(No Model.) 2 Sheets—Sheet 1.

W. N. HARING.

CAR BODY.

No. 487,925. Patented Dec. 13, 1892.

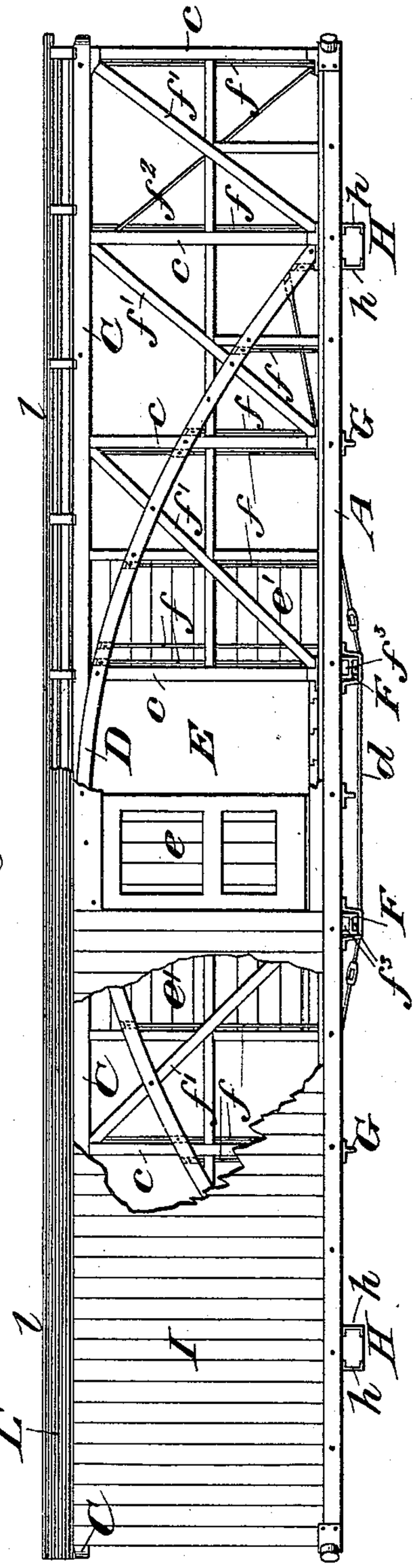

Fig. 1.

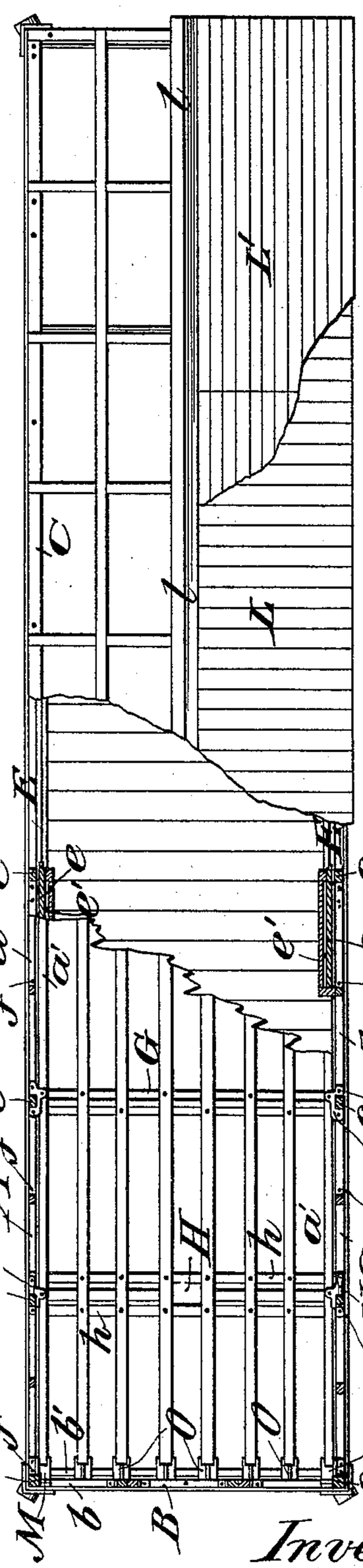

Fig. 2.

