Sept. 21, 1937. G. G. GILPIN 2,093,756

CAR ROOF

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Fig. 1

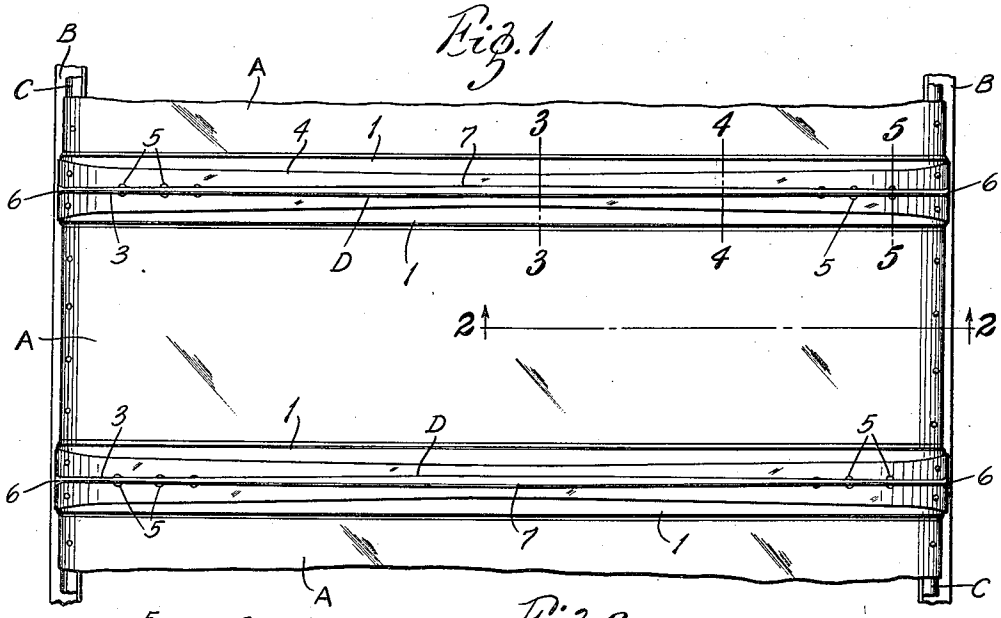


Fig. 2.

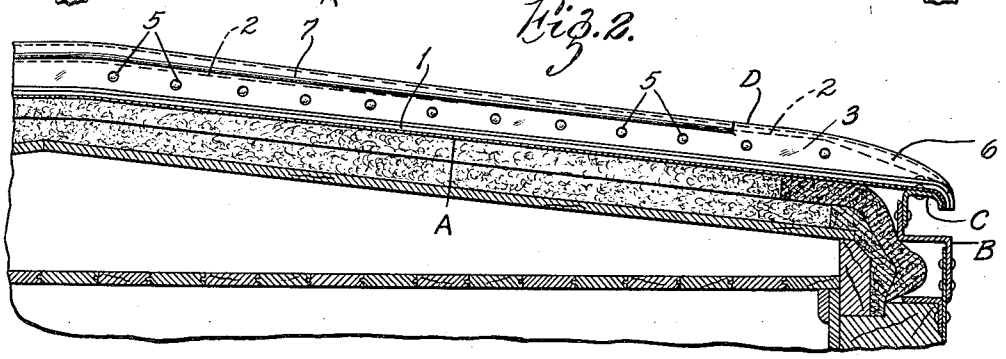


Fig. 3.

