

J. J. TATUM.

CAR ROOF.

APPLICATION FILED SEPT. 26, 1907.

1,052,102.

Patented Feb. 4, 1913.

2 SHEETS-SHEET 1.

Fig. 1.

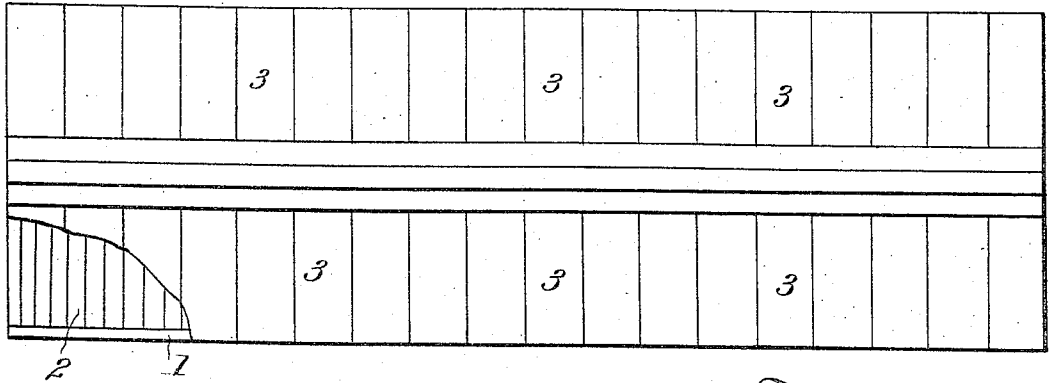


Fig. 2.

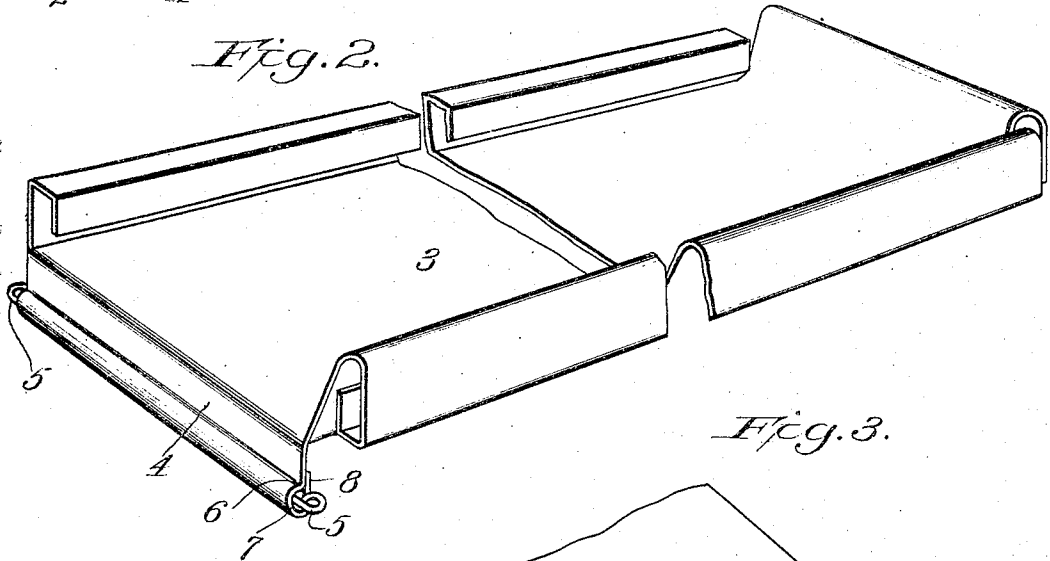
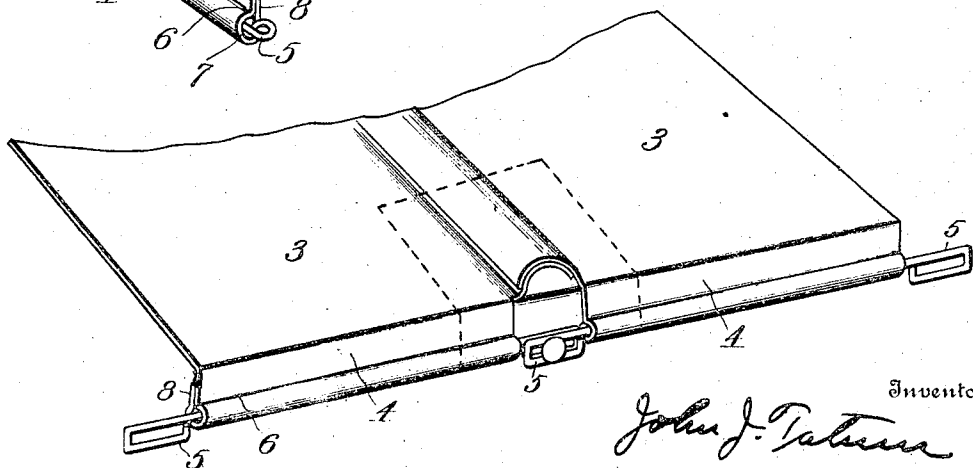


