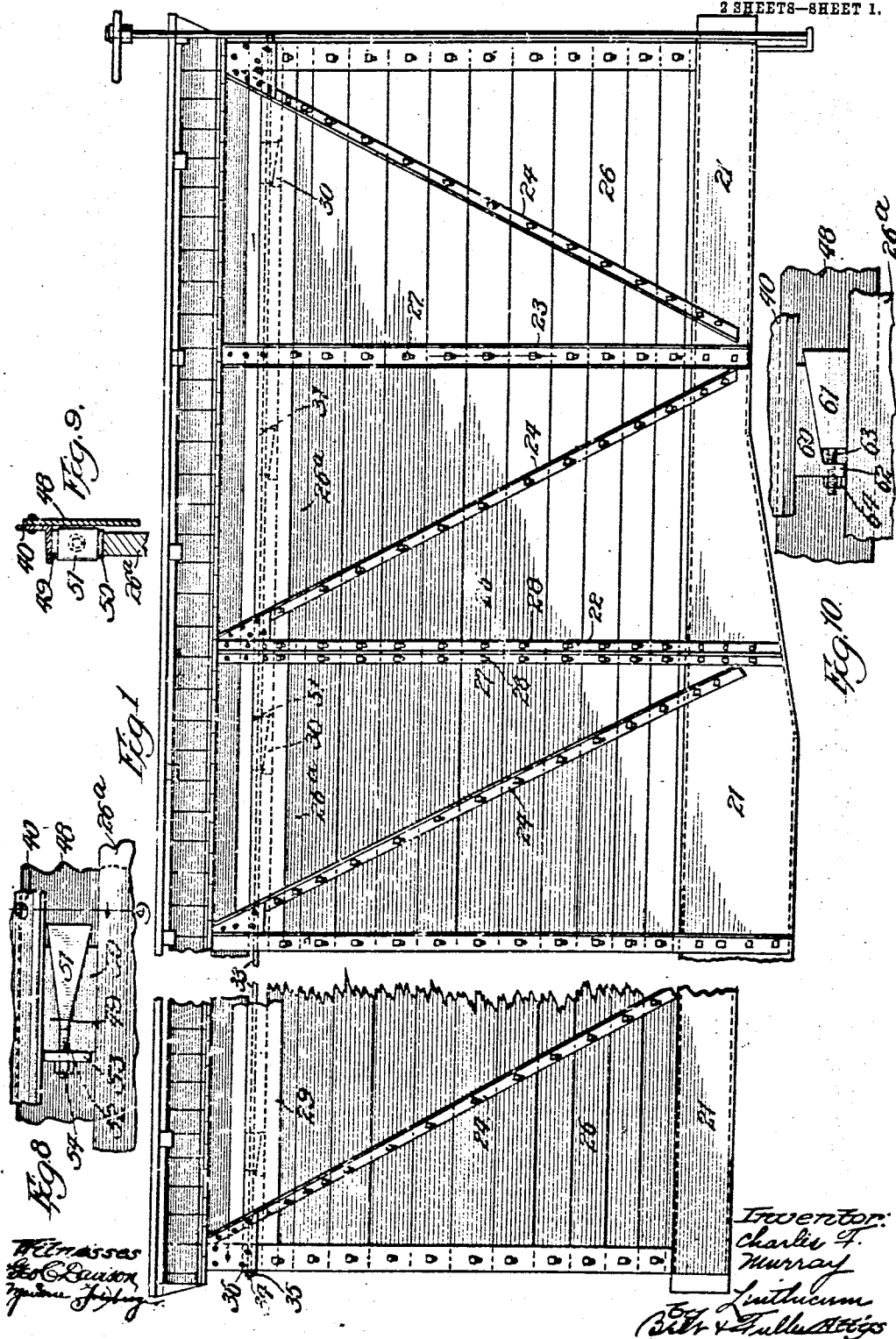


967,412.

2 SHEETS—SHEET 1.



C. F. MURRAY.
TIGHTENING MEANS FOR CAR SIDES.
APPLICATION FILED DEC. 11, 1909.

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Patented Aug. 16, 1910.