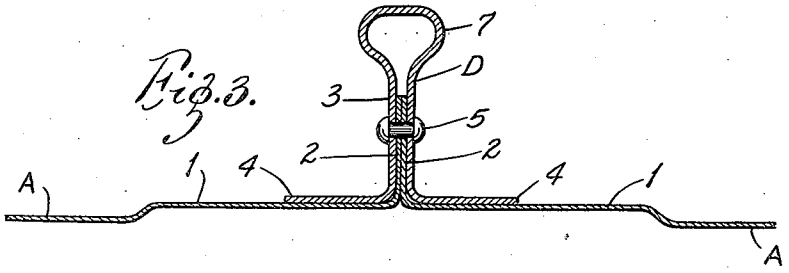
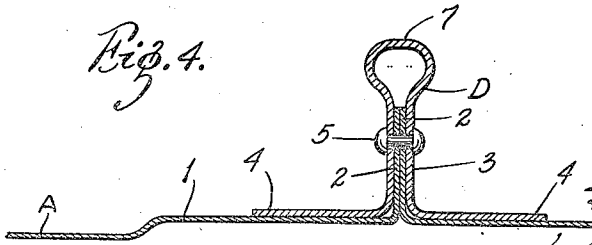


Fig. 4.



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Fig. 5.

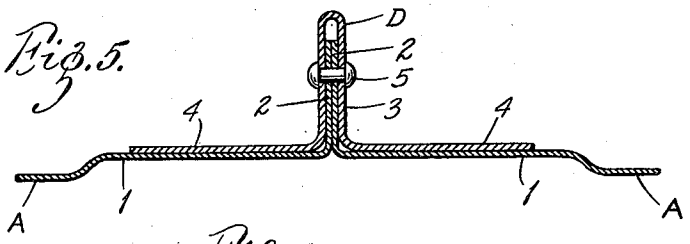


Fig. 6.

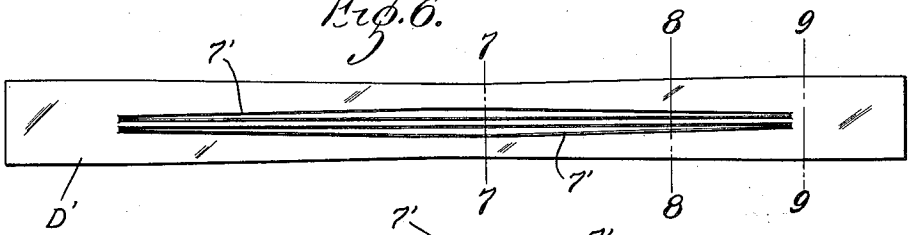


Fig. 7.

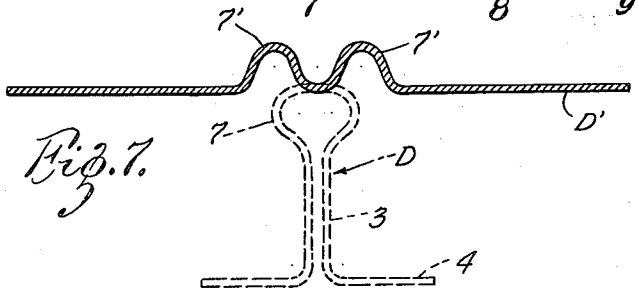


Fig. 8.

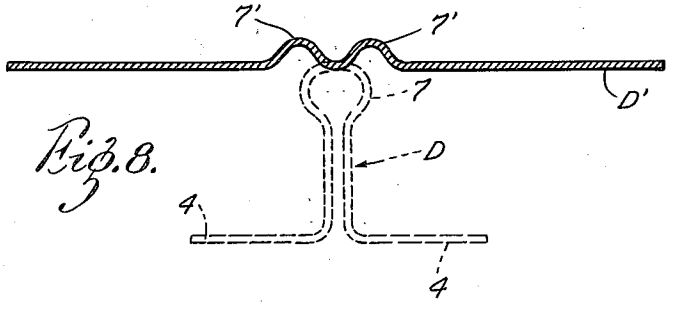
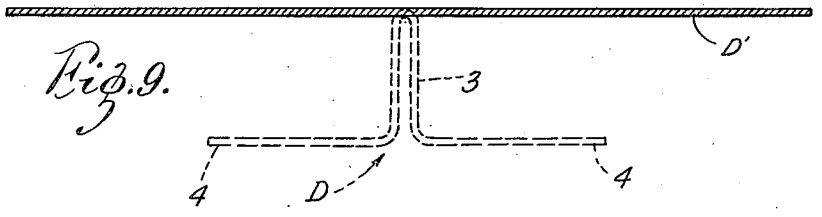


Fig. 9.



