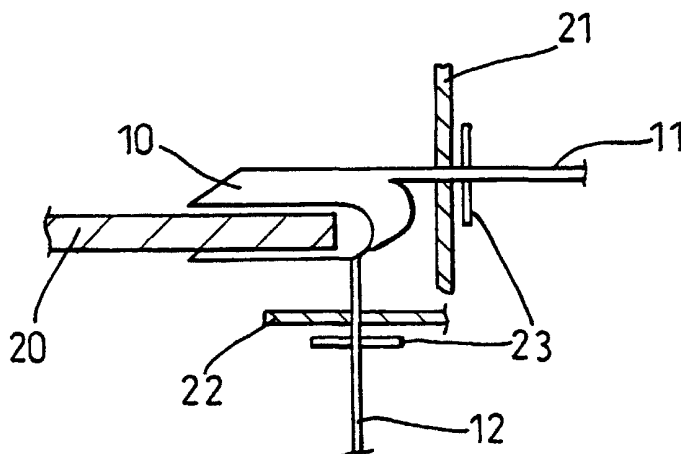
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SPRING CLIP



(57) **Abstract:** A spring clip for attaching a first building component (20) to a second building component (21, 22) comprises a first portion (10) of substantially U-shaped longitudinal section and pins or tines (11, 12) which are integral with the first portion and can be bent so as to extend therefrom in use. The first portion (10) engages a girder (20) and each of the pins or tines (11, 12) engages a panel (21, 22) such as an insulation or cladding panel. The panels (21, 22) can be retained in position on their respective pins or tines (11, 12) by means of retention plates (23).

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SPRING CLIP

This invention relates to a spring clip and in particular to a spring clip adapted, in use, to be attached to a first building component and to
5 include means to attach thereto one or more second building components.

Thus, the present invention provides a spring clip comprising a first portion adapted, in use, to engage a first building component and at least one second portion integrally formed with said first portion, each said
10 second portion being adapted, in use, to engage a second building component.

In a preferred embodiment, the present invention provides a spring clip as described in the immediately - preceding paragraph and having two said
15 second portions integrally formed with said first portion.

Preferably, the first portion is of substantially U-shaped longitudinal section.

20 Preferably, each said second portion comprises a pin or tine integral with said first portion.

In use, the first portion engages a building component such as a girder, a RSJ or a similar component. Each second portion, in use, engages a
25 building component such as a cladding panel, an insulation panel or a similar component.

A spring clip according to the present invention may conveniently be made from a generally planar strip. The strip may, for example, be made

of a metal such as spring-steel. Alternatively, the spring clip may be made from a mouldable plastics material.

The strip may then be subjected to a stamping operation in which the pins or tines constituting the second portions are formed by a shearing process. Preferably, one pin or tine is simultaneously sheared from each opposite edge of the longer dimension of the strip.

At the same time, one or more barbs may be formed in the metal or plastics strip, to enhance the grip of the spring clip on the building component.

Thus, in accordance with a preferred embodiment, a spring clip according to the present invention may further include one or more barbs.

The strip is then formed, by means known *per se*, into a U-shape, the pins or tines extending from opposite edges of the "U".

In use, the generally U-shaped first portion of the spring clip is caused to engage a building component such as a girder. Each pin or tine is then bent to the required angle relative to the spring clip and a second building component such as an insulation panel is attached thereto. The insulation panel is secured in position on the pin or tine by means of a retention-plate (known *per se*) and the pin or tine is then cut off flush with the retention-plate.

The present invention will be illustrated, merely by way of example, in the following description and with reference to the accompanying drawings.

In the drawings (wherein like numerals denote like parts):

Figure 1 is a view of a strip for making a spring clip according to the present invention;

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Figure 2 is a view of the strip of Figure 1 after formation of the integral pins or tines;

Figure 3 is a schematic view of one means of deploying a spring clip according to the present invention.

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A strip 10 of spring-steel is subjected to a stamping operation to form pins or tines 11 and 12 and barbs 13.

