T. H. BURRIDGE & L. P. BARNES.

Car-Roof.

No. 198,566. **Patented Dec. 25, 1877.**

FIG. 2.

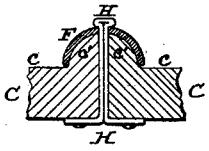
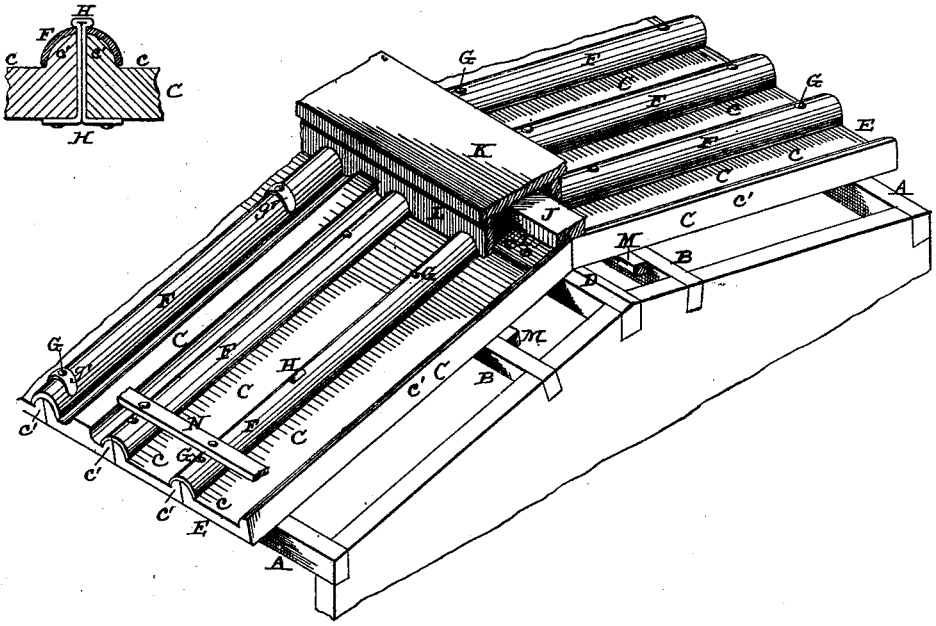


FIG. 1.



ATTEST:

Robert Burns.
A. H. Galt

INVENTORS:

Thomas H. Burridge
Lovick P. Barnes
per Knight Bros
attys.

UNITED STATES PATENT OFFICE.

THOMAS H. BURRIDGE AND LOVICK P. BARNES, OF ST. LOUIS, MO.

IMPROVEMENT IN CAR-ROOFS.

Specification forming part of Letters Patent No. **198,566**, dated December 25, 1877; application filed February 17, 1877.

To all whom it may concern:

Be it known that we, THOMAS H. BURRIDGE and LOVICK P. BARNES, both of the city and county of St. Louis, and State of Missouri, have invented a certain new and useful Improvement in Roofs for Railway-Cars, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

This roof is intended more especially for freight-cars, but may be used in many other situations.

Our improvement relates to that class of roofs having a single thickness of boards; and it consists in combining with the cleat-strip and roofing-boards a metal fastening, as hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of a roof provided with my improvement. Fig. 2 is a section showing the fastening between the purlins.

A A are timbers at the top of the car sides. B B are purlins, upon which the roof-boards are laid. No novelty is claimed in the above parts, as they have the ordinary construction.

The roofing-boards C are laid on the purlins and side timbers, and each board may extend from side to side of the car, and be bent at the ridge, or, as shown, each board may extend from the ridge D to the eaves E upon each side, the boards abutting at the ridge, and this latter is the preferred construction, as it is cheaper and as good, and admits of more easy repair, as each board can be taken out singly in an endwise direction, and another board substituted therefor without any general disturbance of the roof. Each board C is channeled out upon the upper side, as shown at *c*, leaving on the margin raised ribs or ridges *c'*, and over the ridges *c' c'* of the adjoining boards is laid a metal joint-strip, F, in form of an inverted trough, which laps over the marginal ribs *c'*, and breaks the joint between the boards C. The joint-strip F is held down by screw-bolts G, which extend through it, as shown, and between the boards C, and down through the purlin, beneath which is a nut.

Where the purlins are so far asunder that the boards C require a fastening at the joint between the purlins, I provide a fastening consisting of a piece of hoop-iron or similar piece of metal, H, bent at the middle, and attached at that point to the strip F, and its ends turned asunder and attached to the bottom of the boards C by screws. This fastening H allows the boards C to shrink or expand in their width, according as they may be dry or damp, so that no injury takes place to the board or the fastening in said expansion and contraction.

I I are plates of metal, that overlie the ends of the boards at the ridge upon the part *c*, so as to cover the ridge-joint, and prevent the entrance of water even when the car is standing tilted to one side, so that the rain upon one side would run toward the ridge.

J is a ridge-piece, which runs the whole length of the car over the ridge, and forms the central support of the running-board K, whose edges are supported on the side bearing-strip L, which strip may serve to hold down the edges of the plates I.

M is a longitudinal cleat running along the side of the purlin beneath the roof, and to which the boards C may be attached by screws from beneath, so as to prevent the boards from slipping down endwise.

The strips F do not fit on the ribs *c'* so tightly as to prevent the expansion and contraction of the boards C, but, while allowing the same, hold the edges *c'* down in position, and in close contact with the purlins.

The low portion *c* of the boards may extend nearly across their whole width, as shown and described, or the central part of the board may retain its thickness, and a channel be made near each edge to receive the edges of the cleat-strip F.

N is a bar attached to the roof to prevent brakemen slipping off the car.

We claim—

1. The fastening H, in combination with the cleat-strip F and boards C, substantially as and for the purpose set forth.

2. The channeled boards C, in combination with the joint-strips F, bolts G, and fastening H, substantially as and for the purpose set forth.

THOMAS H. BURRIDGE.
LOVICK P. BARNES.

Witnesses:
SAML. KNIGHT,
ROBT. BURNS.