

973,888.

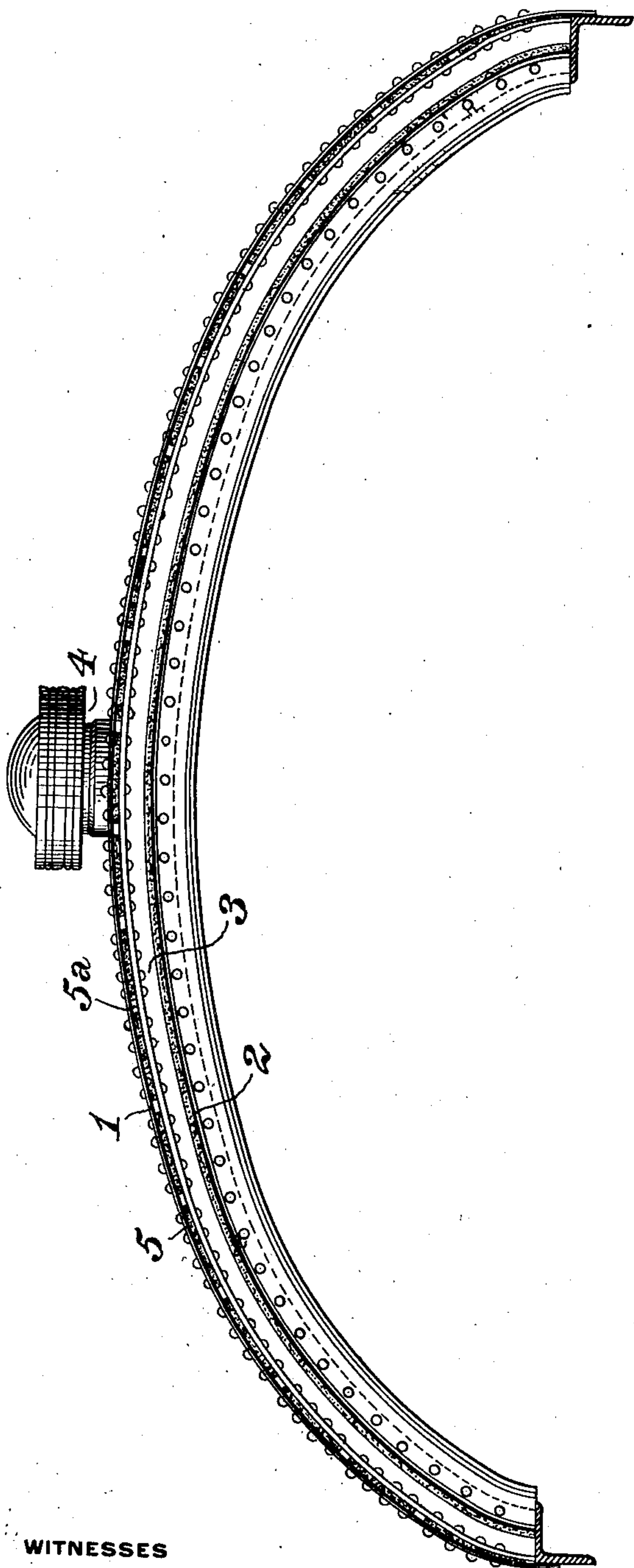
H. STILLMAN.  
CAR ROOF.

APPLICATION FILED APR. 13, 1910.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