2 SHEETS—SHEET 2.

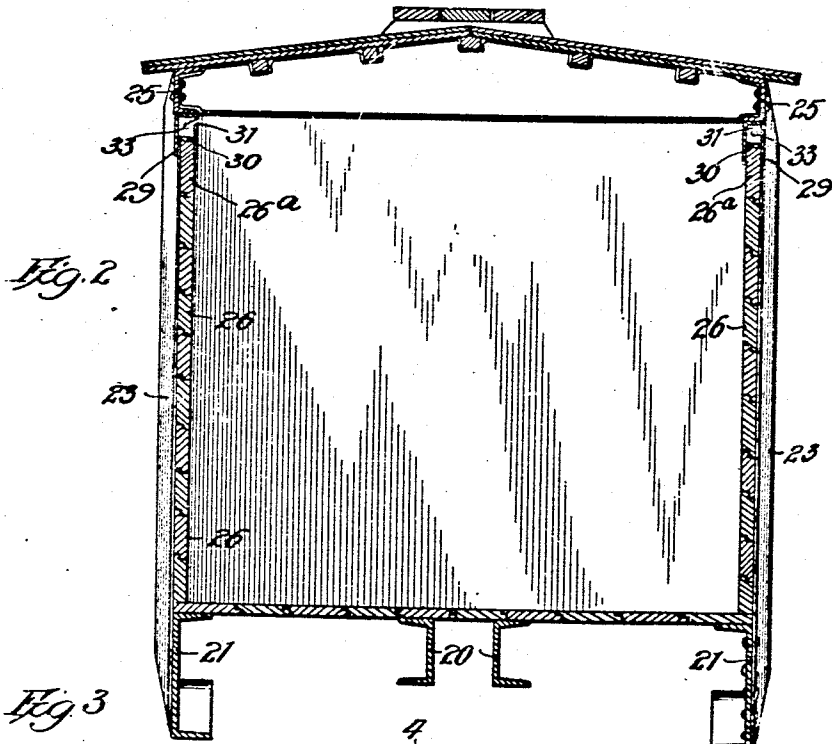


Fig. 2

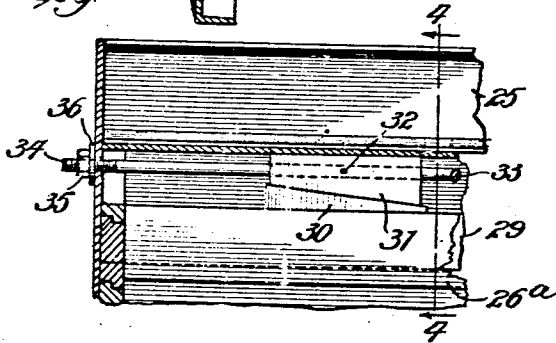


Fig. 3

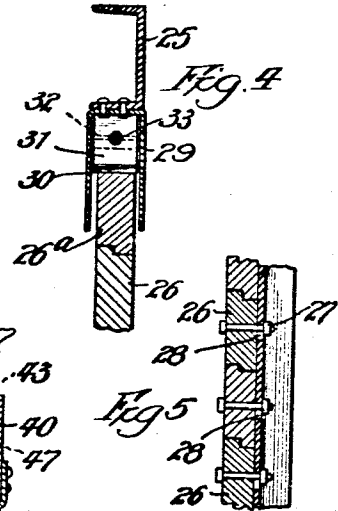


Fig. 4

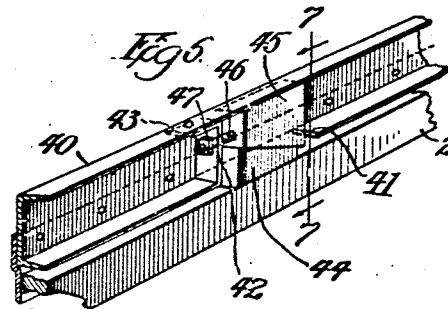


Fig. 5

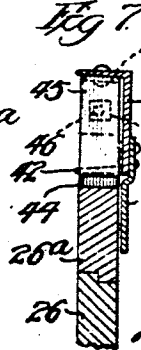


Fig. 7

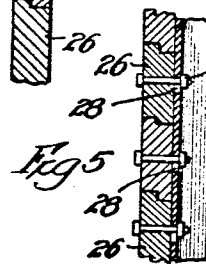


Fig. 5

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UNITED STATES PATENT OFFICE.

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TIGHTENING MEANS FOR CAR SIDES.

967,412.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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To all whom it may concern:

Be it known that I, CHARLES F. MURRAY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tightening Means for Car Sides, of which the following is a specification.

It has heretofore been proposed to make the walls of a car-body of a single thickness of wood, disposing the boards or planks in edge to edge relation, but in wall constructions of this character there is a tendency for spaces to occur between such boards owing to the shrinkage or contraction of the latter.

This invention pertains to novel and useful tightening means for forcing such boards together after shrinkage, whereby to maintain the joints or seams between the same closed at all times.

