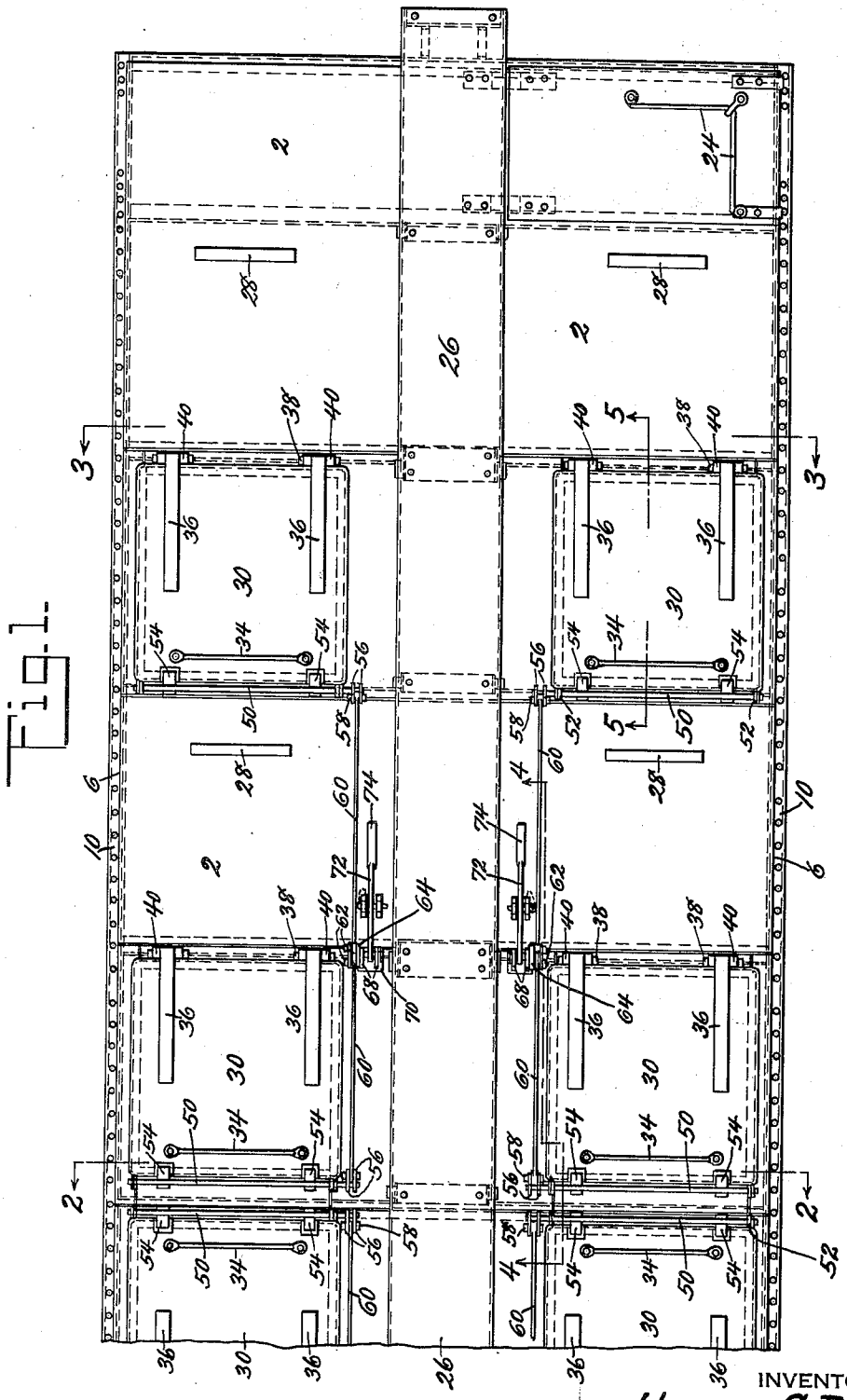
Dec. 14, 1943. H. G. PELLNITZ 2,336,566

LATCH FOR RAILWAY HATCH COVERS

Filed June 6, 1942 3 Sheets-Sheet 1

Fig. 1.



