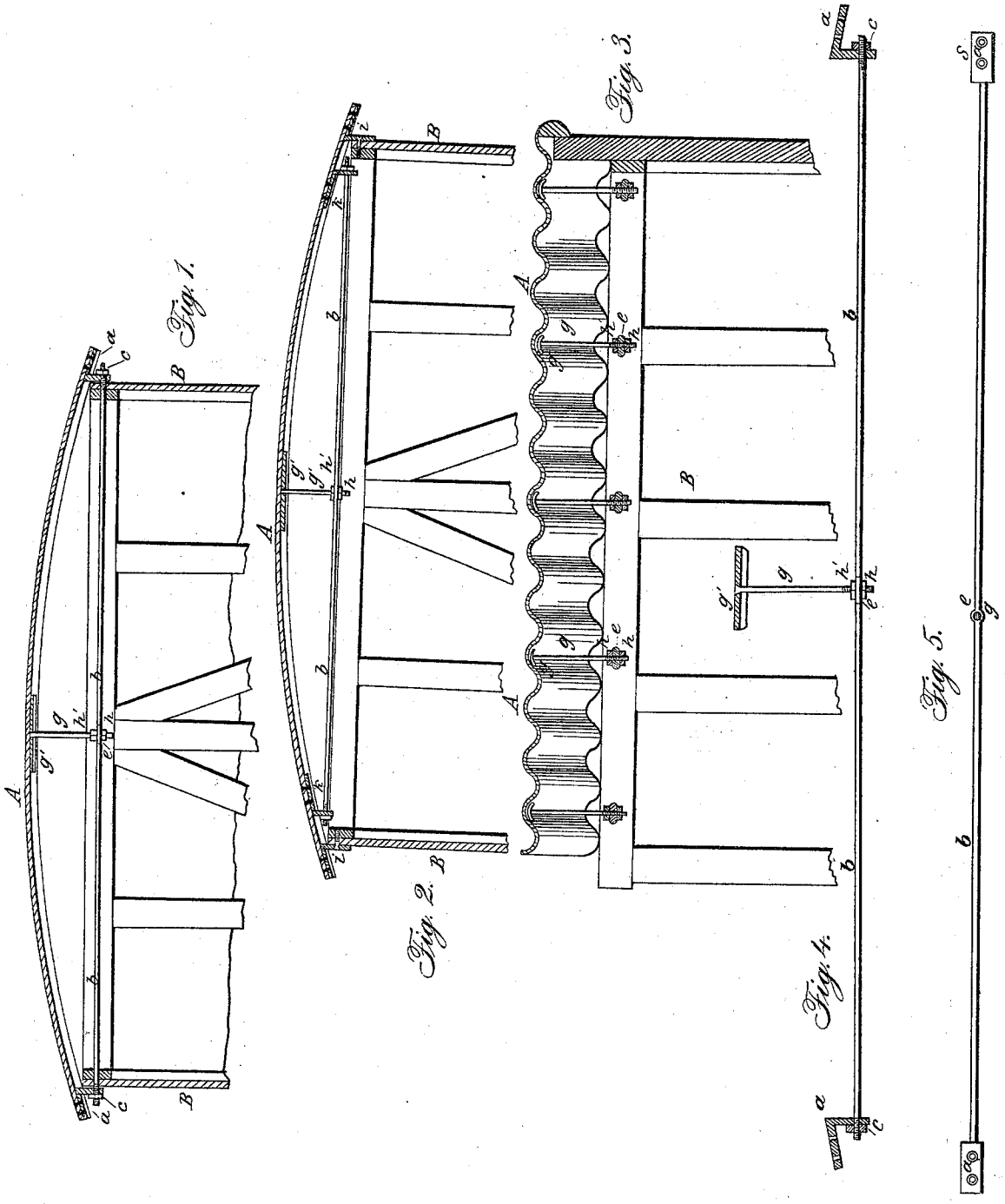
O. P. SCAIFE.

Car Roof.

No. 42,229. Patented Apr. 5, 1864.



