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ANCHORING CLIP ARRANGEMENT

Original Filed Nov. 18, 1964

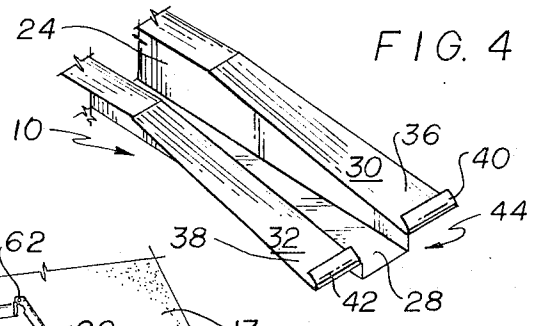


FIG. 4

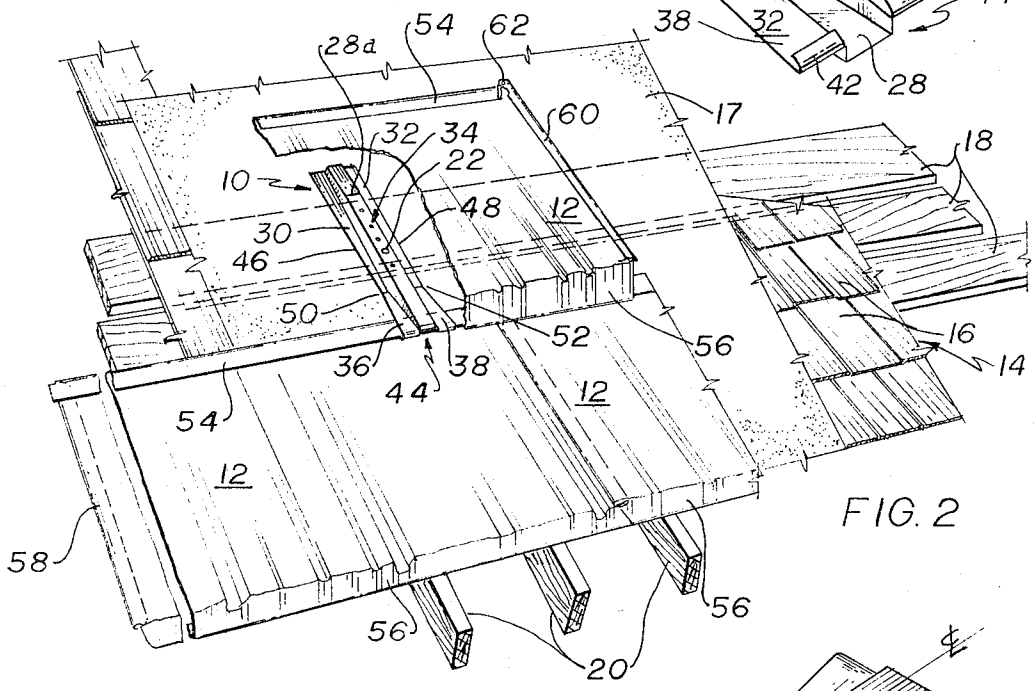


FIG. 2

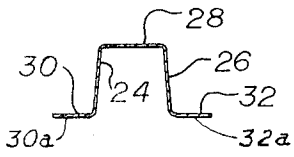


FIG. 3

FIG. 1

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ANCHORING CLIP ARRANGEMENT

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2 Claims. (Cl. 52—520)

ABSTRACT OF THE DISCLOSURE

An elongated one-piece clip formed from sheet metal or the like for use in fastening interlocked panel sections to an underlying roofing structure and the like. The body of the clip is generally made in the form of an inverted channel-shaped structure provided with flanged sidewall portions and a series of openings in the web portion, whereby one of the openings of the clip is always in alignment with a support element of the underlying structure in order that the clip can be positively fastened thereto. One end of the clip includes a hooked portion for disposition between and interengagement with the interengaging flanged edges of a pair of interlocked panel sections. The inverted channel-shape of the clip along with the hooked portion thereof when engaged with a pair of panel elements prevents twisting and distortion of the clip.

