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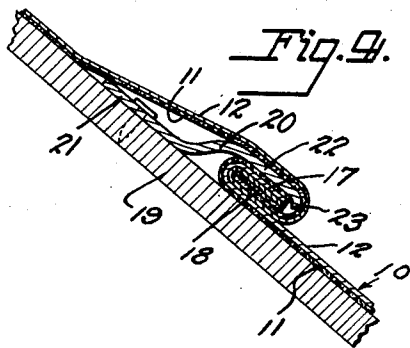
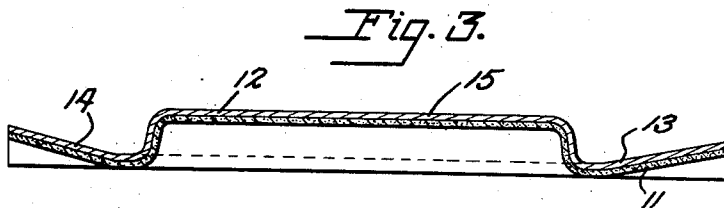
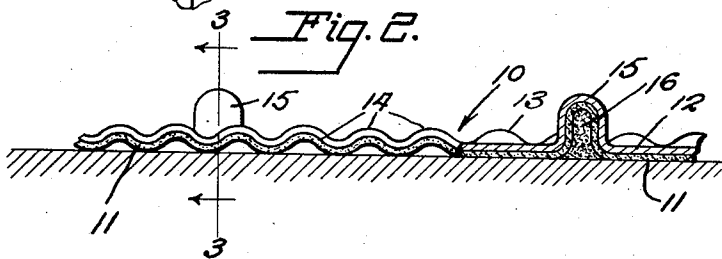
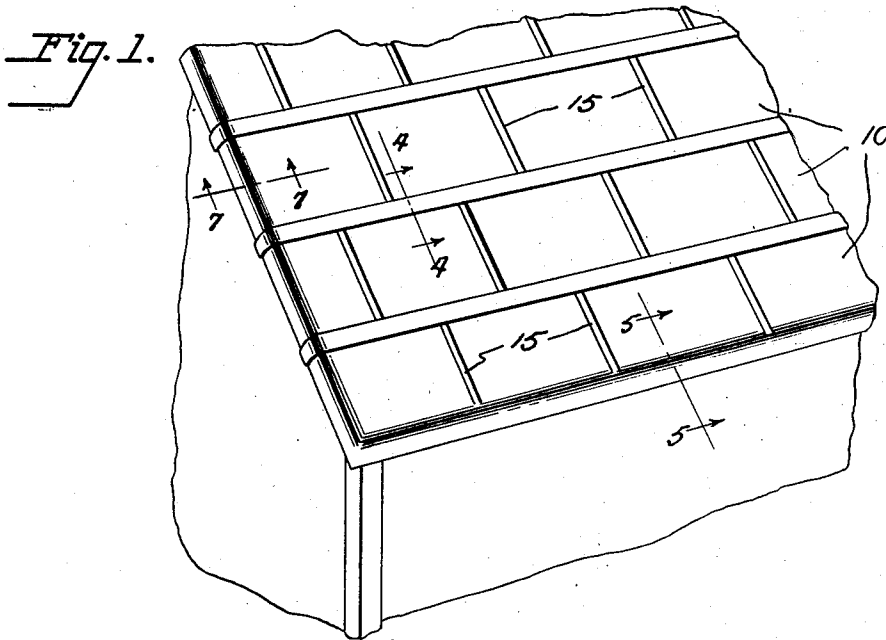
J. E. CRUMP

