Dec. 6, 1955 G. H. HUNTINGTON 2,725,832

SHEET METAL ROOFING

Filed Jan. 8, 1951 2 Sheets-Sheet 1

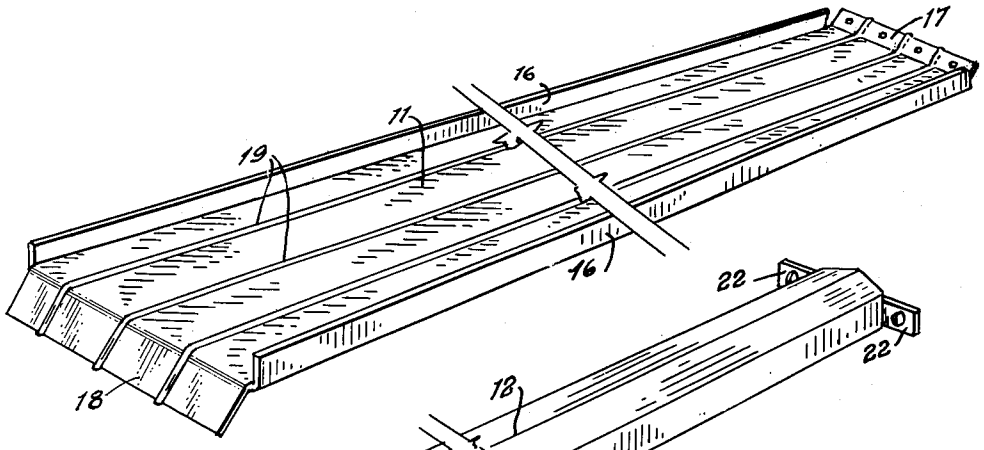


Fig. 1.

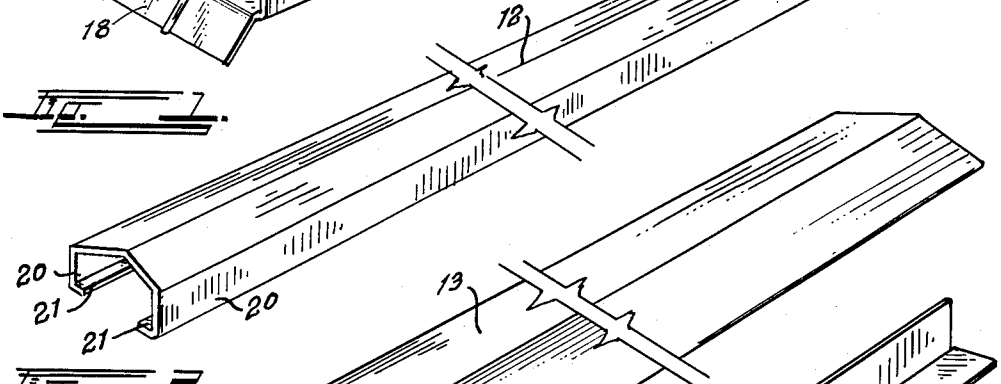


Fig. 2.

Fig. 3.

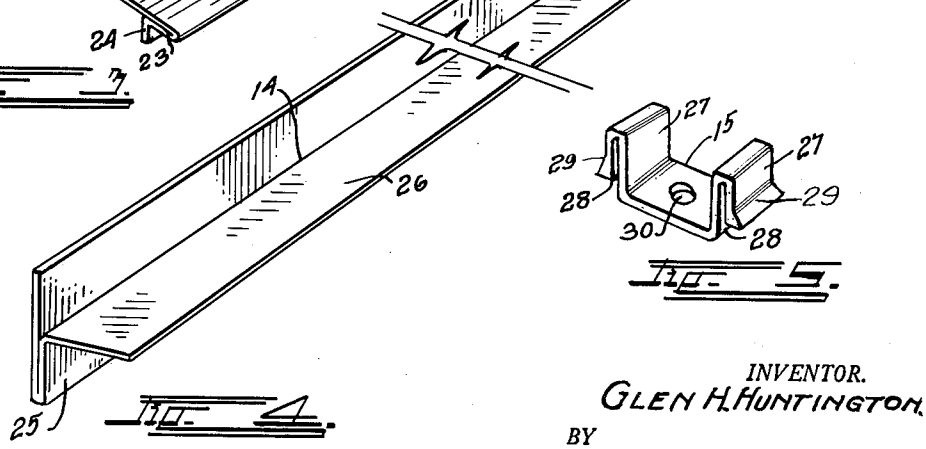


Fig. 4.

Fig. 5.

INVENTOR.
GLEN H. HUNTINGTON.
BY
ATTORNEY.