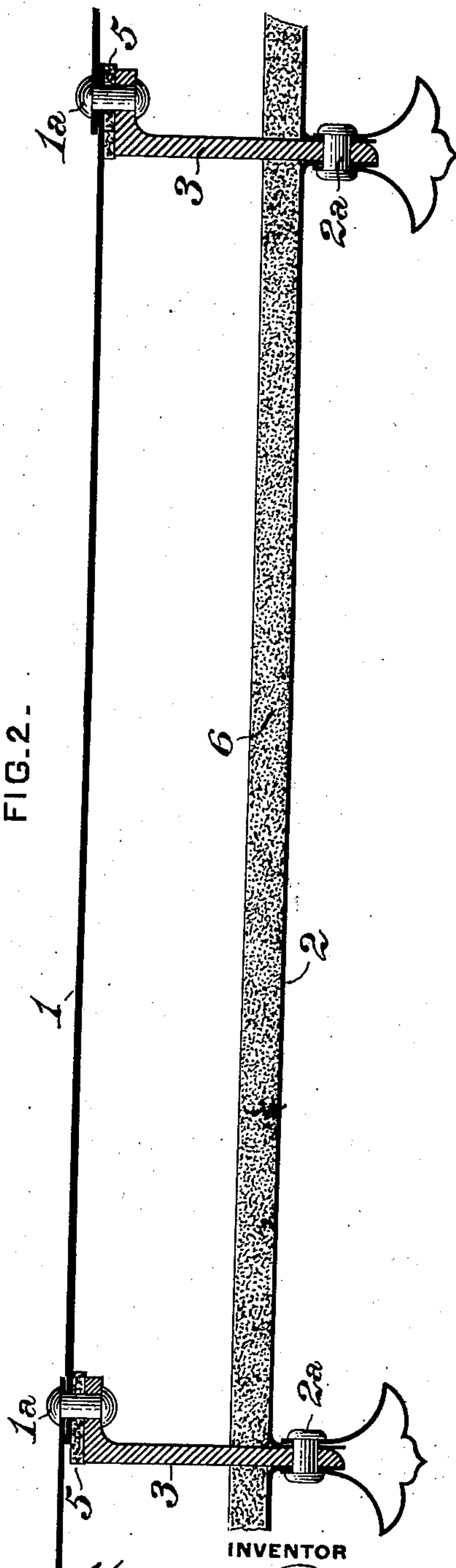


WITNESSES

James C. Herrow.

S. R. Bell.

FIG. 2.



INVENTOR

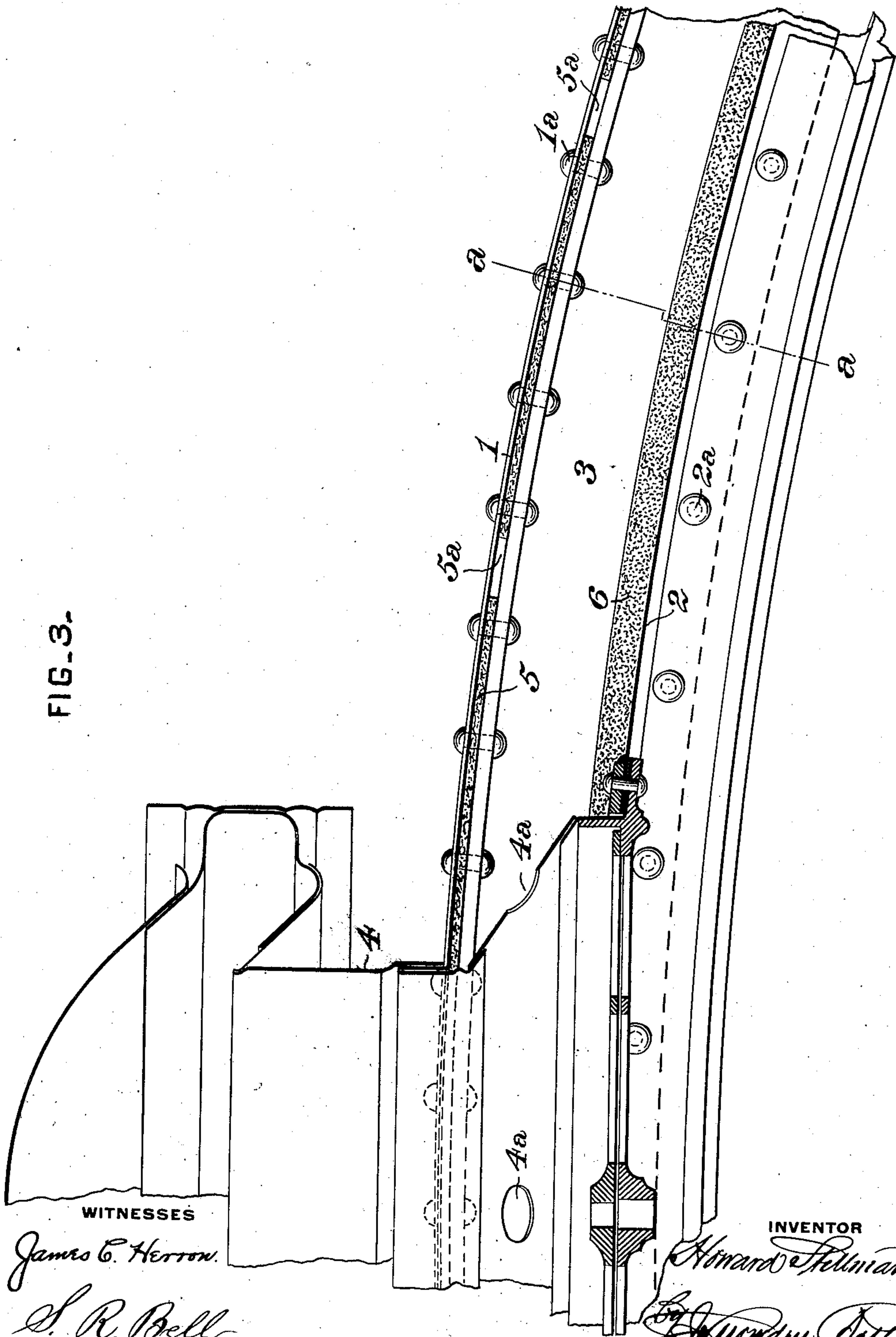
Howard Stillman  
by J. H. H. Bell, atty.