This application is a continuation of application Ser. No. 412,079 filed Nov. 18, 1964 and now abandoned which is a continuation in part of application Ser. No. 326,134 filed Nov. 26, 1963 and now abandoned in favor of the continuation application Ser. No. 540,106 filed April 14, 1966 now Patent No. 3,312,031.

The present invention relates to roof structures and the like and more particularly to an improved one-piece clip means that can be advantageously used in combination with interlocking panel sections during the application of a roof covering to a building structure.

Accordingly, it is a primary purpose of the instant invention to provide an improved one-piece clip means for a roof structure and the like wherein the novel clip means is interconnected in a unique fashion to interlocking panel sections to provide an efficient initial roof covering for a roof structure or a reroof covering for a weathered conventional roof structure. This clip means is particularly useful in applying to a roof structure the panel elements disclosed in my copending application Ser. No. 326,134 filed Nov. 26, 1963, and now abandoned in favor of continuation application Ser. No. 540,106 filed April 14, 1966, now Patent No. 3,312,031, of which this application is a continuation-in-part.

This and other purposes of the instant invention will become more apparent from review of the following detailed description when taken in conjunction with the appended drawings, wherein:

FIGURE 1 is a perspective view of a preferred embodiment of the novel clip of the instant invention;

FIGURE 2 is a plan view on a reduced scale of an arrangement for recovering a conventional roof structure and embodying the clip means of the instant invention wherein certain parts are broken away and other parts are shown in dotted lines for the purposes of clarity;

FIGURE 3 is a sectional view generally taken along line 3—3 of FIG. 1 and with parts removed; and

FIGURE 4 is a fragmented perspective view of the underside of the clip shown in FIGURE 1.

With further reference to the drawing, and in particular to FIGURES 1 and 4, a preferred form of clip

means that can be used in carrying out the teachings of the instant invention generally comprises a novel one-piece clip **10**. In one advantageous embodiment of the invention the clip **10** is used with panel sections **12** in providing a recovering for a conventional roof structure **14**, encompassing wood shingles **16** and underlying sheath boards **18**. The individual wood shingles **16** are secured in an appropriate fashion to the underlying sheath boards **18** and these boards are fastened in a generally parallel pattern to the conventional supporting rafter boards **20**. In providing the roof covering a sheet **17** of moisture resistant material, such as asphalt, can be beneficially disposed between the shingles **16** and the sheath boards **18** as shown in FIG. 2. It is to be observed here that although the covering construction incorporating the novel clip **10** of the instant invention will be described with particular reference to a recovering for a conventional roof structure it can be employed equally as well during covering or recovering of other structures such as siding structures and the like.

Referring to FIGURE 1, the one-piece clip **10** of unique shape is fabricated from a blank of sheet material preferably of aluminum or a suitable aluminum alloy. The clip is formed into shape by a suitable die forming apparatus in such a fashion that it is generally symmetrical along its longitudinal axis and approximates a channel shape wherein the main upstanding wall portions **24** and **26** thereof are interconnected by a web portion **28**. The wall portions **24** and **26** are advantageously provided with flanges or terminal portions **30** and **32** which are bent outwardly to extend in opposite lateral directions away from the wall portions **24** and **26**. These terminal portions **30** and **32** are also spaced from but are arranged generally parallel to the web **28** for a substantial portion of the length of the clip. The web portion **28** desirably includes a plurality of holes generally indicated at **34**. These holes are preferably equally spaced from each other with their centers generally coinciding with the longitudinal axis of the clip **10**. It is to be understood that any number of holes can be provided and arranged in any pattern in order to meet the requirements for a particular application of the clip **20** of the instant invention.

One longitudinal end of the clip **10** is provided with a hook means. For the purpose of providing such hook means, the terminal portions at the one longitudinal end of the flanges **30** and **32** are inclined upwardly, in the manner indicated at **36** and **38**, whereby the wall portions **24** and **26** are progressively reduced in lateral extent or taper toward this particular longitudinal end of the clip **10**. The inclined terminal portions **36** and **38** of the flanges at this longitudinal end of the clip are provided with identical ear projections **40** and **42**. These ear projections **40** and **42** are folded back underneath the respective inclined terminal portions **36** and **38** to define the hook means **44** shown in FIGURES 2 and 4.

