Jan. 29, 1963 C. S. GOBY 3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Filed Aug. 18, 1959 6 Sheets-Sheet 1

FIG. 1

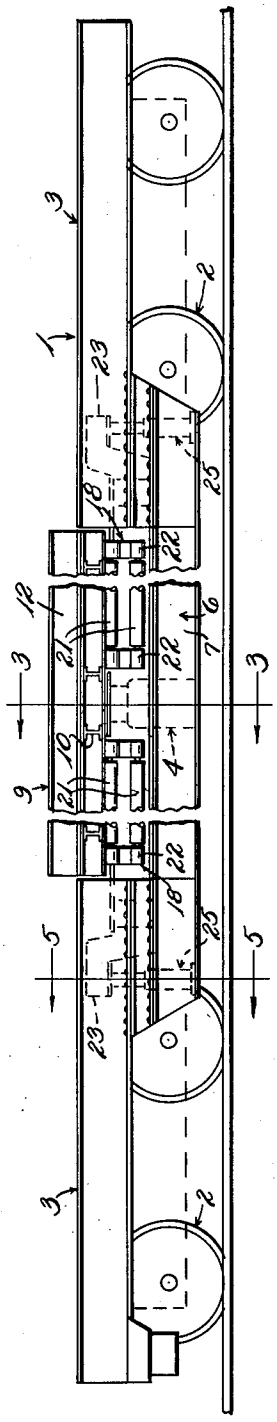
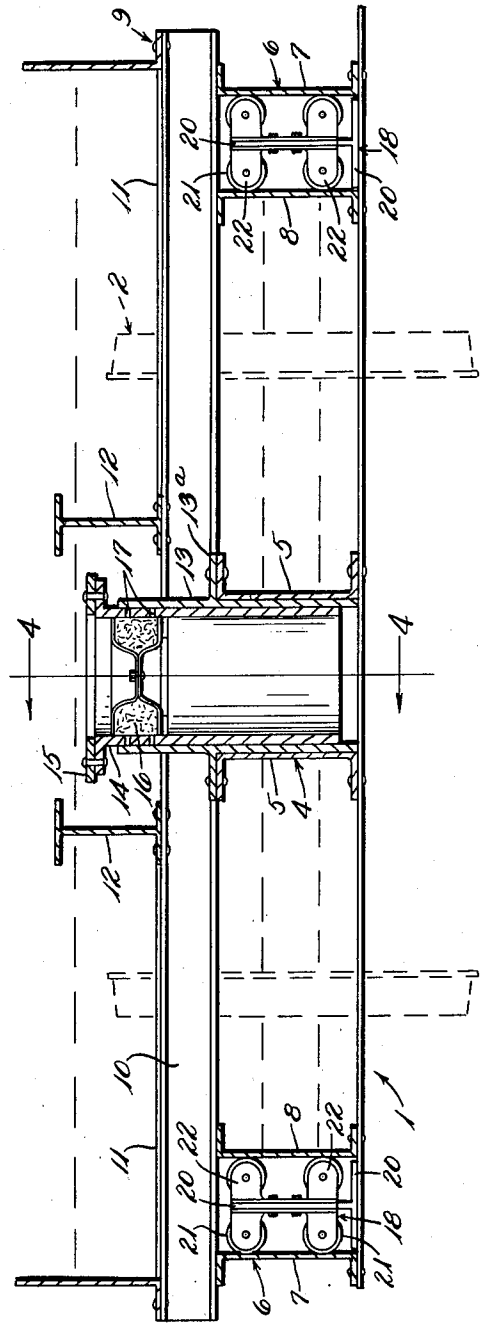


FIG. 3



INVENTOR.
CLIFFORD S. GOBY
BY
Oldham & Oldham
ATTYS.

Jan. 29, 1963 C. S. GOBY 3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Filed Aug. 18, 1959 6 Sheets-Sheet 2