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

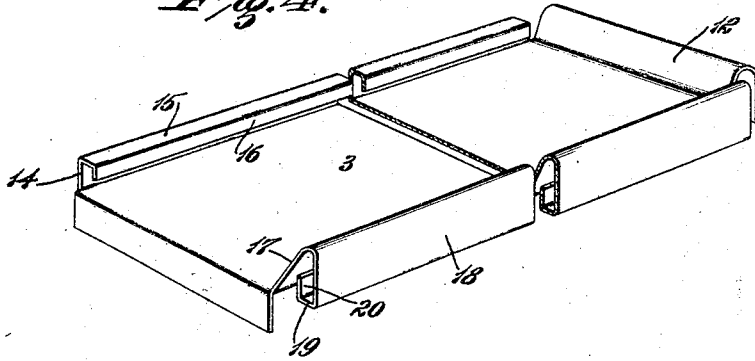


Fig. 5.

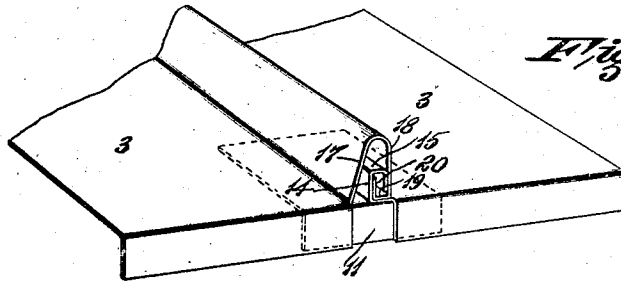
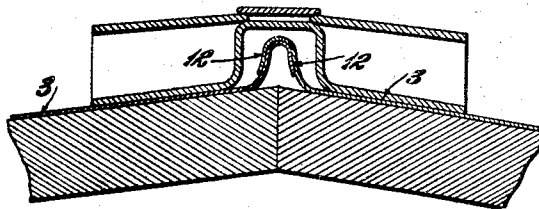


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CAR-ROOF.

1,052,102.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN J. TATUM, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Car-Roofs, of which the following is a specification.

In actual practice it is found that the roof of a freight car requires more attention and repairs than any other part of the car, as the maintenance of a rain and snow tight roof is essential, and the conditions of service are severe. To maintain the seams between the roof sheets tight and to properly and securely attach a roof to a car is one of the most difficult problems that confronts a car builder inasmuch as the "weaving" of a car in transit; the jacking of the car for repairs and the overhang of the cars on sidings has a tendency to twist the roof sheets apart and to tear them from their fastenings at the eaves of the car.

The object of my invention is to overcome the loosening of the roof sheets at the eaves and at the same time to obviate some of the strain on the seam between the sheets by changing the structure of the joints between the several sheets, and by securing the sheets at the eaves of the car by means of what may be called a sliding hinge joint whereby a movement at the outer ends of the sheets is permitted without transmitting any strain or stress to the fastening means.

