Aug. 10, 1943. C. D. BONSALL 2,326,283

PROCESS OF MANUFACTURING SEAM CAPS

Filed March 24, 1941

Fig. 1.

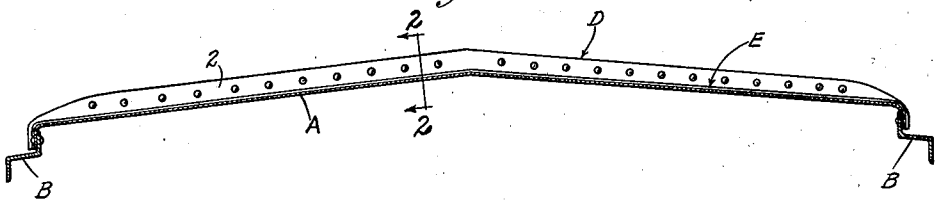


Fig. 2.

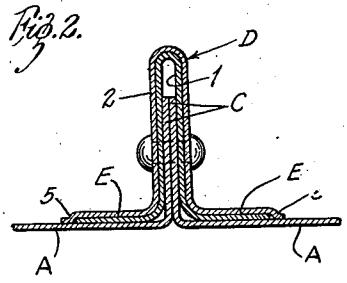


Fig. 4.

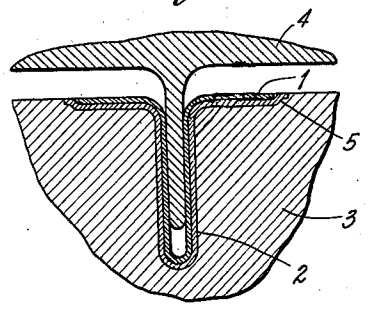


Fig. 3.

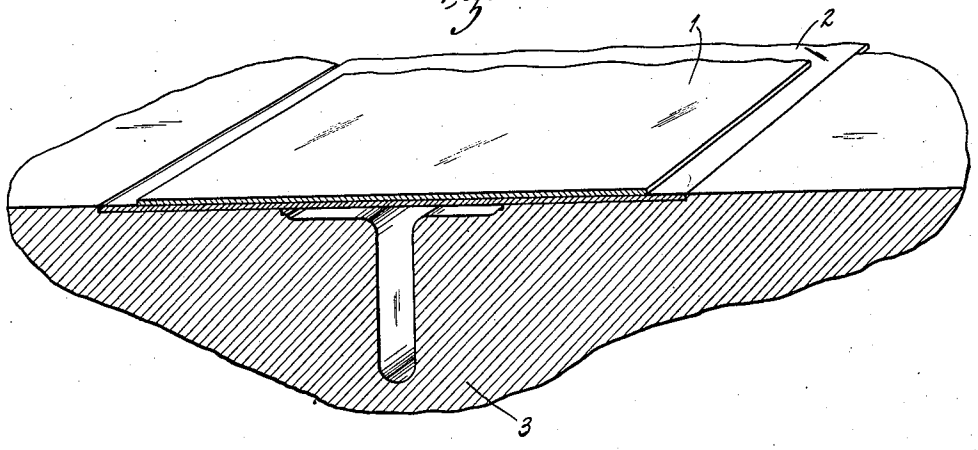
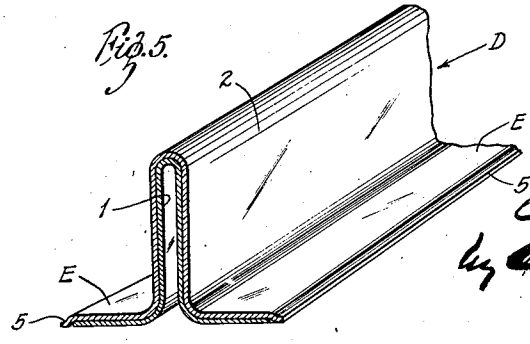


Fig. 5.



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PROCESS OF MANUFACTURING SEAM CAPS

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Application March 24, 1941, Serial No. 384,866

3 Claims. (Cl. 29—148)

My invention relates to seam caps of the kind used in connection with the standing seams of railway freight cars. Seam caps of this type not only protect the seam from the entry of water, cinders and the like but may also be made to cooperate with other members of the seam construction so as together to function as load carrying members of the roof structure after the manner of carlines. For the effective performance of the carline function, it is desirable to make the seam caps of thick sheets or plates; but, while it is practicable to press a galvanized sheet of one-sixteenth of an inch thickness into a suitable shape for a seam cap without causing the zinc to flake from the base metal, it is not practicable to do the same with thicker sheets or plates because of the risk of the zinc flaking therefrom.

The principal object of the present invention is to devise a galvanized sheet metal seam cap of greater thickness than has heretofore been practicable and to devise a method of producing such seam cap. The invention consists principally in a sheet metal seam cap composed of a galvanized metal outside sheet and a second sheet inside thereof which are simultaneously pressed into shape. It also consists in the process of producing said seam cap hereinafter described and claimed. The seam cap is claimed in application Serial No. 442,349, filed May 9, 1942.