2,140,691

SHINGLE STRIP AND ROOF CONSTRUCTION

Filed May 18, 1938

2 Sheets-Sheet 1



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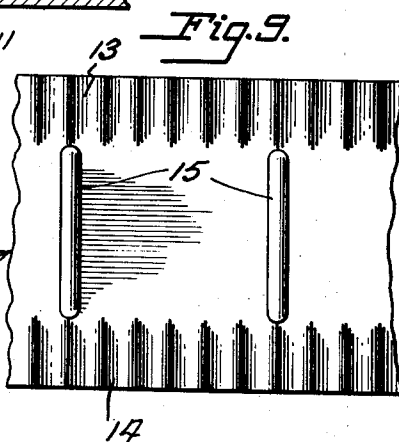
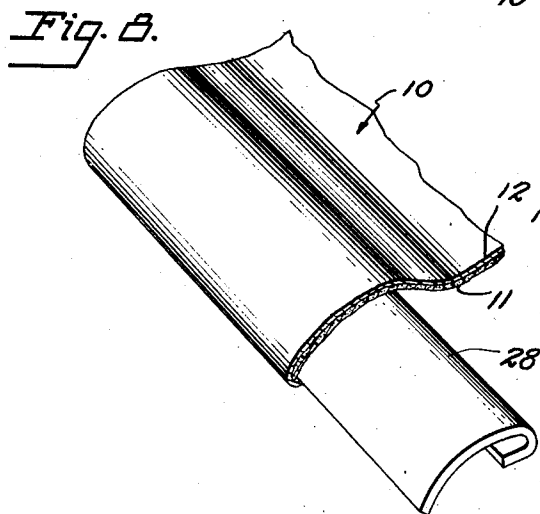
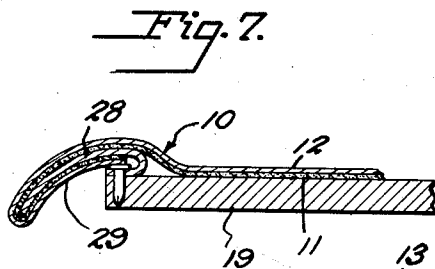
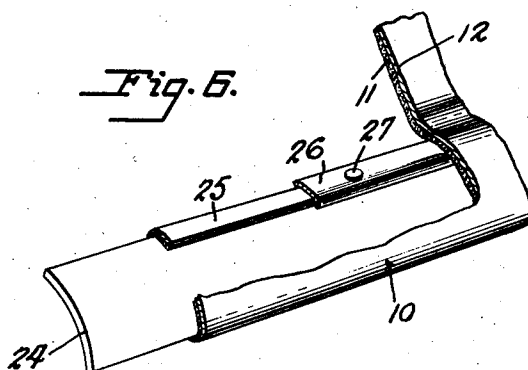
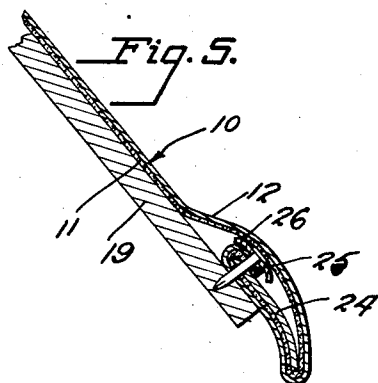
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SHINGLE STRIP AND ROOF CONSTRUCTION

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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SHINGLE STRIP AND ROOF CONSTRUCTION

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Application May 18, 1938, Serial No. 298,689

7 Claims. (Cl. 108—13)

The present invention relates to sheathing for building structures, and is more particularly designed for roofing, although it may be applied effectively to siding, or to the lining of boxes and tanks, etc., to make them water-tight.

In the past, attempts have been made to use weather-resisting metals, such as copper, for sheathing, but the problems encountered have restricted their use. The metals having the desired qualities are relatively expensive, and heavy sheets are prohibitive in cost. Strips that are sufficiently light in gauge to favorably compete with other materials are easily torn and broken. Where pieces of such metal are rigidly secured to a sub-structure, contraction may cause them to tear at the fastenings. Difficulty is experienced in producing joints between adjacent strips or other units that will remain water-tight under storm conditions, and which will allow for expansion and contraction of the sheathing material.

One object of the present invention is to provide a sheathing material that has a surface of very thin, flexible metal, which may be relatively soft, and which will have sufficient mechanical strength to withstand the forces that act upon it.

Another object is to provide units of the material having means for allowing expansion and contraction of the material without danger of injury to the material.

Still another object is to provide a novel form of joint for the material that is effective in excluding the entry of water under all conditions.

A further object is to provide a novel means of securing the sheathing material to a sub-surface without nailing through the sheathing material at any point.

Another object is to provide a novel eaves starter strip for roofing of this character to throw water from the roofing clear of the walls supporting the same.

