

April 19, 1938.

B. F. FITCH ET AL
TRANSPORTATION SYSTEM

2,114,707

Filed May 7, 1936

4 Sheets-Sheet 1

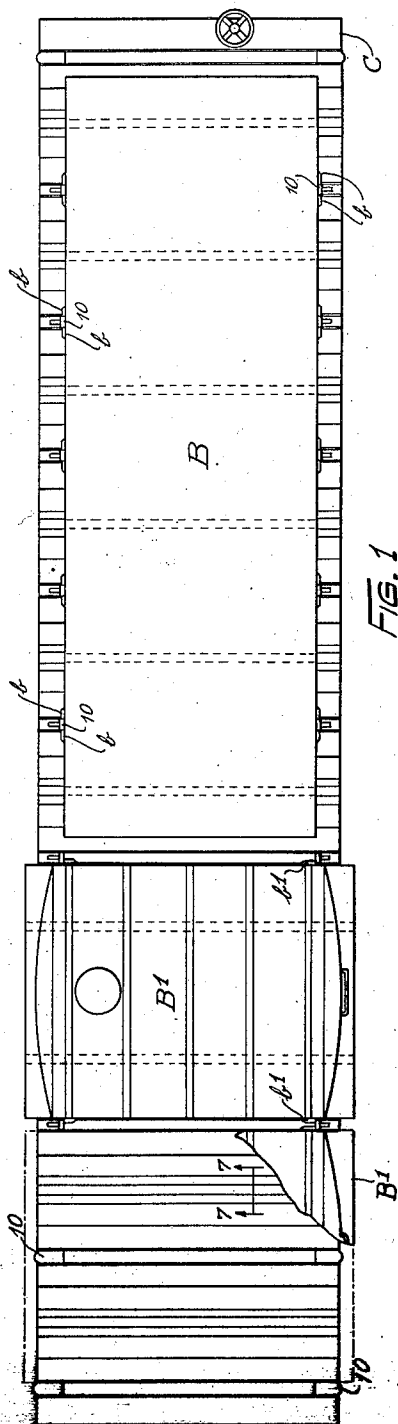


FIG. 1

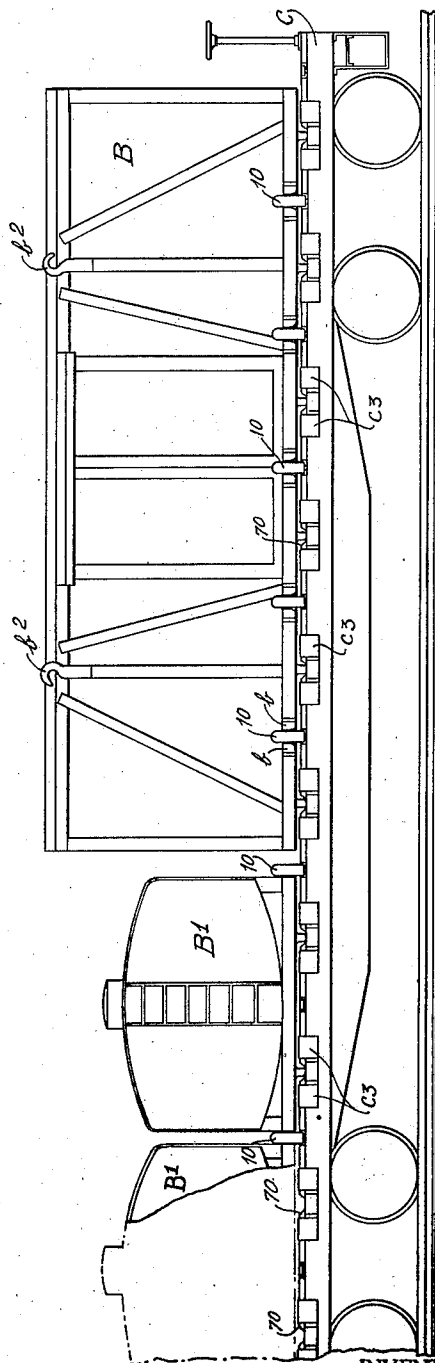


FIG. 2

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4 Sheets-Sheet 2

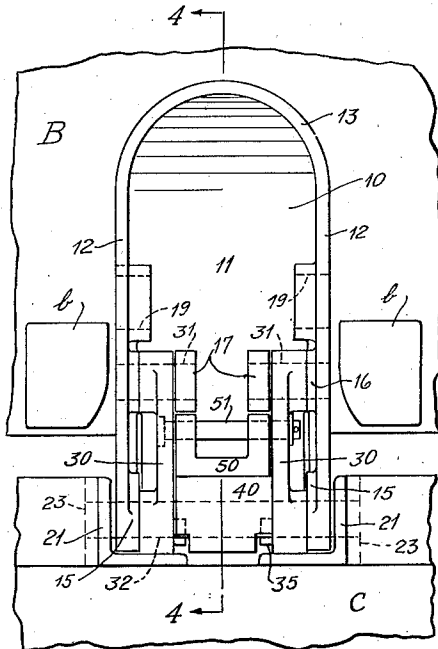


FIG. 3

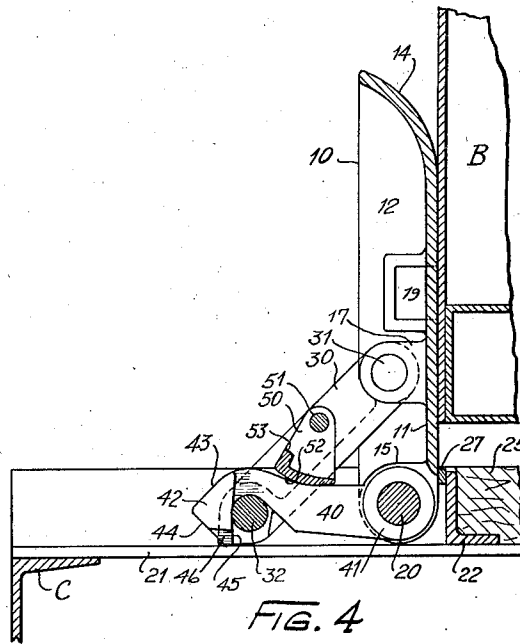


FIG. 4

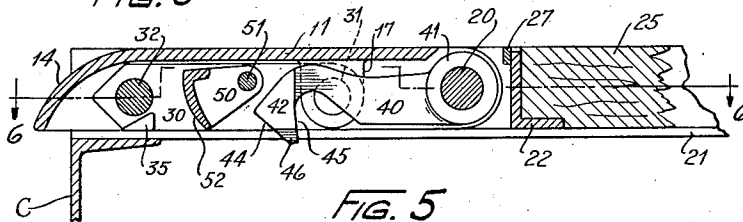