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UNITED STATES PATENT OFFICE

2,093,756

CAR ROOF

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Application March 14, 1936, Serial No. 68,812

7 Claims. (Cl. 108—5.6)

This invention relates to car roofs of the type wherein the roof sheets extend from side plate to side plate and are provided with upstanding flanges along their adjacent sides that are rigidly connected by a seam cover so as together to function as outside carlines. The principal object of the present invention is to increase the strength, rigidity and durability of the seam construction without sacrificing its weatherproofing qualities and to facilitate the manufacture of the seam cover. The invention consists principally in providing said seam construction with a seam cover having closed, jointless end portions and an enlarged rib or bulb shaped portion extending along its top between said end portions; it also consists in tapering said bulb-shaped portion from the middle of the seam cover to the respective end portions thereof; and it also consists in the parts and combinations of parts and in the process of manufacturing such seam cover.

In the accompanying drawings, which form part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a plan view of a portion of a car roof conforming to my invention,

Fig. 2 is a transverse section through one-half of the roof on the line 2—2 of Fig. 1,

Figs. 3, 4 and 5 are cross-sections through one of the seam constructions on the lines 3—3, 4—4, 5—5, respectively, in Fig. 1,

Fig. 6 is a face view of a blank used in producing the seam cover,

Figs. 7, 8 and 9 are cross-sections through the blank on the lines 7—7, 8—8 and 9—9, in Fig. 6, the dotted lines showing the seam cover produced from said blank.

The roof illustrated in the accompanying drawings comprises sheets A that extend from side plate B to side plate B and have their ends supported on and riveted or otherwise rigidly secured to the outstanding top flanges of eaves angle strips C whose vertical flanges are riveted or otherwise rigidly secured to the vertical outside faces of the upstanding flanges of such side plates. The sides of the roof sheets have raised panels 1 with upstanding flanges 2 along their outer edges. The upstanding flanges 2 of adjacent roof sheets abut against each other and are covered by a seam cover D comprising a hollow upstanding rib 3 with outstanding base flanges 4 at the lower edges of the side walls thereof. Such seam cover straddles the upstanding side flanges 2 of the roof sheets and is secured thereto preferably by rivets 5 that extend through both side walls of the hollow upstanding rib 3 of said seam cover and the sheet flanges 2 therebetween, whereby the seam cover and sheet flanges are clamped firmly together and constitute, in effect, an outside carline construction. As shown in the drawings, the rib 3 of the seam cover has closed, jointless ends formed by curving the end portions 5 of said rib downwardly into the plane of the base flanges 4 of said cover at points adjacent to the outer edges of the eaves angles C, where the flat end portions of said cover are turned down to form depending flanges 6 that overhang said eaves angles.

As shown in the drawings, the upstanding seam flanges 2 of the roof sheets are of substantially uniform depth from the ridge to points adjacent to the eaves where they are coped off or beveled to clear the downwardly curved closed end portions 6 of the seam cover. The seam cover is preferably of greater depth at the ridge than at the eaves, decreasing in depth uniformly from the ridge to the eaves. The upper portion of the rib 3 of the seam cover is provided with an enlarged bulb-shaped portion 7 that tapers from the ridge towards the eaves and terminates short of the downwardly curved eaves end portions 6 of said seam cover and inside of the side plates B. The bulb-shaped top portion 7 of the seam cover gradually decreases in both width and depth from its middle to its ends where its sides merge into the outer faces of the sheet flange engaging side walls of the rib 3 of said seam cover.

