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(54) **Trapezoidal metal roofing sheet**

(57) A roofing sheet of metal has a trapezoidal profile with upper and lower flanges (11,12) and intermediate webs (13,14). The flanges (11,12) have a central portion

(20) of single layer sheet metal and on both sides thereof, the sheet metal is folded into three layers.

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Description

[0001] This invention refers to a trapezoidal metal roofing sheet with upper and lower flanges and intermediate webs.

Object of invention and brief description of the invention

[0002] It is an object of the invention to provide for a more efficient utilisation of the material. This is possible when at least portions of the flanges have sheet in three layers, which makes it possible to use thinner sheet material.

Brief description of the drawings

[0003]

Figure 1 is a transverse section of a roofing sheet of metal shown as an example of the invention.

Figure 2 is an enlargement of a portion of figure 1.

Figure 3 is a portion of the roofing sheet of figure 1 during its manufacturing.

Description of the illustrated example of the invention

[0004] The figures 1 and 2 show a roofing sheet of metal which has a trapezoidal profile. It has upper flanges 11, lower flanges 12 and intermediate webs (sides) 13,14. The webs have two steps 15,16 serving as reinforcements. The upper flanges as well as the lower ones have two side portions 17,18 where the sheet is folded into three layers. These portions with three layers reinforce the flanges. The flanges may have a central groove 20, which serves as an additional reinforcement of the flanges.

[0005] Thinner sheet can be used due to the reinforcement of the flanges, which reduces the roofing weight per square meter. This reduces the cost and makes the roofing operation easier.

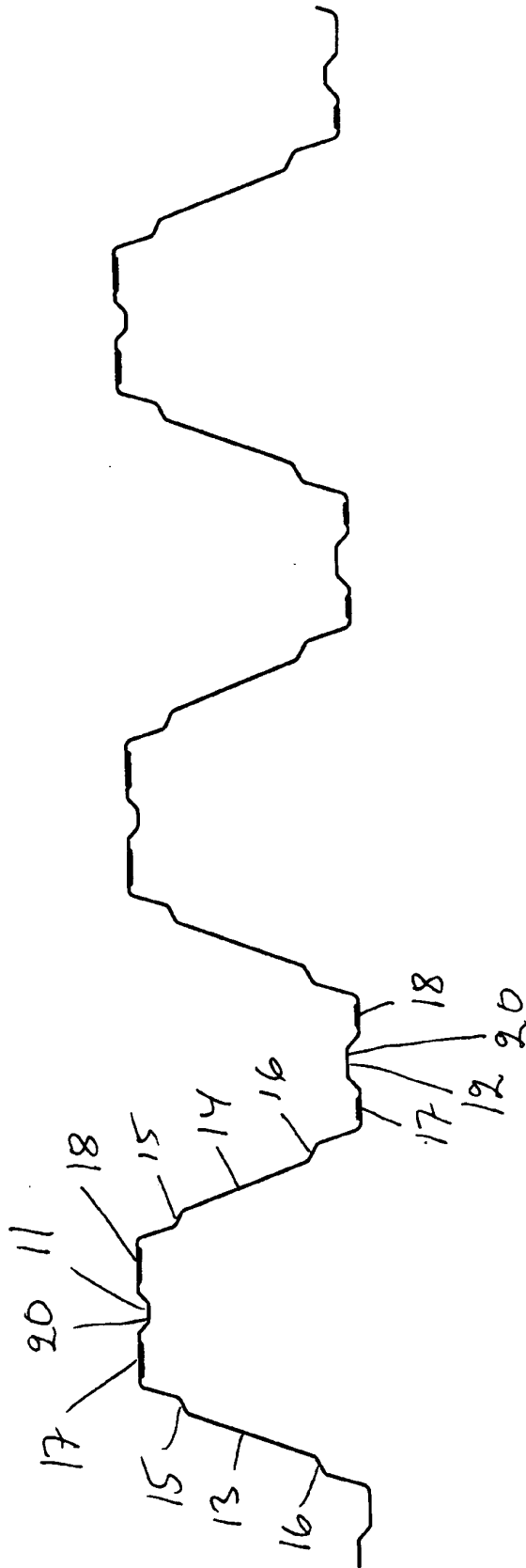
[0006] The roofing sheet is roll formed and figure 3 shows a suitable intermediate step in a possible manufacturing process. At first, the side portions 17,18 are folded as shown before the roll forming continues to shape the entire profile. The roll forming may be carried out by first starting the shaping of a central profile and then sequentially starting the shaping of new side portions and new profiles from the central profile.