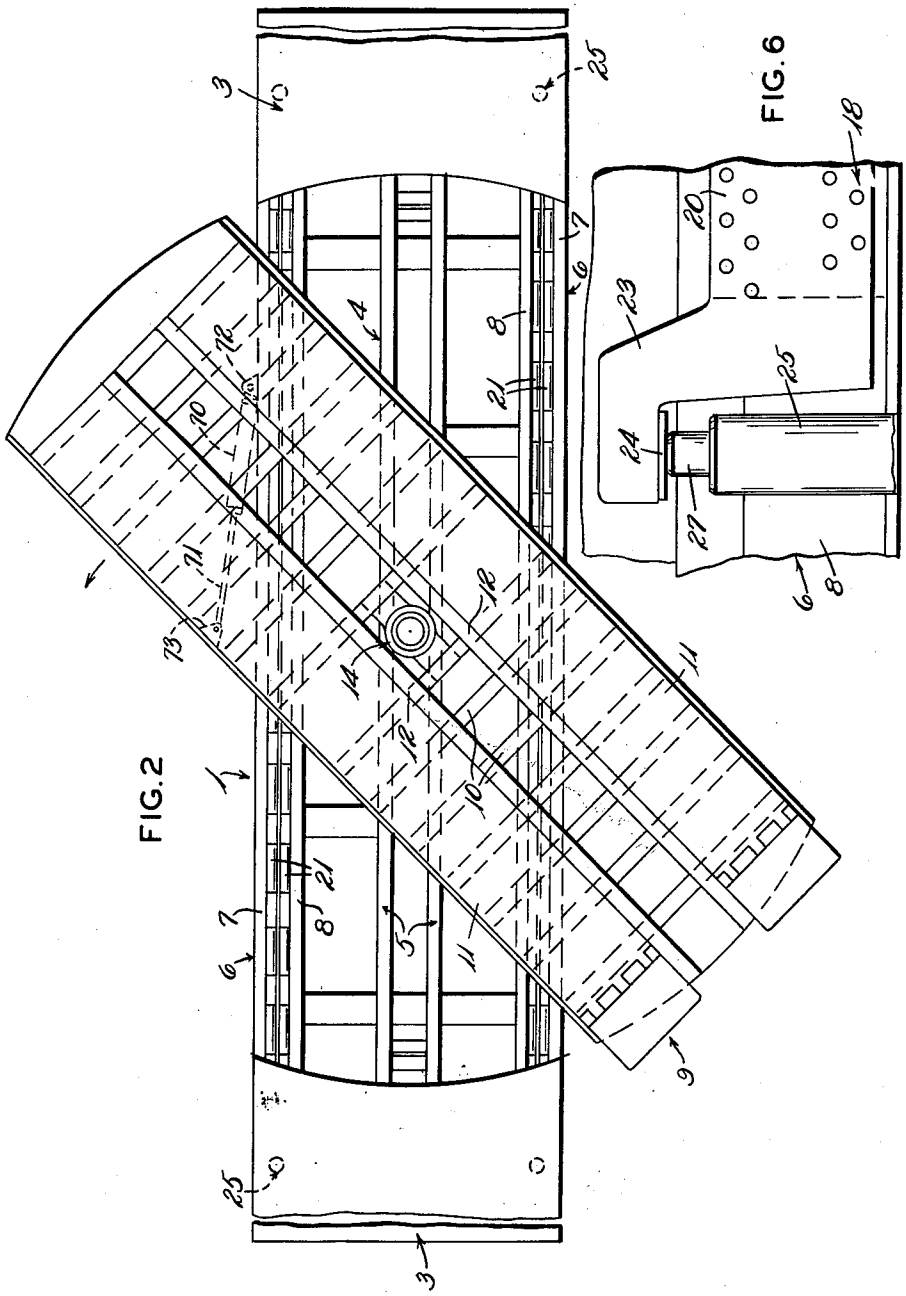


FIG. 2

FIG. 6

INVENTOR.
CLIFFORD S. GOBY
BY
Oldham & Oldham
ATTYS.

Jan. 29, 1963 C. S. GOBY 3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Filed Aug. 18, 1959 6 Sheets-Sheet 3

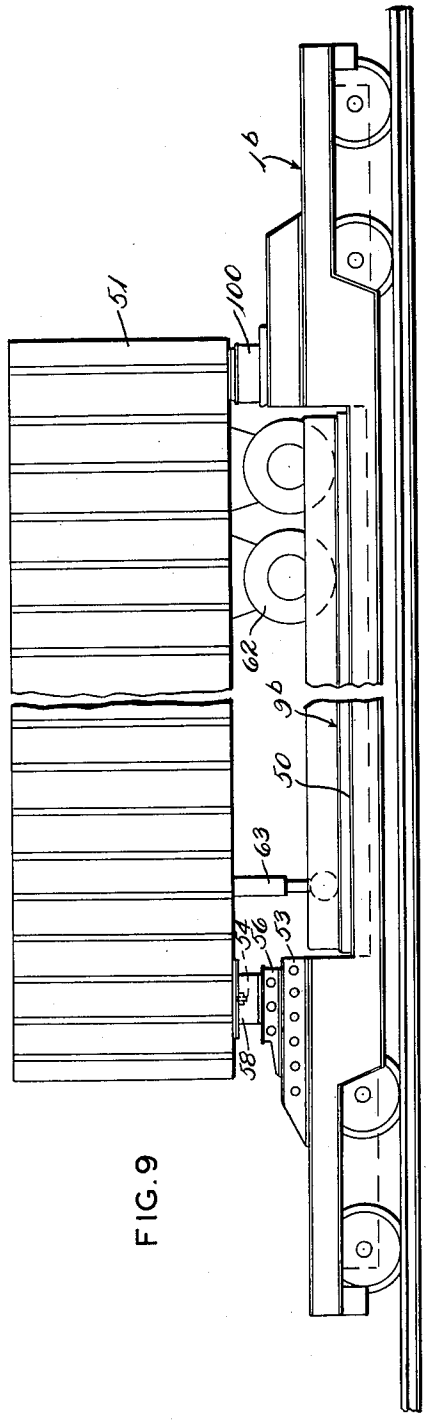


FIG. 9

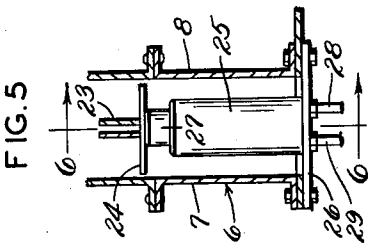
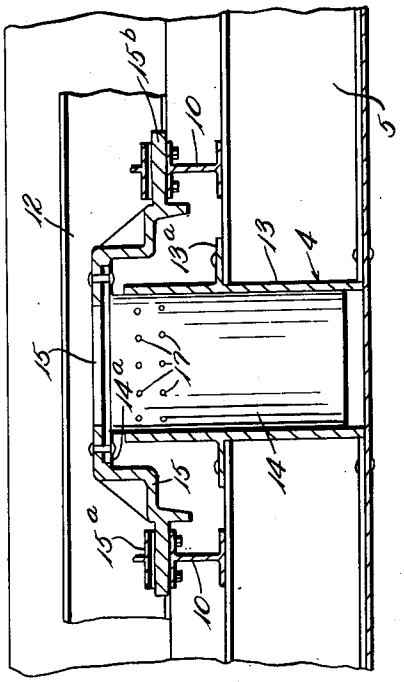


FIG. 5

FIG. 4



INVENTOR.
CLIFFORD S. GOBY
BY
Oedham & Oedham
ATTYS.

Jan. 29, 1963 C. S. GOBY 3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Filed Aug. 18, 1959 6 Sheets-Sheet 4