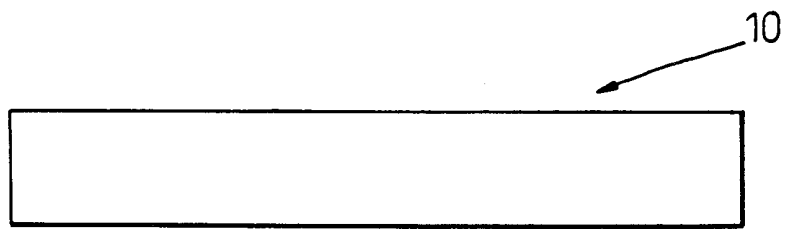
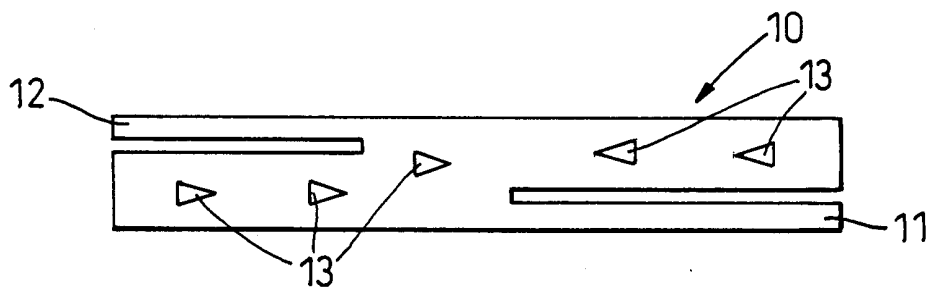
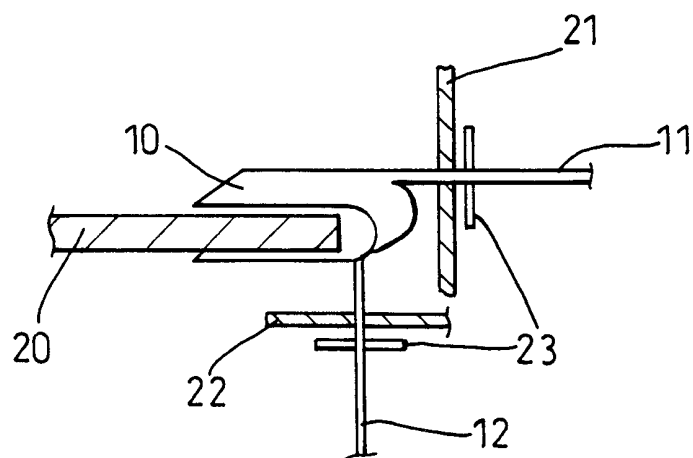
15 In use, as shown in Figure 3, the clip is bent into a U-shape so that portion 10 engages a girder 20. The pins or tines 11 and 12 are then bent relative to the clip to provide attachment means for panels 21 and 22 respectively. The panels 21 and 22 are held in place on their respective pins or tines by means of retention plates, known per se and shown
20 schematically at 23.

CLAIMS

1. A spring clip comprising a first portion adapted, in use, to engage a first building component and at least one second portion integrally formed with said first portion, each said second portion being adapted, in use, to engage a second building component.
2. A spring clip according to Claim 1, in which two said second portions are integrally formed with said first portion.
3. A spring clip according to Claim 1 or 2, in which said first portion is of substantially U-shaped longitudinal section.
4. A spring clip according to Claim 1, 2 or 3, in which each said second portion comprises a pin or tine integral with said first portion.
5. A spring clip according to any one of Claims 1 to 4, in which said first portion engages, in use, a girder, a R.S.J. or a similar component.
6. A spring clip according to any one of Claims 1 to 5, in which each said second portion engages, in use, a cladding panel, an insulation panel or a similar component.
7. A spring clip according to any one of Claims 1 to 6, which has been made from a generally planar strip.
8. A spring clip according to Claim 7, in which the strip is made of a metal.

9. A spring clip according to Claim 8, in which the strip is made of spring-steel.
10. A spring clip according to Claim 7, in which the strip is made of a mouldable plastics material.
11. A spring clip according to any one of Claims 7 to 10 when dependent directly or indirectly upon Claim 4, in which each said pin or tine is formed from said strip by a shearing process.
12. A spring clip according to Claim 11, in which one pin or tine is simultaneously sheared from each opposite edge of the longer dimension of said strip.
13. A spring clip according to any one of Claims 7 to 12, further including one or more barbs formed in said strip.

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**Fig. 1****Fig. 2****Fig. 3**

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F16B5/06

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 7 F16B

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)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 640 074 A (UNITED-CARR FASTENER CORPORATION) 12 July 1950 (1950-07-12) page 1, line 15 - line 28 page 2, line 8-92 figures 9,10	1-9,13
X	GB 1 473 816 A (HAEFLA BRUKS AB) 18 May 1977 (1977-05-18) page 1, line 72 -page 2, line 1 figures 1-4	1-5,7,8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 640074 A		NONE	
GB 1473816 A	18-05-1977	DK 104775 A	20-09-1975
		FI 750765 A	20-09-1975
		NO 750843 A	22-09-1975
		SE 7403682 A	22-09-1975

INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 00/ 01955

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

line 1: insert after "component" "(20)",
line 2: insert after "component" "(21,22)".