As shown in Figs. 6 to 9, inclusive, the seam cover is produced from a rectangular blank D' of sheet metal having two longitudinal corrugations 7' formed thereon adjacent to and on opposite sides of the longitudinal center line thereof that terminate short of the ends of the blank and taper from their middle to their respective ends in width as well as in depth. The seam cover is produced from the blank by folding the latter along its longitudinal center line to form the rib 3 and by bending the side marginal portions at right angles to said rib to form the base flanges 4. By this folding operation, the two corrugations 7' of the blank are brought into positon directly opposite each other and cooperate to form the bulb 7 at the top of the rib 3.

The seam construction above described has several advantages. In the first place, the bulb-shaped seam cover is not only made of a single sheet of metal but is well adapted to be formed from said sheet without injury to the metal. In the next place, the bulb-shaped portion of the seam cover enables the seam to carry a greater

vertical load and is also well adapted to offer resistance to torsional stresses that tend to warp and weave the car body and to horizontal stresses that tend to throw the car body out of square. The bulb has a maximum depth and width at the ridge where the greatest strength is needed and merges into the main body portion of the seam cover at points adjacent to the side plates where the seam cover is strong enough to take care of the load without the assistance of the bulb. Thus, the bulb serves not only to materially increase the strength and rigidity of the seam cover, but it also terminates short of the closed, jointless end portions thereof, thereby preserving the weatherproofing and manufacturing advantages of such end portions.

What I claim is:

1. A car roof comprising side plates, roof sheets extending from side plate to side plate and provided along their adjacent margins with upstanding seam flanges, and a sheet metal seam cover having an upstanding rib straddling said flanges and rigidly secured flatwise thereto, said rib having downwardly curved, closed, jointless end portions of substantially uniform width from top to bottom and having its upper portion widened between said end portions.

2. A car roof comprising side plates, roof sheets extending from side plate to side plate and provided along their adjacent margins with upstanding seam flanges, and a sheet metal seam cover having an upstanding rib straddling said flanges and rigidly secured flatwise thereto, said rib having downwardly curved, closed, jointless end portions of substantially uniform width from top to bottom and having its upper portion widened between said end portions, the length of said widened upper portion of said rib being less than the distance between said side plates.

3. A car roof comprising side plates, roof sheets extending from side plate to side plate and provided along their adjacent margins with upstanding seam flanges, and a sheet metal seam cover having an upstanding rib straddling said flanges and rigidly secured thereto, said rib having downwardly curved, closed, jointless end portions of substantially uniform width from top to bottom and having its upper portion widened between said end portions in the form of an interiorly curved hollow bulb, said widened upper portion of said rib gradually diminishing in width from its middle towards its ends.

4. A car roof comprising side plates, roof sheets extending from side plate to side plate and provided along their adjacent margins with upstanding seam flanges, and a sheet metal seam cover having an upstanding rib straddling said flanges and rigidly secured thereto, said rib having downwardly curved, closed, jointless end portions of substantially uniform width from top to bottom and having its upper portion widened between said end portions in the form of an interiorly curved hollow bulb, the length of said widened upper portion of said rib being less than the distance between said side plates, said widened upper portion of said rib diminishing in depth from its middle towards its ends.

5. A car roof comprising side plates, roof sheets extending from side plate to side plate and provided along their adjacent margins with upstanding seam flanges, and a sheet metal seam cover having an upstanding rib straddling said flanges and rigidly secured thereto, said rib having downwardly curved, closed, jointless end portions of substantially uniform width from top to bottom and having its upper portion widened between said end portions in the form of an interiorly curved hollow bulb, said widened upper portion of said rib diminishing both in depth and in width from its middle towards its ends.

6. A seam cover for a car roof comprising a plate of sheet metal rebent along a longitudinal line to form a hollow rib having closed, jointless end portions of substantially uniform width from top to bottom and having its uppermost portion widened between said end portions in the form of a curved hollow bulb.

7. A seam cover for a car roof comprising a plate of sheet metal rebent along a longitudinal line to form a hollow rib having an enlarged bulb shaped top portion that terminates short of the end portions of said rib, said bulb shaped portion of said rib tapering from its middle towards its ends.

GARTH G. GILPIN.