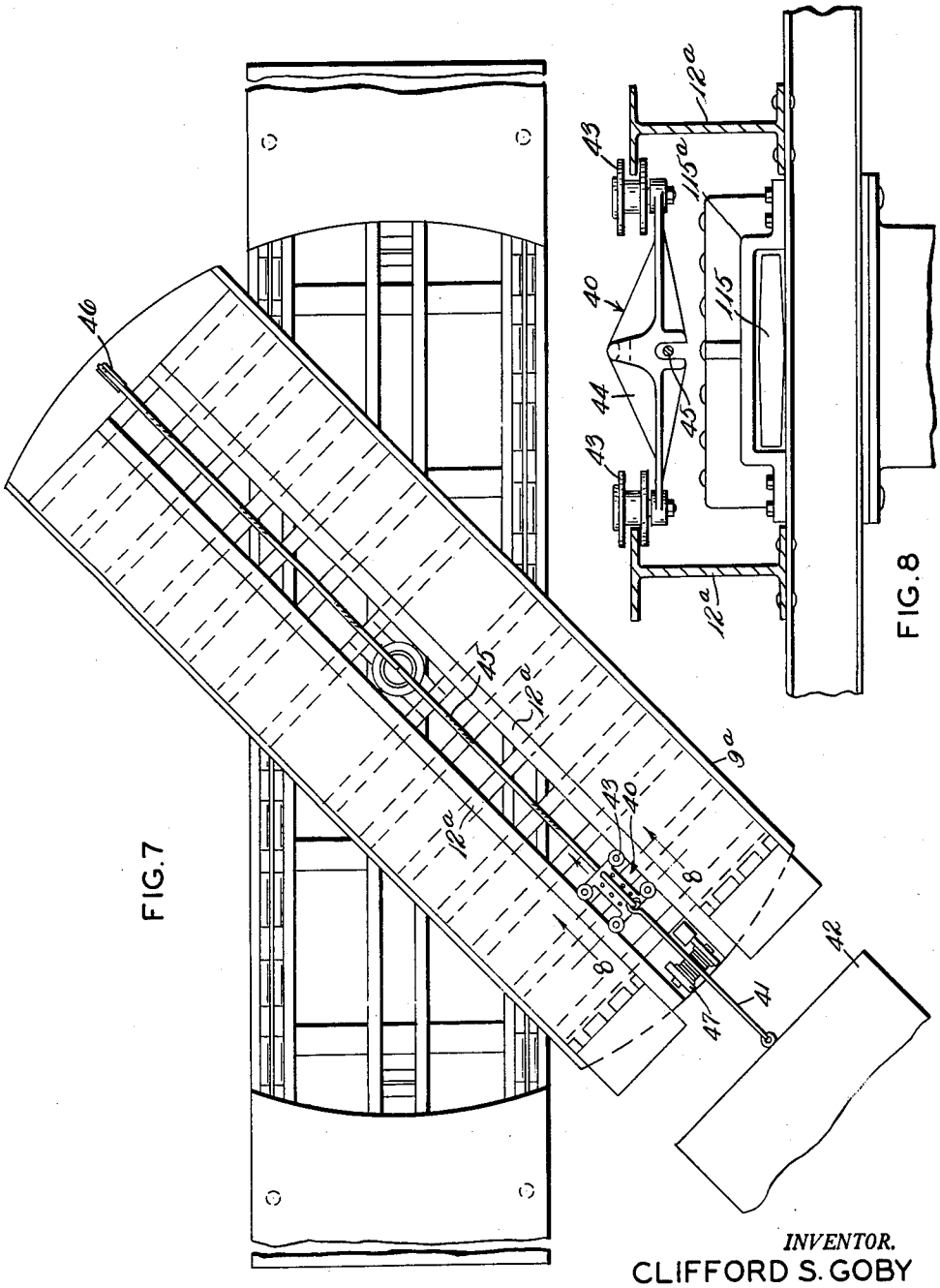


FIG. 7

FIG. 8

INVENTOR.
CLIFFORD S. GOBY
BY
Oldham & Oldham
ATTYS.

Jan. 29, 1963 C. S. GOBY 3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Filed Aug. 18, 1959 6 Sheets-Sheet 5

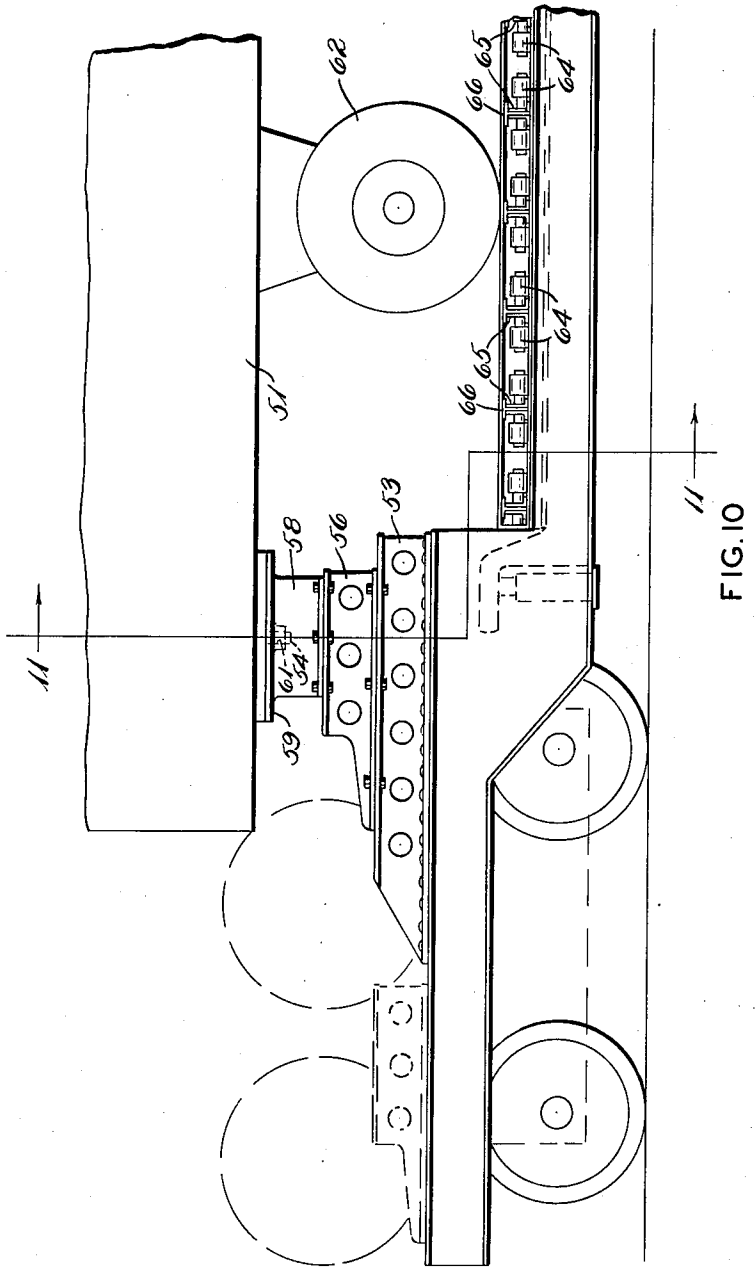


FIG. 10

INVENTOR.
CLIFFORD S. GOBY
BY
Oldham & Oldham
ATTYS

Jan. 29, 1963 C. S. GOBY 3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Filed Aug. 18, 1959 6 Sheets-Sheet 6

