J. W. RUMSEY & W. H. SHEASBY.

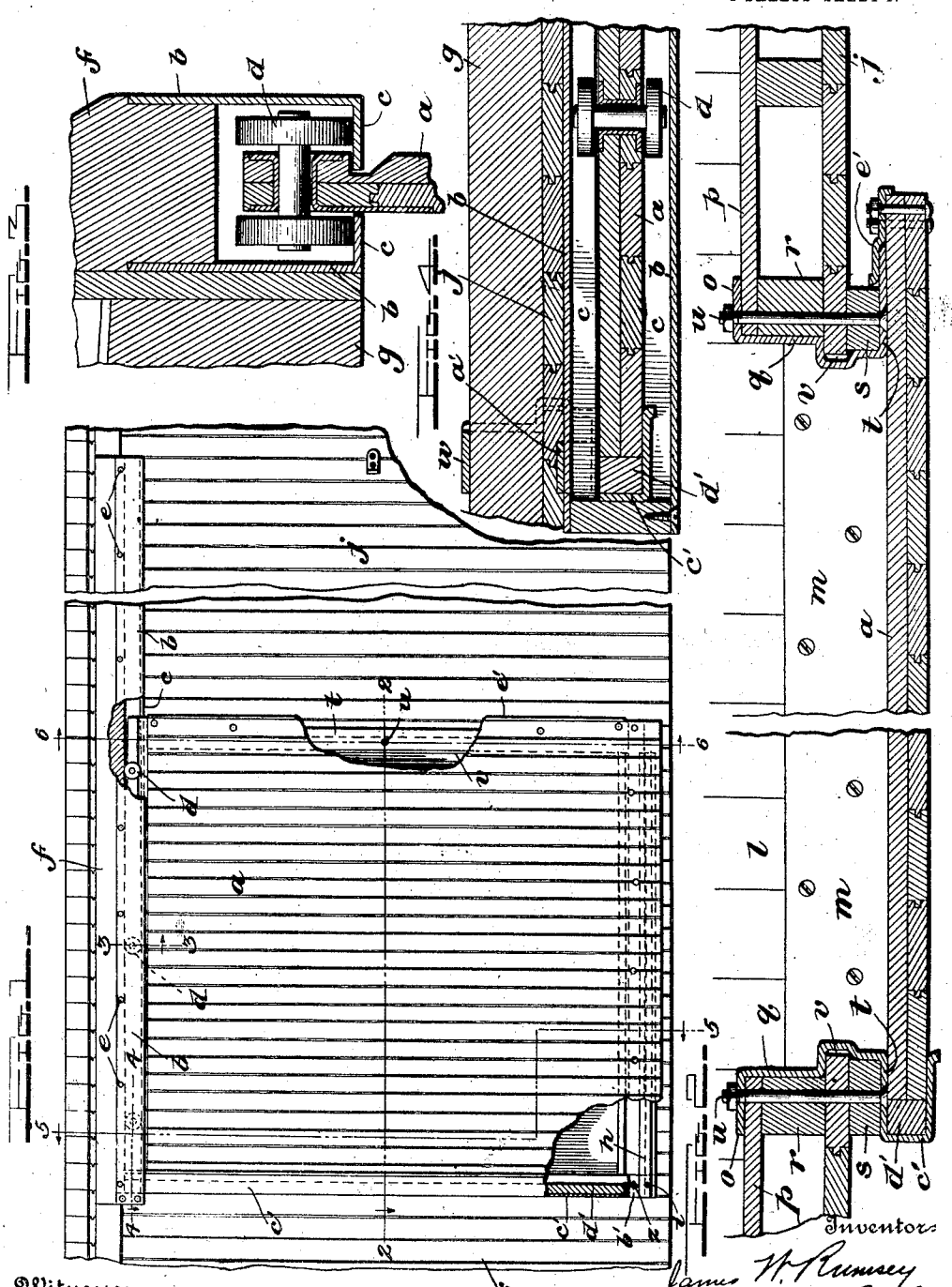
CAR DOOR FRAME.

