(No Model.)

2 Sheets—Sheet 1.

J. W. POST.

RAILWAY CAR.

No. 366,249. Patented July 12, 1887.

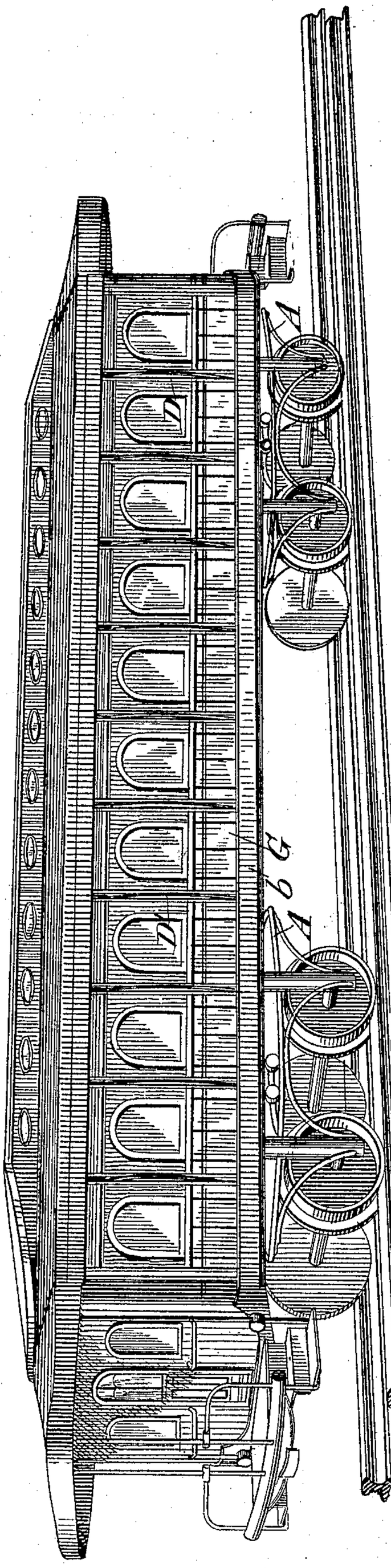

Fig. 1.

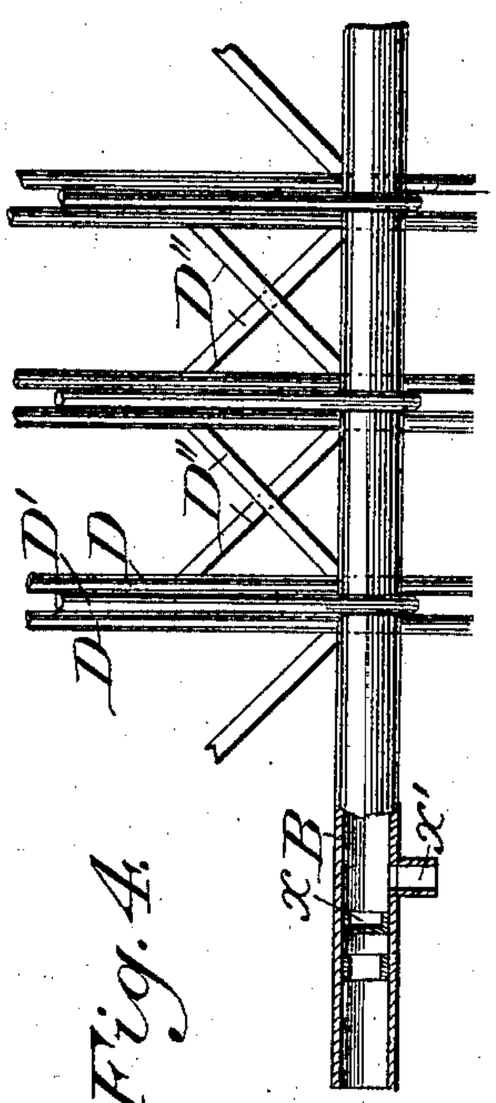

Fig. 4.

Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

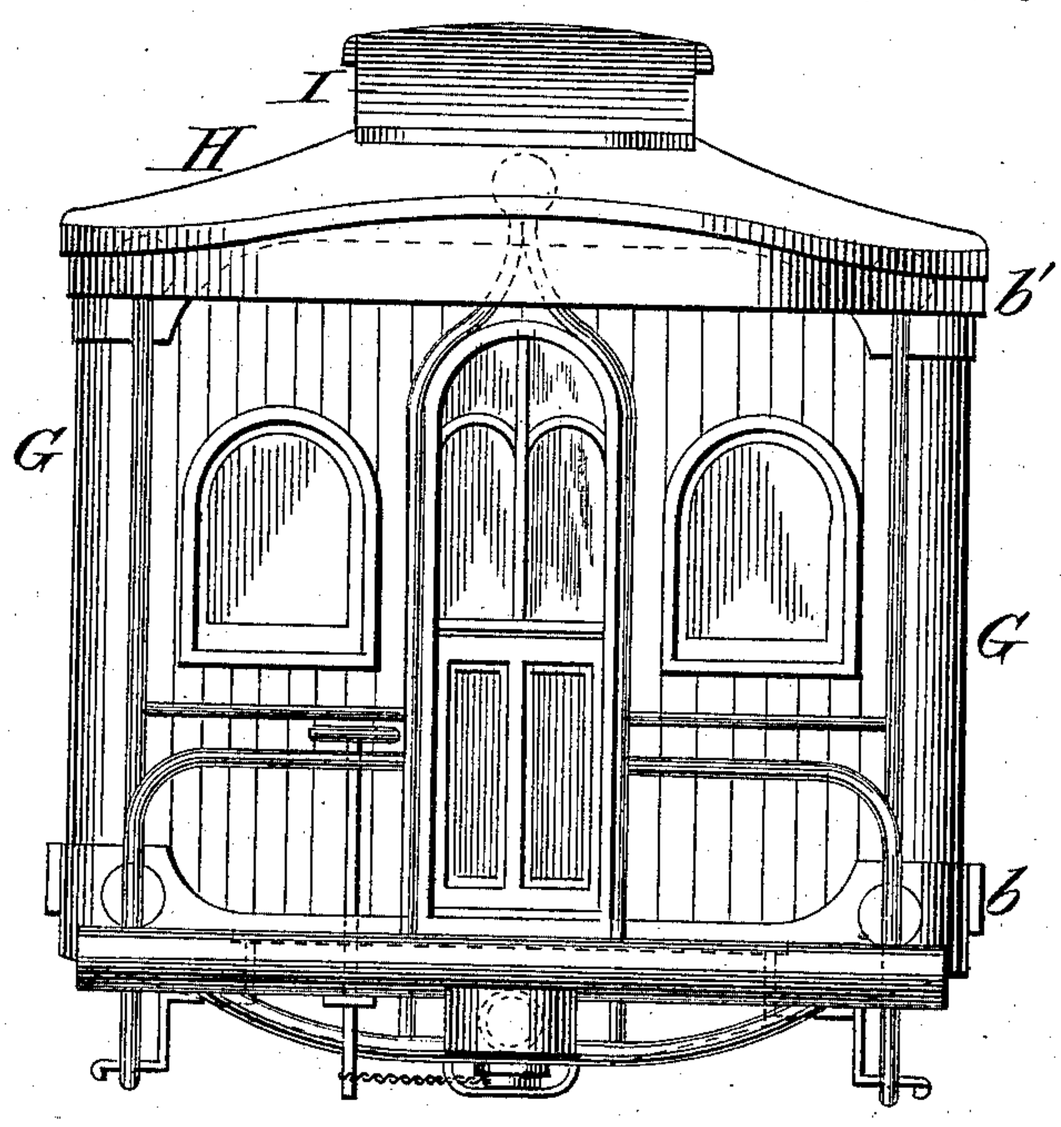
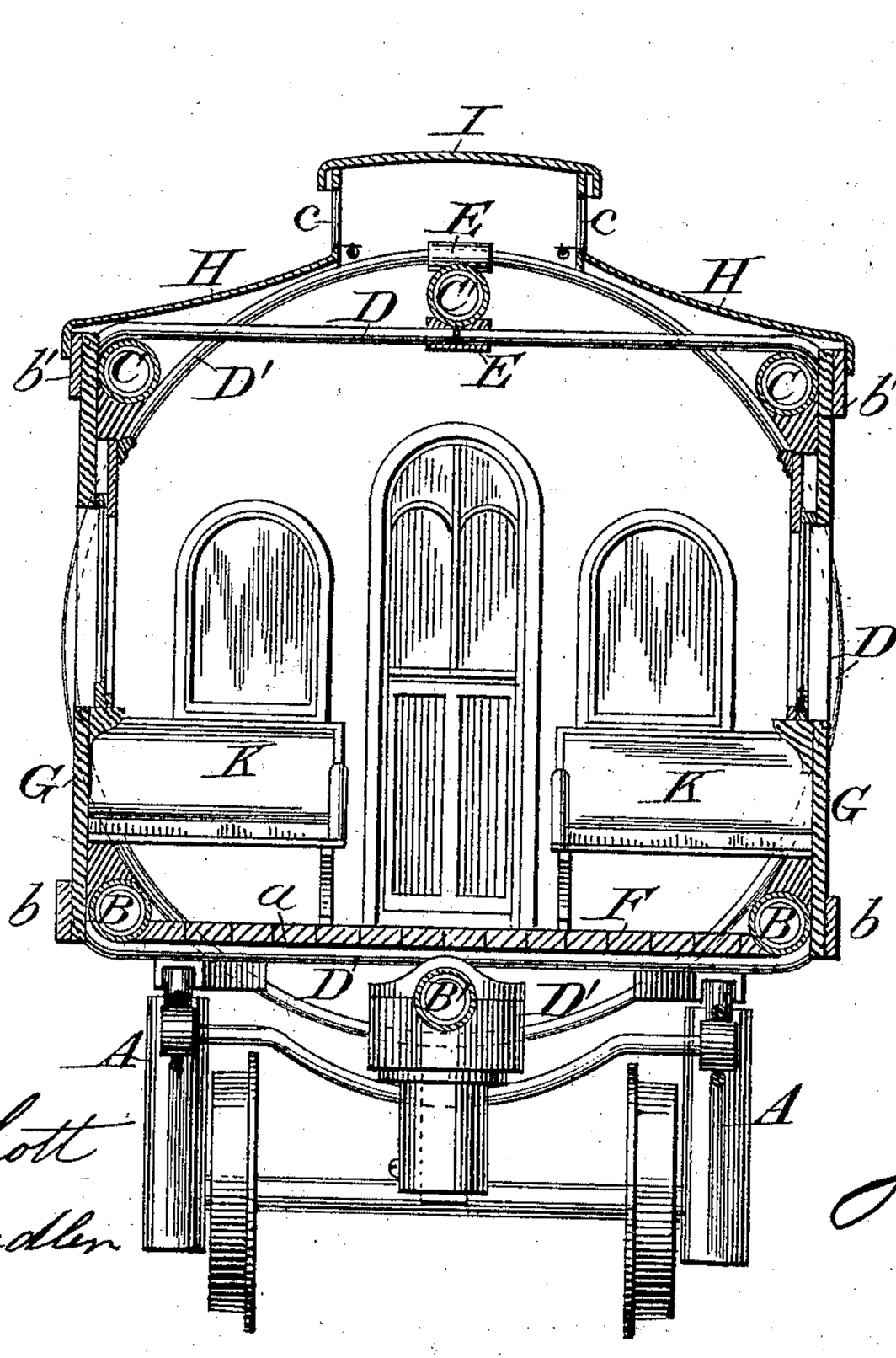