FIG. 5

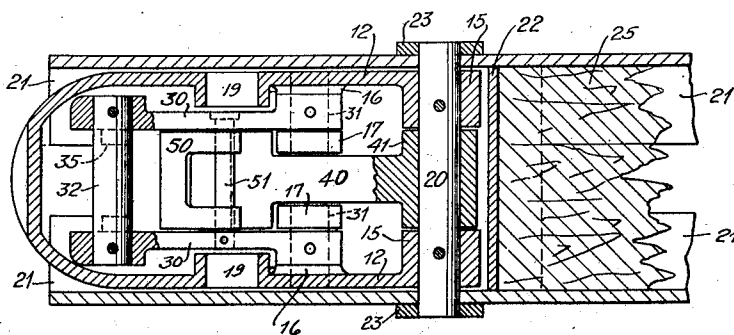


FIG. 6

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4 Sheets-Sheet 3

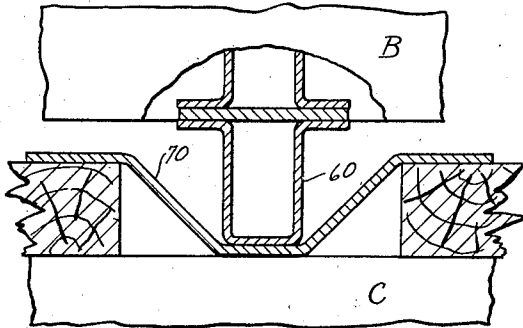


FIG. 7

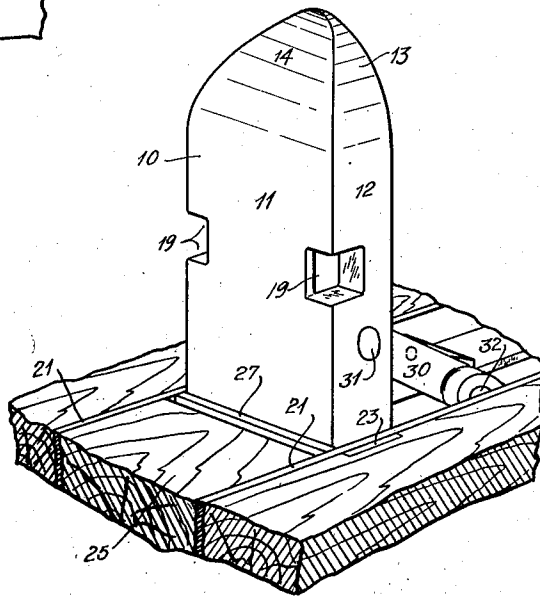


FIG. 8

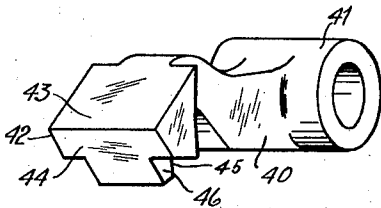


FIG. 9

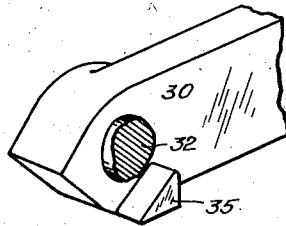


FIG. 10

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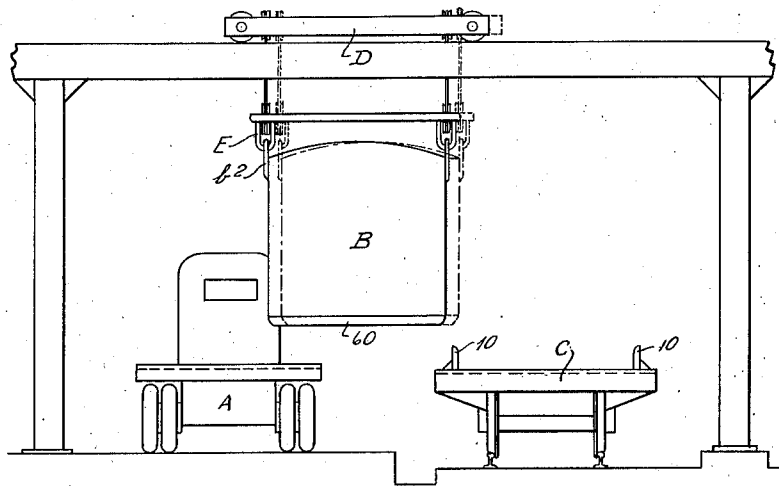