APPLICATION FILED JAN. 25, 1913.

1,079,922.

Patented Nov. 25, 1913.

4 SHEETS—SHEET 1.



Witnesses

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4 SHEETS—SHEET 2.

Fig. 5.

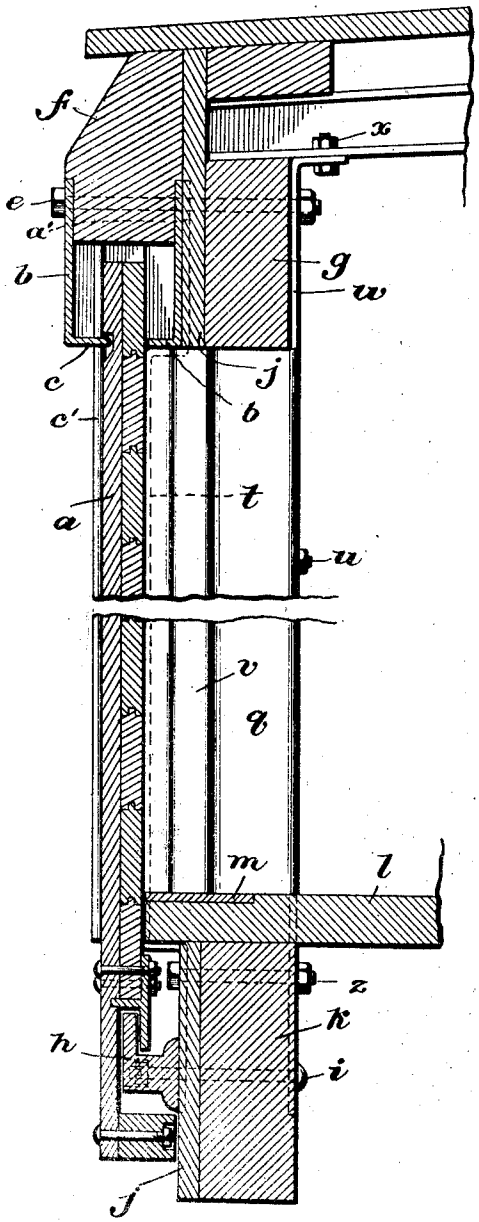
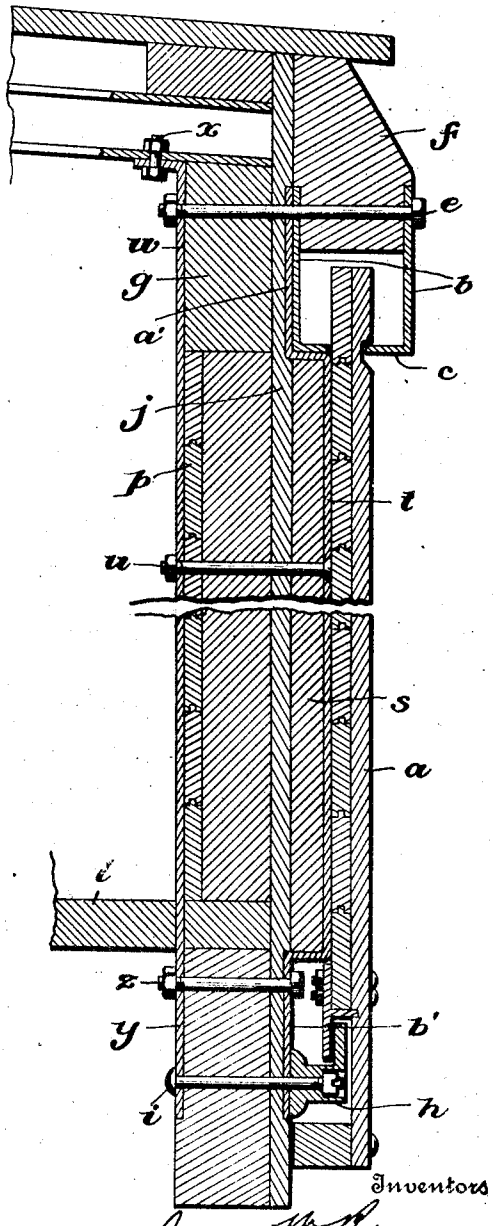


Fig. 6.