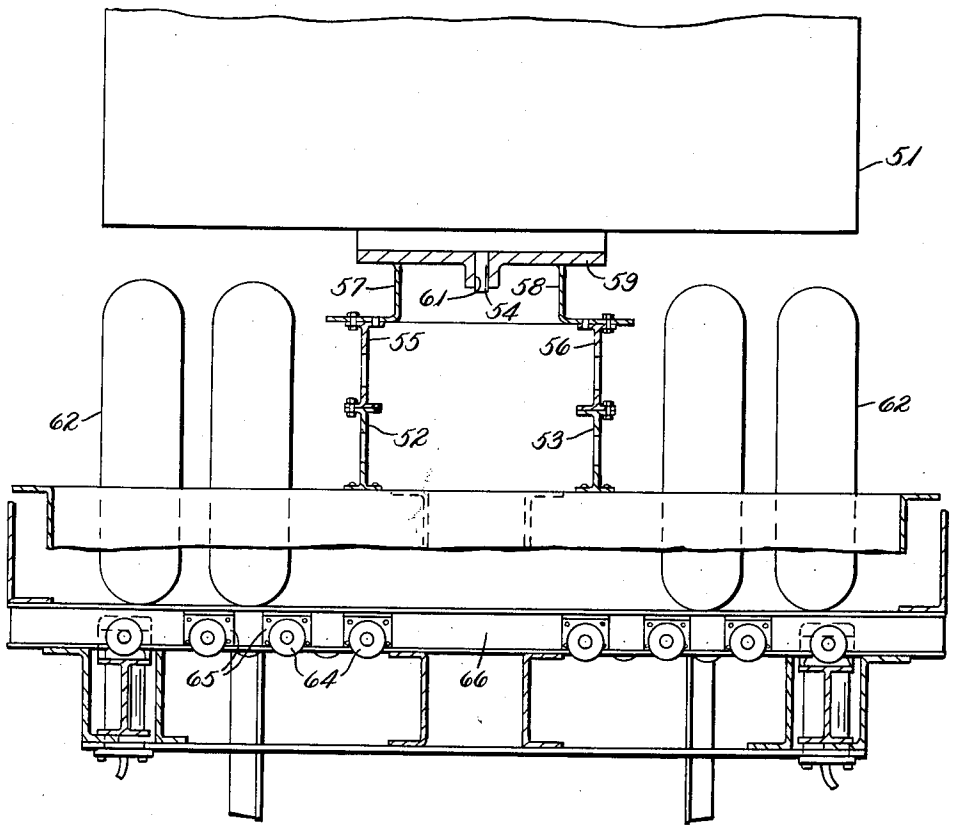


FIG. 11

INVENTOR.
CLIFFORD S. GOBY
BY
Oldham & Oldham
ATTYS.

United States Patent Office 3,075,479 Patented Jan. 29, 1963

3,075,479

RAILWAY CAR FOR FREIGHT TRUCKS AND THE LIKE

Clifford S. Goby, 10308 Wilbur Ave., Cleveland 6, Ohio

Filed Aug. 18, 1959, Ser. No. 834,487
13 Claims. (Cl. 105—455)

The present invention relates to railway cars, especially to railway cars adapted to receive thereon removable freight containers, freight trucks, trailers, or the like.

At the present time, there is a lot of commercial interest in and use of various types of special railway cars that can be used for hauling large freight containers thereon, or which may receive truck trailers thereon for hauling the truck trailers or freight containers specified distances and permitting their removal as units for delivery, or further shipping action, as desired. Thus there has been quite a bit of activity in the designing and production of railway cars adapted to carry truck trailers thereon so that the truck tractor can directly pull a trailer, for example, to a given railway car and deposit it thereon by some type of endwise loading application. There have been efforts made to facilitate the loading of these trailers onto railway cars and the attaching of such trailers to the railway car for safety hauling them by freight train to their destination.

In all events, insofar as I am aware, nearly all of the constructions proposed heretofore and in use at this time involve relatively tedious, costly loading and unloading operations, and they require either very extensive railroad yard areas for loading the freight trailers onto the railway cars, or else the systems are only efficient with two or three railway cars in a row and do not work well with longer freight car assemblies.

It is a general object of the present invention to provide a novel and improved freight car characterized by the provision of a rotatable load carrying body therein whereby side loading of the cars with freight trailers or freight carrying compartments is facilitated.

Another object of the invention is to provide improved means for raising, lowering and turning a freight carrying platform provided on a railway car.

Another object of the invention is to provide a novel railway car adapted to carry freight trailers thereon at a minimum overall height for the railroad car with the freight trailer secured in a fixed position on the railway car for transit.

Further objects of the invention are to provide novel hydraulic lift means in a railway car of the type described wherein a load support platform can be readily raised and lowered in the freight railway car and be carried in a recessed center portion of the car for freight transit action; to provide novel roller means for furnishing easy turning and support action between a movable load platform in the railway car and support means provided therefor by which the load platform can be rotated about a center support trunnion therefor; to provide novel, effective guide means in the side sills of the car so that special lift members can be raised and lowered in a vertical plane only for controlling the position of the load or support platform provided therein; to provide special anchor members on portions of the railway car for engaging a freight trailer to position it fixedly on the railway car for transit.

The foregoing and other objects and advantages of the present invention will be made more apparent as the specification proceeds.

Particular attention is now directed to the accompanying drawings, wherein:

FIG. 1 is a side elevation of a novel railway car embodying the principles of the invention, with portions of the car being broken away;

FIG. 2 is a plan view of the railway car of FIG. 1 with the rotary movement of the load platform being indicated by the platform being shown in its movement towards a side loading or unloading position;

FIG. 3 is an enlarged vertical cross section taken on line 3—3 of FIG. 1;

FIG. 4 is a fragmentary enlarged longitudinal vertical section taken on line 4—4 of FIG. 3;

FIG. 5 is a fragmentary vertical section taken on line 5—5 of FIG. 1;

FIG. 6 is a fragmentary longitudinal section taken on line 6—6 of FIG. 5;

FIG. 7 is a plan view, similar to FIG. 2, of a modified load carrying railway car of the invention;

FIG. 8 is an enlarged fragmentary vertical section taken on line 8—8 of FIG. 7;

FIG. 9 is a side elevation, partially broken away longitudinally, of a further modified railway car of the invention showing a freight trailer in a fixed carrying position thereon;

FIG. 10 is a fragmentary enlarged side elevation of one end portion of the railway car shown in FIG. 9; and

FIG. 11 is a vertical cross section taken on line 11—11 of FIG. 10.