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2 SHEETS—SHEET 2.



WITNESSES

James C. Herron.

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# UNITED STATES PATENT OFFICE.

HOWARD STILLMAN, OF BERKELEY, CALIFORNIA.

CAR-ROOF.

973,888.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed April 13, 1910. Serial No. 555,238.

*To all whom it may concern:*

Be it known that I, HOWARD STILLMAN, of Berkeley, in the county of Alameda and State of California, have invented a certain new and useful Improvement in Car-Roofs, of which improvement the following is a specification.

The object of my invention is to provide means for moderating the temperature of the interior of passenger cars which are equipped with metal roofs, by preventing direct communication of the sun's rays to the roof carlines and thence to the inside of the car, and providing for a free circulation of air in the spaces between the inner and outer sheets of the car roof and the escape of heated air therefrom to the outside atmosphere.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings: Figure 1 is a vertical transverse section through a car roof, illustrating an application of my invention; Fig. 2, a longitudinal section, on an enlarged scale, through the same on the line *a a* of Fig. 3, and; Fig. 3, a partial vertical transverse section, on an enlarged scale.

My invention is herein exemplified as applied in connection with a car roof which comprises a plurality of outside sheets of metal, 1, and a plurality of inside sheets of metal, 2, the outside and inside sheets being spaced apart, and connected, at intervals, by rolled metal carlines, 3, to which they are secured by seams of rivets, 1<sup>a</sup> and 2<sup>a</sup>, respectively. Ventilators, 4, open at bottom to the interior of the car, are fixed to the roof plates, at proper intervals in the longitudinal central plane of the roof.

In the practice of my invention, I interpose between the outer side of each of the carlines, 3, and the adjacent outside sheet, 1, of the roof, a plurality of strips of suitable heat insulating or non-conducting material, 5, the several strips being separated longitudinally at intervals one from the other, so as to provide circulating openings, 5<sup>a</sup>, for

the passage of heated air from one of the spaces between the carlines to another, at the outer portions of said spaces. The bottoms of said spaces are each closed by a lining, 6, of suitable heat insulating or non-conducting material, such, for example, as hair felt, which is laid on the inner roof sheet, 2, of each of said spaces.

The base of each of the ventilators, 4, is provided with a plurality of perforations, 4<sup>a</sup>, through which the heated air from the space between the two adjacent carlines, 3, may escape, through the body of the ventilator, to the outer air.

It will be seen that the direct transmission of the heat of the sun, through the carlines, to the interior of the car, is prevented by the heat insulating strips, 5, and that the direct transmission of heat through the inside roof sheets, 2, is prevented by the heat insulating lining, 6. The openings, 5<sup>a</sup>, between the strips of heat insulating material on the outer sides of the carlines permit the circulation of air between the inside and outside roof sheets, through the spaces between the carlines, the air entering through the joints of the finish in the vestibules and at other points, and escaping, as it becomes heated, through the ventilators.

I claim as my invention and desire to secure by Letters Patent:

A car roof comprising a series of parallel carlines extending transversely of the car, inside sheets secured to the lower edge of said carlines, outside sheets secured to the upper edge of the latter non-continuous strips of material interposed between the outside sheets and the upper edge of the carlines, whereby the spaces between each pair of carlines are put in communication, and openings leading to the outside air from one of the said spaces.

HOWARD STILLMAN.

Witnesses:

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W. S. UREN.