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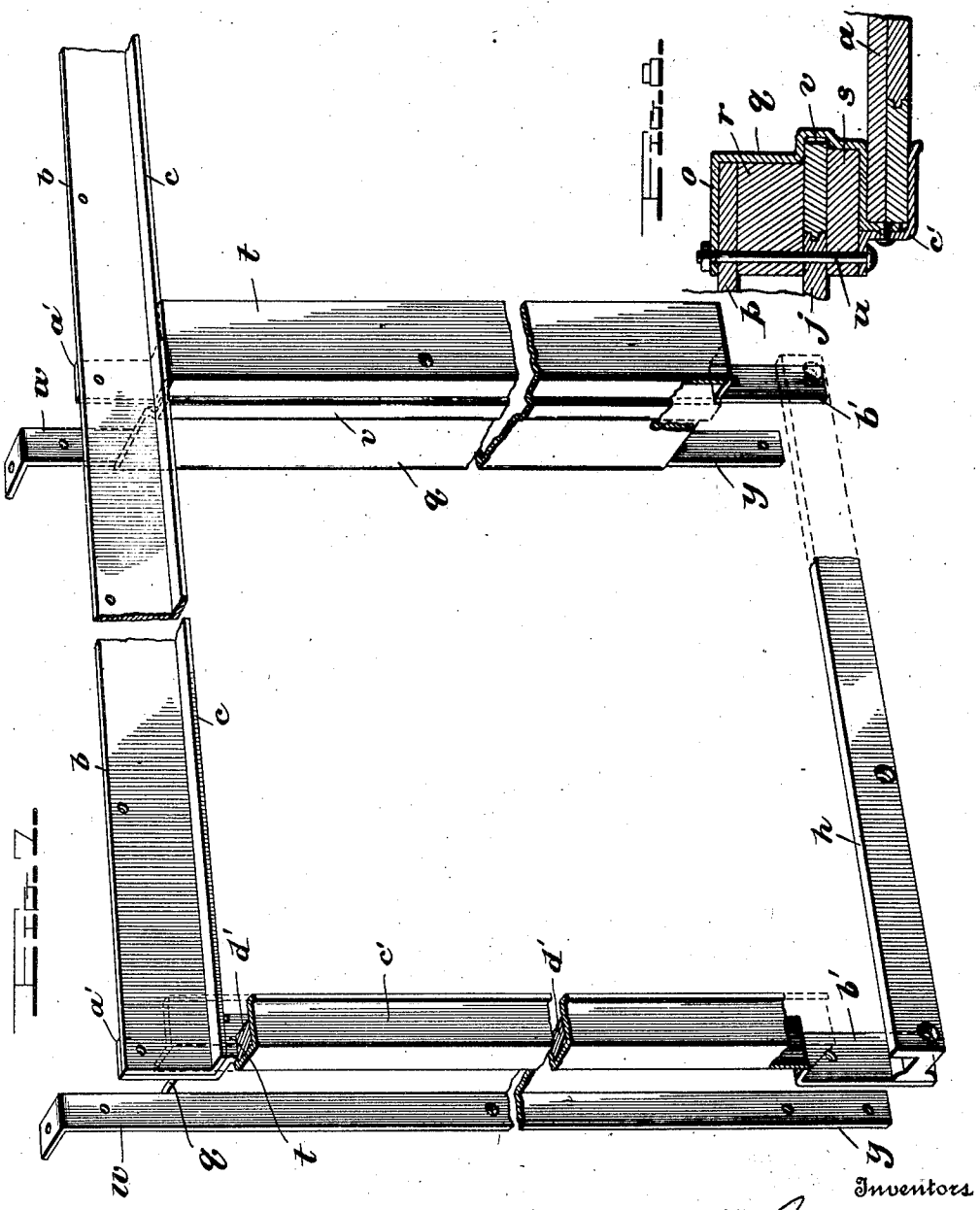
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4 SHEETS—SHEET 4.