A number of embodiments of the invention have been illustrated in detail in the accompanying drawings forming a part of this specification, and throughout the various views of which like reference characters refer to the same parts, and in these drawings,—

Figure 1 is a fragmentary elevation of a railway-car equipped with one style or form of my joint-closing means; Fig. 2 is a vertical cross-section of the car illustrated in Fig. 1; Fig. 3 is a partial section and partial elevation on the inside of the car near the top thereof; illustrating on an enlarged scale the means for closing the joints; Fig. 4 is a cross section through the structure shown in Fig. 3, on line 4—4; Fig. 5 illustrates in section the manner of attaching the boards constituting the side or end of the car to the stakes or posts in such a manner that the shrinkage may be compensated for; Fig. 6 shows in perspective a modified joint-closing means; Fig. 7 is a cross section of the construction shown in Fig. 6, on line 7—7; Fig. 8 illustrates in elevation a modified form of tightening means; Fig. 9 is a cross section through the same on line 9—9 of Fig. 8; and Fig. 10 is a view similar to Fig. 8, of still another modification.

The car shown has the usual channel center-sills 20, 20, and bellied, channel side-sills 21, 21, to which the lower ends of vertical metallic posts 22 and 23 are riveted or other-

wise secured, the lower ends of diagonal braces 24 being also fastened to such sills. At their upper ends these posts and braces are attached to the outer faces of the webs of channel roof-beams 25 having their top and bottom flanges inwardly extended, as shown clearly in Figs. 2 and 4. The boards or planks 26 forming the car-body wall are bolted, as at 27 (Fig. 5), to the flanges of the posts and braces, the latter being slotted, as at 28, so as to permit of the tightening hereinafter described. In the particular embodiment illustrated in Figs. 1 to 5, inclusive, the bottom flange of each roof-beam 25 has riveted or otherwise secured thereto an inverted U-shaped apron or shield 29 straddling the top board of the series forming the car-body side-wall. Such top board, characterized 26^a, has fastened thereto at intervals in any approved manner a plurality of wedges 30, and above such wedges are cooperating wedge-blocks 31 pinned at 32 or otherwise secured to a longitudinal bolt or rod 33 extended through the end walls of the car and provided at each end with a threaded section 34 on which is a tightening nut 35, between which and the end wall are interposed one or more washers 36. As I have illustrated and shown particularly in Figs. 3 and 4, these wedges and wedge-blocks are housed within the U-shaped shield 29 and disposed between the top edge of the upper board 26^a and the channel or roof-beam 25, the constructions of the two side walls of the car being identical.

Assuming that the boards or planks constituting the walls of the car-body have shrunk so that the joints or seams between the same have opened up and that it is desirable to close the latter, the bolts 27 are loosened so as to permit shifting of the boards or planks relative to the posts and braces. Then the nut 35 at one end of the car is loosened or turned back, while the corresponding nut 35 at the other end of the car is tightened up, whereby through means of the connecting rod 33 to draw the wedge-blocks simultaneously in such a direction that their coaction with the wedges 30 fastened to the top board or plank 26^a will cause a considerable pressure on the latter, forcing the same and the other boards below it downwardly and closing up all of the open seams or joints. It will be understood,

of course, that this movement of the boards or planks is permitted because of the slotted relation between the bolts 27 and the flanges of the posts or inclined braces, and as soon as these joints or seams have been closed in the manner indicated, the nuts of the bolts 27 are again tightened so as to hold and maintain these boards in their new positions, with all the seams or joints closed.

It should be apparent and obvious from the illustration and above description of the device and its operation that the joints are closed throughout the entire length of the car, due to the simultaneous shifting of a plurality of wedge-blocks cooperating with the inclined faces of wedges held in cooperative relation with the boards or planks. It will be furthermore apparent that distortion or displacement of the rod 33 is prevented by reason of the fact that the top surfaces of the wedge-blocks 31, by sliding on the central or connecting portion of the U-shaped apron 29, transmit the pressure, tending to raise such blocks directly to the channel roof-beams 25, which are well able to withstand the same, and it is for this reason that this wedge-tightening means is interposed between these roof-beams and the wall boards.

Instead of operating all of the wedges at the same time, they may be capable of individual actuation, and in Figs. 6 and 7 a somewhat modified construction is illustrated. In this case the bottom flange of the channel roof-beam 40 is slit at intervals transversely at 41 and longitudinally for a desirable distance at the junction of the flange with the roof-beam web, and these sections are then bent so as to provide the vertical portions 42 and the horizontal ears 43, the latter lying against the inner face of the roof-beam top flange, and being riveted thereto. The top board or plank 26^a has fastened thereto at intervals corresponding to and occupying the spaces provided by such bending of the flange sections, a plurality of wedges 44, and above each of these wedges, between its top inclined surface and the upper flange of the roof-beam, I interpose a slidable wedge-block 45 having secured thereto a threaded rod or shank 46 extending longitudinally of the beam 40 through an aperture in the part 42 of the upturned flange, and the protruding portion of such shank or threaded rod I provide with a nut 47, the turning of which shifts the wedge-block 45 so as to force downwardly at that point the board or plank 26^a.

