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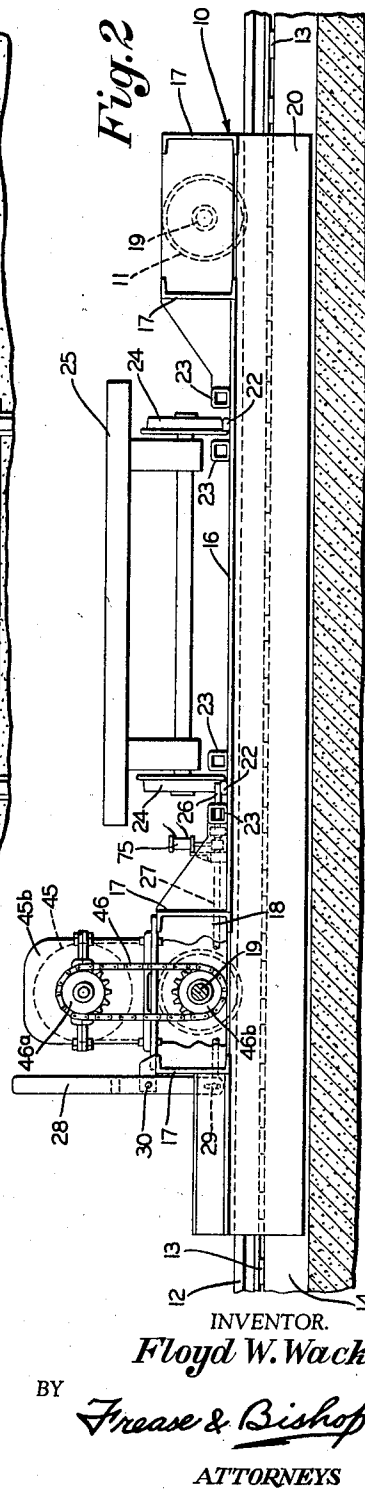
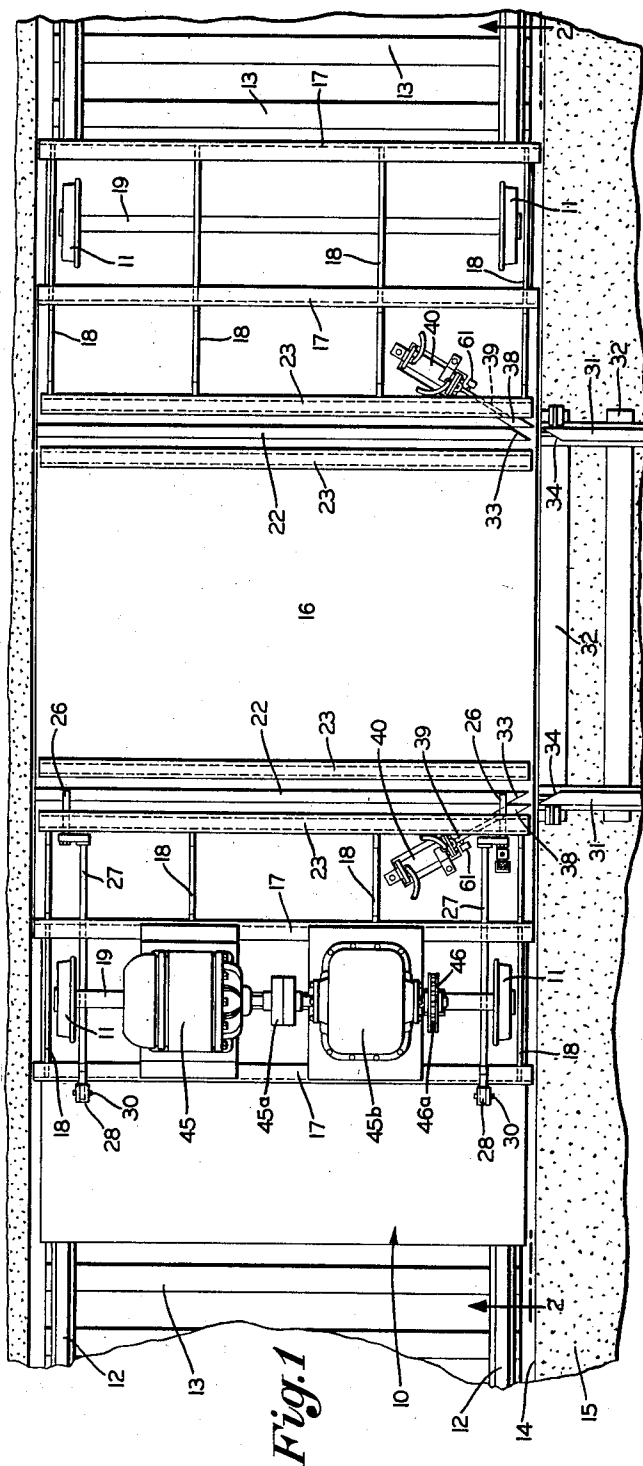
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2,919,657

