H. ALDRIDGE.

CAR-ROOF.

No. 194,286. Patented Aug. 21, 1877.

Fig 1.

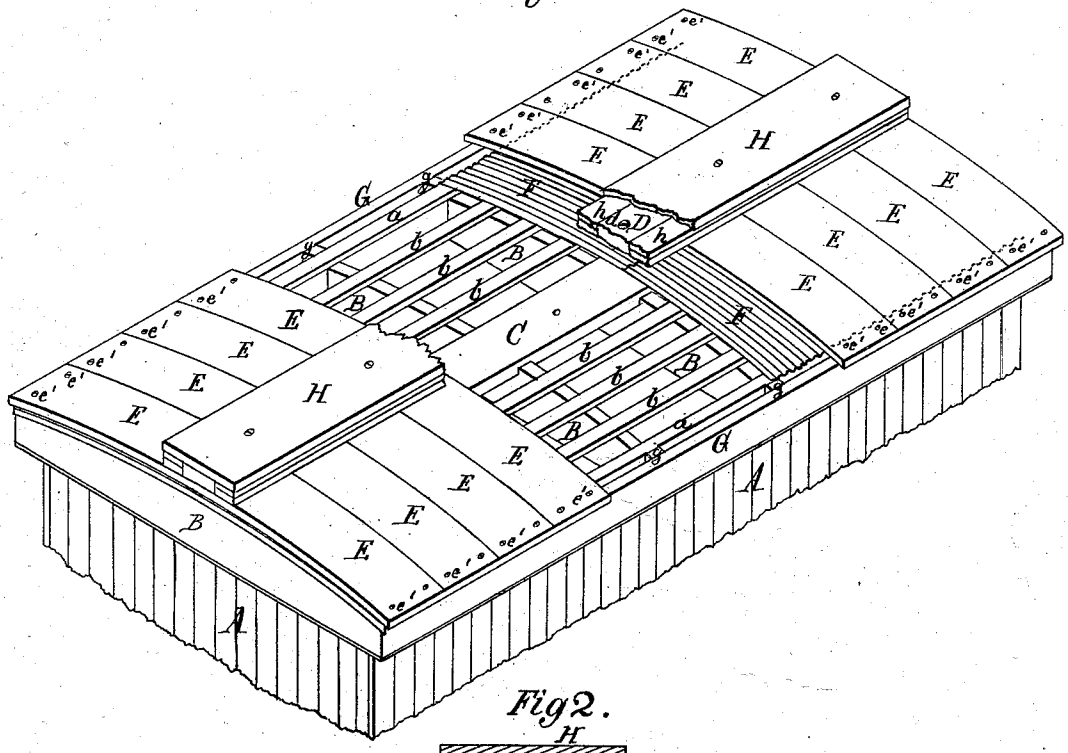


Fig 2.

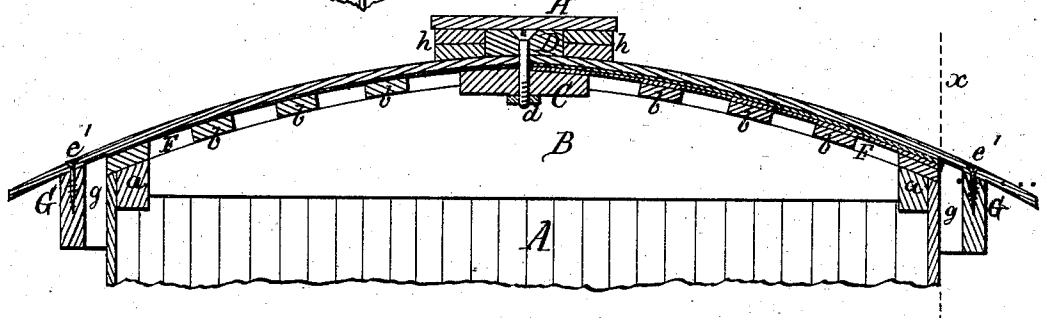
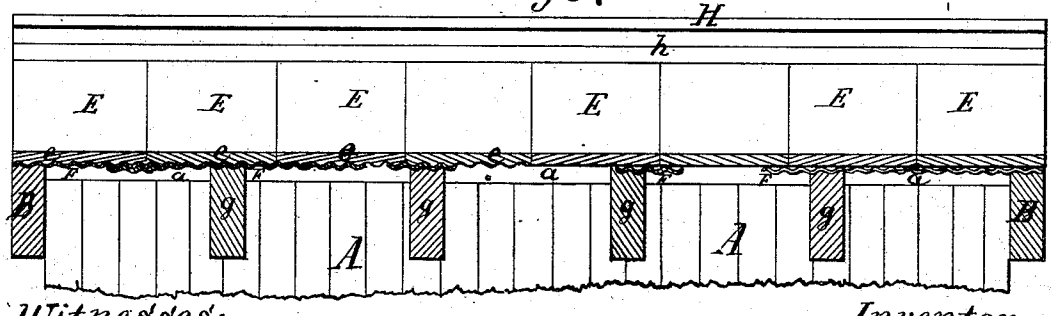


Fig 3.



Witnesses:
James Martin Jr.
J. P. Theodore Laug.