Witnesses:-
D. H. Hayford
F. B. Decker

Inventor:-
William N. Haring
by attorneys
Brown & Seward

(No Model.) 2 Sheets—Sheet 2.

W. N. HARING.

CAR BODY.

No. 487,925. Patented Dec. 13, 1892.

Fig. 3.

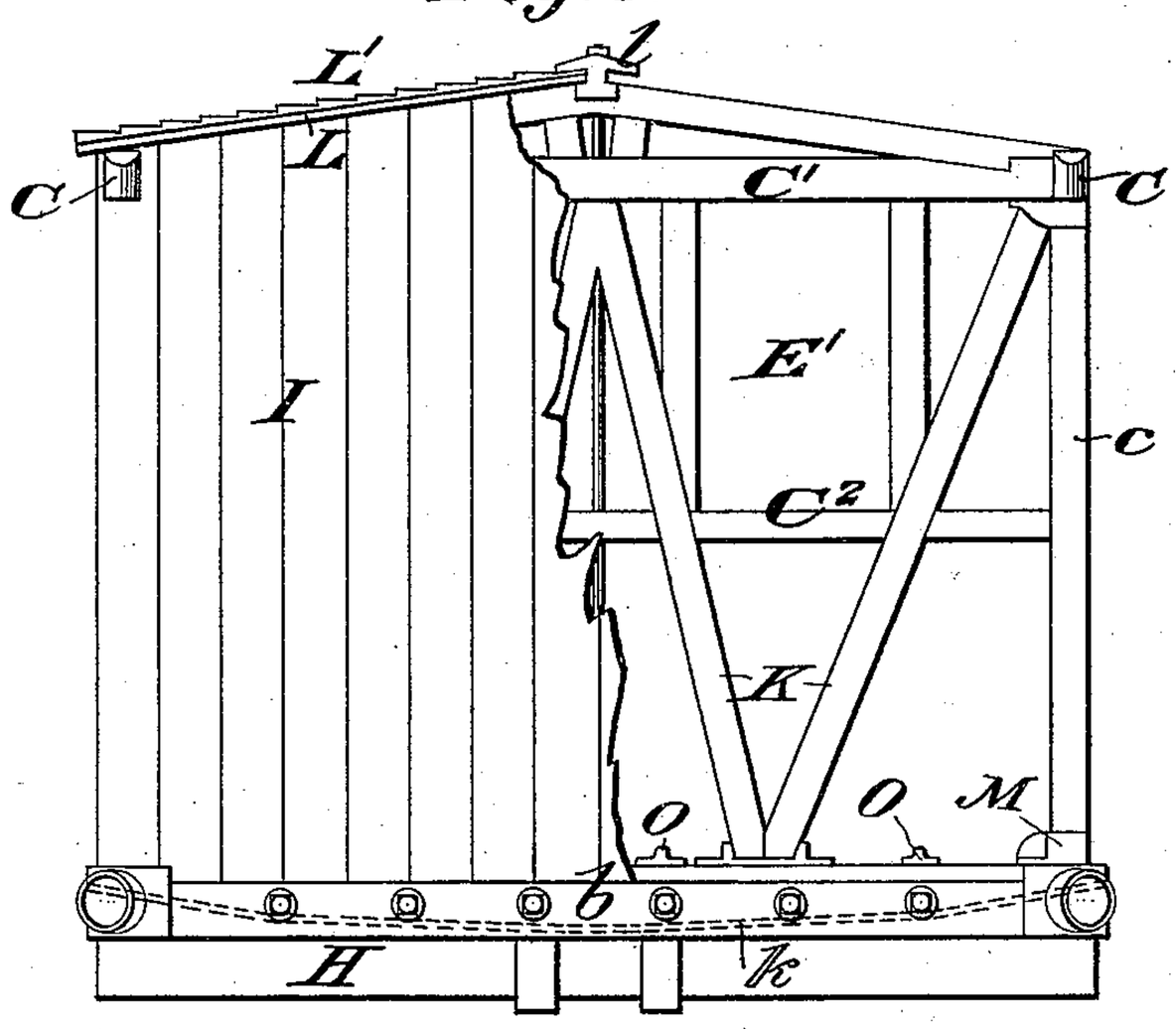

Fig. 4.