RAIL LOCK FOR TRANSFER CARS

Filed April 17, 1957

3. Sheets-Sheet 1



F. W. WACK

RAIL LOCK FOR TRANSFER CARS

3 Sheets-Sheet 2

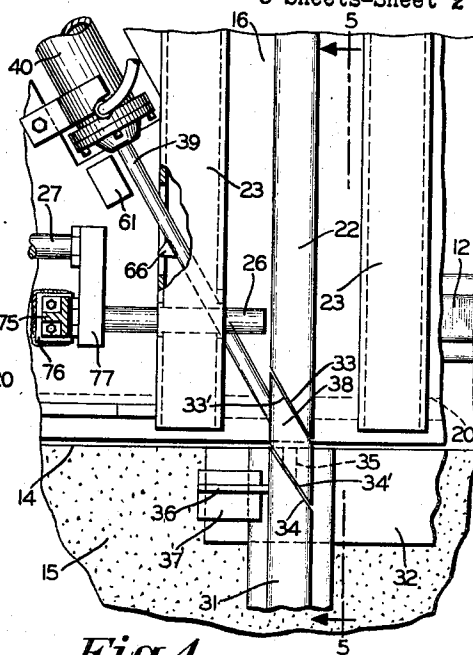


Fig. 3

Fig.4

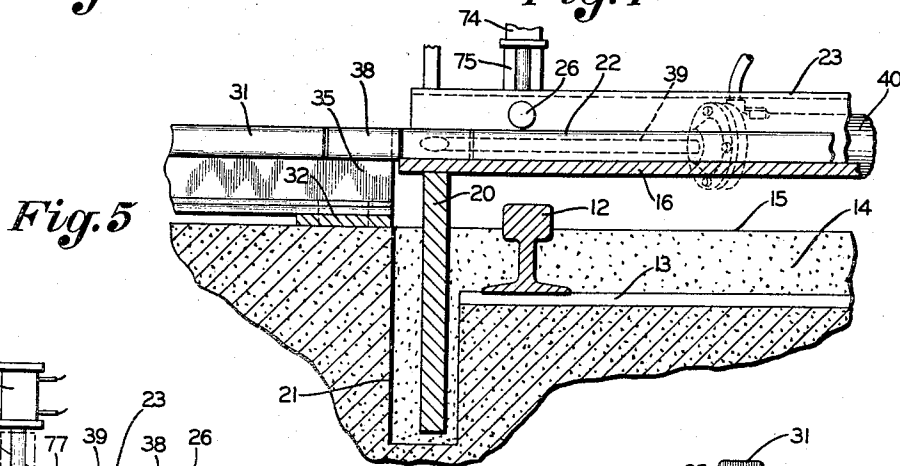


Fig. 5

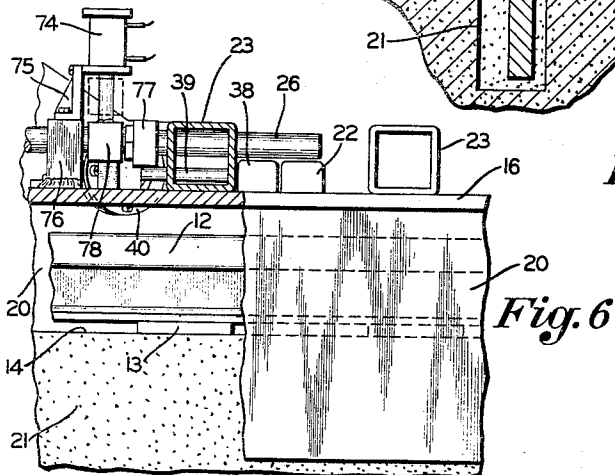
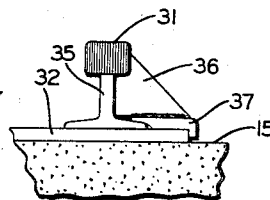