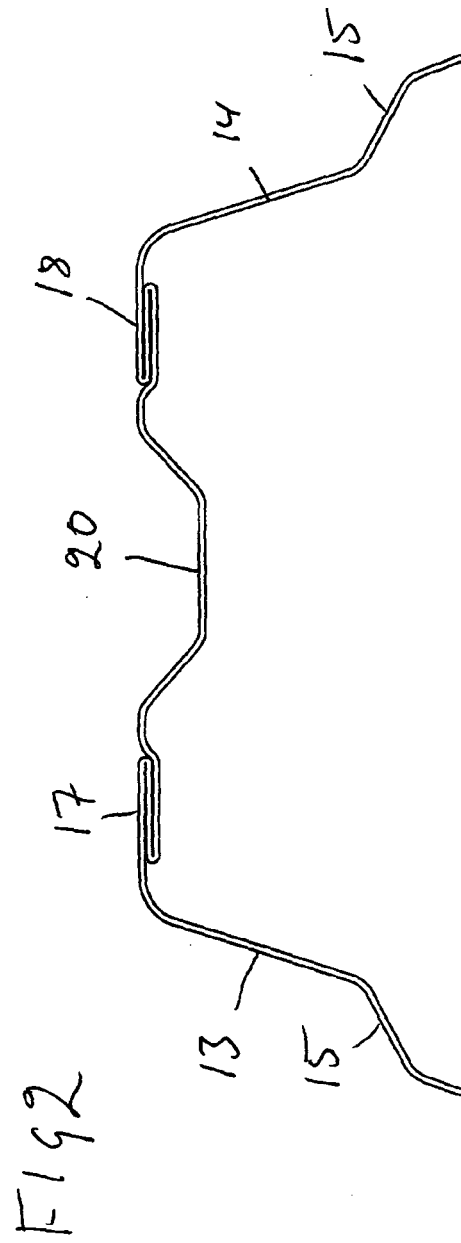
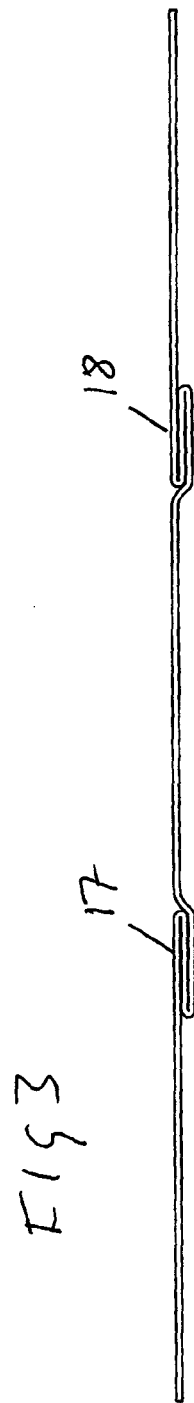
[0007] The reinforcement of the flanges may have other appearances although the illustrated design is preferred. It is not necessary to have the central groove 20 and it is not necessary to have two narrow reinforcements on each flange, but a single centrally placed wider reinforcement can be used. Reinforcement in the form of three layers is preferred but more layers can be used. It is also possible to reinforce some but not all of the flanges.

Claims

1. Trapezoidal metal roofing sheet with upper and lower flanges (11,12) and intermediate webs (13,14), **characterised in that** at least portions (17,18) of the flanges has sheet in three layers.
2. Roofing sheet according to claim 1, **characterised in that** the flanges (11,12) have a central portion (20) with a single sheet layer and on both sides thereof sheet in three layers.
3. Roofing sheet according to claim 2, **characterised in that** the flanges (11,12) have a central groove in the central portion (20).

Fig 1







EUROPEAN SEARCH REPORT

Application Number
EP 09 07 5047

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			E04D E04B E04C
Place of search Munich		Date of completion of the search 8 July 2009	Examiner Khera, Daljit
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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