Fig. 9.

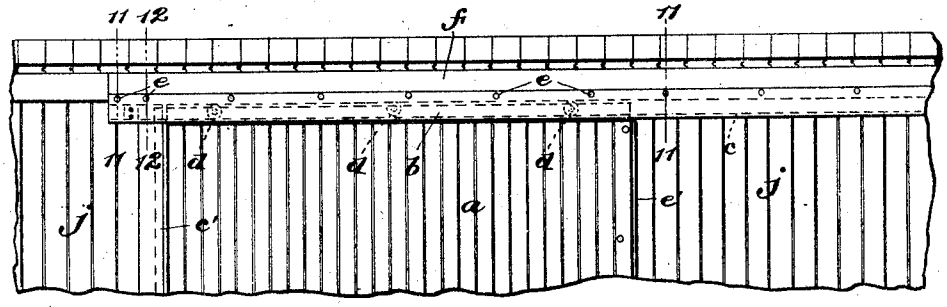


Fig. 10.

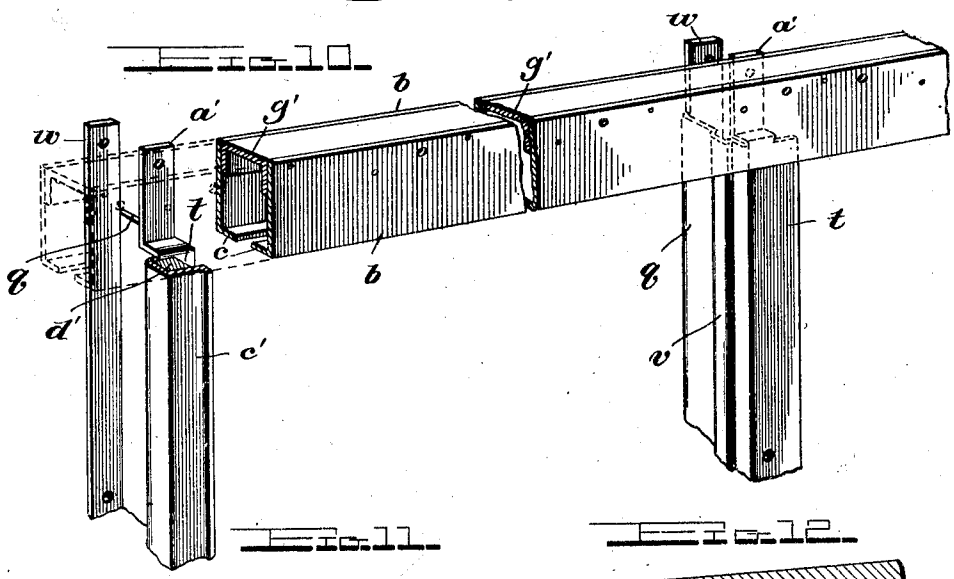


Fig. 11.