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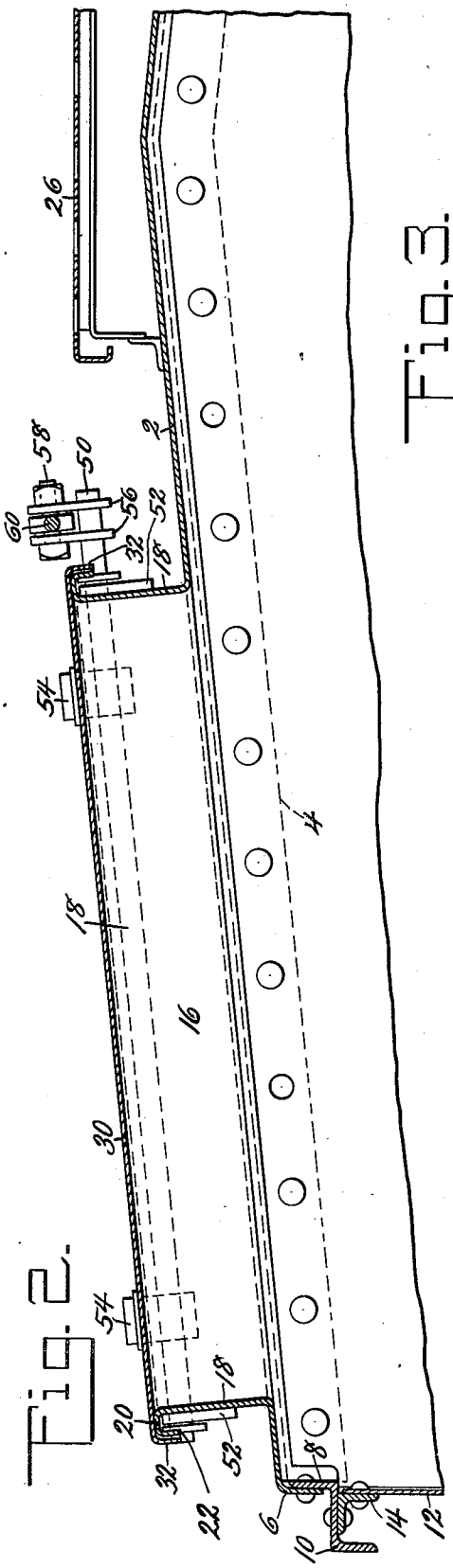

Fig. 2.

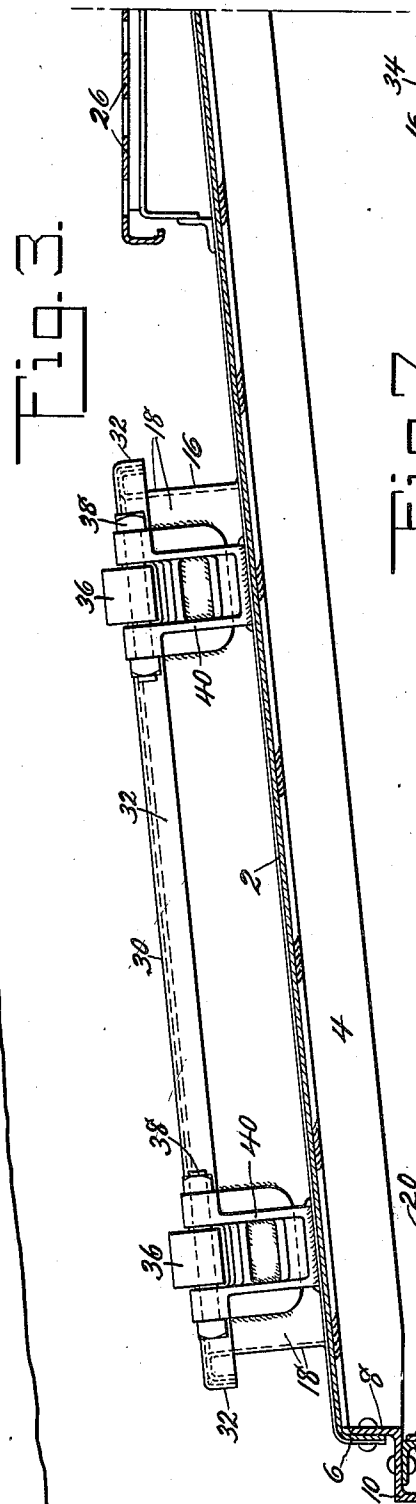

Fig. 3.