Fig. 7



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3 Sheets-Sheet 3

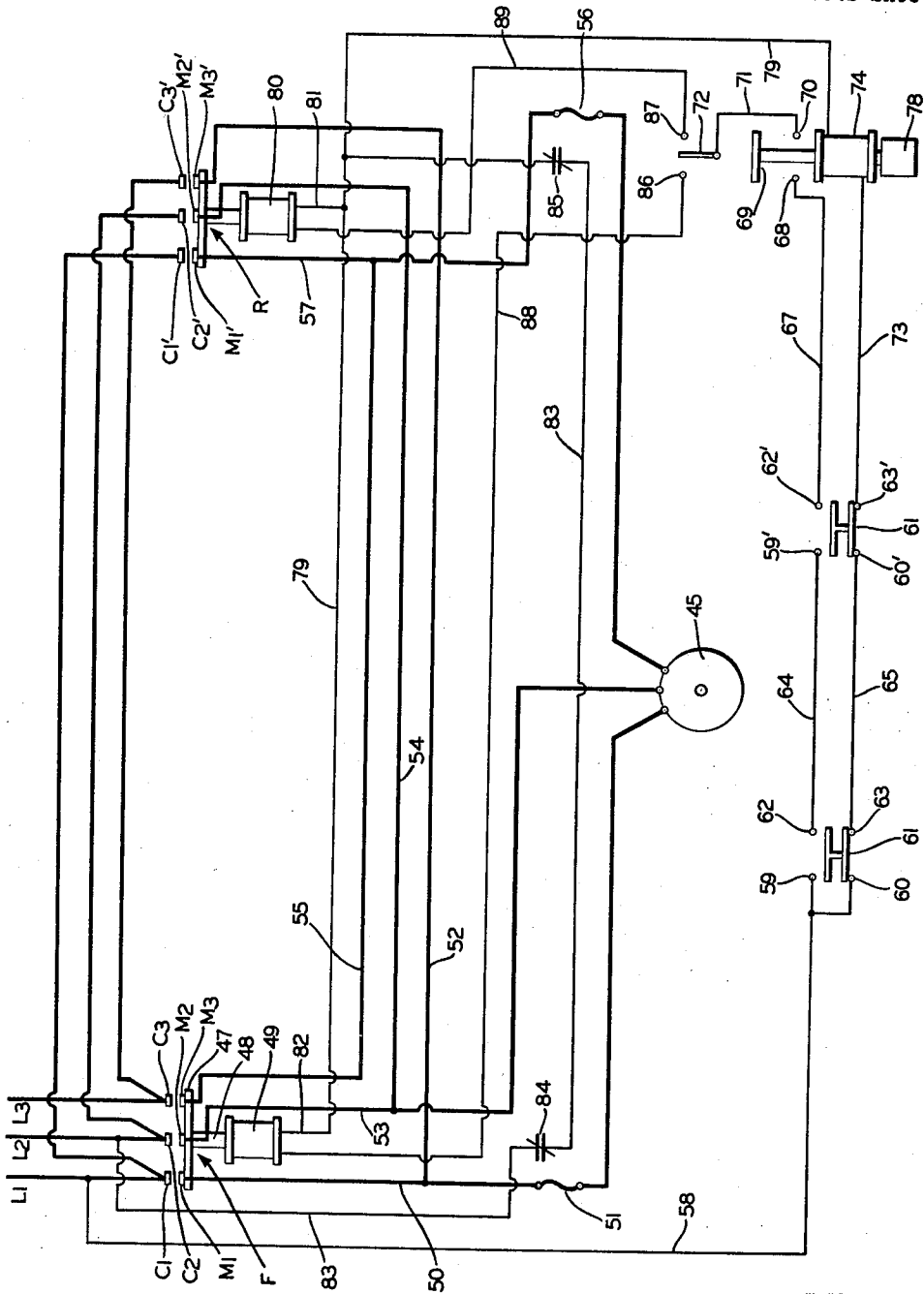


Fig. 8

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RAIL LOCK FOR TRANSFER CARS

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6 Claims. (Cl. 104—48)

The invention relates to a transfer rail lock, and more particularly to such a device carried upon a transfer car having transversely disposed track rails thereon.

It is common practice, in the operation of tunnel kilns and the like, to move cars containing bricks or other formed clay products through the kilns upon longitudinally disposed track rails. These cars are moved to position at the entrance end of the kiln upon a transfer car moving upon tracks located perpendicular to the track rails in the kiln.

For the purpose of mounting the car containing the bricks or the like upon the transfer car, a pair of transversely disposed rails are carried by the transfer car and adapted to be positioned in alignment with the track rails in the kiln by movement of the transfer car to proper position relative thereto.

The load bearing car, carrying the bricks or the like, may then be moved from the rails on the transfer car to the track rails leading to the kiln, or vice versa. For this purpose it is necessary that the transfer car be accurately positioned so as to properly align the rails thereon with the track rails leading into the kiln in order that the load bearing car, containing the bricks or the like, may be rolled from the rails on the transfer car to the rails leading into the kiln, or vice versa.

It is also necessary that the opposed ends of the rails on the transfer car and the rails leading into the kiln be slightly separated in order that the transfer car may be unobstructed as it is moved in a path perpendicular to the kiln.

Thus, when the two sets of rails are aligned and a heavily laden car of bricks or the like is moved from one set of rails to the other, the wheels of the brick-laden car will pound or hammer as they pass over this space or joint between the ends of the aligned rails, jarring or jolting the load of ware on the cars, frequently resulting in damage to the ware or load on the car.

