

PATENT SPECIFICATION

(11) 1290 000

DRAWINGS ATTACHED

- (21) Application No. 47828/69 (22) Filed 29 Sept. 1969
 (31) Convention Application No. 153992 (32) Filed 2 Oct. 1968 in
 (33) New Zealand (NZ)
 (45) Complete Specification published 20 Sept. 1972
 (51) International Classification E04D 3/365
 (52) Index at acceptance
 E1W 4B2 4B36 4B44 4B45 4B59



(54) IMPROVEMENTS IN OR RELATING TO FIXING MEANS FOR CLADDING

(71) We, DIMOND INDUSTRIES LIMITED, a company incorporated under the laws of New Zealand of Waterloo Quay, Wellington, New Zealand, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to fixing means for cladding sheets and has been devised for fixing cladding sheets as described in British Patent No. 1088988.

The cladding sheets comprises a panel having a substantially flat rectangular body portion, an integrally upstanding inverted female channel along one longitudinal edge of said body portion with the lower free edge of said inverted female channel being reversely formed to terminate in a hook means located above the plane containing the body portion and an integrally upstanding male inverted channel extending along the opposite longitudinal edge of the body portion and adapted in use to engage within said female inverted channel with the two sides of the male and female channels co-operatively engaging one within the other when the channels of the adjoining panels are engaged. The male inverted channel has a longitudinally depression in the side thereof extending up from the body portion to receive the hook means of the superimposed female channel of an adjoining panel.

In the past the method adopted for fixing cladding panels of this type comprises individual clips adapted in use to hook over the male inverted channel and be individually fastened to structural members such as purlins of the roof. After these clips have been fixed in place the female inverted channel is engaged over the secured male channel with the interlocking means operating to connect the two sheets together. One of the features of cladding of this nature is that the cladding may be provided in long runs which will involve a special transport means and it is desirable to

have a method whereby the clipping for the area being clad can be prelaidd prior to the cladding panels arriving. Any attempt to pre-clip the roof using individual clips requires skilled labour to ensure that the clips are accurately placed and even then a minor variation in the placement of a line of clips can cause difficulty in laying a roof. Also when laying long runs of roofing with conventional clipping there is a possibility of a fanning effect which may make finishing difficulty on the edge of the area being clad.

It is an object of the present invention to overcome the above mentioned disadvantages or at least provide a useful choice of fixing means for cladding panels of the type described above.

Accordingly the invention consists in a fixing means, for cladding sheets described, said fixing means comprising an elongated strip of metal adapted to be laid on purlins or other members transversely to the run of the cladding to be fixed, a plurality of axially spaced clips formed from sections of metal punched out of said metal strip, said clips arranged at distances equal to the distances between the upstanding channels of each panel of the cladding to be fixed, each clip having a returned upper end adapted to engage over a male channel of said cladding.

One preferred form of the invention will now be described with reference to the accompanying drawing in which:—

FIGURE 1 is a perspective view of a section of fixing means for cladding panels.

FIGURE 2 is a side view of Figure 1.

FIGURE 3 is a section showing a preferred form of cladding used with the fixing clip.

FIGURE 4 shows a cladding being fixed in place using the fixing means according to the present invention and

FIGURE 5 shows a cladding held in place using the fixing means according to the present invention.

In the preferred form of the invention a fixing means 1 for cladding panels is constructed as follows:

[Price 25p]

Price 3s.

An elongated strip of metal 2 to be fixed to purlins or other members, transversely of the run of cladding has a plurality of axially spaced clips formed from sections of the metal punched out of the metal strip. The clips are arranged at distances equal to the distances between the upstanding inverted channels of each panel of cladding being fixed.

Two axially spaced slips are provided in accordance with the invention. The first spaced clips made up of a plurality of clips 3 each of which has an upper end 4 returned over and shaped to engage about the male inverted channel of the cladding panel referred to above. In use the returned end 4 is arranged to hold down the inverted male channel 5 of the cladding sheet as illustrated in Figure 3.

The second spaced clips can be used to engage within the upstanding inverted channel 8 between the channels 12 and 5. The second spaced clips are made up of a plurality of clips 6 each of which is punched from the strip of metal 2 and has the free upper end reversely formed to terminate in a hook end 7, which is arranged to engage with one internal shoulder of the intermediate channel 8 as illustrated in Figure 5. In order to provide a better clipping action between the clips 6 and the rib or channel 8, a tab 9 is punched out of the upstanding clip to extend in the opposite direction to the hook end 7. This tab engages with the opposite internal shoulder at the rib 8 again as illustrated in Figure 5 to complete the end clipping provided.

In order to facilitate fixing of the strips on to the structural members being clad countersunk apertures are provided adjacent the base of each clip punched out of the strip.

The use of the above described fixing means is as follows: It is assumed that the structure to be clad is a roof and has been finished ready to receive cladding material.

The continuous fixing strips according to the present invention are placed on purlins spaced apart at a distance of approximately three feet with the strips running transverse to the line of cladding to be fixed in position. The strips of cladding panel are placed so that the holding clips 3 of each strip are in line. Because of the modular arrangement of the clips once a single line of clips has been determined across the various strips being placed on the roof the remaining clips will also be in line. The strips may be fixed in place with the minimum of skilled labour required and yet the arrangement will allow for an area to be accurately laid out with clips ready to receive the cladding panels. The clipping panels are then placed in engagement with the clips in the usual manner with

the male inverted channel 5 being engaged beneath the returned end 4 of the clip 3 and the female inverted channel 12 engaging over the previous clipped male channel 5a of the adjoining sheet as is illustrated in Figures 4 and 5.