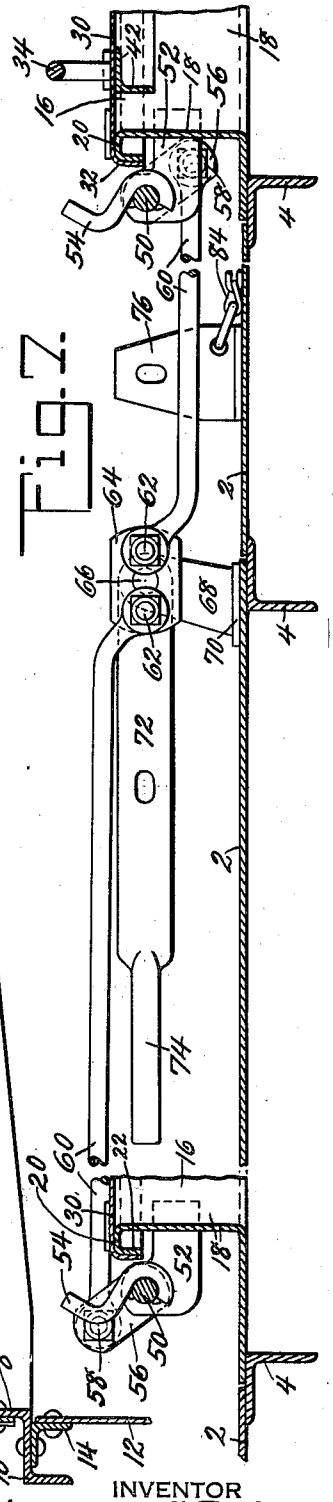

Fig. 7.

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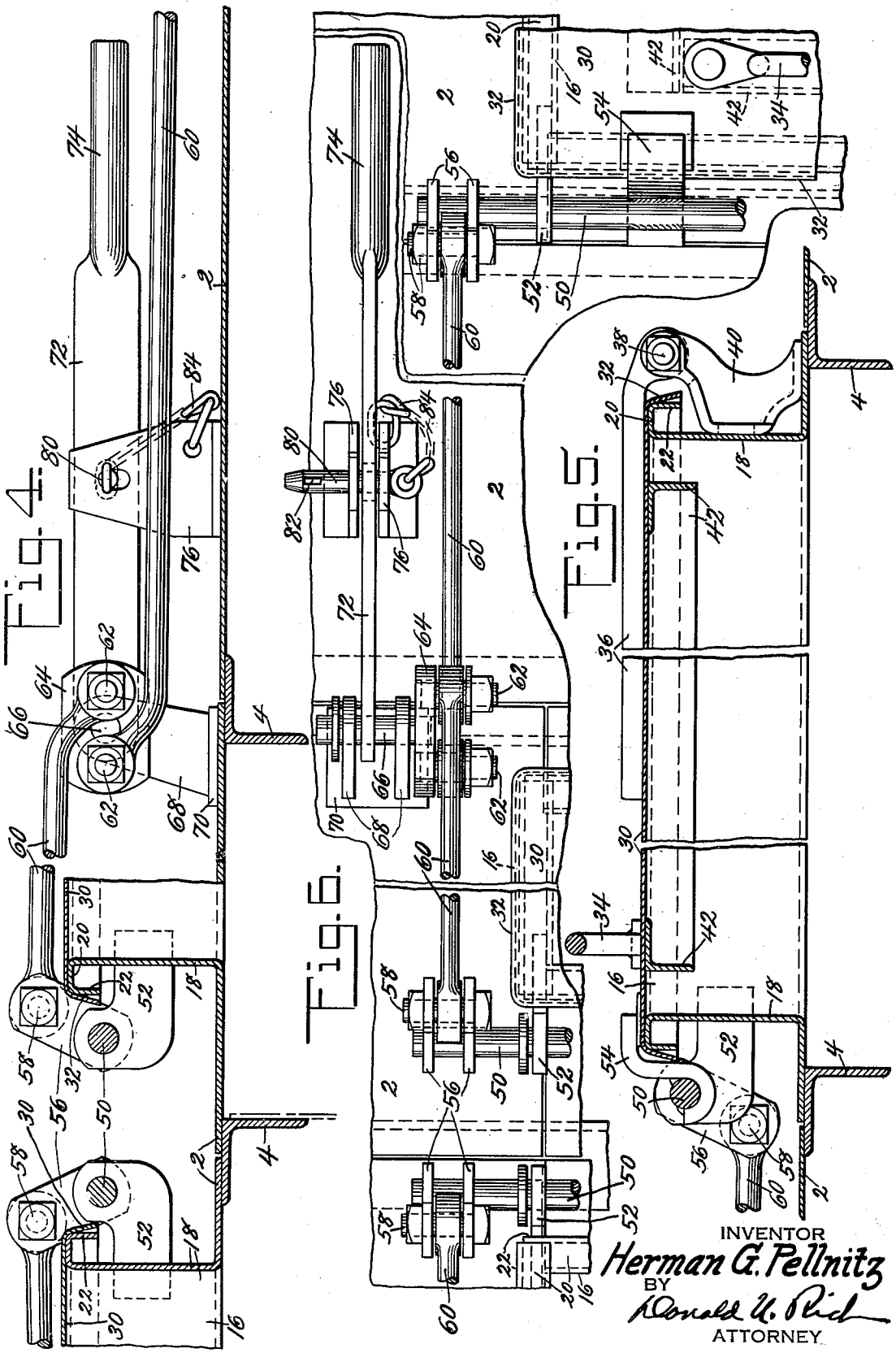