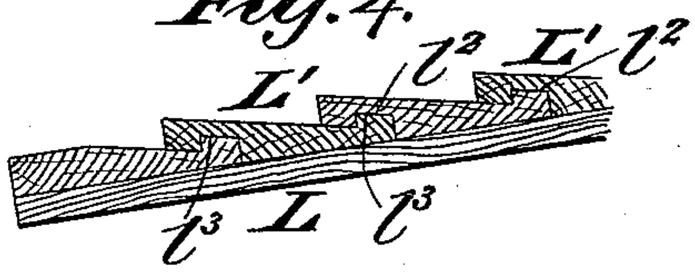

Fig. 5.

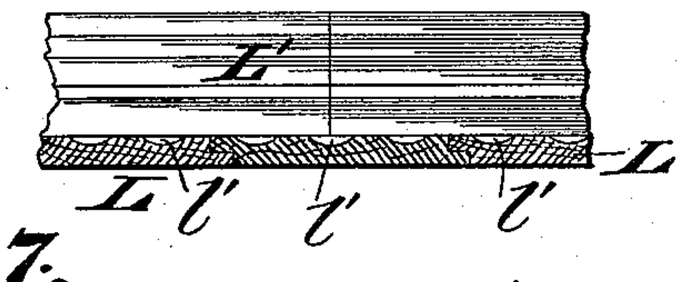

Fig. 6.

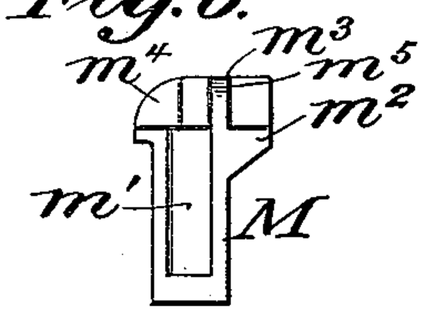

Fig. 7.

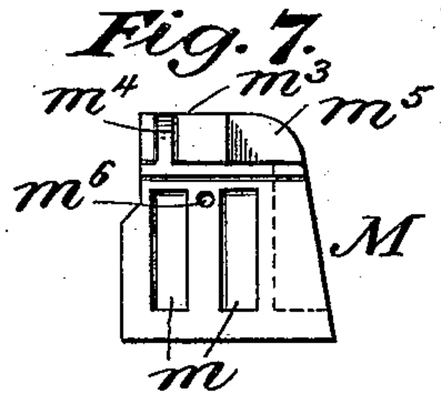

Fig. 8.

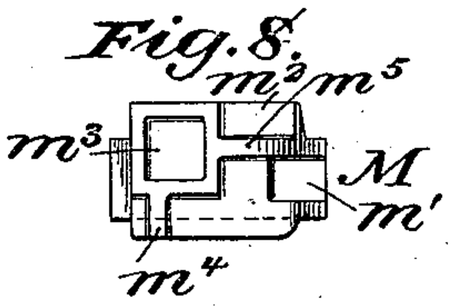

Fig. 9.

Fig. 10.

Fig. 11.

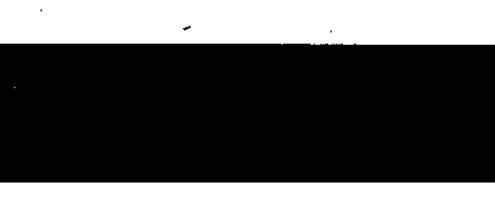

Fig. 12.

Fig. 13.

Witnesses:-
D. H. Mayhood
D. B. Decker.

Inventor:-
William N. Haring
by attorneys
Brown Seward

UNITED STATES PATENT OFFICE.

WILLIAM N. HARING, OF NYACK, ASSIGNOR OF ONE-HALF TO FRANCES J. HASBROUCK, OF NEW YORK, N. Y.