Where the preferred type of cladding material is used the intermediate clip 6 will engage within the male inverted channel 8 as described above and as illustrated in Figure 5. Thus there is a positive overclipping of the male inverted channel 5 and an under clipping in the male channel 8 which ensures a positive fastening of the cladding panels to the area being clad and also enables the fixing means to be placed with the minimum of effort overcoming the difficulties referred to above.

WHAT WE CLAIM IS:—

1. Fixing means, for cladding sheets as described, said fixing means comprising an elongated strip of metal adapted to be laid on purlins or other members transversely to the run of the cladding to be fixed, a plurality of axially spaced clips formed from sections of metal punched out of said metal strip, said clips arranged at distances equal to the distances between the upstanding channels of each panel of the cladding to be fixed, each clip having a returned upper end adapted to engage over a male channel of said cladding.

2. Fixing means as claimed in claim 1 wherein the cladding includes as integral upstanding inverted channel parallel to and intermediate of the female and male channels and said fixing means includes a clip with a returned upper end to engage within the intermediate channel of the cladding panel being fixed.

3. Fixing means as claimed in claim 1 or claim 2 wherein one of the clips has the free end thereof returned to engage over the male channel of the cladding with said clip from the side view being in the form of an inverted "J".

4. Fixing means as claimed in claim 2 wherein said intermediate channel clips have a free end turned down inwardly on one side and on the opposite side a punched out tongue having its free edge also pointing downwardly so that the side view of the clip has the appearance of a broad arrow head.

5. Fixing means as claimed in any of the preceding claims including counter-sunk apertures adjacent the base of each clip to facilitate fixing of the strip.

6. Fixing means, for cladding substantially as herein described with reference to the accompanying drawings.

MARKS & CLERK,



5 An elongated strip of metal 2 to be fixed to purlins or other members, transversely of the run of cladding has a plurality of axially spaced clips formed from sections of the metal punched out of the metal strip. The clips are arranged at distances equal to the distances between the upstanding inverted channels of each panel of cladding being fixed.

10 Two axially spaced slips are provided in accordance with the invention. The first spaced clips made up of a plurality of clips 3 each of which has an upper end 4 returned over and shaped to engage about the male inverted channel of the cladding panel referred to above. In use the returned end 4 is arranged to hold down the inverted male channel 5 of the cladding sheet as illustrated in Figure 3.

20 The second spaced clips can be used to engage within the upstanding inverted channel 8 between the channels 12 and 5. The second spaced clips are made up of a plurality of clips 6 each of which is punched from the strip of metal 2 and has the free upper end reversely formed to terminate in a hook end 7, which is arranged to engage with one internal shoulder of the intermediate channel 8 as illustrated in Figure 5. In order to provide a better clipping action between the clips 6 and the rib or channel 8, a tab 9 is punched out of the upstanding clip to extend in the opposite direction to the hook end 7. This tab engages with the opposite internal shoulder at the rib 8 again as illustrated in Figure 5 to complete the end clipping provided.

35 In order to facilitate fixing of the strips on to the structural members being clad countersunk apertures are provided adjacent the base of each clip punched out of the strip. The use of the above described fixing means is as follows: It is assumed that the structure to be clad is a roof and has been finished ready to receive cladding material.

40 The continuous fixing strips according to the present invention are placed on purlins spaced apart at a distance of approximately three feet with the strips running transverse to the line of cladding to be fixed in position. The strips of cladding panel are placed so that the holding clips 3 of each strip are in line. Because of the modular arrangement of the clips once a single line of clips has been determined across the various strips being placed on the roof the remaining clips will also be in line. The strips may be fixed in place with the minimum of skilled labour required and yet the arrangement will allow for an area to be accurately laid out with clips ready to receive the cladding panels. 60 The clipping panels are then placed in engagement with the clips in the usual manner with

the male inverted channel 5 being engaged beneath the returned end 4 of the clip 3 and the female inverted channel 12 engaging over the previous clipped male channel 5a of the adjoining sheet as is illustrated in Figures 4 and 5.

Where the preferred type of cladding material is used the intermediate clip 6 will engage within the male inverted channel 8 as described above and as illustrated in Figure 5. Thus there is a positive overclipping of the male inverted channel 5 and an under clipping in the male channel 8 which ensures a positive fastening of the cladding panels to the area being clad and also enables the fixing means to be placed with the minimum of effort overcoming the difficulties referred to above.

WHAT WE CLAIM IS:—

1. Fixing means, for cladding sheets as described, said fixing means comprising an elongated strip of metal adapted to be laid on purlins or other members transversely to the run of the cladding to be fixed, a plurality of axially spaced clips formed from sections of metal punched out of said metal strip, said clips arranged at distances equal to the distances between the upstanding channels of each panel of the cladding to be fixed, each clip having a returned upper end adapted to engage over a male channel of said cladding.

2. Fixing means as claimed in claim 1 wherein the cladding includes as integral upstanding inverted channel parallel to and intermediate of the female and male channels and said fixing means includes a clip with a returned upper end to engage within the intermediate channel of the cladding panel being fixed.

3. Fixing means as claimed in claim 1 or claim 2 wherein one of the clips has the free end thereof returned to engage over the male channel of the cladding with said clip from the side view being in the form of an inverted "J".

4. Fixing means as claimed in claim 2 wherein said intermediate channel clips have a free end turned down inwardly on one side and on the opposite side a punched out tongue having its free edge also pointing downwardly so that the side view of the clip has the appearance of a broad arrow head.

5. Fixing means as claimed in any of the preceding claims including counter-sunk apertures adjacent the base of each clip to facilitate fixing of the strip.

6. Fixing means, for cladding substantially as herein described with reference to the accompanying drawings.

MARKS & CLERK,