Clearly, then, such wedge-blocks and wedges may be individually operated for tightening up the joints in a manner somewhat similar to that described above. In order to cover the space between the top board and the roof-beam, I rivet to the outer face of the latter's web a depending metallic plate or

apron 48, which prevents the entrance of dirt, moisture and the like from the exterior to the inside of the car.

By reference now to Figs. 8 and 9, it will be observed that a somewhat different modification is illustrated therein. This device shows the same top board 26^a, the same channel roof-beam 40 and the apron or cover plate 48, but instead of using a single wedge for each wedge-block, I employ between the top board and the bottom flange of the roof-beam a pair of wedges 49 and 50 bearing against the roof-beam and top board, respectively, as illustrated. Between their diverging faces I interpose a wedge-block 51, the two active faces of which are divergent, as indicated. The small end of this wedge-block has fastened thereto a threaded rod 52, which passes through an apertured plate or large washer 53 overlying the ends of the two wedges 49 and 50, and I supply the protruding end of such threaded rod with an actuating nut 54. By turning such nut, the wedge block 51 may be drawn inwardly between the wedges 49 and 50 so as to force the wedge 50 downwardly, pressing the edge-to-edge disposed boards in the same direction and closing all open joints and seams. As in the previous instance, a number of such joint-closing wedge means would be employed at proper points throughout the length of the car. In this instance it is not necessary to fasten the wedges 49 and 50 to the parts against which they bear, since they are effectively locked in position by the interposed wedge and the plate or block 53.

Referring now to Fig. 10, another style of independently operated wedge construction is shown. I have supplied the top board and the roof-beam with the same reference characters 26^a and 40 as in the previous instance, and have also illustrated the apron or cover plate 48. Between the parts 40 and 26^a I interpose a wedge 60 bearing against the bottom surface of the roof-beam, and a wedge-block 61 resting on the top face of the upper board 26^a, their inclined active surfaces bearing upon one another, as is clearly shown. The upper wedge-block has at its large end a depending ear or lug 62 apertured for the passage therethrough of the threaded stem or shank 63 secured to the wedge-block 61, the latter, as in all previous instances, having a nut 64 on the same and adapted to abut against the lug 62. By turning such nut and permitting the same to press against such ear, the wedge-block 61 may be drawn forwardly, thereby pressing downwardly the board 26^a and those below it.

To those skilled in the art a number of desirable embodiments of the invention will doubtless occur, after the heart and essence of the invention are understood from this description, and it will therefore be readily

appreciated that this invention is not limited and restricted to the precise structures shown and described, because their mechanical features may be considerably varied without the loss of any of the advantages and benefits accruing from the invention.

I claim:

1. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, wedge means acting on said boards, and means to shift said wedge means to close the joints between the boards, substantially as described.
2. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, and wedge means acting on said boards and capable of actuation to close the joints between the boards, substantially as described.
3. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, wedge means acting on said boards, and screw means to shift said wedge means whereby to close the joints between the boards, substantially as described.
4. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a roof-beam, and means acting on said boards to close the joints between the same and disposed between the top board and said roof-beam, substantially as described.
5. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a roof-beam, and wedge means acting on said boards and disposed between the top board and said roof-beam whereby the shifting of said wedge means may be employed to close the joints between the boards, substantially as described.
6. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a roof-beam, wedge means acting on said boards and disposed between the top

board and said roof-beam, and screw means to shift said wedge means whereby to close the joints between the boards, substantially as described.

7. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a roof-beam, means for closing the joints between the boards disposed between the top board and said roof-beam, and a shield or apron covering the space between said top board and roof-beam, substantially as described.

8. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a plurality of wedges adapted to act on said boards and close the joints between the same, and means to simultaneously shift said wedges to close such joints, substantially as described.

9. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a roof-beam, a plurality of wedges resting on the top board between the same and said roof-beam, a plurality of wedge-blocks coacting with said wedges, and means to simultaneously actuate said wedge-blocks whereby to close the joints between the boards, substantially as described.

10. In a railway car-body wall, the combination of a plurality of boards disposed edge to edge, a roof-beam above said boards, a plurality of wedges between the upper board and said roof-beam, a plurality of wedge-blocks cooperating with said wedges, a screw-threaded rod to which said wedge-blocks are secured, and nuts on said rod by means of which the latter and its wedge-blocks may be shifted to close the joints between the boards, substantially as described.

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