Furthermore, no means is provided upon such transfer cars for locking them in position, with the rails thereon in alignment with the track rails leading into the kiln, and it will be obvious that slight movement of the transfer car during the transfer operation may result in derailment of the heavily-laden brick car.

Such transfer cars are usually motor driven, and are ordinarily provided with wheel stops movable relative to the transverse rails upon which the load-bearing car is located. These wheel stops should be positioned over the transverse rails before the motor is operated to move the transfer car. Otherwise, the load-bearing car might accidentally move off of the transfer car, while the transfer car is in motion, causing damage to the load of materials as well as to the equipment.

It is an object of the present invention to provide means for overcoming the above-mentioned objections and difficulties.

Another object is to provide a transfer rail lock which will lock the transfer car against movement.

A further object is to provide a device of this char-

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acter which completely fills the space between the end of each rail on the transfer car and the opposed end of the corresponding track rail leading into the kiln.

A still further object is the provision of a device of the character referred to in which the ends of the rails on the transfer car and those leading into the kiln are cut off at angles, and a correspondingly shaped locking block is slidably moved into position therebetween entirely filling the space between the opposed ends of the rails.

It is also an object to provide such a device in which the opposed ends of the rails on each side are angled oppositely to those on the other side, whereby when the angular locking blocks are moved into position therebetween, the transfer car will be locked against movement in either direction.

Another object is to provide interlocking means to permit starting of the motor on the transfer car only when the wheel stops are in wheel-blocking position relative to the transverse rails on the transfer car.

A further object is to provide an interlock between the rail locks and the motor which prevents starting of the motor when rail locks are in the locked or closed position.

A still further object of the invention is to provide an interlock between the rail locks and the wheel stops which prevents moving the wheel stop from wheel-blocking position when the rail locks are in the open or unlocked position.

The above and other objects, apparent from the drawings and following description, may be attained, the above described difficulties overcome and the advantages and results obtained, by the apparatus, construction, arrangement and combinations, subcombinations and parts which comprise the present invention, a preferred embodiment of which, illustrative of the best mode in which applicant has contemplated applying the principle, being set forth in detail in the following description and illustrated in the accompany drawings.

In general terms, the invention may be described as comprising a pair of track rails upon which a transfer car is movably mounted, the transfer car having a spaced pair of transversely disposed rails thereon for mounting a load-carrying car, a pair of track rails, leading to a kiln or the like, being located perpendicularly to the track rails upon which the transfer car is movable, the transfer car being adapted to be moved into position so that the transfer rails thereon may be located in alignment with the track rails leading into the kiln.

Opposed ends of the track rails and the rails upon the transfer car are cut off at angles, the ends of the rails on each side being angled oppositely to those on the other side. Angular locking blocks, shaped to fill the spaces between the opposed angular ends of the rails, are adapted to be moved into locking position therebetween by means of fluid-operated cylinders, or the like, so as to form flush joints between the two sets of rails and to lock the transfer car against movement when the rails thereon are properly aligned with the track rails.

Having thus briefly described the nature of the invention and the operation thereof, reference is made to the accompanying drawings, in which:

Fig. 1 is a top plan view of a transfer car and the adjacent ends of a pair of track rails, showing the transfer rail lock mechanism upon the transfer car in unlocked or open position;

Fig. 2 is a vertical sectional elevation taken as on the line 2—2, Fig. 1;

Fig. 3 is an enlarged, fragmentary plan view of one of the transfer rail locks and associated parts, showing the same in the unlocked or open position;

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Fig. 4 is a view similar to Fig. 3, showing the transfer rail lock in the closed or locked position;

Fig. 5 is a section taken on the line 5—5, Fig. 4;

Fig. 6 is a section taken on the line 6—6, Fig. 3;

Fig. 7 is a section taken on the line 7—7, Fig. 3; and

Fig. 8 is a diagram of the electric interlock.

Referring now to the embodiment of the invention illustrated in the drawings, in which similar numerals refer to similar parts throughout, a transfer car is indicated generally at 10, provided with conventional railroad car wheels 11, by means of which the transfer car may be moved upon the tracks 12, which are mounted upon ties 13 located in a pit 14 located below the floor level 15.

The transfer car may be of conventional construction and comprises generally the horizontal platform 16 having a spaced pair of transversely disposed channel members 17 mounted near each end thereof with spaced plates 18 connected thereto and forming housings for the axles 19 and wheels 11 thereon.

Longitudinally disposed plates 20 are welded, or otherwise attached to, the underside of the bed or platform 16 of the transfer car, near each longitudinal edge portion thereof, and extend downwardly into longitudinal recesses 21 provided in the pit 14.

For the purpose of mounting a load-bearing car transversely upon the transfer car, a spaced, parallel pair of transversely disposed rail balls or heads 22 are fixed upon the top of the platform or bed 16 of the transfer car, at substantially the central portion thereof. Tubular reinforcing members 23 may be mounted upon the top of the platform 16 on each side of each of the rails 22.