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LATCH FOR RAILWAY HATCH COVERS

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Application June 6, 1942, Serial No. 446,115

7 Claims. (Cl. 105—377)

This invention relates to railway cars in general and in particular to latches for hatch covers of covered railway hopper cars.

In recent years a large number of commodities have been shipped in bulk in covered railway hopper cars, thus speeding up both the loading and unloading of the commodity and obviating the necessity of individual containers, sacks, etc. A large number of these covered hopper cars have been provided with individual latches for each hatch cover, thus necessitating extreme care on the part of the parties filling the car in order that all hatches would be closed and sealed to prevent damage to the commodity. Recently latches have been built to operate a plurality of locks for a plurality of hatch covers, but the operating means for these latches has been of necessity located near the side of the car thereby requiring the operator to leave the running board and walk on the car roof sheets. This is extremely dangerous and also time-consuming since the operator would have to go from one side of the car to the other. It is an object, therefore, of the present invention to provide latch means for a covered hopper car in which the operating means for the latches are located adjacent the running board and operable therefrom.

It is a further object of the invention to provide latch means for the hatch covers located on opposite sides of the running board and controllable in multiple by operating means located on the same side of the running board as the hatch covers.

A still further object of the invention is the provision of latch means for the hatches of covered hopper cars which latch means are operable in independent pairs located on opposite sides of the running board.

These and other objects of the invention will be apparent to persons skilled in the art from a study of the following description and accompanying drawings, in which

Figure 1 is a plan view of substantially one-half of the roof of a covered hopper car;

Fig. 2 is a sectional view taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 1 and showing the latches in locked position;

Fig. 5 is a sectional view taken substantially on line 5—5 of Fig. 1;

Fig. 6 is an enlarged detail plan view showing the improved latch mechanism in locked position, and

Fig. 7 is a sectional view similar to Fig. 4 but disclosing the mechanism in unlocked position.

Referring now to the drawings in detail, it will be seen that the car roof is formed by sheets 2 welded or otherwise secured along their edges to carlines 4 and flanged downwardly on their ends as at 6 for attachment to the upstanding flange 8 of the side plate 10 of Z formation. This side plate is connected to the hopper side sheets 12 by means of an angle 14, all as clearly shown in Figs. 2 and 3. Certain of the roof sheets are solid, while others are formed with openings provided by flanging upwardly portions of the roof sheet to form a hatch frame 16. The hatch frame, as clearly shown in the figures, is formed with a vertically extending web portion 18, a horizontal upper flange 20 and a downwardly extending reflanged portion 22. The roof is also provided with roof grab irons 24 and a longitudinally extending running board 26 secured in any suitable manner to the roof sheets. The roof also is provided with reinforcing bars 28 secured on the upper surface thereof and adapted to provide striking surfaces against which the lifting handles of the hatch covers may strike, thereby preventing damage to the roof sheets.