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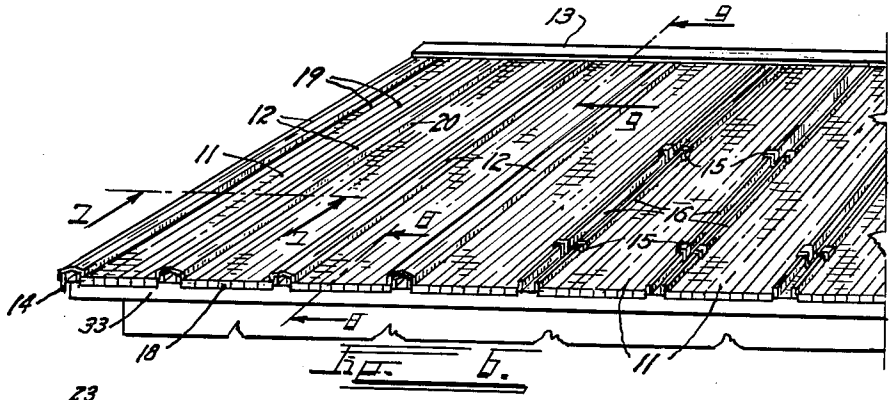


Fig. 6.

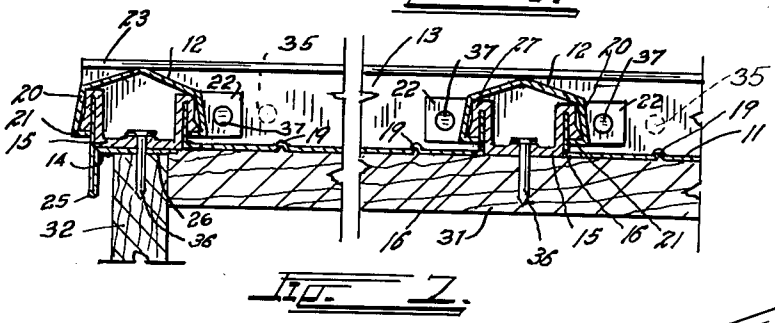


Fig. 7.

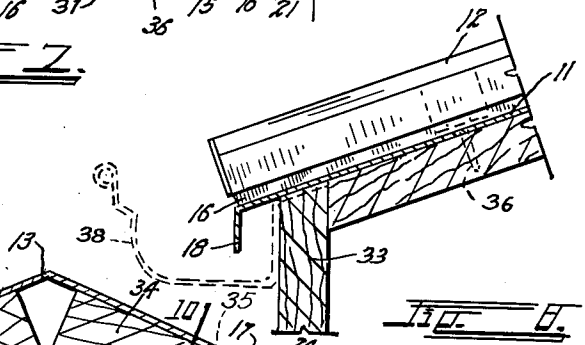


Fig. 8.

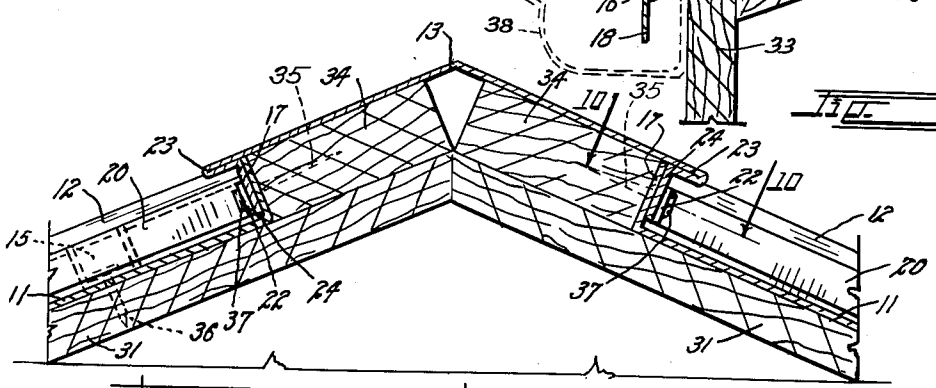


Fig. 9.

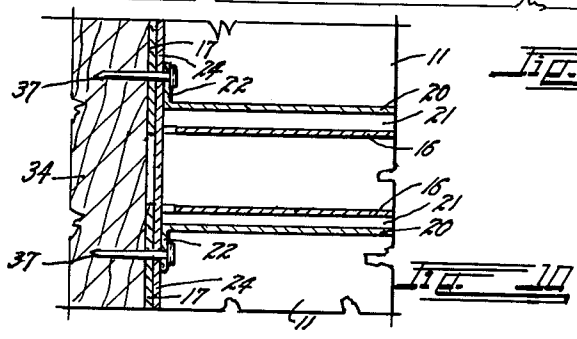


Fig. 10.