The wheels 24, of a conventional type of load-bearing car 25, are adapted to roll upon the rails 22 on the transfer car. For the purpose of providing stops to prevent the load-bearing car from accidentally rolling off of the rails on the transfer car, stop members 26 are adapted to be projected over the top of one rail 22, near opposite ends thereof, as best shown in Fig. 1.

The stop members 26 are connected, by the rods 27, to an operating lever 28 by a slotted connection as indicated at 29. Each lever 28 is fulcrumed intermediate its ends upon one of the channel members 17 as indicated at 30.

With the levers 28 in the upright position, as shown in Figs. 1 and 2, it will be seen that the stop members 26 are projected over opposite ends of the adjacent rail 22 so as to prevent the wheels 24 of the load-bearing car from passing over the same. By swinging the upper ends of the levers 28 to the right, as viewed in Figs. 1 and 2, the stop members 26 will be withdrawn from the rail 22 to the position shown in Fig. 4.

All of the above structure may be of conventional transfer car design and in itself forms no part of the present invention, which is concerned with the transfer rail lock to be later described.

As in usual practice, the load-bearing car 25 is adapted to be moved from the rails 22 of the transfer car onto a pair of track rails 31, located perpendicular to the path of the transfer car and extending into a continuous kiln, drier or the like.

The rails 31 are mounted upon ties 32 located upon the floor 15, and the tops of the rails 31 are in the same horizontal plane as the tops of the rails 22 on the transfer car. For the purpose of the invention, the opposed ends of the rails 22 and 31 are cut off at angles, as indicated at 33 and 34 respectively. As shown in Fig. 1, it will be seen that the opposed ends of the rails 22 and 31 at the right are cut off at angles opposite to the rails 22 and 31 at the left.

As best shown in Fig. 3, it will be seen that only the ball of each rail 31 is cut off at an angle, the web 35 thereof remaining intact, for a purpose to be later explained.

In order to support the tapered end of the ball of each rail 31, a gusset plate 36 is provided, fitting under the

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tapered end of the ball of each rail 31 and connected to a clip 37 extending over the adjacent flange of the rail and attached to the adjacent tie 32.

With the opposed ends of the rails 22 and 31 cut off at angles as indicated at 33 and 34, it will be seen that a considerable space is provided between the opposed ends of the rails 22 and 31.

For the purpose of closing these spaces between the rails so as to provide an unbroken surface for the wheels 24 of the load bearing car, as said car is moved from the transfer car to the rails 31 or vice versa, a movable lock block 38 is provided for each rail joint.

This block is shaped to conform to the heads of the rails, and the ends thereof are cut off at angles 33' and 34' corresponding to the angles 33 and 34 respectively of the rails 22 and 31. As best shown in Figs. 3 and 4, the angular ends 33 and 34 of the rails, and the angular sides 33' and 34' of the lock blocks are preferably slightly tapered for ease of operation, so as to facilitate the entrance of the lock blocks between the angular ends of the rails.

Each block 38 is of such size and shape that when moved to closed position, as best shown in Fig. 4, it closes the space between the opposed ends of the corresponding rails 22 and 31.

For the purpose of operating the rail lock blocks 38, each block is carried upon the end of a piston rod 39 of a double-acting fluid cylinder 40 mounted upon the bed or platform 16 of the transfer car and located at the proper angle to move the rail lock block 38 from the unlocked or open position shown in Fig. 3, to the locked or closed position shown in Fig. 4.

With the rail lock blocks 38 in the closed or locked position, as shown in Figs. 4 and 5, it will be seen that each block 38 entirely fills the space between the opposed ends of the corresponding rails 22 and 31, so that the wheels of a load-bearing car, such as shown at 25 in Fig. 2, may be moved over the blocks 38 from the rails 22 to the rails 31 or vice versa, without any pounding or hammering as the wheels pass over the rail joint, thus preventing damage to the load or ware.

It will also be evident that, since the ends of the rails 22 and 31 at the right side, as viewed in Fig. 1, are angled oppositely to the ends of the rails at the left side, the transfer car will be locked against movement upon the track rails 12 so that the rails 22 thereon will be held in alignment with the rails 31, permitting the transfer of the load-bearing car from the transfer car to the track rails 31, or vice versa.

It will also be seen that when the rail lock blocks 38 are moved to the closed or locked position, as shown in Figs. 4 and 5, the same will be supported partially upon the platform or bed 16 of the transfer car and partially upon the flange 35 of the rail 31, the top edge of which, as shown in Fig. 5, is in the same horizontal plane as the top of the platform 16 of the transfer car.

After the load-bearing car has been moved from the transfer car to the track rails 31 or vice versa, the cylinders 40 may be operated to withdraw the rail lock blocks 38 to the position shown in Figs. 1 and 3, so that the transfer car may be moved upon its rails 12 to any desired station for the loading or unloading of a load-bearing car, as the case may be.