Each of the hatch openings is normally covered by a hatch cover 30 which, in the present instance, is formed as a flat plate having downwardly diverging side flanges 32 adapted to overlap the reflanged portions of the hatch frames in providing a weather seal. Each of the hatch covers has attached thereto a lifting handle 34 and hinge straps 36. The hinge straps engage and are carried by pivot pins 38 carried by hinge butt castings 40 securely fastened to the roof of the car, as clearly shown in Figs. 1, 3 and 5. The hatch covers, as more clearly shown in Fig. 5, are reinforced against bending by means of an angle iron frame 42 located inwardly from the side flanges of the cover.

In order to lock the covers in position covering the hatch openings or to release the covers for opening, latches are provided. These latches each comprise latch rods 50 pivotally carried by brackets 52 welded or otherwise secured to the hatch frames. Each of the latch rods has welded or otherwise secured thereto latches 54 swingable upon rotation of the rod toward or away from the free or adjacent edge of the hatch cover. The inner ends of each latch rod have rigidly secured thereto, such as by welding, spaced plates

56 which constitute cranks to cause operation of the latch rods. The ends of the cranks 56 remote from the latch rods are pierced to receive a pivot pin or bolt 58. These pivot pins or bolts support one end of an operating link 60, the other end of which is pivotally mounted upon a pivot pin or bolt 62. The operating links 60 of adjacent latches extend toward each other for connection to the pivot pins 62. As clearly shown in Figs. 4, 6 and 7, the pivot pins 62 are carried upon the ends of an arm 64 rigidly connected to a pivot rod 66 journaled in spaced brackets 68, rigidly attached to the roof sheets through the medium of a base member 70. The pivot rod has rigidly connected thereto between the brackets 68 an operating bar 72 having a handle portion 74. The operating bar, when in hatch cover locking position, is located between the upstanding legs 76 of angle form members secured to the car roof. These upstanding legs of the angle form members, as well as the operating bar 72, are pierced to receive a locking pin 80 having an opening 82 for reception of a seal. Loss of the locking pin is prevented, as is customary, by means of a carrying chain 84.

It will be seen from the preceding description that the latches for the hatch covers are connected together in pairs on either side of the running board, with the operating means for each pair located adjacent to and accessible from the running board, thereby permitting the operator to work the latches from the running board. It will also be seen that the operator can, if desired, simultaneously operate two pair of latches since the operating handles are located adjacent each other although on opposite sides of the running board. The latches have been shown as connected together in pairs, but it will be obvious that they may, if desired, be connected together in threes or fours or in any other manner desired. It will be obvious that it is only necessary for an operator to remove the locking pin and lift upwardly on the handle 74 and swing the same through an arc of approximately 180 degrees in a plane parallel to the running board in order that the latches of adjacent hatch covers be released. During lifting of the operating handle the pivot pins 62 will impart a thrust to links 60 which in turn will, through the cranks 56, cause rotation of the latch rods, thereby swinging the latches out of engagement with the hatch covers. When the hatch covers are fully unlocked the component parts of the latch mechanism will be in the position shown by Fig. 7 and the hatch covers may be lifted. Movement of the operating handle in the opposite direction will cause a reversal of the movement just described and cause the latches to be swung toward the hatch covers to lock the same in position on the hatch frames.

While the invention has been described more or less in detail, it will be obvious that various modifications and rearrangements of parts may be made by persons skilled in the art and all such modifications and rearrangements of parts are contemplated as will fall within the scope of the appended claims defining my invention.