Inventor:
Hiram Aldridge
by
Mason, Fennick & Lawrence.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HIRAM ALDRIDGE, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN CAR-ROOFS.

Specification forming part of Letters Patent No. **194,286**, dated August 21, 1877; application filed April 6, 1877.

To all whom it may concern:

Be it known that I, HIRAM ALDRIDGE, of the city and county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Car-Roofs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a partly-finished roof, exhibiting my improvements employed in its construction. Fig. 2 is a vertical cross-section of the same through one of the bolts wherewith the ridge-beam and ridge-board are clamped together. This view shows different modes of applying the metal sheets. Fig. 3 is a vertical longitudinal section in front of the eave proper, in the line *x x* of Fig. 2. This view shows different modes of making the joints of the roof water-tight.

My invention relates to car-roofs made of a board covering, and either a complete metal lining or a partial metal lining forming metal joint-strips, both extending from the ridge to the eaves, the wood being beyond the metal, and both being so fastened to the body of the car that the metal lining or joint-strips are not pierced by the fastening-bolts or screws, so that any section of the said covering—wood and metal—may be removed and replaced without disturbing an adjoining section, or the remaining sections on either side of the ridge.

The nature of my invention consists, first, in certain constructions, combinations, and arrangements of parts, as hereinafter fully described and specifically claimed, whereby a roof with the above-described improvements is obtained.

It consists, second, in constructing the lower sides of the covering-boards with corrugations, and fitting the corrugations thus formed into the corrugations of its metal lining for the purpose of making the roof stronger, more solid, and durable.

In the accompanying drawings, A represents the body of a car, *a* the eaves, B the cross-beams of the roof, and *b* the rafters. C is the ridge-beam, and D the ridge-board. The said ridge-board D is bolted, by means of bolts *d*, upon the roof-boards E and their linings F. The under surfaces of the roof-boards E are longitudinally corrugated in the same shape as the linings F, upon which they rest, as seen at *c*, in Fig. 3. This construction secures a perfect and tight fit between the roof-boards and the lining-pieces, and for that reason the lining need not extend along over the whole inner surface of the roof, but the roof will be sufficiently tight and secure against leakage of water by placing a narrow strip of corrugated sheet metal centrally under each joint of the said boards, thereby reducing the expense of construction considerably.

The boards E and linings F of each side of the roof meet at the ridge, and are, by means of the bolts *d*, tightly clamped between the ridge-board D and the ridge-beam C without piercing the roof-boards or their linings. The lower ends of the linings F rest upon the eaves *a* of the car, and are cut off flush with the same, or may be allowed to project slightly beyond them, but not entirely over the eave-cornice, or beams G. The lower ends of the roof-boards E extend beyond their linings, and are fastened on each side of the car upon outer eave-beams G, at *e'*, Fig. 2, by fastenings which do not pass through the eave ends of the metal sheets. The outer eave-beams are fastened, by means of studs or blocks *g*, to the inner eaves *a* in such a manner that a number of vertical spaces are left between the said blocks, through which spaces the water from the linings F is allowed to drip between the beams and the eaves. The ridge-board is, as usual, covered with a running-board, H, which has lateral supports *h* along each side.

It is seen that by means of the described construction of my roof the linings are held down and in place only by the pressure of the roof-boards which pressure is produced by the fastenings of the boards and the ridge-clamp, thus entirely avoiding the piercing of the linings for bolts or other modes of fastening, whereby labor and materials are saved, and all chances for the water following the bolt or other fastening through the said linings into the wood of the car-body are cut off. In case of necessity for repair, the screws *e* or other fastenings of the respective boards E are removed, and the ridge-bolts *d*, near the

said board, are eased by unscrewing their nuts until the clamping force of the ridge-board D and the ridge-beam C is so much reduced as to permit pulling the said board and its lining out of position. The board removed may be replaced by a new or better one, or the respective sheets of lining may be exchanged, or other repairs may be done on either side of the ridge-piece without taking down the ridge-board or undoing such fastenings of the roof as are ordinarily intended to be permanent, and therefore offer great difficulties to their removal, and generally necessitate the removal of the whole roof or a large part of it.

I will state that, so far as the features of invention of fastening the sheets by a ridge-joint clamp, and of making sheets which laterally adjoin one another, and abut against one another at the gable, shorter than the curving-boards, and so as not to be pierced by the fastenings of covering-boards is concerned, the principle would not be departed from if the sheets or the covering-boards, or both, were made plain instead of corrugated, and if they were lapped upon each other laterally, or were only placed under the joints of the covering.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a car-roof wherein metal sheets and wood covering-boards are used, as described, the combination of the clamping ridge-board and ridge-beam, and the outer eave-beams, with spaces between them and the eaves, for the purpose of fastening the roof without piercing the sheets and allowing water to escape, substantially as set forth.

2. In a car-roof, the combination of the laterally-adjoining roof-boards E of a length greater than that of the lining or joint-sheets, and the ridge-clamp, substantially as set forth.

3. In a roof, the boards E, having their inner or lower sides corrugated to fit a corrugated metal lining or metal joint-strips, substantially as set forth.

Witness my hand in the matter of my application for a patent for an improved car-roof this 3d day of April, 1877.

HIRAM ALDRIDGE.

Witnesses:
J. W. PHILLIPS,
L. P. BARNES.