Oct. 16, 1951 P. E. McCULLOUGH 2,571,273

JOINT FOR ROOFING OR LIKE SHEETS

Filed Jan. 28, 1948

Fig. 1.

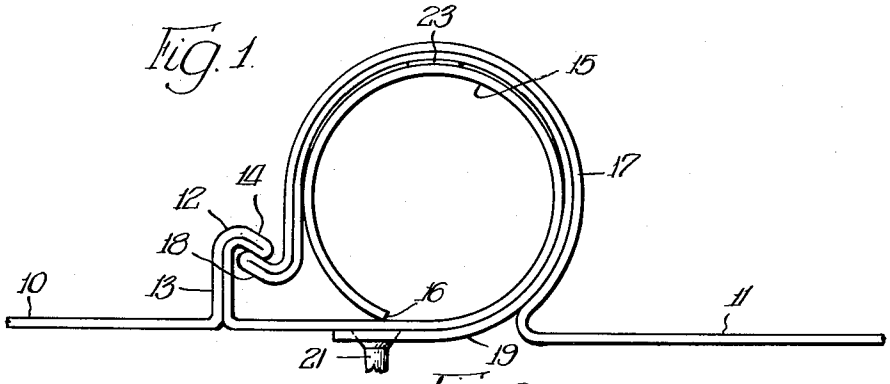


Fig. 2.

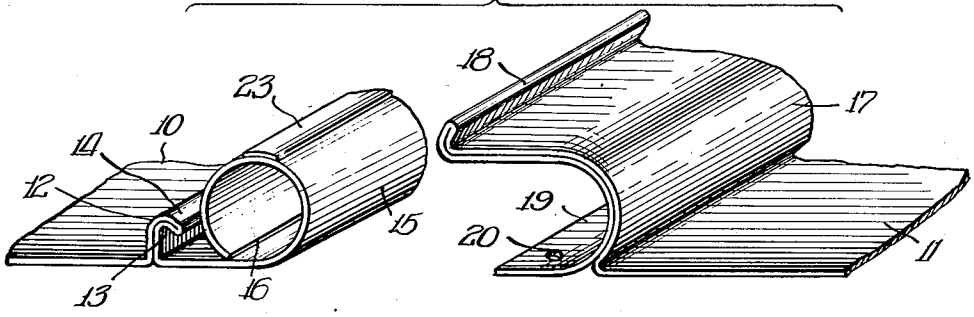


Fig. 3.

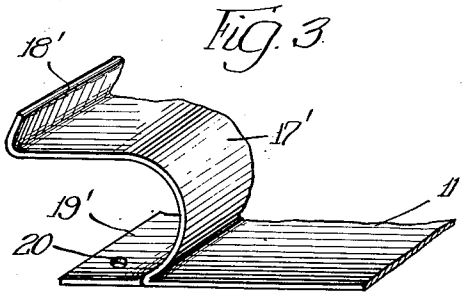
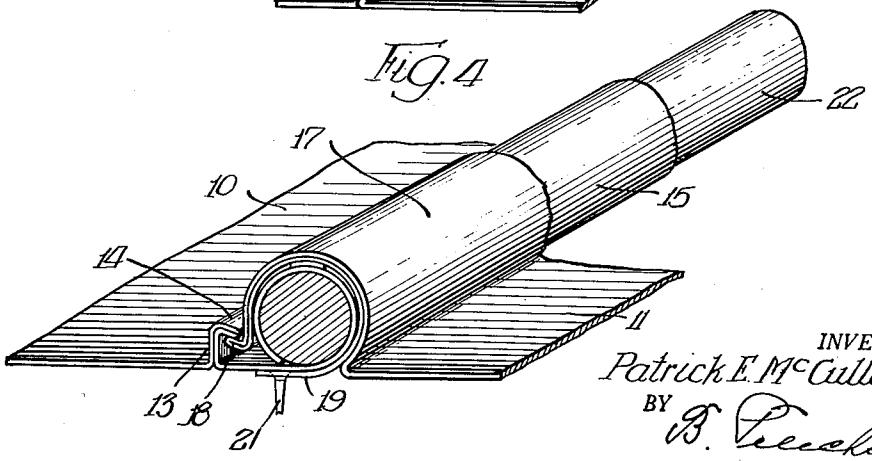


Fig. 4.



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JOINT FOR ROOFING OR LIKE SHEETS

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5 Claims. (Cl. 108—22)

1

The present invention relates to joints between a pair of contiguous metallic sheets, and has for its main object the provision of a suitable means at the adjacent edges of a pair of sheets whereby the same may be interengaged and interlocked when brought to an edge to edge relation.