FIG. 12

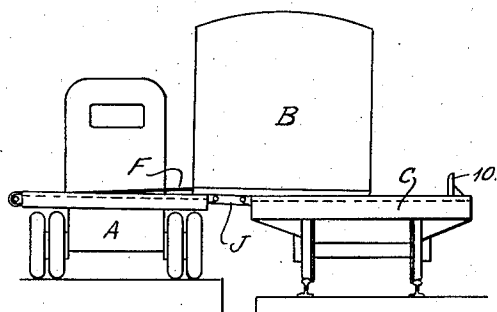


FIG. 13

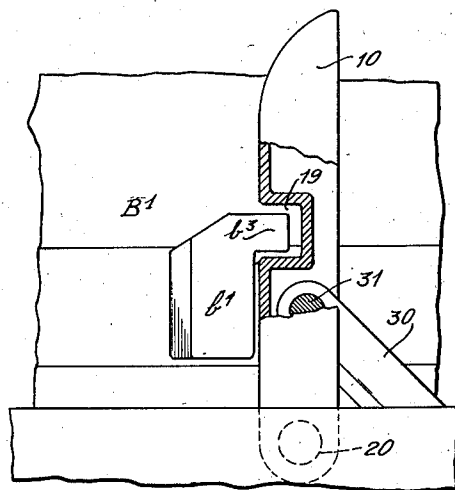


FIG. 11

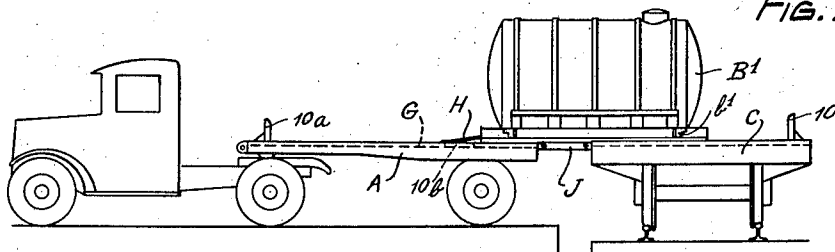


FIG. 14

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UNITED STATES PATENT OFFICE

2,114,707

TRANSPORTATION SYSTEM

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Application May 7, 1936, Serial No. 78,452