When referring to corresponding members shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

The present invention, generally speaking, relates to a railway car wherein the car has a reduced height center section extending the full width of the car, and it has elevated end portions connected in a conventional manner with railway car trucks, and where the railway car comprises a frame, a load carrying platform supported by the frame, trunnion means positioning the load carrying platform on the frame for arcuate and limited vertical movement on the reduced height portion of the car, support members extend longitudinally of the car adjacent each side thereof and below the load platform, means operatively securing the support members to the frame for vertical movement of the support members with relation to the frame, which support members engage the load platform on vertical upward movement by the last-named means, and roller means are operatively connected between the load platform and the support members to facilitate arcuate movement of the load platform when carried by the support members.

Having particular reference now to the details of the structure shown in the accompanying drawings, a railway car is indicated as a whole by the numeral 1. This railway car embodies the principles of the present invention and has included therein a set of conventional railway trucks 2, 2 at each end of the car 1, which trucks 2 are secured by conventional means to the load carrying, or frame portion of the railway car 1. The railway car 1 has ends or load carrying decks 3 provided at the ends of the railway car and which ends 3, 3 are of a fixed vertical height, or position. The railway car 1 also has a vertically movable center portion provided therein carried by a vertically recessed portion of the railway car frame whereby a reduced height load support platform can be provided intermediate the ends 3, 3 of the railway car.

The railway car 1 has suitable frame means that normally extend the length thereof, and with the frame means generally comprising a center sill 4 made from a pair of channels 5, 5 placed in spaced, parallel, back-to-back relation, and a pair of side sills 6, 6 each of which is made from a pair of channels 7 and 8 placed in spaced, parallel relation adjacent the lateral margins of the railway car 1. These center sills 4 and side sills 6, 6 can be made from integral eyebeams, channel members, or equivalents, that

would have portions cut therefrom on the lower surfaces thereof at the ends of the railway car to contour the sills over the trucks 2, 2 and would have portions cut or otherwise removed therefrom at the tops thereof at the center portion of the railway car to provide for a reduced height center portion therein. Or, these center and side sills can be made from members of different contours at the ends and center portion of the railway car, as desired. In all events, the channels 5, 7 and 8 preferably have top and bottom flanges provided thereon either integral therewith, or welded or riveted thereto, to aid in reenforcing such channels for load carrying action, and some or portions of the flanges may be formed from original parts of the beams cut therefrom and resecured thereto to different portions thereof. Or the side sills and/or center sills may be made from a plurality of vertically superimposed channels the adjacent flanges of which are welded or riveted together.

A load platform 9 is provided at the center of the railway car 1 and extends the width thereof between the ends 3, 3 of the car. This load platform 9 includes a plurality of transversely extending channels or beams 10 that may have members, such as a cover plate, or deck, 11 secured to the upper surface thereof. Longitudinally extending parallel tie bars, or beams 12 extend the length of the load platform and are secured to the unit of the deck 11 and cross beams 10 to complete the load carrying portion of the load platform 9.

It is an important feature of the present invention that the load platform 9 is pivotally or rotatably carried on the railway car 1 and to this end, trunnion means, such as a trunnion sleeve 13, is secured to and extends between the channels 5, 5 at the center of the recessed center portion of the railway car 1, usually at the longitudinal center thereof. This trunnion sleeve 13 extends above the center sill 4, and is adapted to receive a suitable trunnion 14 therein. This trunnion 14 has a trunnion plate or bracket 15 secured thereto and extending longitudinally of the railway car 1 therefrom for engagement with a pair of the cross beams 10, 10 forming a part of the load platform 9 to transmit load from the load platform 9 onto the trunnion 14 for support action in the trunnion sleeve 13. The trunnion sleeve 13 and trunnion 14 are operatively connected to provide and permit pivotal and vertical movement of the trunnion 14 in the receiving and positioning sleeve 13. The trunnion 14 slidably engages the trunnion sleeve 13 for vertical movement with relation thereto. Pivotal movement of the trunnion 14 is produced by external forces applied to the trunnion 14 through the load platform 9. The trunnion 14 preferably has some type of conventional lubricating means, such as fabric wick means 16 having conventional lubricant material saturating the wick means 16, carried by a portion of the trunnion 14 so that lubricant can seep through holes 17 provided in the trunnion 14 to lubricate the connection between the adjacent surfaces of the trunnion sleeve 13 and the trunnion 14.

It is a further feature of the invention that the trunnion 14 and trunnion plate 15 are secured to the load platform 9 by means that permit some relative tipping movement therebetween. Hence cap members or securing brackets 15*a*, FIG. 4, are suitably secured to the cross beams 10 adjacent the trunnion 14 to loosely bridge over the ends 15*b* of the trunnion plate 15 but to permit limited tilting of the load platform in a transverse or longitudinal direction and slight arcuate freedom of the trunnion, if desired. The ends 15*b* of the trunnion plate 15 are of slight convex curvature, top and bottom, to aid in permitting limited relative movement of the load platform and the trunnion with minimum clearance therebetween. The trunnion sleeve 13 has a flange 13*a* thereon to aid in securing the trunnion sleeve in position while the trunnion 14 also has a top flange 14*a* thereon to facilitate its engagement with the trunnion plate 15.

Any desired cross frame means may be used in building the frame of the railway car and connect the center sill 4 to the side sills 6, 6.

It should be noted that in FIG. 3, the load platform 9 and means associated therewith is shown in a retracted or lowered vertical position, whereas in FIG. 1, such load platform is shown in its elevated position at which time the deck 11 thereon is parallel with the surfaces of the ends 3, 3 to facilitate movement of a truck or other loading vehicle over the railway car 1 for depositing a tractor trailer, or other freight receptacle, onto the load platform 9.