Although the web portion **28** can extend in a generally parallel fashion to the flanges **30** and **32**, the preferred embodiment of the invention contemplates that the web portion **28** actually has a slight downward incline relative to the flange portions **30** and **32** for a substantial portion of the length of the clip. If desired, the web portion **28** may be slightly beveled, beginning approximately at point or line **28***a*, to further increase this slight downward inclination of the web portion. One reason for the web portion **28** being slightly inclined relative to the terminal portions **30** ad **32** adjacent the top of the clip is that each clip **10** of the instant invention is geometrically proportioned to underlie the respective panel sections **12** associated therewith but without disturbing the esthetic appearance of the interlocking panel sections **12**. By virtue of the initial flat shape of a blank coupled

with its being formed by suitable die apparatus as aforementioned into the clip **10** of the instant invention, the free side edges **46** and **48** of the terminal portions **30** and **32** converge intermediate the length of the clip **10** to define apices **50** and **52** which are located adjacent the upwardly inclined portions **36** and **38**.

The panel sections **12** are desirably formed from a blank of sheet material, preferably aluminum or aluminum alloy, to simulate a series of different-size shingles on their exposed surface as shown in FIG. 2. These panel sections can be made in the form of the panel section shown and described in my co-pending patent application Ser. No. 326,134 filed Nov. 26, 1963, and now abandoned in favor of continuation application Ser. No. 540,106 filed April 4, 1966, now Patent No. 3,312,031, or they can have other configurations. Regardless of the particular type of panel section **12** which is employed the opposed edges of such a panel section will always be provided with upper and lower folded-back flanges **54** and **56** as well as side flanges **58** and **60**. The upper flanged edge **60** at the right-hand end of each panel section **12** as viewed in FIG. 2 is provided with a nail hole **62** adjacent the end of the flange **54**. The purpose of the hole **62** in each panel section **12** is to enable initial fastening of a panel section **12** by means of a suitable nail fastener to one of the shingles **16** or a similar element to be covered.

Three interlocking panel sections **12** are shown in FIG. 2 wherein the lower flanged edge **56** of the upper panel section **12** is interlocked to the aligned upper flanged edges **54** of two lower interconnected panel sections **12**. These panel sections **12** are representative of the manner of installation of the clip **10** with the panel sections **12** as well as the interlocking of the panel sections **12**. Prior to interlocking the lower flanged edge **56** of the upper panel section **12** to the upper flanged edges **54** of the lower interconnected panel sections **12**, the ears **40** and **42** that define the hook of the clip **10** are brought into engagement with the upper flanged edge **54** of the left panel section **12** in the lower row in FIG. 2. After this engagement of the hooked clip **10** the downwardly facing surfaces **30***a* and **32***a* of the terminal portions **30** and **32** are brought into nesting contact with the exposed surface of an underlying roof shingle **16** and secured to the roof structure **14** in a unique fashion by virtue of the holes **34**. These holes allow the roofer to line up the clip fastener means with the underlying structure made up of sheath boards **18** or the like and roofing nails are driven through these openings. The roofer drives a nail fastener through any one of the holes until the resistance of the nail fastener being driven indicates that the nail fastener has been successfully driven into a sheath board **18**. As indicated in FIG. 2, the conventional nail fastener **22** is driven into the sheath board **18** at the hole **34** that is closed to the hook means **44** of the clip **10**, while at the same time being aligned with a solid object or sheath board **18**. Although it is evident upon an inspection of FIG. 2 that the other holes **34** could have guided the nail fastener **22** into the sheath board **18**, at least one nail fastener **22** is always driven into the hole **34** that is aligned with the sheath board **18** and at the same time closest to the hooked longitudinal end of the clip **10**. When the clip **10** is properly emplaced it will have the greatest strength or resistance to bending whenever the distance between the hook **44** of the clip **10** and one of the nail fasteners **22** driven through one of the holes **34** is at a minimum. Once the clip **10** is fastened to the underlying sheath board **18** the lower flanged edge **56** of the panel section **12** in an upper row is interlocked to the upper flanged edges **54** of the two panel sections **12** in a lower row. Thereafter, the upper panel section **12** is initially located in an interlocked and offset position with respect to the two lower panel sections **12** by driving a suitable nail fastener (not shown) through the nail holes **62** on

