(No Model.)

3 Sheets—Sheet 1.

J. L. STAGG.

CAR FLOOR FRAME.

No. 309,990. Patented Dec. 30, 1884.

Fig. 1.

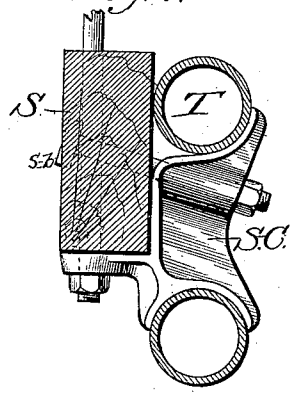


Fig. 2.

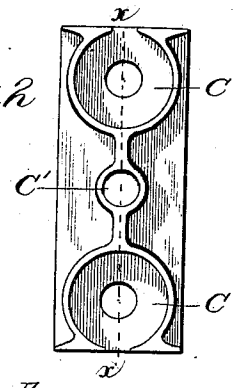


Fig. 3.

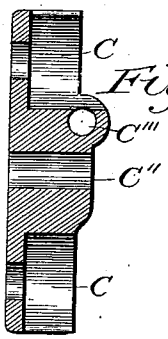


Fig. 4.

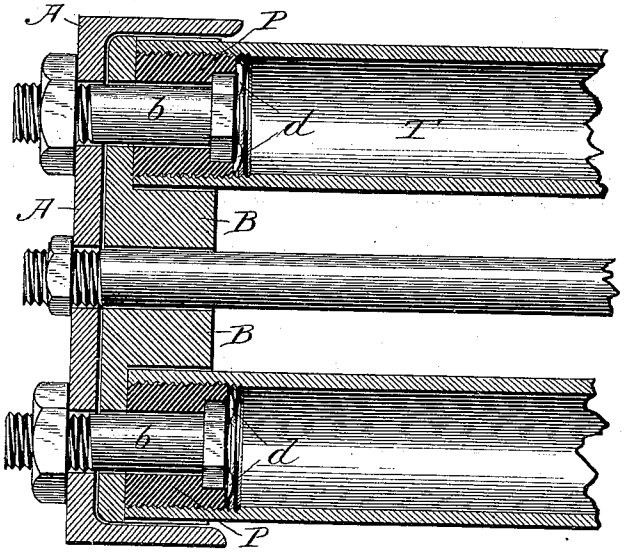
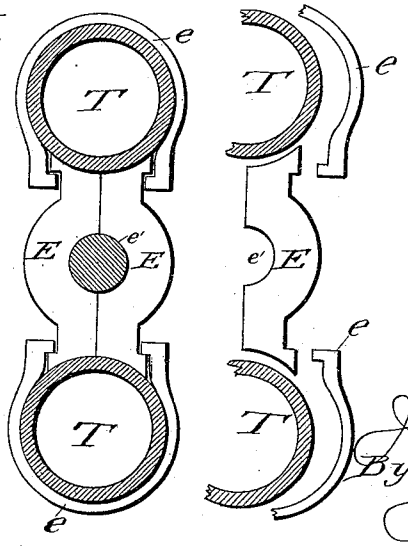


Fig. 5.



Witnesses.

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Inventor

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By J. H. Raymond

Atty.

(No Model.)

3 Sheets—Sheet 2.

J. L. STAGG.

CAR FLOOR FRAME.

No. 309,990. Patented Dec. 30, 1884.

Fig. 6.

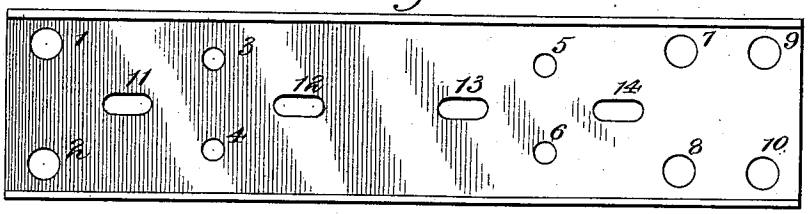


Fig. 7.



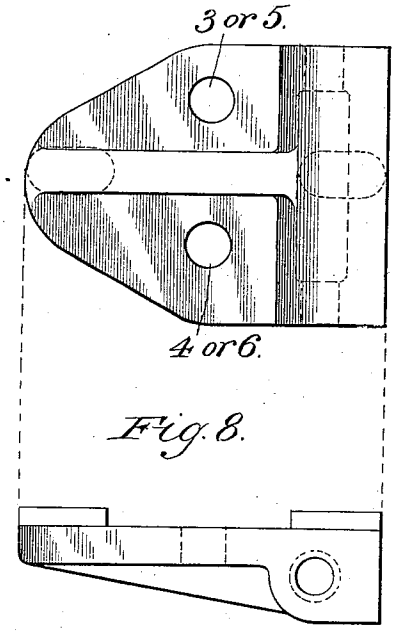


Fig. 8.