Another object of the present invention is the provision of a rib along an edge of a sheet, with a sheath formed along an edge of another sheet, wherein said rib may be received when the two sheets are brought to an edge to edge relation, and whereby said rib may be enveloped for forming a joint between said rib and said sheath, with means provided at the body of the first named sheet for interengaging and interlocking said sheath for maintaining the latter in a rigid engaged position with relation to the said rib, for forming thereby a joint between a pair of sheets when in an edge to edge relation.

A still further object of the present invention is the provision of a suitable joint of the character indicated for a pair of metallic sheets which may be impervious to water when the sheets are used for roofing or similar purpose.

With the above general objects in view and others that will appear as the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claims.

In the drawing forming a part of this application and in which like designating characters refer to corresponding parts throughout the several views:

Fig. 1 is an enlarged end view of a joint made in accordance with the present invention;

Fig. 2 is a perspective view of a pair of metallic sheets with preformed joint edges in the position immediately preceding to their interengagement and interlocking;

Fig. 3 is a perspective view of a preformed edge of one of the sheets, of a modified construction; and

Fig. 4 is a perspective view of the formed joint with a filler therein, which may be optionally used with the joint for adding rigidity thereto.

Referring to the present drawing in detail there is shown therein a pair of sheets 10 and 11. The marginal edge of sheet 10 is suitably formed for effecting a complementary part of the joint to be engaged by a complementary part of the joint formed at the marginal edge in sheet 11, in order that the two parts may interengage

2

and interlock when the sheets are brought to an edge to edge relation. Said complementary part of the joint in sheet 10 includes hook 12 which is formed out of the body of sheet 10 by doubling the same upon itself for effecting stem 13 which is in a substantially perpendicular relation with the body of sheet 10, and hook proper 14, which extends from said stem 13 and is inclined toward the body of sheet 10, for the purpose hereinafter described.

The free marginal portion of sheet 10, past said hook 12, is rolled into an upward direction for defining a cylindrical rib 15, with the edge of said sheet 10 within said rib 15 contacting the body portion of sheet 10, as at 16.

The diameter of said rib 15 is considerably longer than the height of stem 13, as is clearly seen in Fig. 1. Stem 13 and hook proper 14 are in a spaced relation with rib 15. Both said stem 13, with hook proper 14, and rib 15 are in a longitudinal relation with the margin of sheet 10.

The marginal portion of sheet 11 is suitably preformed for engaging and interlocking the same with the joint part of sheet 10 hereinabove described. Said marginal portion of sheet 11 is doubled up upon itself for forming an arcuate, trough-like sheath 17, with flange 18 extending outwardly of the margin of said sheath 17 and in an acute-angular relative position therewith. The free edge of the margin of said sheet 11, extending from said sheath 17, in a downward direction, is left free for effecting flap 19 which is left substantially on the plane with the body of sheet 11. In the preformed condition of said sheath 17, flange 18 and flap 19, the free end of said sheath 17, adjacent said flange 18, remains in a substantially parallel relation with said flap 19, as is seen in Fig. 2, for the purpose hereinafter described. Said flap 19 is provided with a plurality of spaced apertures 20 in a longitudinal relation with said flap 19 for receiving therein nails or screws 21 by means of which flap 19 may be rigidly affixed to any suitable base, such as roof foundation.

In the modified formation of the edge of sheet 11, illustrated in Fig. 3, the marginal portion of the sheet is not doubled up upon itself, as is shown in Fig. 2, but sheath 17' is in a single layer, being continuation of the body portion of sheet 11, with flange 18' extending from the free edge of said sheath 17'. In the said modified form of the margin of sheet 11 flap 19' embodies an oblong sheet strip welded, or otherwise suit-

ably attached to the corner effected by the juncture of the body of sheet 11 and said sheath 17'.

When sheet 11 has been attached to the roof foundation or any other base, by means of nails or screws 21, sheet 10 is then brought to said sheet 11 in an edge to edge relation, with rib 15 inserted within the space defined by the free edge of sheath 17 and flap 19, with the periphery of said rib 15 contacting the arcuate inner ends of said sheath 17 and flap 19, as is seen in Figs. 1 and 4.

When said rib 15 remains in an operative position with relation to said sheath 17, as aforesaid; flange 18 and the free edge of sheath 17 are then pressed downwardly against the remaining upward peripheral portion of rib 15, in order to curve the free marginal portion of said sheath 17 therearound. Further pressure upon flange 18 will flex the same downwardly past the free end of hook proper 14. During this operation stem 13 with hook proper 14, as well as flange 18 and the free marginal portion of sheath 17 will flex into opposite directions, the outer face of said flange 18 riding upon the outer face of hook proper 14 until flange 18 springs below said hook proper 14, as is seen in Figs. 1 and 4. When in that operative position hook 14 overhangs flange 18, effecting interengagement and interlocking of the two, preventing the unfolding of sheath 17 over rib 15. By virtue of this arrangement rib 15 remains effectively enveloped within sheath 17 and flap 19, for forming a tight joint for interlocking sheets 10 and 11 along their contacting margins.