INVENTOR.
GLEN H. HUNTINGTON
BY
ATTORNEY

United States Patent Office

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SHEET METAL ROOFING

Glen H. Huntington, Denver, Colo.

Application January 8, 1951, Serial No. 204,953

3 Claims. (Cl. 108—21)

This invention relates to sheet metal roofing, and has for its principal object the provision of a highly efficient, weatherproof, expansible sheet metal roofing construction which can be quickly, easily, rapidly, and economically installed. The invention is more particularly designed as an improvement over the roofing illustrated and described in applicant's prior Patent No. 2,408,557, issued October 1, 1946.

Another object of the invention is to provide means for securely attaching sheet metal roofing strips to roof sheathing without interfering with the thermal expansion of the strips, and to provide highly efficient means for finishing the roofing at the eaves, gable ends, and ridge of the roof.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawings:

Figs. 1 to 5, inclusive, are perspective views of the five elements employed to form a complete roof with the improved roofing;

Fig. 6 is a perspective view illustrating the method of applying the improved roofing;

Figs. 7, 8, and 9 are enlarged, fragmentary, detail sections, taken on the lines 7—7, 8—8, and 9—9, respectively, Fig. 6; and

Fig. 10 is a similar enlarged, detail section looking downwardly on the line 10—10, Fig. 9.

The five types of elements employed in the improved roof are: an elongated roofing strip **11**, a batten strip **12**, a ridge member **13**, a gable end member **14**, and an attachment clip **15**.

The roofing strips **11** are formed from sheet metal and are continuous in length with two upturned, parallel side flanges **16** extending along the side edges thereof. The upper extremity of the strip is provided with an upturned upper end flange **17**, and the lower extremity is provided with a downturned lower end flange **18**. A plurality of parallel, longitudinally extending stiffening ridges **19** are indented upwardly throughout the length of the strips **11**. The ridges **19** serve a double purpose, first, they break the highlights of the conventional flat surfaces found in sheet metal roofing to produce an ornamental, roughened texture to the surface, and second, they act as stiffening members for the strips **11**.

The batten strip **12** consists of an elongated strip of sheet metal bent to form a relatively sharp, concave ridge along the top. The two sides of the strip are bent downwardly, as shown at **20**, and the lower edges of the sides are bent inwardly to form inwardly hooked edges **21**. The upper extremities of the two sides **20** are turned outwardly to form two oppositely-projecting attachment ears **22**.

The ridge member **13** is also formed from an elongated strip of sheet metal bent on its longitudinal axis to form a straight, concave ridge along its top. The two side edges of the strip are bent back beneath themselves to form projecting edges **23** of double thickness, and are then extended downwardly to form two parallel sides **24**.

The gable end member **14** is formed from an elongated strip of sheet metal folded longitudinally and upwardly on itself to form a double-thickness, vertical lower edge portion **25**, thence folded outwardly to form a shelf portion **26** extending at right angles to the plane of the strip.

The attachment clip **15** is formed from relatively heavy metal, such as a die casting, to provide two side hooks **27** having upwardly extending, flange-receiving notches **28**. The outer lower edges of the hooks **27** incline outwardly, as shown at **29**, to form relatively wide, hook-engaging extremities. The clip is provided with a central nail hole **30**.

The roof is prepared for receiving the improved roofing by laying tight sheathing boards **31** thereon, terminating at the gable ends in bargeboards **32** and at the eaves in eave boards **33**. A wooden ridge cleat **34** is applied along each side of the roof ridge, as shown in Fig. 9.

The strips **11** are laid on the sheathing boards **31** in parallel relation, extending from the hip or ridge to the eaves thereof. The upper end flanges **17** of the strips are nailed to the cleats **34**, as indicated in broken line at **35**, and the side flanges **16** are held in accurate, parallel relation by means of the attachment clips **15**, the hooks **27** of which are fitted over the flanges **16** of the adjacent strips at spaced intervals. The clips **15** are nailed to the sheathing boards **31** by means of suitable nails **36** placed in the nail openings **30**.

It will be noted that there is no rigid attachment of the strips to the sheathing boards **31**, so that the latter may freely contract and expand longitudinally under the influence of changes in temperature, the flanges **16** sliding into the notches **28** of the hooks **27** of the clips **15**.

After the strips **11** are in place, the ridge member **13** (of Fig. 3) is fitted over the two ridge cleats **34** and over the flanges **17** of the strips and their nails **35**.

The batten strips **12** are now placed over the open joints between the adjacent strips **11** and forced downwardly over the clips **15**. The sides **20** of the batten strips **12** are formed in vertical, parallel planes. However, in forcing them over the clips, the sides **20** are forced outwardly by the inclined surfaces **29** until the hooked edges **21** snap beneath the wide hook-engaging extremities of the hooks **27**, as shown in Fig. 7, thus firmly locking the batten strips from upward movement.