My invention consists also in a car roof comprising a series of sheets with a loose sliding rain and snow proof joint between them.

My invention consists further of the parts and combination of parts as will be more fully hereinafter pointed out.

In the accompanying drawings, Figure 1 is a top plan view of a freight car (broken away) provided with a roof embodying my invention; Fig. 2 is a perspective view of one of my improved roof sheets provided with one form of faster; Fig. 3 is a perspective view of roof sheets provided with another embodiment of my invention; Fig. 4 is a perspective view of another form of my improved roofing sheet; Fig. 5 is a perspective view of a car roof covering, broken away, showing my improved roof sheet seam joint, and Fig. 6 is a detail sectional view through the ridge of the car roof illustrating

the joint between the sheets on opposite sides of the roof.

Fig. 1 shows a car body 1 having a wooden roof substructure 2, and roof sheets 3 arranged thereon, the roofing sheets being arranged in two rows lengthwise of the car, one row on each side of the ridge, with their ridge ends hooked together, and with their side edges rebent and interlocked to form loose water tight joints.

The roofing sheets are each provided with a depending flap 4 at its outer end which is rebent as shown in the several figures forming a pocket in which a rod 5 is placed. It will be seen in the forms of roof sheets shown in Figs. 2 and 3 that the depending flap is first bent outward as at 6, thence downward as at 7 and thence inward and thence upward as at 8 in substantially the plane of the under face of the flap and extends up back of the flap whereby the pocket and the rod are positioned in front of the flap thus obviating any projection on the inner face of the flap whereby it may fit snug against the fascia of the car to prevent rain, snow and cinders from entering under the edge of the roof.

In Fig. 3 the eye of the rod is shown as elongated and in line with the pocket in the flap of the sheet; the eyes of the rods of adjacent sheets overlap and are held by a bolt, screw or staple common to both.

As will be seen the construction of the end flap of the roofing sheet provides a sliding interlock and a hinge joint for the sheet whereby the sheet may twist, buckle and slide, sufficiently to take up all twisting, sagging, weaving and strains from jacking of the car without loosening the fastening or the roofing sheets.

It will be understood that I may provide one side of the end sheet of the roof with the fastener rod thereby forming a hinge joint for the roof at the end of the car.

The side seams or joints between adjacent roof sheets by bending up the side margins of the sheets in the form of flanges or "sheds" which when interlocked form hollow flexible and slidable seams.

The sub-structure immediately under the end of each hollow seam is covered by a flat piece of metal 11 for some distance back from the eaves of the car to protect it from rain, snow and cinders. One edge of the

sheets is bent upward to form the wall 14,
 thence horizontally as at 15, substantially
 parallel with the main body of the sheet,
 and thence rebent downward, as at 16, to
 5 form a "shed", the rebent portion termi-
 nating a comparatively short distance above
 the main sheet. The other edge of the sheet
 is bent upward as at 17 (shown in the
 drawing as slightly inclined) thence rebent
 10 to form an upright edge 18 and thence bent
 inward as at 19 and terminating in an up-
 turned lip 20, thereby forming a groove
 under the shed formed by the wall 18 and
 portion 17, into which the edge of an ad-
 15 jacent sheet (bent in accordance with my
 invention) is movably secured. The incli-
 nation of the portion 17 provides for an
 increased space between the body of the
 sheet and the joint whereby space is found
 20 for the relative movement of the sheets
 without forming too flat a bend of the metal
 at the juncture of the walls 17 and 18. The
 ridge end of the sheet is provided with an
 upstanding inverted U flange or upward re-
 25 turn bend 12 which is adapted to fit over
 a similar bend in a sheet on the opposite side
 of the car roof as shown in Fig. 6.