If desired, filler 22, which may consist of a cylindrical rod made of wood or any other suitable material, may be inserted within rib 15 and left in the joint for adding thereto a degree of rigidity and preventing denting of the joint. Filler 22 may be used in the process of formation of rib 15 and thereupon left therewithin.

Optionally strip 23, made of rubber or any other impervious flexible material, may be rigidly affixed to rib 15, in a longitudinal relation therewith and along the uppermost point of its periphery, for providing a seal between the said rib and the contacting inner face of sheath 17, as seen in Fig. 1, thereby preventing seepage of liquid, such as water, which may otherwise enter the joint and pass below the plane of sheets 10 and 11.

Although rib 15 is preferably of an annular formation on a transverse cross-section, it is understood that it need not be restricted to that formation, but may be polygonal if desired. Sheath 17, however, should be preformed to correspond to the formed contour of rib 15 in order that the two may closely contact.

Spot-welding, soldering or otherwise rigidly binding the two leaves of stem 13, and the base of sheath 17 with the adjacent portion of flap 19, will prevent distortion or opening of said stem 13 and of sheath 17 with relation to flap 19.

While there is described herein a preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

1. A joint for binding a pair of roofing sheets brought into an edge to edge relation, comprising a rib along an edge of one of said sheets, a rib engaging member along an edge of the other of said sheets, said rib engaging member being formed out of the marginal body portion of said second named sheet, a hook projecting from said first-mentioned sheet and spaced from said rib, said hook being inturned with its edge toward said rib, a flap extending from the body portion of said second named sheet substantially at a point of juncture of said rib engaging member and the adjacent body portion of said second named sheet, said rib and said rib engaging member extending above the plane of said sheets and on one side thereof, means for affixing said flap to a roofing foundation, said rib engaging member and said flap defining a substantially U-shaped sheath for receiving therewithin said rib with the sheath embracing the rib and the flap extending between the rib and the roofing foundation, said rib engaging member being adapted to flex in an enveloping contactual relation around said rib and a flange carried upon said rib engaging member in position to engage said hook for maintaining the rib engaging member in an enveloping relation with said rib.

2. A joint for a pair of sheets along their contacting edges comprising a rib extending along one edge of one of said sheets, a hook projecting from the surface of said sheet and on the same side thereof as said rib, said hook being inturned toward said rib and spaced therefrom, a sheath extending along the other of said sheets, a flap extending along the edge of said second sheet, said flap and sheath forming a substantially continuous U-shaped member, and a flange extending along one side of said sheath and forming a hook turned outwardly from said sheath in position to engage under the hook on said first-mentioned sheet when said flap extends under said first-mentioned sheet and said sheath embraces said rib.

3. A joint for a pair of sheets along their contacting edges comprising a rib extending along one edge of one of said sheets, a hook projecting from the surface of said sheet and on the same side thereof as said rib, said hook being inturned toward said rib and spaced therefrom, a sheath extending substantially along one edge of the second sheet, a flap extending substantially along said edge of said second sheet, said sheath and flap being formed by bending said sheet back upon itself with said flap extending from said sheet, and an outwardly bent flange formed substantially along the edge of said sheath opposite the flap, said flange engaging with said hook to lock said sheets together along their edges when said sheath embraces the rib and the flap extends under said rib.

4. A joint for a pair of sheets along their contacting edges comprising a rib extending along one edge of one of said sheets, a hook projecting from the surface of said sheet and on the same side thereof as said rib, said hook being inturned toward said rib and spaced therefrom, a sheath extending along one edge of the second sheet, a flap extending along said edge of said second sheet, said sheath and flap being formed by bending said sheet back upon itself with said flap extending in a single thickness from said sheet, an outwardly bent flange formed substantially along the edge of said sheath opposite the flap, said flange engaging with said hook to lock said sheets together along their edges when said sheath embraces the rib and the flap extends under said rib, and sealing means extending along said rib and located between the rib and sheath.

5. A joint for a pair of sheets along their contacting edges comprising a rib extending through-

out the length of one edge of one of said sheets, a hook projecting from the surface of said sheet and on the same side thereof as said rib, said hook being inturned toward said rib and spaced therefrom, a sheath extending substantially throughout the length of one edge of said second sheet, a flap extending substantially throughout the length of said edge of said second sheet, means for securing said flap to a roofing foundation, said sheath and flap being formed by bending said sheet back upon itself with said flap extending in a single thickness from said sheet, and an outwardly bent flange formed substantially along the edge of said sheath opposite the flap, said flange engaging with said hook to lock said sheets together along their edges when said

sheath embraces the rib and the flap extends under said rib.

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