In the accompanying drawing, wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a vertical transverse section through a car roof having an upstanding seam construction including a seam cap embodying my invention,

Fig. 2 is an enlarged vertical cross-section through said seam construction on the line 2—2 in Fig. 1,

Fig. 3 is a perspective view, showing portions of two sheet metal seam cap blanks, one superposed on the other on the die of a power press, preparatory to pressing,

Fig. 4 is a cross-section of the seam cap produced by pressing the two blanks simultaneously in said press; and

Fig. 5 is a perspective view of a portion of the seam cap.

In the accompanying drawing, my invention is shown embodied in the upstanding seam construction of a metal car roof comprising roof sheets A that extend from side plate B to side plate B of the car and have upstanding flanges C along their adjacent margins that are rigidly connected by an upstanding hollow rib or cap D so as together to form said seam construction which functions as an outside carline. As shown in the drawing, the seam cap D straddles and is riveted to the upstanding seam flanges C of the roof sheets A and has outstanding base flanges E that rest on the body portions of said roof sheets.

In carrying out the present invention, two sheet metal blanks are used to form the seam cap D, these blanks being of substantially the same oblong shape and size. Usually the length of the blank is approximately the same as the width of the freight car, that is, the length of the roof seams that extend from eaves to eaves of the car, being somewhat longer than the seam when the seam cap is to be turned down at the eaves and being somewhat shorter than the width of the car in some other cases. One of the sheet blanks, herein sometimes called the inside blank 1, is preferably made of ungalvanized metal for the sake of economy. The other sheet blank, herein sometimes called the outside blank 2, is a galvanized metal sheet of a thickness of one-sixteenth of an inch or less, these blanks being of stock material galvanized on both sides. The two sheet blanks are laid on the hollow die 3 of a power press with the ungalvanized sheet 1 superposed on the galvanized sheet 2. Then the press is operated and the plunger member 4 of the die presses the longitudinal medial portions of the two blanks simultaneously into the drawing die 3 and thereby forms therein the deep hollow rib portion of the seam cover D. This rib extends the full length of the blanks or nearly the full length according to the design of the end portions of the die. After pressing, the side portions of the blanks project transversely at substantially right angles to the rib of the seam cap D to form the base flange E thereof. Preferably, the die members are so designed as to give the seam cap a camber to conform to the slope of the roof. Preferably also the outer side margins of the outside blank 2 extend beyond the outer side margins of the inside blank 1 and are disposed in the plane of said last mentioned margins, so as, in the finished seam cap, to form depressed side marginal panels 5 that overhang and cover the side edges of said inner blank.

By using a galvanized sheet that is no thicker than one-sixteenth of an inch, the danger of the zinc flaking off is substantially elminated; and by die-pressing therewith another sheet, which snugly fits and cooperates with the galvanized sheet, they constitute a unitary two-ply seam cap assembly of much greater strength than could be

formed out of a single thick galvanized sheet without injury to its zinc coating.

What I claim is:

1. The process of making caps for the seams of a railway freight car roof, comprising placing a first blank of corrosion-resisting sheet metal on a hollow rib-forming die member, superposing centrally on the first blank a second sheet metal blank with the edges of the second blank spaced inwardly from the edges of the first blank, and then unitarily die pressing said blanks while in superposed relation into said forming die member to form an elongated hollow U-shaped rib whose free edges terminate in laterally extending side portions in which the edges of the first blank extend beyond the edges of the second and bending the edges of the first blank over the edges of the second.

2. The process of making seam caps for the seams of a railway freight car roof, which consists in placing a first blank of corrosion-resisting metal on a hollow rib forming die member, superposing centrally on the first blank a second sheet metal blank with the edges of the second blank spaced inwardly from the edges of the first blank and said blanks being unbonded and free to slip relative to one another, and then unitarily die pressing said blanks, while so superposed, into said forming die member until said blanks are bent and pressed together in tight non-slip engagement with one another in the form of an elongated, hollow, U-shaped rib whose free edges terminate in laterally extending side portions in which the edges of the first blank extend beyond the edges of the second and bending the edges of the first blank over the edges of the second.

3. The process of making caps for the seams of a railway freight car roof, which consists in placing a first flat blank of galvanized sheet metal of no more than one sixteenth of an inch in thickness centrally over a hollow rib-forming die member of symmetrical cross-section, superposing centrally on the first blank a second flat bank of ungalvanized metal with the edges of the second blank spaced inwardly from the edges of the first blank and said blanks being unbonded and free to slip relative to one another, and then unitarily die pressing said blanks, while so superposed, into said forming die member until said blanks are bent and pressed together in tight, non-slip engagement with one another in the form of an elongated, hollow, U-shaped member whose free edges terminate in laterally extending side portions in which the edges of the galvanized first blank extend beyond the edges of the second, ungalvanized blank and bending the edges of the first blank over the edges of the second.

CHARLES DAVID BONSALL.