As will be seen from the drawings, each
 sheet of the roof has a comparatively liberal
 30 lateral play or movement with respect to
 the other sheets of the roof. In actual prac-
 tice, there is about one-quarter of an inch
 play as the clearance between the walls 14
 and 16 and the walls 18 and 20 and when
 35 it is considered that there are usually eight-
 een sheets on each side of a car, it will be
 seen that I have made ample allowance for
 "give" and "take" in the roof to accom-
 modate the "weaving", twisting and sway-
 40 ing of the car. Such give and take also
 provides for the automatic adjustment of
 the roof in case a car is left on a siding in-
 clined transversely on which the upper por-
 tion of the body of the car is inclined to
 45 hang over.

This construction of roof has, from prac-
 tical experience, been found to obviate the
 objections heretofore experienced in other
 constructions of roof and its use results in
 50 a material reduction in roof repair expenses
 as well as a resultant reduction for claims
 for goods damaged by roofs springing a
 leak in transit.

It is obvious that changes may be made in
 55 the details of construction without depart-
 ing from the spirit of my invention, hence
 I do not wish to be limited to the use of the
 details shown.

What I claim and desire to secure by Let-
 60 ters Patent is:

1. A car roof comprising a series of roof-
 ing sheets flexibly connected at their side
 edges and having their ends bent down at
 the eaves forming a depending flap, which
 65 flaps are bent near their lower edges out-

ward, thence downward, thence inward and
 thence upward against the inner face of the
 flap, thus forming loops at the bottom of
 each flap, and an independent rod secured
 loosely in each loop and provided at each
 70 end with an elongated eye, the eyes of the
 adjacent ends of the rods overlapping, and
 a bolt passing through the overlapping eyes
 and constituting a common means for secur-
 ing the ends of adjacent rods.

2. A sheet for a car roof, one edge of
 which is rebent to form a shed and the other
 edge bent to form an inverted shed, and an
 intermediate portion of the sheet bent to
 form a shed over the inverted shed, one wall
 80 of the intermediate bend being on an in-
 cline to the sheet, whereby a clearance space
 is formed to provide for movement of an
 adjacent sheet transverse of the sheet.

3. A sheet for a car roof, one edge of
 which is rebent to form a shed and the
 other edge rebent to form an inverted shed,
 and an intermediate portion rebent to form
 a shed, wider at the bottom than at the top,
 over the inverted shed, whereby a clearance
 90 space is formed to permit of movement of
 an adjacent sheet transverse of the shed.

4. In an outside metal car roof, roof sheets
 having upstanding flanges along their two
 side margins, said flanges being rebent and
 interlocking to form flexible seams, one of
 said upstanding side marginal flanges on
 said sheets being bent inwardly at the top
 and thence downwardly and terminating
 above the roof sheet, and the other of said
 100 upstanding marginal flanges being bent but-
 wardly at the top and thence downwardly
 and terminating in a lip turned under the
 lower edge of the first-named flange of an
 adjacent sheet.

5. In an outside metal car roof, roof
 sheets having upstanding flanges along
 their two side margins, said flanges being
 rebent and interlocking to form flexible
 seams, one of said upstanding side marginal
 110 flanges on said sheets being bent inwardly
 at the top and thence downwardly and ter-
 minating above the roof sheet, and the other
 of said upstanding marginal flanges being
 bent outwardly at the top and thence down-
 115 wardly and terminating in a lip turned un-
 der the lower edge of the first-named flange
 of an adjacent sheet, said upstanding
 flanges being spaced apart at their bases in
 assembled position, whereby they may move
 120 relative to each other without flexing the
 flanges.

6. In an outside metal car roof, roof
 sheets having upstanding flanges along
 their two side margins, said flanges being
 125 rebent and interlocking to form flexible
 seams, one of said upstanding side marginal
 flanges on said sheets being bent inwardly
 at the top and thence downwardly and ter-
 minating above the roof sheet, and the other
 130

of said upstanding marginal flanges being
bent outwardly at the top and thence down-
wardly and terminating in a lip turned un-
der the lower edge of the first-named flange
5 of an adjacent sheet, and said roof sheets
being rebent at the eaves to movably engage
fastening means.

In testimony whereof I affix my signature
in presence of two witnesses.

JOHN J. TATUM.

Witnesses:

D. ARDIN CARRICK,
JAS. O. BEAUMONT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."