Another object is to provide roofing of this character with end or gable strips to support the roofing material with its end edges clear of the walls in order to prevent unsightly stains resulting from water shed by metallic roofing.

Other objects of the invention will become apparent as the detailed description thereof proceeds:

In the drawings

Figure 1 is a fragmentary perspective of a roof covered with the shed roofing forming this invention;

Figure 2 is an end elevation of a strip of this

roofing, partly broken away and shown in section;

Figure 3 is a section, to an enlarged scale, taken on the line 3—3 of Figure 2;

Figure 4 is a section taken on the line 4—4 of Figure 1;

Figure 5 is a section taken on the line 5—5 of Figure 1;

Figure 6 is a fragmentary perspective view illustrating the method of applying the roofing at the eaves of a roof;

Figure 7 is a section taken on the line 7—7 of Figure 1;

Figure 8 is a perspective view illustrating the method of applying the shingle strip to the ends of a roof; and

Figure 9 is a fragmentary plan view of a shingle strip constructed in accordance with this invention.

Referring to the drawings, the sheathing employed in carrying out this invention is manufactured in relatively long strips 10. Each strip consists of a flexible base layer 11 which may be manufactured from ordinary roofing felt or other felt-like material. A thin surface layer 12 of flexible metal, preferably thin sheet copper is securely attached to the felt-like base by bonding with a suitable adhesive preparation, such as tar or pitch by means of which the two layers are firmly secured to each other.

Along their opposite edges, the strips 10 are corrugated to allow for any lengthwise expansion and contraction thereof when applied to a roof. The corrugated parts 13 and 14 of the strips 10 extend inwardly from the edge of each strip a sufficient distance to permit the formation of a wind-proof and water-tight joint between the adjacent strips as applied to the roof.

The space between the corrugated parts 13 and 14 are provided with ribs 15 extending across each strip perpendicular to the edges thereof and spaced apart from each other at distances corresponding to the widths of shingles in common use. These ribs not only serve to give the entire roof the appearance of a shingle roof, but also serve as means for compensating for the lengthwise expansion and contraction of the strip. Preferably, the ribs 15 are filled with some plastic material 16 which will maintain the ribs in their initially formed condition and at the same time will not interfere with the expansion and contraction of the strip.

In order to form a wind-proof and water-tight joint between adjacent strips of the sheathing material, the corrugated, marginal portion of one

strip is applied to a marginal portion of the adjacent strip and the two portions are bent and re-bent to form the hook-like flanges 17 and 18, as shown in Figure 4 of the drawings. To

5 secure the adjacent strips in their inter-locked relation, and to anchor the sheathing to the sub-surface 19, a specially formed clamping and nailing strip 20 is provided. This clamping strip extends about the entire length of each joint between the adjacent units of sheathing.

10 The clamping strip 20 is shaped so as to provide a nailing flange 21 adapted to be nailed directly to the sub-surface 19. The other end of the clamping strip 20 is bent so as to form a clamping member 22 which is adapted to seat on the upper surface of the joint and is provided with a downwardly turned flange 23 adapted to engage the edges of the connected adjacent shingle strips. The clamping strip is so shaped that when the nails are hammered into the sub-surface 19, the clamping part 22 will exert a downward pressure on the return-bent members of the adjacent strips and secure the said members firmly to the sub-surface 19. This method of constructing the joint between adjacent shingle strips will be carried out as often as may be necessary to cover the roof.

Unless the gables and eaves of the roofs are provided with large overhangs, the metallic sheathing is likely to cause discoloration of the wall of the building by permitting water to flow directly thereon. In order to eliminate this objectionable feature in buildings without overhanging eaves or gables, the starter strip construction illustrated in Figures 5 and 6 of the drawings may be employed.

As shown in Figure 5, the lower edge of the first shingle strip 10 has a comparatively stiff strip 24 laid thereon with a flanged portion 25 bent around the upper edge of the strip 24. A narrow clamping strip 26 is laid over the flange 25 and nails 27 are driven through the four plies of material thus formed into the sub-surface 19. The strip 10 thus secured to the eaves of the roof is then bent over the lower edge of the strip 24 and is laid on the roof to be secured to the adjacent shingle strip by the joint illustrated in Figure 4.