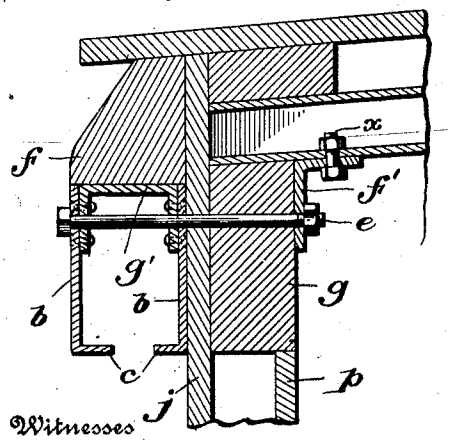
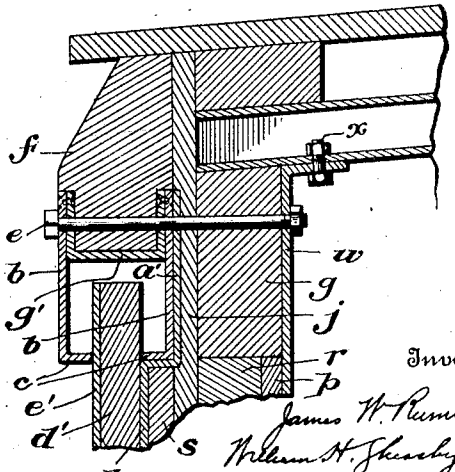


Fig. 12.



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UNITED STATES PATENT OFFICE.

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CAR-DOOR FRAME.

1,079,922. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed January 25, 1913. Serial No. 744,191.

To all whom it may concern:

Be it known that we, JAMES W. RUMSEY and WILLIAM H. SHEASBY, citizens of the United States, and residents of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Car-Door Frames, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a freight car provided with our invention, parts being broken away; Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1; Fig. 3 a detail vertical sectional view on the line 3—3 of Fig. 1; Fig. 4 a horizontal sectional view on the line 4—4 of Fig. 1; Fig. 5 a vertical sectional view on the line 5—5 of Fig. 1; Fig. 6 a similar view on the line 6—6 of Fig. 1; Fig. 7 a perspective view of the door frame members detached from the car body, with parts broken away for the purposes of better illustration; Fig. 8 a detail horizontal sectional view showing a slight modification; Fig. 9 is a side elevation of a car showing a slight modification of our structure; Fig. 10 a perspective view of the door frame members detached from the car body, parts being broken away for the purpose of better illustration; Fig. 11 a section on the line 11—11 of Fig. 9; and Fig. 12 a section on the line 12—12 of Fig. 9.

The object of this invention is to so brace and strengthen the door frame structure of wooden freight cars that the parts shall not become distorted or disalined by the bulging or bowing strains of the freight or the strains due to severe bumping action or bad road bed conditions, thereby maintaining the door members in such relation to each other as to at all times insure a close fit of the door, as more fully hereinafter set forth.

The door *a* may be hung and guided in any suitable manner. We have illustrated the door as having its upper edge housed between a pair of depending steel housing plates *b*, whose inturned lower edges form rails *c* for the support of the hanger rollers *d*, said housing plates being secured by a series of horizontal bolts *e* which extend through the upper edges of the housing plates and an intermediate beam *f*, as well as through the usual longitudinal roof beam *g*. The lower edge of the door is slidingly confined to the side of the car by means of a rail *h* bolted to the side of the car by means of a series of bolts *i* extending through said rail as well as through the siding *j* and the usual longitudinal sill *k* of the under-frame. The flooring *l* of the car that is supported on the sill *k* and extends through the door-way and is provided with the usual wear plate *m* extending along the edge of the door-way.

As will be seen, the top side of the door way consists of the track rail *b*, the beam *g* and the intermediate siding boards *j* of the car. The two posts of the door frame each consists of a stamped or forged sheet metal shell of sufficient thickness to give the necessary rigidity. Each post consists of an inner plate member *o* which fits against the lining boards *p* of the car, a jamb or facing member *q* which fits against the side faces of the wood filling posts *r* and *s*, and an outer plate member *t* which fits against the outer face of the filler bar or post *s*, this member *t* lying parallel with the inner member *o* and at right angles to the intermediate member *q*. Each metal shell is secured in place by means of one or more horizontal bolts *u* passed horizontally through the members *o* and *t* and the intermediate wood-work. The jamb or facing member *q* is longitudinally corrugated to form a vertical rib *v* projecting into the door-way slightly. The siding boards *j* are clamped between the filler posts *r* and *s* and extend into the channel *v* but not entirely to the bottom of the channel, thereby leaving a vertical space for entrapping and carrying off any water that may leak past the filler post *s*.