The ears **22** at the upper ends of the batten strips **12** are nailed to the ridge cleats **34**, through the upper end flanges **17** of the strips **11** and through the sides **24** of the ridge member **13**, by means of suitable nails **37**. The projecting edges **23** of the ridge member extend outwardly over the nails **37** and the ears **22** to conceal and protect the latter, and to prevent water from entering the upper ends of the batten strips.

The terminal strips **11** at the gable ends of the roof are spaced back from the bargeboards **32** so that the gable end members **14** may be nailed along the top of the bargeboards **32** or along the edge of the sheathing boards **31** to form a straight, finished edge therealong. The attachment clips **15** are then nailed in place through the shelf portions **26** of the members **14**. One side hook of each clip engages the side flange of the terminal strip **11**. The other hook of each clip engages the upturned edge of the gable end member. The batten strips **12** are now placed

over the clips, as shown in Fig. 7, to form a finished gable end on the roof.

The downwardly turned end flanges **18** of the strips **11** protrude downwardly beyond the eave boards **33** to provide an edge drip for the roof. A conventional eave trough or gutter can be tacked in place along the eave boards **33**, as indicated in broken line at **38**, if desired.

It will be noted that the batten strips **12** can expand and contract thermally without loosening any of the roof structure, since they are anchored only at their upper extremities by the nails **37**.

While a specific form of the improvement has been described and illustrated herein, it is to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. A thermally expansible sheet metal covering for a pitched roof of the type having a ridge with an inclined side roof portion sloping downwardly from each side of said ridge comprising: an elongated ridge cleat secured to said side roof portions at each side of said ridge; a plurality of elongated roofing strips lying on said side roof portions at right angles to said ridge and spaced from each other; an upturned side flange along each side edge of each strip; an upturned terminal flange across the upper end of each strip lying against one of said ridge cleats; a plurality of clips secured to said side roof portions between the spaced roofing strips, the extremities of each of said clips extending over the adjacent spaced roofing strips, each of said extremities having an upwardly extending vertical slot slidably receiving the upturned side flange of one of the adjacent roofing strips; an inverted channel-shaped batten strip positioned over the open space between each pair of adjacent roofing strips; inwardly-hooked bottom edges on the sides of each of said batten strips engaging beneath the extremities of the clips positioned therebelow; upper end flanges on said batten strips; an inverted channel shaped ridge member positioned over said cleats; an outwardly projecting edge portion along each side of said ridge member, said edge portions extending over and covering the upper extremities of the roofing strips and the batten strips; a downwardly extending cleat flange formed along and below each side of said ridge member, each of said cleat flanges extending along the lower edge of one of said cleats; and securing means extending through the upturned terminal flanges of said roofing strips, through the upper end flanges of said batten strips, through the cleat flanges of said ridge member and securing the upper extremities of said roofing strips and securing the upper extremities of said batten strips to said roof while permitting free expansion and contraction of both said strips.

2. A thermally expansible sheet metal covering for a pitched roof having a gable end as described in claim 1,

having a terminal roofing strip similar and parallel to the other roofing strips and extending along one of the side roof portions adjacent said gable end; a vertical edging strip; a horizontal shelf portion formed on said edging strip and supporting the latter along the gable end of said roof parallel to and spaced from said terminal roofing strip, said edging strip extending downwardly from said shelf portion to form a drip edge and upwardly above said shelf portion parallel to the upturned side flange on said terminal roofing strip; and a plurality of terminal clips similar to the clips described in claim 1 secured to said roof between the terminal roofing strip and the edging strip, the upturned side flange of the terminal roofing strip and the upper edge of the edging strip engaging in the vertical slots of said clips; and a terminal batten strip similar to the batten strips described in claim 1, engaging the extremities of said terminal clips and covering the side flange of the terminal roofing strip and the upper edge of said edging strip.

3. A gable end construction for sheet metal roofing of the type embodying parallel elongated roofing strips having upturned side edges comprising a sheathed roof having a barge board at the gable edge thereof, a gable strip of sheet metal positioned on top of and having a downwardly-turned drip flange extending along the side of said barge board, an upwardly-extending flange on the gable strip, clips having closely spaced notches therein for securing said gable strip along the gable substantially parallel thereto, a roofing strip having an upturned flange secured to the roof with its flange spaced from the gable strip flange a distance equal to the distance of separation of the notches in the clips, said clips being secured along said gable edge between said elongated strip and the roofing strip with the clip notches receiving said upturned flanges on the roof strip and gable strips, and an elongated batten strip attached to said clips and covering said flanges and clips.

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