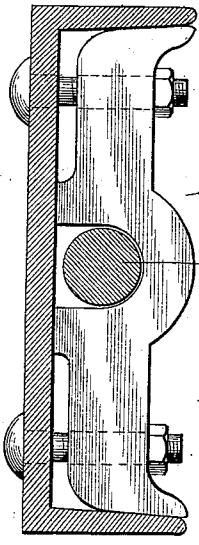


Fig. 9.

Witnesses.
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Inventor.
John L. Stagg
By J. H. Raymond Atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.)

3 Sheets—Sheet 3.

J. L. STAGG.

CAR FLOOR FRAME.

No. 309,990. Patented Dec. 30, 1884.

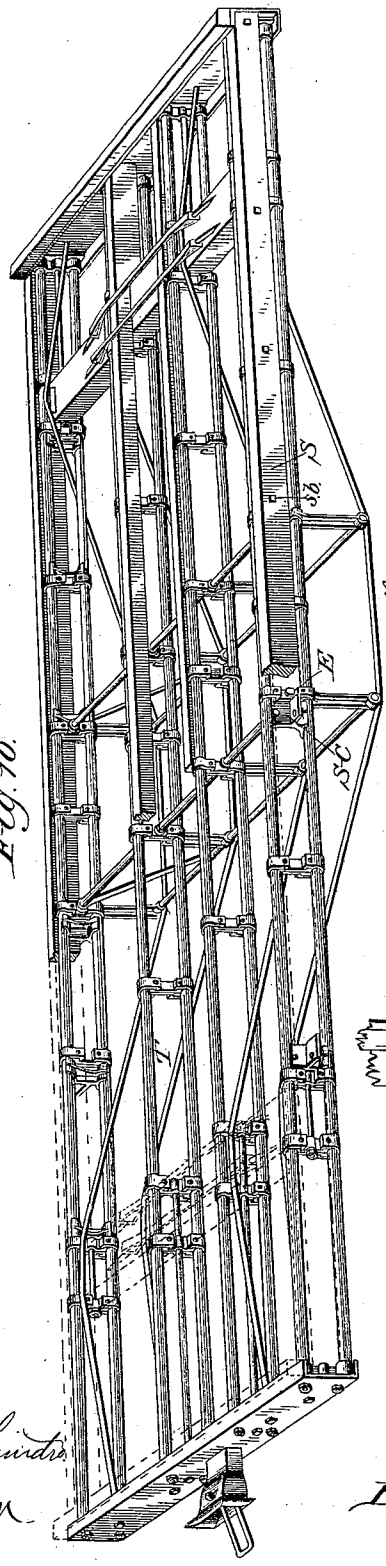


Fig. 10.



Fig. 13.

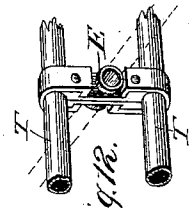


Fig. 12.

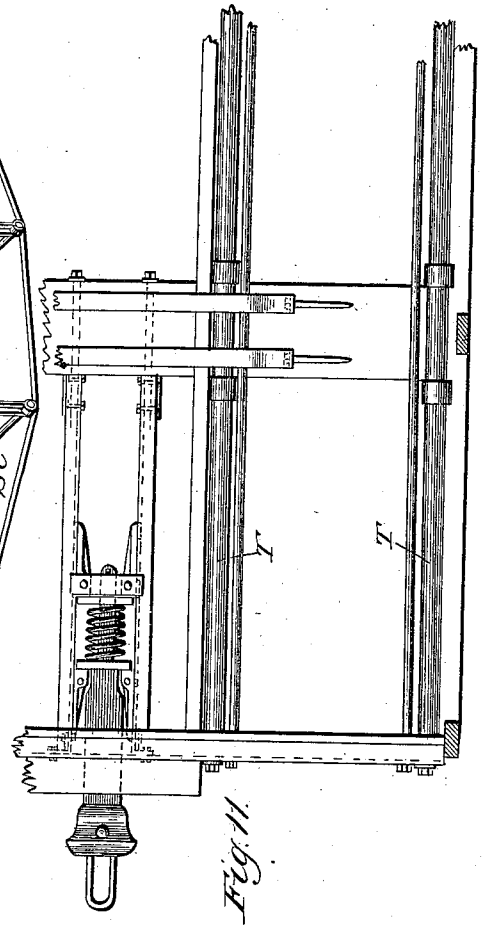


Fig. 11.