22 Claims. (Cl. 105-366)

This invention is concerned with the handling of freight in demountable containers which are adapted to be carried interchangeably on highway trucks or railway cars. This enables the loading of the commodity or commodities to be shipped in the bodies, while the latter are in any location, the body thereafter mounted on a highway truck, transported thereby to the vicinity of the railway car, and then transferred to the car and carried by it to some other city, and then transferred from the car to a highway truck for ultimate delivery.

In such a system of transporting freight it is very efficient to lift the bodies by overhead trolley hoists in making the interchange between the truck and car. However, such overhead hoists require a capital expenditure for equipment which might not be justified for locations where only occasional transfer is required. To provide for the latter condition, it is desirable to have a surface interchange by substantially horizontal movement direct between the car and truck, operated by power supplied by the truck engine.

It is the primary object of our invention to provide a railway car with a system of positioning devices adapted to enable the bodies to be carried effectively in railway transportation and so arranged that the bodies may be placed on the car or removed therefrom either by hoisting and trolleying or by surface interchange.

Another object of the invention is to provide the positioners in such form that they may coact with bodies of different sizes and shapes, allowing the placing of various sized bodies in various locations on the car.

In effecting the result we have provided positioners hinged to the car structure in such manner that they may stand upright, extend well above the bottom line of the container, and engage the outer sides thereof, to prevent shifting of the body, and are available in their upright form for the deposit of the body by crane in the region bounded by the set of positioners, the positioners, however, being foldable down into horizontal position, so that the body may be slid over them in surface interchange.

Another feature of the invention comprises the arrangement of the hinged positioners in coaction with positioning abutments on the demountable body so that the positioners may prevent the shifting of the body either longitudinally or laterally of the car. We have so devised and arranged the positioners that the same positioners may coact with the longitudinal face of

long bodies on the car or with the transverse faces of shorter bodies placed crosswise of the car. We have also arranged our positioners so that they may receive lugs on the containers to lock the latter against vertical movement, in case such action is considered desirable, as, for instance, to prevent tipping of a tank body due to surging of the liquid therein.

The above outlined features and others hereinafter explained are comprised within our invention, which is hereinafter described in detail in connection with a preferred embodiment thereof illustrated in the drawings.

In the drawings, Fig. 1 is a plan of a railway car made according to this invention and showing a large size body extending lengthwise thereof, a tank body extending crosswise, and a space for an additional crosswise body, a part of which is shown; Fig. 2 is a side elevation of the car and body shown in Fig. 1; Fig. 3 is an elevation on a larger scale of one of the positioners in upright position coacting with the body, a fragment of which is shown in elevation; Fig. 4 is a vertical section of the upright positioner as indicated by the line 4-4 on Fig. 3; Fig. 5 is a vertical section in the plane of Fig. 4, showing the positioner in its retracted or horizontal position; Fig. 6 is a horizontal section through the retracted positioner as indicated by the line 6-6 on Fig. 5; Fig. 7 is a cross-section through one of the transverse body-supporting channels on the car and a coacting body rail, as indicated, for instance, by the line 7-7 on Fig. 1; Figs. 8, 9 and 10 are perspectives of parts of the positioners; Fig. 11 is a sectional elevation indicating the use of a locking lug on the body occupying a recess in the positioner. The remaining figures are diagrams illustrating the freight transferring system,—Fig. 12 showing a body being lifted by overhead crane from a flat car to a highway truck or vice versa; Fig. 12 illustrating the same body drawn crosswise in surface interchange from the railway car to the highway truck; and Fig. 14 illustrating the movement of a crosswise tank to or from a highway truck, receiving the body lengthwise of the truck.

In Figs. 12, 13 and 14 we have indicated a highway truck A (which may be a tractor-trailer combination), a flat-car C, equipped with our positioners as hereinafter explained, and two types of demountable bodies B B' adapted to be carried by the car or truck and transferred from one to the other. The bodies B of Figs. 12 and 13 are large sized bodies, adapted to ex-

tend lengthwise of the car, while the body B1 is considerably shorter and lies crosswise of the car, and may, if desired, be in the form of a tank mounted on a suitable platform or cradle.