Witnesses:

R. F. Campbell

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Inventor:

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by his attys

Mason Fenwick & Lawrence

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

O. P. SCAIFE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN ROOFS OF RAILROAD-CARS.

Specification forming part of Letters Patent No. **42,229**, dated April 5, 1864.

To all whom it may concern:

Be it known that I, O. P. SCAIFE, of Pittsburg, county of Allegheny, and State of Pennsylvania, have invented a new and Improved Roof for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical transverse section through the upper part of a car-body having my improved roof applied to it. Fig. 2 is a modification of Fig. 1. Fig. 3 is a longitudinal central section of Fig. 1. Figs. 4 and 5 show in detail the tie-rods, angle-irons, and the adjustable central strut.

Similar letters of reference indicate corresponding parts in the several figures.

In the application of metallic roofs to railroad-cars the method hitherto practiced for obtaining the necessary degree of stiffness and strength has been to employ sheathing-boards and transverse arched rods.

The object of my invention is to avoid the great weight attending the use of sheathing, and at the same time obtain all the required stiffness and strength by a much cheaper, simpler, and lighter contrivance, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the accompanying drawings, Fig. 1, A represents a sheet-metal corrugated roof, constructed of such width as to project a short distance over each side B of the car-body. This roof is arched, as shown, and just under each overhanging edge I rivet knees or angle-irons *a a* to it, two of which are shown in Fig. 1. These knees *a a* are arranged directly opposite each other and serve as a means whereby tie-rods, such as are represented by *b*, Figs. 1, 4, and 5, can be used for sustaining the arch of the roof. These tie-rods are passed through the vertical portions of the knees *a a*, and also through the sides B B of the car-body, and the whole are set up and confined in place by means of the nuts *c c* on the ends of the tie-rods, which not only prevent the sides of the car-body from spreading outward but perform the same office for the arched roof.

In the middle of the tie-rods *b* eyes *e* are formed, through which pass vertical rods *g*, having plates *g'* on the upper ends adapted to fit the grooves in the corrugated roof A. The lower ends of these rods *g* have screw-threads cut on them for receiving the nuts *h h'*—one above and the other below the rods *b*. Thus constructed and applied, these rods *g* form struts for supporting the center of the arched roof, the two nuts *h h'* serving to regulate their length and their pressure against the roof.

In Fig. 2 I have represented a modification of the arrangement above described, which consists in the employment of angle-iron attachments *i i* for the roof A, which occupy the same positions as those lettered *g* in Fig. 1; but instead of making the tie-rods *b* form the attachment of the roof to the sides of the car-body these angle-irons *i i* are bolted to the sides B B, and separate and independent knees *k k*, secured to the roof A inside of the car, are employed for the tie-rods *b*. In this arrangement the struts for supporting the center of the roof may be employed, as described in Fig. 1.

Instead of using separate knees on each side of the roof for receiving each one of the tie-rods *b*, I can use strips of angle-iron running the entire length of the roof, either inside of the car, as in Fig. 2, or ouside thereof, as shown in Fig. 1. The independent attachments *i i* may be formed of angle-strips extending the entire length of the roof. The lightest and cheapest mode will probably be to have separate knees for each tie-rod applied at proper intervals from end to end of the roof, and on each side thereof, as above described.

By the above arrangement of tie-rods it will be seen that I am enabled to dispense with sheathing or other stiffening boards or beams and to construct a metallic arched roof wherein the rods which are employed to prevent the arch from spreading outward also serve to sustain the sides of the car-body, this latter object being accomplished by means of angle-irons secured rigidly to the roof and projecting down a sufficient distance to admit of their being secured either directly or indirectly to the sides of the car.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. The means, substantially as described and represented, for sustaining the arched corrugated metallic roof A and connecting the same to the car-body, the whole being arranged as herein represented.

2. The combination of angular knees, tie-rods, adjustable T-struts, corrugated roof and car-body, substantially as described.

O. P. SCAIFE.

Witnesses:

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