FIG. 3 of the drawings best shows how the cross beams 10 of the load platform 9, when the load platform is in its load carrying position for transit action, are received on and supported by the channels 5, 7 and 8, so that fixed load support or carrying action is provided for this load platform 9. It is an important feature of the present invention that other load carrying or lifting means are provided in the railway car 1 for facilitating rotational or arcuate movement of the load platform 9 when desired for aiding in applying freight to, or removing it from the load platform 9. Hence a pair of elongate support members 18, 18 are provided in the railway car 1 and they extend the length of the reduced height center portion of the railway car and protrude beyond the ends of this load platform 9 for operative association with the side sills 6, 6 of the car for vertical movement with relation to the frame or side sills of the railway car 1. The support members 18 may comprise an I-beam with the top flange thereon removed, a pair of back-to-back right angles suitably secured together, or an equivalent member having a base flange 19 and a vertically upwardly extending web 20 thereon. These support members 18 are received in the open centers of the side sills 6, 6 and are retained centrally therein by suitable means, such as a plurality of rollers 21, 21, journalled on brackets 22 secured to longitudinally spaced portions of the web 20 so that the rollers 21, 21 are adapted to engage the inner surfaces of the side sills 6, 6 and be guided vertically thereof. The webs 20 preferably have load carrying ends 23 usually vertically upwardly offset in the railway car 1 with relation to the remainder of the webs 20, 20 and the reduced height center portion of the railway car. These ends 23 are shown in FIG. 5 and have a suitable base plate 24 secured thereto and extending laterally therefrom. Such offset ends 23 and base plate 24 are provided on the support members 18 to adapt them to be engaged by vertical lift cylinders 25, or similar means, received within the open centers of the side sills 6, 6 adjacent the trucks 2, 2. The lift cylinders 25 may be secured in position by means of support plates 26 riveted, bolted, or otherwise secured to and extending between the lower margins of the side sills 6, 6 whereby load on the support members 18 is transferred to and from the side sills through these base plates 26 and the lift cylinders 25.

The lift cylinders 25 control the position of a support plunger or piston 27 that extends from the cylinder and engages the base plate 24, with the position of such piston 27 being controlled by the supply of hydraulic fluid to the lift cylinder 25 through fluid supply conduits 28 and 29. These conduits 28 and 29 connect to a conventional source of hydraulic pressure fluid (not shown) whereby hydraulic fluid will be forced into or be permitted to exhaust from four lift cylinders provided in the railway car 1. That is, a pair of lift cylinders 25, 25 will engage each of the support members 18 provided in the railway car adjacent the ends thereof so that a uniform lifting or lowering action will be provided for the load platform 9 and any load or freight carried thereby.

FIGS. 1 and 3 show that the upper members of the rollers 21, carried by the web 20, extend above such web and are adapted to engage different cross beams 10 of the load platform as the support members 18, 18 are raised

up into engagement with the load platform **9** to lift it above the side sills and center sills in the railway car. The rollers will then facilitate turning the load platform on its supports.

Any conventional type of coupler means (not shown) can be secured to the railway car **1** for conventional coupling action to engage it to adjacent railway cars.

A modified type of load support platform and associated means is shown in FIGURES 7 and 8 of the drawings. In this instance, a load platform **9***a* is shown and it has a pair of longitudinally extending beams **12***a* provided on its upper surface. This modification of the railway car and load support platform is particularly adapted to facilitate the movement of some type of a freight carrying body or article longitudinally along the load platform **9***a*. A dolly assembly **40** is provided and it usually has a member, such as a load engaging hook **41**, pivotally secured thereto and extending therefrom for engaging a member, such as a freight receptacle or body **42**. The dolly assembly **40** includes a plurality of pulleys or sheaves **43**, **43** that are suitably journalled on a center bracket **44** of the dolly assembly. These sheaves **43**, **43** are adapted to engage the laterally inner flanges of the beams **12***a*. The bracket or frame **44** has a control cable **45** secured thereto, extending around a pulley **46** journalled at one end of the load support platform **9***a*, and returning to a control winch **47** secured to the load platform **9***a* at the end thereof remote from the pulley **46**. This winch **47** can be of conventional design and can be controlled by mechanical or power means, as desired (not shown). In all events, by the use of the winch **47**, one can move the freight container or compartment **42** onto or from the load platform **9**, and this load platform **9***a* can rotate about the journal or trunnion means provided therefor as in the other embodiment of the invention for loading and unloading action. The control cable **45** may extend around another pulley (not shown) adjacent the winch **47** or else extend directly to a load to aid in moving load from the load platform **9***a*.

With reference to the modification of the structure shown in FIGS. 9, 10 and 11, in this instance a railway car **1***b* is shown that has a depressed height center portion **50** provided therein as in the other embodiments of the invention. A load support platform **9***b* is pivotally positioned in this lowered height center portion **50**, by trunnion means as previously described. Usually the center load platform **9** is of the length of a freight container, or trailer received thereon. However, when desired, this freight container, such as a conventional trailer **51**, may be longer than the load platform **9***b*, as shown. Thus in order to support this trailer **51** for safe transit on the railway car **1***b*, a plurality of support members are provided at the opposite elevated end portions of the railway car. A pair of parallel eyebeams **52** and **53** usually are secured to the deck of the railway car **1***b* for longitudinally strengthening the floor or deck thereon, and support members of conventional or desired design are provided for engaging means, such as the fifth wheel and/or king pin **54**, of the trailer **51**. In this embodiment of the invention, a pair of beams **55** and **56** are shown removably secured, as by bolts, to the beams **52** and **53** to extend upwardly therefrom, and other support beams, members, or sections **57** and **58**, usually of shorter length than the other beams **52** and **53** and **55** and **56**, are removably secured to the beams **55** and **56**, respectively. The actual load carrying member in this instance comprises a support or fifth wheel or king pin engaging plate **59** that is suitably secured to the beams **57** and **58** to form a support unit therewith. The plate **59** has an aperture **61** therein to engage with the king pin **54** and associated plate of the trailer **51**. A similar removable support structure **100** usually is provided at the opposite end of the railway car **1** and it is adapted to engage an end portion of this trailer when the load support platform **9***b* is lowered down into its recessed position in the railway car. Until load is transferred to these support plates **59** at the ends of the car, the load will be carried by the wheels **62** on the trailer and the conventional carrier assembly **63** provided adjacent the forward end of the trailer.