Transfer cars such as shown are ordinarily operated by a reversing motor. Such a motor is indicated at 45 in Figs. 1, 2 and 3, operatively connected, through a fluid drive 45a and suitable reduction gearing 45b, to one axle 19 of the transfer car, as by a roller chain 46 located over sprockets 46a and 46b.

In order to prevent movement of the transfer car when the wheel stops 26 are in open position, or when the rail lock blocks 38 are in closed or locked position, and to prevent moving the wheel stops 26 from wheel blocking position when the rail lock blocks are in open or

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unlocked position, electric interlocking means may be provided.

This interlocking means is shown diagrammatically in Fig. 8, in which a three-phase circuit is provided for the motor 45, comprising the wires L1, L2 and L3 upon the transfer car, which may be connected, by trolley or the like in usual manner, to the line wires of a three-phase circuit.

These wires lead to the stationary contacts C1, C2 and C3 respectively of a solenoid switch, indicated generally at F, which controls operation of the motor 45 forwardly. The wires L1, L2 and L3 are also connected to the stationary contacts C1', C2', C3' of a solenoid switch, indicated generally at R, which controls operation of the reversing motor 45 in reverse.

The solenoid switch F comprises the movable contacts M1, M2 and M3, adapted to contact the fixed contacts C1, C2 and C3 respectively. These movable contacts are carried upon an insulation contact 47 fixed upon the armature 48 of the solenoid 49.

A wire 50 leads from the movable contact M1 of the switch F to the motor 45, and has a fuse or bi-metal heater 51 interposed therein. The wire 50 is also connected by wire 52 with the movable contact M3' of the solenoid switch R.

A wire 53 leads from the movable contact M2 of the solenoid switch F to the motor 45 and is connected by a wire 54 with the movable contact M2' of the solenoid switch R.

A wire 55 leads from the movable contact M3 of the solenoid switch F to the motor 45 and as fuse or bi-metal heater 56 interposed therebetween. The wire 55 is also connected by wire 57 to the movable contact M1' of the solenoid switch R.

With this circuit it will be seen that when the solenoid switch F is closed the line wires L1, L2 and L3 will be connected through the wires 50, 53 and 55 respectively with the motor 45 so as to operate the motor in forward direction.

In the same manner, when the solenoid switch R is closed the wires L1, L2 and L3 will be connected through the wires 57, 54 and 52 respectively with the motor 45 to operate the motor in reverse direction.

A control circuit is provided, including the wire 58 connected to the line wire L1 and leading to the upper and lower fixed contacts 59 and 60 respectively of a limit switch 61. The other upper and lower fixed contacts 62 and 63 of the limit switch 61 are connected by the wires 64 and 65 respectively to the fixed upper and lower contacts 59' and 60' of a second limit switch 61.

The limit switches 61 are located in convenient positions upon the transfer car so as to be operated by the lugs 66 upon the piston rods 39 of the cylinders 40.

The upper fixed contact 62' of the second limit switch 61 is connected by a wire 67 with the fixed contact 68 of a solenoid-operated switch 69, the other fixed contact 70 thereof being connected by wire 71 to the switch blade 72 of the starting switch.

The lower fixed contact 63' of the second limit switch 61 is connected by a wire 73 with one side of the solenoid 74 which operates the solenoid switch 69. The solenoid 74 may be mounted upon a bracket 75 on a stationary block 76 adjacent to the cross piece 77 of the wheel stop member 26.

A stop block 78 is carried on the lower end of the armature of the solenoid 74 and is adapted to drop by gravity into the position shown in Figs. 3 and 6, when the solenoid 74 is de-energized, so as to prevent the wheel stop member 26 from being withdrawn from wheel-blocking position across the adjacent rail 22.

The other side of the solenoid 74 is connected by wire 79 to one side of each of the solenoids 80 and 49 of the solenoid-operated switches R and F respectively, as indicated at 81 and 82. A wire 83 is connected at one end to the line wire L2 adjacent to the fixed contact C2

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of the solenoid-operated switch F, and at the other end to the wire 79.

Overload switches 84 and 85 may be interposed in the wire 83 adjacent to the fuses or bi-metal heaters 51 and 61 respectively. The switch blade 72 of the starting switch is adapted to be moved into contact with the fixed contacts 86 or 87, as desired. A wire 88 connects the fixed contact 86 with the solenoid 49 of the solenoid-operated switch F, and a wire 89 connects the fixed contact 87 with the solenoid 80 of the solenoid-operated switch R.