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. POST, OF NEW YORK, N. Y.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 366,249, dated July 12, 1887.

Application filed November 24, 1886. Serial No. 219,800. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. POST, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Safety-Cars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to the construction of railway-cars, the object being to produce a practically indestructible car for the transportation of passengers and their baggage, as well as mails and express matter. The panels, floor, and roof of this car will be of properly-prepared asbestus board or other non-combustible material, it being cooler in summer and warmer in winter, owing to its non-radiating properties, and forms a perfect safeguard against accidental fires. The frame-work of the car is of steel tubing, so arranged as to withstand the severest shocks of collisions or derailment, the whole structure presenting a light and graceful appearance and forming a perfect model of safety and convenience for the accommodation of the traveling public. In constructing this car longitudinal tubes of proper length are placed in position to receive the end-thrusts, and these tubes are surrounded and interlaced at short intervals by transverse tubular bands or ribs, a portion of which are rectangular, substantially corresponding in form to the exterior covering of the car, and the remainder complete circles or rings. These bands or ribs coming in frequent contact with each other, and also with the longitudinal tubes, are brazed, clasped, or otherwise securely united at such points of contact, the whole forming a frame of such strength and rigidity as to be practically indestructible by exposure to the shocks of collision with other cars or by overturning, as sometimes happens in cases of derailment.

The invention, therefore, consists, essentially, in the construction of a tubular metallic frame secured against telescoping by a series of rigid longitudinal tubes, and injury from derailment or overturning by a series of tubular hoops, forming a part of the frame-work, and, further, from injury by fire by a non-combustible non-conducting covering, which incloses the car-frame, all as hereinafter fully described, and specifically stated in the claims.

In the accompanying drawings, illustrating one method of carrying out my invention, Figure 1 is a perspective view of a car constructed on my improved plan. Fig. 2 is an end view of the car, illustrating its general appearance and the relative arrangement of the buffer, coupling-hook, and other parts. Fig. 3 is a transverse vertical section through the car, showing the relation of the external covering and internal fittings to the frame-work. Fig. 4 is a detail view of a portion of the car-frame, showing the method of bracing the transverse frames below the windows and the method by which the longitudinal tubes of the frame are made capable of holding hot water to warm the car.

In the figures, A A represent the car-trucks, which are preferably constructed with a tubular frame-work, as indicated in the drawings, but may be of any of the well-known forms in common use, as the special construction of the trucks does not interfere with the construction of the car or its ability to withstand the shocks to which it may be subjected.