CAR-BODY.

SPECIFICATION forming part of Letters Patent No. 487,925, dated December 13, 1892.

Application filed March 17, 1892. Serial No. 425,221. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. HARING, of Nyack, in the county of Rockland and State of New York, have invented a new and useful Improvement in Car-Bodies, of which the following is a specification.

My invention relates to an improvement in car-bodies with a view of increasing their strength without materially increasing their weight.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a view of the car-body in side elevation, partly in section. Fig. 2 is a top plan view partly in section. Fig. 3 is an end view partly in section. Figs. 4 and 5 represent, respectively, partial cross and longitudinal sections of the roof. Figs. 6, 7, and 8 represent, respectively, the edge, side, and top plan views of a corner framing-piece. Figs. 9, 10, and 11 represent, respectively, an end, side, and top plan view of a framing-piece at the side of the car for the attachment of the ends of the arch-bar; and Figs. 12 and 13 represent, respectively, an end and face view of a framing-piece for the attachment of the joists to the end sills.

The side sills of the car are represented by A and the end sills by B. The side sills each consist of a pair of flat beams *a* and *a'*, spaced a short distance apart and bolted together. Each of the end sills consists of a pair of flat beams *b* and *b'*, spaced a short distance apart and bolted together.

The plates are represented by C and are connected at intervals with the sills by upright posts *c*.

The arch-bar D extends from a point on the sill A near the opposite ends of the car up and over a doorway E at the middle portion of the car, where it is bolted or otherwise secured to the plate C. The ends of the arch-bar D are secured to the sills by means of specially-constructed sockets and framing-pieces, which will be hereinafter more particularly described. The arch-bar itself is preferably of metal and is seated edgewise in the plane of the side of the car. A truss-rod *d* is secured at its opposite ends to the arch-bar D at points a short distance above the sill A and extends downwardly between the parts *a* and *a'* of the sill and underneath the cross-beams F, preferably at opposite sides of the door-space E. Hanger-rods *f* depend from the arch-bar D at intervals and connect with the sills A, and diagonal braces *f'* extend from the top of one post *c* to the foot of the next succeeding post *c*, and where they cross the arch-bar D they are bolted thereto.

At the ends of the car diagonal brace-rods f^2 extend from the plate C in proximity to the upper end of the second post *c* down to the foot of the corner-post. It is understood that the opposite side of the car is formed in the same manner as the side just described.

The cross-bars F, hereinbefore referred to, consist of skeleton metallic bars **I**-shaped in cross-section and provided throughout the entire or a portion of their length with wood fillings f^3. Metallic cross-beams G, **T**-shaped in cross-section, are employed intermediate of the beams F and in front and to the rear of the same, and the body-bolsters H are formed of heavy wooden beams having their front and rear edges incased in metallic channel-irons *h*. The side of the car exterior of the framework is formed of upright sheathing I.

The side doors *e* of the car are intended to slide back within tightly-inclosed pockets *e'* between the framework and the interior sheathing, so as to prevent any interference with the opening of the door from the load carried by the car.

The end of the car, as shown more clearly in Fig. 3, has a **W**-shaped bracing-frame K, connecting the cross-beam C' with the sill B at the bottom. An intermediate cross-beam C^2 is connected with the parts of the **W**-shaped frame, and between the beams C^2 and C' there are formed spaces for windows E'.

A truss *k* is secured at its ends to the corner of the car and extends downwardly between the parts *b* and *b'* of the end sill to a point at or near the bottom of the sill and about midway thereof, where it passes under certain securing-bolts and serves to prevent the end sill from sagging.

The roof consists of a series of boards L, having their edges overlapped, as shown in Fig. 5, and extending from the eaves to the

ridge-pole *l* and provided with grooves *l'*, extending longitudinally along their faces. Over the series of boards L there is placed a series of interlocking clapboards L', as clearly shown in Fig. 4. The boards L' extend longitudinally of the car, and hence transversely to the boards L. The boards L' have a groove l^2 formed in the lower side of their lower or thicker portion and their upper edges provided with a tongue l^3, projecting substantially at right angles to the face of the boards and adapted to fit within the groove of the under portion of the next succeeding board. The boards L' may be laid on in sections—sixteen feet long, more or less, for example—the meeting edges of the sections being preferably over a groove *l'* in one of the boards L, so that should there be any leak at the joints the groove *l'* will carry the water downwardly to the base without any liability of its entering within the car.