5 In Fig. 12 the body B is shown as being transferred by a suitable trolley hoist D from which is suspended a cradle E engaging hooks on the body, this hoist having means for skewing the body slightly, as indicated by broken lines. In Fig. 13, the same body is transferred by a cable F running to winding mechanism (not shown) on the truck. In Fig. 14, the body B1 is shown as being transported to and from the truck by means of a power-driven chain G on the truck, 10 connected to the tank cradle by push and pull bars H. When the surface interchange is employed as in Figs. 13 and 14, the highway truck and car are connected by suitable bridges J pivotally attached to the truck and car.

20 In Figs. 1 and 2, we have shown the same car C and mounted on it the same long bodies B and transverse tank bodies B1, above referred to. The length of the long body is determined by actual practice, as may be most convenient for transportation by highway truck to railway car, while the width of such body is limited at the present time to eight feet by reason of that being the maximum permitted by the laws of various States for highway transportation. Likewise, the tank body B1 has a width limited to eight feet but its length is limited to the permissible width clearance for railway transportation, which, under present standards, is a little over ten feet.

35 Now, when these bodies, either the large or the small size, are mounted on the flat car, it is important that means be provided to prevent shifting either longitudinally or laterally, and one of the features of our invention is the provision of such means which may cooperate equally well with either the long longitudinal or short transverse bodies. To this end, we have provided a longitudinal row of positioning devices 10, extending along the flat car some little distance in from the outer edge, and so located that when upright they may readily coact with the longitudinal sides of the long body B, or with the transverse faces of the short cross bodies B1. These positioners fold down outwardly so that 50 they may be flush with the car floor and thus are out of the way if the body is to be shifted by surface interchange over them.

As shown in Fig. 2, the upright positioners 10 may stand between blocks b on the sides of the floor frame of the body B so that the positioners by direct engagement of the floor frame sills prevent lateral shifting of the body and by engagement with the sill blocks b prevent longitudinal movement. Likewise, these same positioners may engage abutment blocks b1 on the transverse faces of the short bodies and thus by direct engagement with the sills of that body prevent shifting of the body lengthwise of the car and by engagement with the blocks prevent lateral shifting of the body.

When the containers are arranged crosswise of the car, the same positioner 10 may act on the blocks b1 of two adjacent containers. Thus, if another tank B1 were placed on the open space of the flat car of Fig. 1 or 2, the upright positioners 10 at the left-hand side of the shown container B1 would coact with the blocks on the right-hand side of a similar container occupying the adjacent region of the car.

75 The hinged positioning members 10 are speci-

cally illustrated in Figs. 3 to 6 and 8 to 11, inclusive, and will now be particularly described. The positioner itself designated 10, comprises what may be called a boat-shaped body having a flat base portion 11 and side walls 12, the side walls being connected by a rounded end portion 13, and the flat base 11 curving at the free end to the crest of the side walls, as indicated at 14. At the other end, the positioner is provided with a pair of inwardly extending tubular bosses 15, which receive a cross shaft 20, pivoting the positioner to its support.

The support for the positioner comprises two angle bars 21, extending crosswise of the car and connected by short angle bars 22, which extend lengthwise of the car and rest on the horizontal flanges of the bars 21. The shaft 20 is journaled in the vertical flanges of the angle bars, which in this region are reinforced by welded plates 23. One of the cross-bars 22 is located just back of the pivot pin 20, and the space between such cross-bars at opposite sides of the car is filled with floor planking 25 resting on the horizontal flanges of the angle bars 21.

As shown in Figs. 5 and 6, when the positioner 25 is in its horizontal position, its flat base 11 is substantially flush with the car floor, which is in the plane of the top of the filler strips 25. The rounded end 14 of the positioner in this location overhangs the side sill of the car C and furnishes a convenient hand-hold for lifting the positioner. The horizontal flanges of the channels 21 prevent the positioner swinging down below the horizontal plane, nor can it swing upwardly past the vertical plane because in a vertical position the lower portion of the back plate 11 engages the abutment strip 27, secured to the cross angle 22, as shown in Fig. 4.