With the rail lock blocks 38 in the closed or locked position, as shown in Fig. 4, the limit switches 61 will have been operated by the lugs 66 on the piston rods 39 so as to move them to the positions shown in Fig. 8, contacting the fixed contacts 60, 63 and 60', 63' respectively, so as to close the circuit from the wire L1 through the wire 58, contact 60, switch 61, contact 63, wire 65, contact 60', switch 61, contact 63', wire 73, solenoid 74, wire 79 and wire 83 to the line wire L2, energizing the solenoid 74 and raising the stop block 78 out of the path of the cross member 77 of the wheel stop member 26 so that the same may be withdrawn from the rail 22, as shown in Fig. 4.

The load-bearing car may thus be moved from the rails 22 on the transfer car to the track rails 31 across the rail lock blocks 38. In order to start the motor 45, so as to move the transfer car upon its tracks 12, it is necessary that the rail lock blocks 38 be withdrawn to the open position as shown in Fig. 3.

The wheel stop member 26 should first be moved to wheel-blocking position, as shown in Fig. 3. When the cylinders 40 are then operated to withdraw the rail lock block 38 to the open or unlocked position, as shown in Fig. 3, the projections 66 on the piston rods 39 of the cylinders will operate the limit switches 61 moving them into contact with the upper contacts 59—62 and 59'—62'.

The solenoid 74 is thus de-energized, permitting the armature thereof to drop by gravity so that the stop block 78 will drop into position as shown in Figs. 3 and 6, between the cross member 77 of the wheel stop member 26 and the fixed block 76, preventing withdrawal of the wheel stop member 26.

As the armature of the solenoid 74 drops the switch 69 thereon will make contact with the fixed contacts 68 and 70. The circuit will thus be completed from the line wire L1 through the wire 58, contact 59, switch 61, contact 62, wire 64, contact 59', switch 61, contact 62', wire 67, contact 68, switch 69, contact 70 and wire 71 to the switch blade 72 of the starting switch.

If it is desired to operate the motor 45 forwardly to move the transfer car in a forward direction, the switch blade 72 is moved into contact with the fixed contact 86. The circuit will then be closed through the wire 88, solenoid 49 of the solenoid-operated switch F, wire 82, wire 79 and wire 83 to the line wire L2, energizing the solenoid 49 to close the switch F, so as to complete the circuit to the motor 45 to operate the same in forward direction.

If it is desired to operate the motor 45 in reverse, in order to move the transfer car in the opposite direction, the switch blade 72 of the starting switch is moved into contact with the fixed contact 87, closing the circuit through the wire 89, solenoid 80 of the solenoid-operated switch R, wire 81, wire 79 and wire 83 to the line wire L2, energizing the solenoid 80 to close the switch R, closing the circuit to the motor 45 to operate the same in reverse.

From the above it will be seen that a very simple and efficient interlock is provided which prevents starting of the motor 45 when the rail lock blocks 38 are in the locked or closed position, or when the wheel stop members 26 are in the open or unlocked position.

Furthermore, it will be seen that the interlock pro-

vents moving of the wheel stop members from wheel-blocking position when the rail locking blocks are in the open or unlocked position.

From the above it will be obvious that a simple, efficient and easily operated device is provided for forming a bridge between the opposed ends of the rails upon the transfer car and the track rails located perpendicular to the path of the transfer car and for locking the transfer car against movement with the rails thereon properly aligned with said perpendicular track rails.

Although the embodiment of the invention disclosed herein shows the same as applied to a transfer car, it should be understood that the invention in its broader aspects is equally well adapted for use in connection with turntables, drawbridges or other movable devices having rails thereon adapted to be moved into alignment with stationary track rails, whereby a load-bearing car may be transferred from one set of rails to the other without any jarring or jolting of the load thereon, the rail locks providing means for locking the turntable or other movable device against movement during the transfer operation.

In the foregoing description, certain terms have been used for brevity, clearness and understanding, but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are used for descriptive purposes herein and are intended to be broadly construed.

Moreover, the embodiments of the improved construction illustrated and described herein are by way of example, and the scope of the present invention is not limited to the exact details of construction.

Having now described the invention or discovery, the construction, the operation, and use of preferred embodiments thereof, and the advantageous new and useful results obtained thereby; the new and useful construction, and reasonable mechanical equivalents thereof obvious to those skilled in the art, are set forth in the appended claims.

I claim:

1. In combination with a transfer car having a flat horizontal bed and movable in a straight path, a pair of stationary track rails located perpendicular to the path of the transfer car, a pair of transversely disposed rail balls upon the bed of the transfer car adapted to register with the balls of said stationary track rails, opposed ends of said transversely disposed rail balls and the balls of said track rails having spaced acute angular ends substantially parallel to each other, acute angular rail lock blocks slidably mounted upon the bed of the transfer car and shaped to fit between said angular ends, and means for moving said rail lock blocks into position between the angular ends of the transversely disposed rail balls and the balls of said stationary track rails, so that each rail lock block is supported partially upon the bed of the transfer car and partially upon the top of the web of the corresponding track rail, said rail lock blocks holding the transfer car against movement when they are located between the angular ends of the rails.