The corners are framed by pieces which are represented as a whole by M, (illustrated in Figs. 6, 7, and 8,) and may be made of some suitable metal. Each is provided in its face toward the end sill with sockets *m*, adapted to receive the ends of the parts *b* and *b'* of the sill. On its edge or end toward the side sill it is provided with a socket *m'*, adapted to receive the end of the inner part *a'* of the side sill. It is provided at its top with an overhanging flange m^2, under which and against the side of the base the other part *a* of the side sill is adapted to rest. At its top it is provided with a socket m^3 for the reception of the foot of the corner-piece, and strengthening ribs or webs m^4 and m^5 connect the sides of the socket m^3 with the top of the body portion of the piece. The piece I further provide with an opening m^6 therethrough for the passage of the rod *k*.

The socket and framing-piece for attaching the ends of the arch-bar to the side sill is represented as a whole by N and is adapted to rest on the top of the part *a* of the sill, while a depending lug *n* extends downwardly between the parts *a* and *a'* of the sill and receives therethrough one of the binding-bolts which connect the parts of the sill together. In its top there is formed a socket *n'* for the reception of the foot of one of the upright posts, and extending from the side of the socket to the body portion there is a web or rib n^2, provided with a perforation n^3 therethrough, to which web or rib the end of the arch-bar is secured by a bolt passing through it and through the web. The base is further provided with a laterally-extending lug n^4, which when the parts are assembled extends over the inner part *a'* of the sill. The body portion and the part n^4 are provided with perforations n^5 and n^6, respectively, for the reception of the fastening-bolts, which extend down through them and through the parts *a* and *a'* of the sill.

The post for holding the ends of the joists in position consists of body portions O, provided with sockets *o* therein for the reception of the ends of the joists. The upper overhanging lips *o'* extend from the top of the body portion outwardly and downwardly to embrace the upper edge of the inner part *b'* of the end sill and strengthening ribs or webs o^2 extend from the body portion centrally along the top of the overhanging portions *o'*.

The structure which I have hereinabove described is that particularly adapted for the building of freight, express, and mail cars, but may be utilized wherever the uses of the car will make it expedient. It possesses the advantage of being light and extremely stiff, preventing any material sagging of the car under its load and rendering it capable of resisting wear and tear for a long period of time.

The roof and door sections are described herein to make the description of the car-body complete. They do not, however, form a part of my present invention.

What I claim is—

1. In a car structure, a side framework comprising a sill, a plate, an arch-bar having its ends secured to the sill and its crown to the plate, and a truss-rod connecting the opposite ends of the arch-bar and extending under the sill, substantially as set forth.

2. In a car structure, a side frame comprising a two-part sill, a plate, posts connecting the sill and plate, an arch-bar connecting the sill and plate, hangers connecting the arch-bar and sill, and a truss-rod connecting the opposite ends of the arch-bar and sill, substantially as set forth.

3. In a car structure, an end frame comprising a two-part sill, a beam, diagonal braces connecting the beam and sill, and a truss-rod extending between the parts of the two-part sill, substantially as set forth.

4. The combination, with the side sill, the arch-bar, and a post, of the socket and framing-piece provided with a socket in its top for the reception of the foot of the post, a web for the attachment thereto of the arch-bar, a depending portion extending down within the sill, and a laterally-extending portion extending over the inner portion of the sill, substantially as set forth.

5. The combination, with the joist and the end sill, of a framing-piece comprising a body portion having a socket therein for the reception of the end of the joist and an overhanging portion adapted to engage the upper edge of a portion of the sill, substantially as set forth.

WILLIAM N. HARING.

Witnesses:
FREDK. HAYNES,
I. B. DECKER.