To retain the positioners effectively in their upright position, while allowing them to be readily folded down to the horizontal whenever desired, we have provided a system of linkage illustrated in Figs. 4 to 6 and 8 to 10. This system includes a pair of links 30, pivoted at their upper ends to pins 31, mounted in bosses 16 on the inner face of the side walls 12 of the positioner and lugs 17 rising from the positioner plate 11. These two links 30 are connected adjacent their free ends by a cross-rod 32. Pivotaly mounted on the positioner pivot pin 20 is a hook 40 illustrated particularly in Fig. 9. This hook has an elongated tubular boss 41 at one end, giving it effective pivoting on the pin 20. Adjacent the free end it is provided with a head 42, the outer face of which inclines downwardly away from the pivot as shown at 43 and then downwardly toward the pivot, as at 44. At the back of the head is a downwardly facing recess 45. The head has at its lower end a narrower bottom extension 46.

When the positioner is folded, so that the hook is in the position shown in Fig. 5, the hook is supported horizontally by the engagement of the head 42, with the angle flanges 21, the central region of the connection extending between these flanges. When the positioner is in its vertical position, as shown in Fig. 4, the links 30 extend downwardly at an angle of about 45° which brings the rod 32 connecting them a distance from the pivot axis 20 equal to the distance of the hook recess 45 from the pivot axis, so that in this location the hook can extend over the rod 32 and effectively hold it against displacement.

The outward stress of the body against the 75

positioner is in a horizontal direction, but being resisted by the inclined link 30, as a strut may be resolved into a vertical force, resisted by the flanges of the angles 21 and a horizontal component resisted by the head of the hook 40. The inner surface of the head, where it engages the link rod 32, is vertical or inclines slightly toward the axis of the car as shown in Figs. 4 and 5, so that the horizontal component of the stress on the links 30 has no tendency to lift the hook.

It is desirable, however, to positively lock the hook 40 in its engaged position, to prevent any possible disengagement from bouncing during the running of the car. To this end we provide a locking dog 50, which is a U-shaped member pivotally carried by the two links, by a cross-pin 51, and having a curved underface 52 adapted to engage the top of the hook when the positioner is elevated, as shown in Fig. 4. It will be clear from this figure that the elevated positioner is effectively braced and held in the vertical position by the diagonal strut links 30; that the lower ends of these links are prevented from moving outwardly by the hook 40; that the hook 40 is prevented from moving upwardly to release the links by a dog 50, which by gravity rests against the upper face of the hook and becomes constantly tighter, due to the jarring of the car in operation.

To release the positioner, it is only necessary to swing the locking dog free from the hook and raise the hook free from the link cross-bar. To enable the ready swinging of the dog, it is provided with a ledge 53, which furnishes a convenient hand-hold or an abutment for a prying bar in case the dog should be frozen in place. When the dog is turned into its uppermost position it will lie against the bosses 17 out of the way. Then the hook may be readily raised by hand or if frozen easily pried up. When the hook has cleared the rod 32 the positioner may be turned out into the horizontal position. When in that position the hook lies horizontally, being supported by the angle bar flanges, and the dog lies in the free space in front of the hook, as shown in Fig. 5.

It will be seen from Figs. 5 and 10, that the links 30 have their ends cut off in two directions at 45°, so that when elevated the end face of the link has a good bearing on the flange of the angle bar 21. It will also be seen from these views that a lug 35 is provided on the inner face of each link. Now, as the positioner is being raised from the horizontal to the vertical position, the extreme end of the links resting by gravity on the channel flanges, travel inwardly in a horizontal plane, as the link gradually assumes the diagonal position. In this movement of the link, the dog 50 is carried upwardly to idle position, trailing along the diagonal face 43 of the hook, and then the lugs 35 come into engagement with the under diagonal face 44 of the hook head and cam that hook upwardly so that the cross-rod 32 passes beneath it, and then the hook drops down into place over the cross-rod, after which the dog 50 drops into place over the hook. The parts thus come in the position shown in Fig. 4.

It will be seen from the above description that the locking of the positioner in its upright position operates automatically. That is, when the positioner is raised manually from the horizontal position shown in Fig. 5, into its vertical position in Fig. 4, the effective hooking and locking action results, without attention by the operator, so that as the positioner reaches the vertical position, it

becomes automatically locked against displacement.

In constructing the car, it may be convenient to assemble the two opposite positioners and their angle bars as a self-contained unit in the shop before mounting the same on the car. In fact, such units are readily adapted for subsequent mounting on existing flat cars, requiring merely the removal of cross zones of the floor planking and the securing of the angle bar frame of the positioners to the car frame.