As another feature of this embodiment of the invention, preferably the load support platform **9***b* has a plurality of rollers **64**, FIG. 11, secured thereto with their longitudinally extending axes parallel to the longitudinal axis of the railway car. These support rollers or casters **64** are suitably journalled on bracket means or similar members **65** carried by the reenforcing beams **66** forming a part of the load platform **9***b*. These rollers **64** on opposite sides of the reenforcing beams **66** are offset from each other laterally to provide roller support means continually engaging the side or center sills of the railway car when the load platform **9***b* is being turned.

In any of the embodiments of the invention, preferably some type of mechanical means are provided for turning or moving the load support platform through arcs for loading and unloading purposes. Thus in FIG. 2 of the drawings, typical control apparatus is shown. This apparatus comprises a hydraulically operated cylinder that has a control piston or rod **71** extending therefrom. The cylinder **70** is secured pivotally at one end thereof through universal joint means, as by a bracket **72**, to and extends laterally from a side sill **6** of the railway car. The piston rod **71** is likewise pivotally secured, as by a bracket **73**, to a portion of the frame of the load support platform, such as a cross beam **10**. Conventional pressure supply conduits and control means (not shown) connect to this cylinder **70** for reciprocating a piston therein in either direction for positively moving the load platform to swing it to a side loading position, or to bring it back into alignment with the railway car, as desired. This arcuate movement of the load platform usually is provided for an arcuate length of approximately 45°, but further pivotal action can be provided, as desired.

It should be realized that the railway flat cars of the invention have ready adaptability for loading truck trailers thereon, either endwise or sidewise from loading ramps or platforms, as desired. At the same time, the structure of the invention, particularly that shown in FIGS. 7 and 8, is adaptable on the same type of a flat car for carrying some type of a detachable van body or freight container so as to remove it from its normal frame and pull it over onto the railway car and support means provided thereon.

As indicated, any suitable types of reenforcing means, including metal plates or wood beams or planks, may be used in making the load support decks and ends of the car. Conventional means connect the trucks to the car frame which itself is reenforced as outlined herein and shown in the drawings.

In view of the foregoing, it is contended that a novel and improved type of a freight car has been provided which car has a minimum overall height and is adapted to carry relatively high vertical loads, such as conventional freight trailers thereon. The novel railway car has effective and improved load movement means so that a recessed center load platform in the railway car can be elevated a controllable height to the height of the ends of the railway car for facilitating loading and unloading actions, when desired. This action also permits seating of freight means, such as a trailer, onto suitable support members provided on the elevated ends of the railway car. Obviously these load support members, including the support plates **59** of FIGS. 9 through 11 can be removed from the end portions of the railway car when loading or unloading a freight trailer onto or from the car by endwise loading action. It will be seen that the load support platforms are carried on frame means of the railway car for transit action, but that the lift and support members come into removable engagement therewith for raising the load support platform and facilitating loading action by use of the roller means

and arcuate movement of the load platform, as hereinafter described.

It will be noted that the load support platform may be wider than the support frame of the railway car as shown in FIG. 3.

FIG. 8 brings out that a trunnion end 115 is secured to the load platform 9a by an end cap 115a for limited rocking action therebetween.

Thus it is believed that the objects of the invention have been achieved.

While several complete embodiments of the invention have been disclosed herein, it will be appreciated that modification of these particular embodiments of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. In a railway car having railway car trucks, a center sill, a pair of side sills, said side sills extending the length of the railway car, said sills being secured to said car trucks to extend therebetween, said sills being of reduced height at the longitudinal center portions thereof, said side sills having longitudinally open centers, a load platform, trunnion means securing said load platform to said center sill for arcuate and vertical movement in the railway car, elongate support members received in the open centers of said side sills and extending the length of and beyond the reduced height center portions thereof, hydraulic means carried by said side sills and engaging end portions of said support members to lift them vertically to engage said load platform and control the vertical position thereof, said load platform being supported by said side and center sills when at its lowest position, and roller means operatively supporting said load platform on said elongate support members when said support members protrude above said side sills to facilitate arcuate movement of said load platform.

2. In a railway car having railway car trucks, a center sill, a pair of side sills, said side sills extending the length of the railway car, said center and side sills being secured to said car trucks to extend therebetween, said sills being of reduced height at the longitudinal center portions thereof, said side and center sills having longitudinally open centers, a load platform having reenforcing cross beams therein and longitudinally extending reenforcing rails on the upper surface thereof, trunnion means securing said load platform to said center sill for arcuate and vertical movement in the railway car, said trunnion means including a trunnion plate secured to a pair of said cross beams at the center of said load platform, elongate support members received in the open centers of said side sills and extending the length of and beyond the reduced height center portions thereof, said support members having elevated end portions thereon, and pairs of hydraulic means carried by each of said side sills at longitudinally spaced portions thereof and engaging said end portions of said support members to lift them vertically to engage said load platform and control the vertical position thereof, said load platform being supported by said side and center sills when at its lowest position.

3. In a railway car having a reduced height center section and elevated ends thereon, a frame extending longitudinally of the car, a load platform, trunnion means positioning said load platform on said frame for arcuate and vertical movement on the reduced height portion of the car, support members extending longitudinally of the car adjacent each side thereof below but protruding beyond said load platform, and means operatively securing said support members at the protruding ends thereof to said frame for controlled vertical movement of said support members relative to said frame, said support members engaging said load platform on vertical upward movement by said last-named means.

4. In a railway car, a frame including side sills which are open from the tops to the center portion thereof extending longitudinally of the car, a load platform, trunnion means positioning said load platform on said frame for arcuate and vertical movement on the car, a pair of support members received in the open centers of said side sills for only sliding vertical movement therein and extending longitudinally of the car adjacent each side thereof below said load platform, said support members extending longitudinally beyond both ends of said load platform, a plurality of means operatively securing each of said support members to said frame at longitudinally spaced portions of said support members for vertical movement of said support members relative to said frame, said support members engaging said load platform by vertical upward movement by said last-named means, and roller means operatively connected between said load platform and said support members to facilitate arcuate movement of said load platform when carried by said support members.