Witnesses.
Wall Pinckney
P. H. S. Mason

John L. Stagg
Inventor.

By, J. H. Raymond
Atty.

UNITED STATES PATENT OFFICE.

JOHN L. STAGG, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE UNITED STATES ROLLING STOCK COMPANY, OF NEW YORK.

CAR FLOOR-FRAME.

SPECIFICATION forming part of Letters Patent No. 309,990, dated December 30, 1884.

Application filed August 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. STAGG, of the city of Chicago, in the county of Cook and State of Illinois, have made an invention in the Floor-Frames of Cars, especially designed for use in tubular cars, of which the following is a specification.

My invention consists, first, of a new and useful bracket so constructed and attached to the longitudinal rods or piping of a tubular car as to receive and firmly attach thereto the ordinary car-sills heretofore in use, upon which the usual superstructure or housing of cars can be built as heretofore constructed; secondly, in a new and useful inside end casting of the two forms herein shown and described, the primary office of which is to receive the said longitudinal tubes or piping and to connect same with the end sills of the car, but which casting in one of the forms shown is also used as an inside corner casting, through which bolts pass in two directions through the end and side sills to attach thereto the outside corner or push plate; thirdly, in peculiar means for attaching the end of said longitudinal rods or tubing to the end sills; fourth, in substituting channel-iron "draw-timbers" of a peculiar construction, and attaching the same by a new and useful means to the end sill and to the transom, and having attached to their inner faces peculiar check-plates, against which the followers of the draw-spring operate; and my invention further consists in certain combinations of parts, hereinafter in the claims set forth.

In the drawings, Figure 1 is a vertical section through the sill S and the longitudinal tubes T and the sill-casting S C, which constitutes the first part of my invention, and showing in dotted lines the tie-rod running from a flange of said casting through the sill to the plate. I prefer to make the said flange of this casting about three inches wide in the direction of the length of the sill, (I make it of the width of the rest or body portion of said casting,) and make in said flange two holes, in either of which the plate tie-rod may be inserted, according as it may be used as a right or left casting. The head of the sill-bolt *s b*, (shown partially in dotted lines,) which bolt fastens the sill to said bracket and pipes, is set into the sill sufficiently not to interfere with adding the sheathing.

Fig. 2 shows the inside end casting which receives the inside longitudinal tubes, and abuts against the end sill; and Fig. 3 shows the inside end corner casting for the reception of the outside longitudinal tubes, the latter casting being provided with holes, through which bolts pass through the side and end sills, respectively, to fasten the outside corner or push plate, Fig. 2 being a front elevation from the inside of the floor-frame, and Fig. 3 being a vertical section of the said corner casting on a line corresponding to *x x* of Fig. 2. Both these castings are made of just sufficient height to fit between the upper and lower flanges of the end sill, when flanged sills are used, and are of any convenient width. In these figures, C C C C indicate partial cylinders or cups of the diameter of the outside periphery of the longitudinal tubes to be received therein, and, say, one and one-half inch deep. C′, Fig. 2, indicates the hole in said casting through which the rod passes from the bolster to the end sill, which rod is hereinafter described. C″, Fig. 3, indicates the hole in said casting through which a short bolt passes through the end sill to fasten one flange of the outside corner casting, and C‴ a similar hole for a similar short bolt passing through the side sill to said outside corner casting.

Fig. 4 is a vertical section through an end sill, A, through an inside end casting, B, and through longitudinal tubes T, showing the threaded plugs P P, which are screwed into the end of the tubes, the inner ends of which plugs are cut out at their center in the form and depth of the angular heads of the bolts *b b*, which pass through said plugs and through the inside end casting and through the end sill to fasten the tubes thereto. I prefer to make this plug of malleable iron, and I cast on the inner end two or more bosses or knobs, *d d*, which are bent over the end of the head of the bolt after the latter is inserted, so as not to lose it in the tube after the plug is screwed into place. Two nuts screwed onto the end bolts outside the end sill fasten the whole together.

I am aware that complicated arrangements

consisting of a sleeve on the outside of the end of the tube flanged inwardly to form a shoulder for the head of the bolt have been heretofore designed for this purpose, although, as far as I am aware, they have not been used or patented.

By the above means I provide a cheap, simple, and reliable fastening which is readily applied.