To provide a drip overhang for the gable end of the roof, each end has a strip of comparatively stiff sheet material nailed to the ends of the roof. This strip 28 is then bent outwardly over the gable end to form an overhang, around which the outer ends of each strip 10 are bent and turned under to form a flange 29 adapted to be clamped between the folds of the strip 28. It will be understood, of course, that the folds of the strip 28 will be initially separated far enough to permit the easy insertion of the flange 29. After such insertion, the shingle strip and the overhanging part of the strip 28 may be hammered down to securely lock the flange 29 in its desired position.

The material and structure disclosed in this application have many advantages. They combine to give a relatively inexpensive sheathing although a relatively expensive metal be used for the outer coating. The joints are wind-proof and water-tight under all conditions and sealed against entry of water due to capillary attraction.

A further advantage of this joint is that the surfacing metal is kept entirely out of contact with the metal of the clamping strips and nails, precluding the possibility of destructive electrolytic action except as shown in Figures 5 and 7

where the roofing is shown attached to the eaves and gables. A further advantage is that the sheathing is strongly and securely attached to the substructure and yet is amply free to expand and contract under heat variations.

All fastenings are beneath the sheathing and protected from the weather. Finally, the sheathing is capable of infinite changes in design, both in the pattern of the folds and in the range of height variations in the joints.

From the foregoing, it is thought that the construction operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim is:

1. A shingle strip comprising a sheet of copper and a reinforcing sheet secured thereto, the opposite edges of said strip having marginal portions corrugated to compensate for expansion and contraction of the strip when applied to a roof, said strip being provided with ribs extending between said portions to divide the strip into shingle members.
2. A shingle strip comprising a sheet of copper and a reinforcing sheet secured thereto, the opposite edges of said strip having marginal portions corrugated to compensate for expansion and contraction of the strip when applied to a roof, said strip being provided with ribs extending between said portions to divide the strip into shingle members, said ribs being filled with plastic material and adapted to compensate for expansion and contraction of the strip between the marginal portions thereof.
3. A shingle strip comprising a sheet of copper and reinforcing sheet secured thereto, said strip being provided at its opposite edges with marginal portions corrugated to compensate for expansion and contraction of the strip when applied to a roof, and adapted to form folded over portions for interlocking adjacent strips edge-to-edge.
4. A shingle strip comprising a sheet of copper and reinforcing sheet secured thereto, said strip being provided at its opposite edges with marginal portions corrugated to compensate for expansion and contraction of the strip when applied to a roof, and adapted to form folded over portions for adjacent strips edge-to-edge, each strip being provided between said marginal portions with ribs extending at right angles to said portions and dividing the strip into shingle members.
5. A roofing construction comprising a plurality of strips interlocked along adjacent edges, each of said strips having spaced apart ribs dividing the strip into shingle members and presenting means to control expansion and contraction of the strip caused by changes of temperature, each of said strips being formed of a continuous sheet of copper and a reinforcing sheet of felt-like material of the same width and length as the copper sheet and having corrugated marginal portions folded to form the interlocking joint between adjacent strips, a stiff retaining plate formed with a body extending from the edge of the interlocked joint between adjacent strips and having a depending flange positioned to fit along the edges of the interlocked shingle strip, and means extending through the body of said

retaining plate for securing said plate and interlocked portion to a roof.

5 6. A roof comprising a sub-structure, a starter strip of stiff sheet material, a shingle strip of flexible material having a marginal portion extending along one face of said strip and bent around an edge thereof, and means for securing said shingle strip with the starter strip applied thereto to one edge of said sub-structure with the
10 said marginal portion projecting outwardly from said edge, and means projecting from the edges of said sub-structure at right angles to the first

named edge to support and secure the ends of said shingle strips projecting beyond said edges.

7. A roof comprising a sub-structure, a starter strip of stiff sheet material, a shingle strip of flexible material having a marginal portion extending along one face of said strip and bent around an edge thereof, and means for securing said shingle strip with the starter strip applied thereto to said sub-structure with the said strip and marginal portion projecting outwardly from
10 and overhanging said edge to form a drip.

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