5. Apparatus as in claim 3 where said load platform has a pair of parallel channel members secured thereto and extending longitudinally thereof, a dolly assembly engages said channel members for movement therealong, a load engaging means is secured to said dolly assembly, and winch and cable means are carried by said load platform and operatively engage said dolly assembly to move it along said load platform whereby load carriers can be moved onto and off said load platform.

6. In a railway car having a center section lower than elevated ends thereon, a frame, a load platform, trunnion means operatively secured to said frame at the center section of the car, means securing said trunnion means to said load platform to permit limited tipping action of said load platform relative to said trunnion means, support members extending longitudinally of the car adjacent each side thereof below said load platform, and a plurality of means operatively securing said support members by engaging spaced portions of each such member to said frame for vertical movement of said support members relative to said frame, said support members engaging and raising said load platform on vertical upward movement by said last-named means whereby said load platform can be raised to the level of the ends of said car.

7. In a railway car, a frame, a load platform, trunnion means operatively secured to said frame at the center of the frame, means securing said trunnion means to said load platform to make a unit therefrom for vertical movement and to permit limited tipping action of said load platform relative to said trunnion means, a pair of support members extending longitudinally of the car one adjacent each side thereof below said load platform and extending longitudinally therebeyond, and means operatively securing said support members at the four protruding ends thereof to said frame for unitary vertical movement of said support members relative to said frame, said load platform resting on said frame when said support members are in their lowermost positions.

8. In a railway car, a frame extending the length of the car, a load platform shorter than the frame, trunnion means operatively secured to said frame adjacent the center of the car, means securing said trunnion means to said load platform to permit limited tipping action of said load platform relative to said trunnion means and for vertical movement of said load platform, support members extending longitudinally of the car adjacent each side thereof below said load platform and extending longitudinally therebeyond, said support members being engageable with said load platform to control the vertical position thereof with reference to said frame, and a plurality of lift means operatively securing said support members at the protruding ends thereof to said frame and adapted to provide vertical movement of said support members relative to said frame whereby

said load platform can be raised and lowered in said car by controlled movement of said support members.

9. In a railway car, a frame extending the length of the car, a load platform shorter than the frame, trunnion means operatively secured to said frame at the center of the car, means securing said trunnion means to said load platform to permit vertical movement of said load platform on said trunnion means axis relative to said frame, support members for said load platform extending longitudinally of the car adjacent each side thereof below said load platform and extending longitudinally therebeyond at both ends of said load platform, means securing said support members to said frame for only relative vertical movement therebetween, and a plurality of lift means operatively securing said support members at all four protruding ends thereof to said frame and adapted to provide vertical movement of said support members and load platform relative to said frame.

10. In a railway car, a frame extending the length of the car, a load platform shorter than the frame, trunnion means operatively secured to said frame adjacent the center of the car, means securing said trunnion means to said load platform to permit pivotal and vertical movement of said load platform relative to said frame, support members for said load platform extending longitudinally of the car adjacent each side thereof below said load platform and extending longitudinally therebeyond, said support members being carried on said frame and being movable below vertically upper portions of said frame at which time said load platform is supported by said frame, and a plurality of lift means operatively securing said support members at the protruding ends thereof to said frame and being adapted to provide vertical movement of said support members relative to said frame to engage and lift said load platform.

11. In a railway car having railway car trucks, a center sill, a pair of side sills, said side sills extending the length of the railway car, said sills being secured to said car trucks to extend therebetween, said sills being of reduced height at the longitudinal center portions thereof, said side sills having longitudinally open centers, a load platform, trunnion means securing said load platform to the top of said center sill for arcuate and vertical movement in the railway car, elongate support members received in the open centers of said side sills below said load platform and extending the length of and beyond the reduced height center portions thereof, said support members having elevated end portions with relation to the reduced height center portions of said sills, a plurality of hydraulic cylinder means carried by said side sills and engaging all of said elevated end portions of said support members to lift them vertically to engage said load platform and control the vertical position thereof, said load platform being supported by said side and center sills when at its lowest position for load carrying action, and roller means operatively supporting said load platform on said elongate support members when said support members protrude above said side sills to facilitate arcuate movement of said load platform.

12. In a railway car, a frame including side sills of generally U-shape in section and having open centers and top portions, said side sills extending the length of the car and having a depressed center portion, a load platform supported on said frame center portion, trunnion means operatively secured to said frame and said load platform to provide vertical and arcuate movement of said load platform on said trunnion means axis relative to said frame, a support member for said load platform extending longitudinally of the car adjacent each side thereof below said load platform, each said support member being telescopically received in a said side sill for vertical movement therein, roller means operatively carried by said support members to aid in positioning said support members in said side sills for relative vertical movement therebetween, and a plurality of lift means operatively engaging said support members adjacent the ends thereof to provide vertical movement of said support members relative to said frame, said lift means being capable of depositing said load platform on said frame for normal load carrying action and to raise said support members up into engagement with said load platform to lift it above said frame, at least some of said roller means operatively supporting said load platform when said support members lift said load platform above said frame.

13. In a railway car, a frame including a pair of side sills of generally U-shape in section and having open centers and top portions, a load platform adapted to be supported on said frame, trunnion means operatively secured to said frame and said load platform to provide arcuate movement of said load platform on said trunnion means axis relative to said frame, a pair of spaced parallel support members for said load platform extending longitudinally thereof below said load platform, each said support member being telescopically received in a said side sill for vertical movement therein, and lift means operatively engaging said support members adjacent all of the ends thereof to provide vertical movement of said support members relative to said frame, said lift means being adapted to deposit said load platform on said frame for normal load carrying action and to raise said load platform by said support members for arcuate movement on said trunnion means.

References Cited in the file of this patent

UNITED STATES PATENTS

1,271,812	Wagner	July 9, 1918
2,021,503	Fildes	Nov. 19, 1935
2,033,119	Bennett	Mar. 10, 1936
2,058,891	Kellett	Oct. 27, 1936
2,246,543	Smith	June 24, 1941
2,782,733	Ewing	Feb. 26, 1957
2,786,590	Edwards et al.	Mar. 26, 1957
2,821,936	Weissman	Feb. 4, 1958
2,835,209	Kavanaugh	May 20, 1958