The outer plate members *t* of the posts are flush with the front edge of the sill plate *m* and the edge of the inner track flange *b*, so that the door may shut closely against these parts and thus completely close the door opening of the car. The jamb or facing members *q* of the posts terminate at their lower ends against the floor and at their upper ends against the members which constitute the top wall of the door opening. The inner plate members *o* however are extended both upwardly and downwardly, the upper extensions *w* being bolted to the inner face of the beam *g* by the above described bolts *e* and also to the carlines or other transverse beams of the roof by means of bolts *x* while the depending extensions *y* are extended through the floor of the car

and are bolted to the inner face of the under frame beam *k* by horizontal bolts *g* and also the above described bolts *i*. The outer plate members *t* are likewise extended upwardly and also downwardly, the upper extensions *a'* being bolted to the car structure by the above described bolts *e* and the lower extensions *b'* being fastened to the car structure by the aforesaid bolts *g* and *i*. Preferably the upper extensions *a'* are bent so as to fit around back of the inner housing member *b* and are desirably gained into the face of the siding boards *j*, while the depending extensions *b'* are desirably bent around under the filler piece *s* and likewise gained into the face of the siding boards, the lower extremities of these parts *b'* being clamped to the side of the car by the guide rail *h*.

At the left side of the door opening, the front facing strip *t* has the edge remote from the door opening bent outwardly and then toward the door opening to form a vertical channel *c'*, which is an integral extension of the door post and is adapted to receive the front edge of the door when the door is closed, the extreme vertical edge of the outer member of the channel being deflected slightly outwardly to guide the edge of the door into the channel. A vertical filling piece *d'* is inserted in the channel to receive the impact of the front edge of the door when the door is pushed into the channel. At the rear edge of the door the inner face of the door is provided with a plate *e'* which is adapted to overlap an extension of the adjacent front plate *t* and thereby not only form an overlapping water-proof joint at the rear edge of the door but also furnish means which will coöperate with the channel *c'* to cam the door to a tight closure.

In Fig. 8 a modification is shown in which the channel forming parts *c'* is made of a separate piece and riveted to an outwardly turned flange on the facing strip *t*, the inner edge of the member *c'* being bent laterally to receive the clamping bolt *u*. In this view we have omitted the filling piece *d'* as that piece is not essential.

It will be observed that with our construction we prevent the pressure of the freight in the car from bulging the door frames sufficiently to interfere with the free operation of the doors or to so distort the parts as to permit the doors to leak water, etc. This provision against bowing or bulging outwardly the door frames is important also in that with the ordinary car structures this bulging of the frames and doors is frequently so great as to permit the car to be burglarized without breaking the seals on the doors. With our construction the bulging strains are all resisted by the steel car posts which are tied and braced firmly not only to the roof structure of the car but also to the under frame of the car. It is well known that with cars of the ordinary construction the car is frequently, by reason of uneven road bed conditions subjected to twisting or distorting strains and these strains are so great at times as to distort the door frames and door hanging and guiding devices sufficiently to either disconnect the doors entirely or to completely destroy their fit. Such troubles as these are completely avoided by our improved structure since the door frame and the door suspending and guiding means are connected up into a unitary structure, the various members of which are rigidly tied and braced together. It is also a well known fact that under severe bumping strains the cars as ordinarily constructed are frequently so distorted or humped upwardly in the centers as to completely dislodge and disconnect the doors from the cars. This is due to the fact that the distorting tendency reaches its maximum about the center of the car, tending to hump or bend the car body upwardly at the center. With our construction the car body is stiffened about midway its length, just where the greatest upward bending tendency takes place, and thus resists this bending or distorting tendency and distributes the strain throughout the car body, thus preventing the car doors and door posts and connected devices from being seriously injured from severe bumping strains. It will thus be seen that our structure is eminently adapted to withstand all the strains of service abuse.