Fig. 5 shows my improved means of strapping and keeping in place the said tubes, and it consists in two castings and two elastic straps, (the latter being made preferably of steel,) as clearly shown in said figure, which is an end elevation thereof, in which E E are two castings fastened together at each end by two bolts (not shown) passing, respectively, through the upper and lower part of said casting, and also through the two spring-straps *e e*, which, respectively, embrace the said tubes. The said castings E E may or may not be made to accommodate a rod at *e'*, and the parts E E may be cast in one piece. It is, however, more economical in construction and easier of application to cast the same in two parts, as shown. The hole at *e'* is necessary in strapping the intermediate tubes between the end sill and the transom to accommodate the supplemental rod of the draw-bar arrangement hereinafter described.

Figs. 6 and 7 illustrate my channel-iron draw-beams, the latter being an end view thereof. In Fig. 6 holes 1 and 2 are for two bolts or rivets which secure an ordinary angle-iron. (Not shown.) Two other bolts or rivets are fastened through the other part of this ordinary angle-iron to the end sill. The other end of the angle-iron draw-beam is fastened to the transom in a different and peculiar manner, soon to be described. Holes 3, 4, 5, and 6 are for bolts or rivets which fasten the spring check-plates to the angle-iron draw-beam. Holes 11, 12, 13, and 14 are for lugs which are cast upon said check-plates, and fit into and through said last-named holes. The said lugs and last-mentioned holes may be dispensed with.

Fig. 8 shows one of said check-plates, the said lugs on the reverse side being shown in dotted lines. For the other end of said channel-iron draw-beam I use a casting of the form shown in Fig. 9, having four holes, through which bolts or rivets pass to and through holes 7, 8, 9, and 10 in Fig. 6 of the channel-iron draw-beam, and I pass in the other direction through 15 and through the bolster a strong T-headed bolt, having a screw-thread and nut on the end nearest to the channel-iron draw-beam. The casting shown in Fig. 9 can also be used for fastening the said channel-iron beam and the end sill together.

Fig. 10 of the drawings shows the parts herein described assembled in a floor-frame, with the wooden sills broken off midway of the length of the frame to better show the construction thereof, the same being, as shown in said figure, ready for the flooring and superstructure of the car. Fig. 11 shows the draw-bar organism, and as well the lateral strengthening-rods (not lettered) extending backward from the end sill parallel with the main tubing T. Fig. 12 shows one form of the device shown in Fig. 5 for strapping together and keeping in place the longitudinal tubes, the form shown in Fig. 12 being intended for use at the center of the floor-frame, and being provided with holes for transverse tubes or rods. Fig. 13 is a perspective view of the sill-casting shown in Fig. 1 for securing the main sills to the tubing of the frame.

On each side of the draw-bars, and equidistant between the draw-bars and the side sills, I introduce a strong rod (four to each eight-wheeled car) passing through the end sill and through the transom, and having a shoulder on each side of the transom to hold the straps which hold the longitudinal tubes, with screw-threads and nuts on the outer end of said rod. Either in bumping or in suddenly starting the car this auxiliary rod relieves the end sill or the transom, as the case may be, and, while not absolutely indispensable, is a simple, important, and very valuable addition in this construction of cars.

Any of the ordinary draw-bars, draw-bar springs, and followers will answer my present purpose, and as to the details of construction for such a car floor-frame not herein specified the constructions in tubular cars heretofore patented and used may be adopted.

Means have heretofore been designed for adding the housing or superstructure of a box-car to a tubular floor-frame which are incapable of practical use, while the bracket arrangement herein shown and described constitutes, as I have ascertained by experience, practical, strong, and safe means by which said superstructure may be readily attached and detached, even after said floor-frame is constructed.

I claim—

1. In a tubular car, a bracket for attaching together the car-sill and the longitudinal rods or tubes, fitted onto said tubes substantially as shown and described.

2. The inside corner casting herein described, constructed substantially as shown in Figs. 2 and 3, and having two recesses for the reception of the longitudinal tubes, and also holes for the passage of rods or bolts through the end and side sills to unite said casting with said sills and the outside or "push" castings, substantially as and for the purpose set forth.

3. The construction herein described for attaching the ends of the longitudinal tubes to end sills, consisting of a plug for the inside of the ends of said tubes, having the bosses or knobs to hold the bolt-head and the bolt, constructed and arranged substantially as and for the purpose set forth.

4. In the floor-frame of a car, the channel-iron or steel draw-beams having check-plates bolted or riveted to their inner faces and the end casting therefor shown in Fig. 9 for

attaching said channel-iron to the transom or the end sill.

5. The general construction herein shown and described for floor-frames for tubular cars, consisting of the sill-brackets for fastening the sills and superstructure to the longitudinal pipes or rods and the end and corner castings for attaching the push or corner plate and the end sills to the ends of said longitudinal pipes or rods, substantially as and for the purpose set forth.

JOHN L. STAGG.

Witnesses:
J. H. RAYMOND,
P. H. T. MASON.