It will be noticed from a comparison of the right-hand portion of Fig. 2, showing the large container, with the left-hand portion showing the small container, that in each case the positioner prevents shifting either longitudinally or transversely, but acts differently in the two installations. In case of the large body the positioners engaging the longitudinal side walls of the container prevent it shifting laterally while, by reason of standing between the adjacent blocks b longitudinal shifting is prevented. These blocks are bevelled or rounded on their under edges as shown, and the positioner is rounded at the top and rounded outwardly also away from the container, so that as the container is deposited there is a bevelled engagement with the positioners, thus avoiding the necessity for accurate presentation; that is to say, the rounded face of the projections will cam the large container laterally one way or the other, as may be necessary to accurately center it between the opposite positioners. Likewise the blocks b will cooperate with the arched tops of the positioners to cam the container in one direction or the other longitudinally as may be necessary.

Now as to the small crosswise container, it will be seen the positioners are in identical position with the positioners for the large container but only four positioners are employed, which stand adjacent the four corners of the body. The side edges of these positioners engage the body sills and the inner face of the positioners engage the outer edges of the blocks b1 on the container, so that the positioners prevent longitudinal shifting and the blocks lateral shifting. Here also the bevelled under-edge of the blocks and the bevelled top portion of the positioners may effect a camming on a container being lowered.

We have referred to the containers being deposited by a hoist onto the car. The large sized containers, particularly, are provided with hooks b2 for the engagement of such hoist, as indicated in Fig. 12. Should the lowered container be materially out of registration with the positioners, the weaving characteristic of the hoist (illustrated, for instance, in Patent 1,598,273), enables it be skewed as required.

Each body is provided with skid rails on its base by which it may be shifted laterally. Such skid rail is indicated at 60, for example, in Fig. 7. There are two or more of these for each body. They are secured to the base and extend crosswise of the car. They may be hollow rails of U-shaped cross section. These skid rails occupy channels arranged crosswise of the car. Such channels are shown at 70 and may be standard structural forms, if desired. I have shown them as of plate formation presenting upwardly facing flaring channels, the top portions of the channels being bent down at the sides of the car and secured to the outer face of the side sills.

The channels and skid rails referred to are of particular value in case of surface interchange of the body illustrated in Figs. 13 and 14. In

that case the body is shoved or pulled laterally to pass from the highway truck to the car, or vice versa, the body rails sliding in the channels of the car and across connecting bridges J between the channels of the car and the channels of the truck. In such operation, those body positioners which would be in the path of the container are turned down to idle position and the body shifted across them in either direction as desired. After a body has been so positioned on the car, the positioners over which it has passed are manually raised into active position.

The positioners when upright extend a considerable distance above the car floor. There is ordinarily no necessity for anchoring the body down to the floor, as it would not in ordinary course bounce sufficiently to clear the positioners. However, in the case of a tank car only partially loaded, the surging of the liquid may give an upward thrust on the body and in that case and possibly others it may be desirable to actually lock the body down on the car.

Our positioners very readily accomplish actual locking of the bodies by reason of recesses 19 formed in the positioner, on the body-engaging side thereof adjacent the extreme edges of the positioner, the blocks on the body being in this case formed with lugs to engage these recesses and prevent lifting of the body. Thus, we have shown in Fig. 11 the body B1 equipped with a block b1 having an ear b3 adapted to occupy the recess 19.

The ears on the four blocks of the container B1 engaging the recesses of the positioners 10 would lock the container down on the car floor. In this case the positioners, at least at one side of the car, are turned down when the body is put in place, whether by lowering or sliding. If it is being lowered into position, the two positioners 10 on one side of the car are turned down and the body lowered in a location a slight distance away from the upstanding positioners, and then just before the body is seated, it is moved laterally to cause the projections b3 to enter the recesses 19 of the two upstanding positioners. Then the other positioners are turned up into their upright position, as illustrated in Fig. 11, and the body is thereby locked to the car.

It will be understood that when the body is just lifted from the car floor so as to be clear thereof, the lugs b3 are still low enough to enter the recesses of the upstanding projections, and necessary lateral movement of the body may be made by a slight trolleying movement of the hoist or even manually by swinging the suspended body. When the body is placed by surface interchange, the same movement which moves the body onto the car may continue it until the lugs b3 on the far side are within the recesses in the upstanding positioners.