2. In combination with a transfer car having a flat horizontal bed and movable in a straight path, a pair of stationary track rails located perpendicular to the path of the transfer car, a pair of transversely disposed rail balls upon the bed of the transfer car and adapted to register with the balls of said stationary track rails, opposed ends of said transversely disposed rail balls and the balls of said track rails having spaced acute angular ends substantially parallel to each other, acute angular rail lock blocks slidably mounted upon the bed of the transfer car, and fluid cylinders upon the transfer car for moving said rail lock blocks into position between the angular ends of the transversely disposed rail balls and the balls of said stationary track rails, so that each rail lock block is supported partially upon the bed of the transfer car and partially upon the top of the

web of the corresponding track rail, said rail lock blocks holding the transfer car against movement when they are located between the angular ends of the rails.

3. In combination with a transfer car movable in a fixed path, a pair of stationary track rails located perpendicular to the path of the transfer car, a pair of transversely disposed rails upon the transfer car adapted to be aligned with said stationary track rails, a load-bearing car upon said transversely disposed rails, opposed ends of the transversely disposed rails and stationary track rails having spaced acute angular ends substantially parallel to each other, acute angular rail lock blocks upon the transfer car shaped to fit between the angular ends of the rails, a wheel-stop member upon the transfer car, means for moving the wheel-stop member to extended position over the end portion of one of said transversely disposed rails to prevent movement of the load-bearing car from said transversely disposed rails, and interlocking means mounted upon the transfer car and providing an interlock between the wheel stop member and the rail lock blocks for preventing movement of the wheel-stop member from wheel-blocking position when the rail-lock blocks are withdrawn from position between the opposed ends of the rails.

4. In combination with a transfer car movable in a fixed path, a motor on the transfer car for moving it in a fixed path, a pair of stationary track rails located perpendicular to the path of the transfer car, a pair of transversely disposed rails upon the transfer car adapted to be aligned with said stationary track rails, a load-bearing car upon said transversely disposed rails, opposed ends of the transversely disposed rails and stationary track rails having spaced acute angular ends substantially parallel to each other, acute angular rail-lock blocks upon the transfer car shaped to fit between the angular ends of the rails, means for moving the rail-lock blocks into and out of position between said opposed angular ends of the rails, a wheel-stop member upon the transfer car, means for moving the wheel-stop member to extended position over the end portion of one of said transversely disposed rails to prevent movement of the load-bearing car from said transversely disposed rails, interlocking means mounted upon the transfer car and providing an interlock between the wheel stop member and the rail lock blocks and the motor for preventing movement of the wheel-stop member from wheel-blocking position when the rail-lock blocks are withdrawn from position between the opposed ends of the rails, and for preventing operation of the motor when said rail-lock blocks are in position between the opposed ends of the rails.

5. In combination with a transfer car movable in a fixed path, a motor on the transfer car for moving it in a fixed path, a pair of stationary track rails located perpendicular to the path of the transfer car, a pair of transversely disposed rails upon the transfer car adapted to be aligned with said stationary track rails, a load-bearing car upon said transversely disposed rails, opposed ends of the transversely disposed rails and stationary track rails having spaced acute angular ends substantially parallel to each other, acute angular rail-lock blocks upon the transfer car shaped to fit between the angular ends of the rails, means for moving the rail-lock blocks into and out of position between said opposed angular ends of the rails, and interlocking means mounted on the transfer car and providing an interlock between the motor and the rail lock blocks for preventing operation of the motor when said rail-lock blocks are in position between the opposed ends of the rails.

6. In combination with a transfer car movable in a fixed path, a motor on the transfer car for moving it in a fixed path, a pair of stationary track rails located perpendicular to the path of the transfer car, a pair of transversely disposed rails upon the transfer car adapted to be aligned with said stationary track rails, a load-

bearing car upon said transversely disposed rails, opposed ends of the transversely disposed rails and stationary track rails having spaced acute angular ends substantially parallel to each other, acute angular rail-lock blocks upon the transfer car shaped to fit between the angular ends of the rails, means for moving the rail-lock blocks into and out of position between said opposed angular ends of the rails, a wheel-stop member upon the transfer car, means for moving the wheel-stop member to extended position over the end portion of one of said transversely disposed rails to prevent movement of the load-bearing car from said transversely disposed rails, interlocking means mounted upon the transfer car and providing an interlock between the wheel stop member and the rail lock blocks for preventing movement of the wheel-stop member from wheel-blocking position when the rail-lock blocks are withdrawn from position between the opposed ends of the rails, and a second interlocking means mounted upon the transfer car and providing an interlock between the motor and the rail lock blocks

and the wheel stop member for preventing operation of the motor when said rail-lock blocks are in position between the opposed ends of the rails, and for preventing operation of the motor when said wheel-stop member is withdrawn from wheel-blocking position.

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