What is claimed is:

1. In a railway car construction, a car roof, a running board secured to the roof, hatch frames outlining a plurality of openings in the roof on either side of said running board, hatch covers normally covering said openings and being swingable longitudinally of the car to expose said openings, latch rods extending transversely of the car adjacent the free edges of said hatch covers, latches secured to each latch rod and swingable toward and away from the adjacent hatch cover to lock or release the same, cranks fixed on the inner ends of said latch rods, and means located adjacent said running board and joining adjacent cranks on the same side of the running board together for simultaneous movement thereby causing simultaneous swinging of said latches to lock or release the hatch covers, said means being manually operable from a position on the running board and swinging parallel to said running board whereby said running board is unobstructed at all times.

2. In a railway car construction, a car roof, a running board secured to the roof, hatch frames outlining a plurality of openings in the roof on either side of said running board, hatch covers normally covering said openings and being swingable longitudinally of the car to expose said openings, latch rods extending transversely of the car adjacent the free edges of said hatch covers, latches secured to each latch rod and swingable toward and away from the adjacent hatch cover to lock or release the same, cranks fixed on the inner ends of said latch rods, links connected to said cranks and positioned substantially parallel to said running board, and operating means joining certain of said links together for simultaneous movement thereby causing simultaneous swinging of said latches to lock or release the hatch covers, said operating means being manually operable from the running board and swingable parallel thereto whereby said running board is unobstructed at all times.

3. In a railway car construction, a car roof, a running board secured to the roof, hatch frames outlining a plurality of openings in the roof on either side of said running board, hatch covers normally covering said openings and being swingable longitudinally of the car to expose said openings, latch rods extending transversely of the car adjacent the free edges of said hatch covers, latches secured to each latch rod and swingable toward and away from the adjacent hatch cover to lock or release the same, cranks fixed on the inner ends of said latch rods, independent links positioned substantially parallel to said running board on either side thereof and being connected to said cranks, independent operating means adjacent either side of said running board and connecting adjacent links on the same side of the running board together for simultaneous movement thereby causing simultaneous swinging of said latches to lock or release the hatch covers, said operating means being manually operable from the running board and swingable parallel thereto whereby said running board is unobstructed at all times.

4. In a railway car construction, a car roof, a running board secured to the roof, said roof including hatch frames outlining a plurality of openings at one side of the running board, hatch covers hingedly connected to said roof and normally covering said openings and being swingable longitudinally of the car to expose said openings, latch rods carried by said roof and extending transversely of the roof adjacent the free edges of said hatch covers, latches secured to each latch rod and swingable toward and away from the adjacent hatch cover to lock or release the same, cranks secured to said latch rods adjacent the running board, and operating means carried by said roof and joining adjacent cranks to-

gether for simultaneous movement to thereby cause simultaneous swinging of said latches to lock or release the hatch covers, said operating means being manually operable from the running board and swingable parallel thereto whereby said running board is unobstructed at all times.

5. In a railway car construction, a car roof, hatch frames outlining openings in the roof, a running board secured to the roof, said roof including a plurality of hatch covers hingedly connected to the roof and normally covering said openings, latches swingable longitudinally of the car toward and away from the adjacent cover to lock or release the same, and latch operating means joining said latches together for simultaneous movement and including an operating handle located adjacent said running board and swingable in a plane substantially parallel thereto whereby said running board is unobstructed and said latches may be manually operated from the running board.

6. In a railway car construction, a car roof, hatch frames outlining openings in the roof, a running board secured to the roof, said roof including a plurality of hatch covers hingedly connected to the roof and normally covering said openings, latches swingable longitudinally of the car toward and away from the adjacent cover to lock or release the same, and latch operating means joining said latches together for simultaneous movement and including an operating handle located adjacent said running board and swingable in a plane substantially parallel thereto, said hatch frames being located on either side of said running board and said latch operating means being also located on either side of and adjacent said running board and wholly independent of each other.

7. In a railway car construction, a car roof, a running board secured to the roof, a plurality of hatch frames outlining openings in the roof on each side of said running board, a plurality of hatch covers hingedly connected to the roof and normally covering said openings, independent latch means carried by the roof and movable into and out of engagement with said hatch covers to lock and release the same, and a plurality of operating means adjacent and swinging parallel to the running board on either side thereof and connecting said latch means together in independent pairs located upon opposite sides of said running board.

HERMAN G. PELLNITZ.