B and B′ are longitudinal tubes extending the whole length of the car, the tubes B occupying the ordinary position of the ordinary car-sills, and the tubes B′ a central position between the tubes B upon a lower plane, and serving not only as a strong longitudinal support to the frame, but also as a continuous draw-bar and buffer, to which the transverse frames are all united, thus causing the strains of draft and buffing to be distributed throughout the whole length of the car. C and C′ are additional longitudinal tubes, the tubes C occupying the position of the plates in the ordinary car-frame, and the tube C′ forming an additional stiffening to the car and support for the roof and hoods which cover the car-platforms.

D represents the rectangular transverse tubular frames, and D′ the circular frames. These frames are preferably placed in groups of three, a circular frame occupying the mid-

dle position, with a rectangulnr frame adjoining it on each side. These circular and rectangular frames are firmly secured together at their several intersections, and also to the longitudinal tubes whenever they come in contact therewith. The connection of the transverse frame with the tubes B′ and C′ is made by means of a metallic junction block or coupling, E, which serves not only to connect the transverse frames with the longitudinal tubes, but also forms a union for the ends of the tubes forming the transverse frames. These groups of transverse frames are placed at proper distances from each other to receive the windows between them, and may be connected by short longitudinal tubes above and below such windows, and having cross braces D″ between the rectangular frames to stiffen the whole superstructure.

The lower horizontal part of the rectangular frames D forms the support for the car-floor F, which may consist wholly of thick asbestus board or similar material, resting directly upon the frames; or a steel plate, *a*, may be interposed between them. The method of constructing the floor with the plate *a* is preferred, as it adds strength to the car and allows the use of a much thinner layer of non-conducting material to be used in forming the floor than would be necessary if the whole floor were formed of such material.

The sides of the car G are formed of the incombustible non-conducting material, which may be applied in sections to fit between the frames D′, said frames projecting beyond the vertical side covering and forming a guard or protection for the same. A base, *b*, extends along the sides of the car, and may be of wood or metal, as its function is to protect the side covering G from abrasion. An additional strip, *b′*, of the same character runs along the top of the side covering just beneath the eaves, and serves the same purpose as the strip *b*, and also as a support for the outer edge of the roof H, the inner edge of said roof being supported by the vertical sides of the monitor top I. These vertical sides are provided with windows *c*, capable of being opened to act as ventilators. The covering of the monitor top, as well as the roof, is preferably of metal, lined upon the inner side with a layer of incombustible and non-conducting material, so as to give both strength and non-conducting properties to the same.

The internal fittings of the car when used as an ordinary passenger-car will consist of seats K, arranged in the ordinary manner, with an aisle between them. The tubes B, which project into the corner of the car beneath the seats, may, if desired, be utilized for the purpose of heating the same by placing a steam-tight head, *x*, in the tubes back of the spring-support, and providing a suitable connection, *x′*, to which a pipe for the conveyance of steam or hot water may be brought from any suitable source of supply. Steam-heating tubes of spiral construction (which form the subject-matter of a separate application) can be used for heating the car during cold weather.

By the use of steam or hot water as a heating agent I avoid the danger from fire, which is always present in cases of collision if the fire used for heating is within the car; but by bringing the steam or hot water from the boiler of the locomotive and employing a portion of the tubular frame as a radiator, I not only cheapen the construction by dispensing with the use of specially-constructed heating apparatus, but add to the safety of the car and its occupants.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. In a railway-car, the car-frame composed of longitudinal tubes and groups of transverse tubular frames arranged at suitable distances from each other, in combination with an incombustible non-conducting exterior covering, substantially as set forth.

2. In a railway-car, the car-frame composed of groups of rectangular and circular frames, as described, in combination with an incombustible and non-conducting flooring carried by said rectangular frames, as set forth.

3. In a railway-car, the combination of the rectangular frames and circular frames with the exterior side covering of incombustible material, said circular frames projecting beyond the vertical line of the sides and serving as guards for the same, substantially as set forth.

4. In a railway-car, the combination of the longitudinal tubes, the rectangular and circular frames, and the incombustible exterior side coverings with the said circular frames projecting beyond the vertical sides, and the guard-strips *b* and *b′*, arranged to protect the side covering of the car from abrasion, as shown and described.

5. In a railway-car, the rectangular frames D, serving as floor-supports, in combination with the metal plate *a* and non-conducting incombustible floor F, supported by said plate and frames, as specified.

6. In a railway-car, the combination of the transverse tubular frames with the cross-braces D″, arranged between said frames beneath the windows to stiffen the superstructure, as set forth.

7. In a railway-car having a tubular frame, the longitudinal tubes B, provided with steam-tight heads *x*, secured in said tubes B in the rear of the spring-support, and connections *x′*, to adapt such tubes for holding a hot-water or steam supply for the purpose of warming said car, substantially as set forth.

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

JOHN W. POST.

Witnesses:
M. V. E. CHANDLER,
M. A. BALLINGER.