the flanged edge **60** and into an underlying wood shingle **16** of the roof structure **14**. Additional upper and lower panel sections **12** can be secured in place in a similar fashion to complete the reroofing structure. In the event that the local weather conditions or building codes require that more than one clip **10** be used under a given panel section **12** a plurality of the same may be used.

Whereas in roofing constructions of the prior art no truly suitable roofing clip means has been developed, the clip means of the instant invention has proved eminently satisfactory for initial roofing or reroofing purposes. One of the reasons for the failure of previously developed clips was due to the fact that these clips were not specifically designed to be fastened to a sheath board in a special fashion. Prior art clips were fastened to the supporting roof structure in only a haphazard fashion and for the most part were merely affixed to the weathered shingles which are a relatively poor anchoring medium.

By virtue of the structure of the one-piece clip **10** of the instant invention and the fact that it can be anchored to a sheath board the clip not only has great resistance to longitudinal flexure but it is also positively held by the sheath board **18** to which it is fastened.

An advantageous embodiment of the invention has been shown and described. It will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the spirit and scope thereof as set forth in the appended claims; wherein:

What is claimed is:

1. In a covering for a building structure provided with underlying sheath boards the combination of a plurality of panel sections each of which is provided with interengaging top and bottom flanged edges for interlocking the individual panel sections together, an elongated clip disposed in interlocked relationship with a pair of adjacent panel sections at a point of interengagement between the top and bottom flanged edges of said sections, said clip being of approximate inverted channel shape whereby it is provided with spaced flanges and upstanding portions interconnected by a web-portion, said web-portion having a plurality of holes projecting therethrough and spaced from the longitudinal ends of the clip whereby when the clip is emplaced at least one of said holes will always be in alignment with an underlying sheath board, the terminal portions of said flanges adjacent one end of said clip being inclined upwardly out of the normal planes of the remaining portions thereof but while remaining fully connected to and integrated with said web portion and said terminal portions being further provided with ears which are folded back to form hook means for engaging in an interlocked relationship the opposing top and bottom flanged edges of the said pair of adjacent panel sections when a fastener means is passed through the one of said holes in the clip and acts to secure the clip and associated panel sections to an underlying sheath board.

2. In a covering for a building structure provided with underlying sheath boards or the like, the combination of a plurality of panel sections provided with intergaging top and bottom flanged edges for interlocking the panel sections together during emplacement of the panel sections; a hold down clip for said sections, said clip having wall portions interconnected by web-portion and one longitudinal end of said clip being disposed intermediate a pair of interlocking panel sections, the clip and panel sections being at their point of interengagement in nesting contact with the exposed surface of the structure, the improvement wherein said clip has an elongated inverted channel shaped configuration such that it is provided with spaced flanges, a web portion and upstanding wall portions, the terminal portions of said flanges adjacent one end of said clip being out of the normal planes of the remaining portions thereof but while remaining fully connected to and integrated with said web-portion and

said terminal portions of said flanges being further provided with ears which are folded back to form hook means for engaging in an interlocked relationship the opposing top and bottom flanged edges of a pair of adjacent interlocking panel sections, and said clip also having a plurality of holes projecting through the web-portion thereof such that at least one hole of the clip will always be in alignment with an underlying sheath board during emplacement of the clip whereby said clip can be effectively secured to the structure when a fastener is passed through the said one of the holes that is in alignment with the underlying sheath board.

References Cited

UNITED STATES PATENTS

1,539,632	5/1925	Belding	52—520
2,361,112	10/1944	Llewellyn	52—478
2,495,303	1/1950	Wisniewski	52—468
2,546,430	3/1951	Cook	52—464
2,607,449	8/1952	Daniels	52—531 X
3,236,932	2/1966	Grigas et al.	52—543 X

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