It happens occasionally that the carlines in a car do not sufficiently aline with the steel door posts to make it practicable to tie the carlines directly to the extensions *w* of the posts. In such cases as these, the carlines may be tied to the housing members *b* of the door hanger as shown in Figs. 11 and 12, the aforesaid bolts *e* being employed for this purpose and a suitable bracket or angle iron *f'* being employed to connect the inner ends of the bolts to the carline. At times it may be necessary to extend the housing members a short distance to the left of the usual termination, as shown in Fig. 9, in which view the carlines fall just outside of the two door posts, as indicated by the lines 11—11 on which Fig. 11 is taken. It may also be desirable in some cases to strengthen the door frame by adding thereto the strength of the outer member of the housing plates *b* and also the intermediate hanger rail *f*, as shown in Figs. 10, 11 and 12 in which the bolts *e* are extended entirely through the housing members so as to rigidly tie the two members together and to the posts and carlines. In Fig. 11 the two housing members are shown as connected to the carline through the bracket *f'* while in

Fig. 12 the housing members are connected directly to the posts through the upstanding extension *w* thereof. In this way the outer housing member is added to the inner member as well as to the intermediate filler rail to greatly increase the stiffness of the door frame as a unitary structure.

To still further add to the rigidity of the door frame structure and thus hold all the parts in alinement against the severest kind of strains from service abuse, we may connect the two housing members *b* directly and permanently together so as to form practically a unitary structure in itself. This may be done in a variety of ways. In Fig. 11 we have shown an inverted channel iron *g'* riveted between the upper edges of the housing members and forming in effect a sort of extension of the rail block *f*, whose lower edge will not in this instance be extended into the housing. This bar *g'* may be of rolled or cast metal and may have any dimensions which are needed to give to the structure the desired strength. In Fig. 11 the flanges of this channel bar depend into the housing, whereas in Fig. 12 the flanges extend upwardly and the lower edge of the track rail *f* depends into this channel bar *g'* so as to receive through it the bolts *e*. This channel bar *g'* may, and preferably does, extend the full length of the housing members, as shown in Fig. 10.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is—

1. In combination with a wooden box car having a door opening in its side wall, of a sheet metal door post rigidly bolted to the car structure at each side of the door opening and extending the full height thereof, each of these metal posts being provided with an extension at its upper end and a depending extension at its lower end, a metal door-hanger-housing rail member affixed to the car structure above the door opening and bolted to said upper extensions of the door, posts and a door guiding rail bolted to the car structure along below the lower edge of the door opening and rigidly affixed to the aforesaid depending extensions of the door posts.

2. In combination with a wooden freight car, having a door opening in one side wall, of sheet steel posts fastened to the woodwork at the respective sides of the door opening, each post having upward extensions, means for rigidly fastening the posts to the car structure, a pair of depending hanger housings and means rigidly connecting the upper edges of these housings together, and additional means connecting the housings to the upper extensions of said posts, for the purpose set forth.

3. In combination with a wooden freight car, having a door opening in one side wall, of sheet metal posts fastened to the woodwork at the respective sides of the door opening, each post having upward extensions, means for rigidly fastening the posts to the car structure, a pair of depending hanger housings and means rigidly connecting the upper edges of these housings together, and additional means connecting the housings to the upper extensions of said posts, together with additional means for rigidly attaching said connected housings to the carlines of the car structure.

4. In combination with a box car having a door opening within its side wall, a sheet metal door post affixed to one of the wood door posts, and each consisting of a facing plate *q* abutting against the face of the door post wood members, an inner plate *o* and an outer plate *t* and bolts fastening said members *o* and *t* against the car structure, said facing member *q* being provided with a vertical bead or corrugation projecting away from the face of the wood door post members to form a vertical drain channel *v*.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses this 24th day of January 1913.

JAMES W. RUMSEY.
WILLIAM H. SHEASBY.

Witnesses:
H. J. Boe,
M. J. Egleston.