Fig. 11 illustrates the locking arrangement for the cross body where the positioner is swung in a plane parallel with the vertical face of the body carrying the lug. A similar locking action may be obtained if desired where the movement of the positioner is toward the vertical face of the body and the body blocks b carry lugs at their adjacent edges. In that case as the positioner moves toward the body side its open recesses 19 pass across the lugs on adjacent faces of the blocks b.

We have described at length the hinged positioners mounted on the car. We may employ similar members on the truck, and the same are illustrated at 10a and 10b in Fig. 14. In this case

the positioners 10a might be rigid members while the positioners 10b fold down onto the truck frame or are elevated and braced similar to those on the car.

It will be understood from the drawings, and the description herein given, that our system of positioning devices provides an extremely flexible transportation apparatus adapted to meet varying conditions occurring in the operation of transporting freight by combined truck and rail haul. Various sized bodies may be mounted on our car; they may be located centrally or over the trucks as their individual loading renders most efficient; they may be longitudinal or crosswise of the car, and the same car may carry both longitudinal and transverse bodies. The construction provides for holding the bodies against shifting either longitudinally or laterally, thus resisting the stresses occurring in ordinary railway operation, and if desired, the bodies may be locked down to the car if conditions render it desirable. The same positioning devices may be employed at the sides or rear of the truck to lock in place bodies slid thereon.

The bodies, irrespective of their size or shape, may be positioned on the car or removed therefrom either by hoisting and trolleying or by surface interchange, as may be most convenient at any particular location. When the surface interchange is employed, the bridges may be secured to brackets on the car sides adjacent the ends of the cross channels, such brackets being conventionally indicated at c3 in Fig. 2.

Finally, it will be observed that our car may be used as an ordinary flat car for transporting merchandise or the demountable bodies. In that case the positioners are all folded down flat, leaving a substantially uninterrupted flat surface, while stakes mounted in pockets, not shown, may readily be employed if the load is of a nature to require it. Stake pockets can be mounted on the sides of the car in a position which will be entirely out of the way of our bodies or openings may be made through the floor of the car for mounting stakes.

While any suitable trolley hoist, if equipped with mechanism for turning the body slightly, indicated in Fig. 12, or any suitable truck with power mechanism for effecting surface interchange, indicated in Figs. 13 and 14, may be employed, we call attention particularly to the following patents or applications of Benjamin F. Fitch, assigned to our assignee, Motor Terminals Company, showing satisfactory apparatus for such purposes; that is to say, Patent No. 1,598,273 issued August 31st, 1926, for a Traveling crane equipped with weaving mechanism to skew the body, or Patent No. 1,748,708 issued February 25, 1930, for a Turntable crane; Patent No. 1,838,139, issued December 29, 1931, for a Load-engaging cradle to connect four depending cables from the hoist mechanism to the body; application 755,752, filed December 3, 1934, for Surface interchange mechanism between the railway car and truck located parallel thereto by the employment of cables and winches, and application 1,926, filed January 15, 1935, for Truck construction having propelling chains extending lengthwise thereof and adapted to be connected by push-and-pull bars to the body.

We claim:

1. The combination of a vehicle, a positioning member hinged thereto adapted to be folded down and to stand upright, a pair of links pivotally secured to the positioning member and connected together by a cross-rod, and a movable hook oper-

actively secured to the vehicle and adapted to engage said cross-rod to lock the positioning member in upright position.

2. The combination of a vehicle, a positioning member hinged thereto adapted to be folded down and to stand upright, a strut pivotally secured to the positioning member to brace it in the upright position, a movable member to engage the lower end of the strut and lock it in such position, and means acting on the movable member to hold it in engagement with the strut.

3. The combination with a support of a positioning member hinged thereto on a horizontal axis adapted to fold down or be raised into upright position, a pair of links pivoted to the positioning member, a cross-bar connecting the free ends of the links, and a hook pivoted to the support and adapted to hook over the cross-bar when the member is upright, a dog pivotally carried by the two links and adapted to depend between them to engage the hook when it is in engagement with the cross-bar.

4. The combination of a vehicle, a pair of parallel bars extending crosswise thereof from side to side, a pair of shafts carried by the bars near the sides of the vehicle, a pair of positioning members mounted on the shafts and swingable about the shafts into substantially horizontal position between the bars and below the top surfaces of the bars, struts pivoted to the positioning members, and means carried by the bars for acting on the lower ends of the struts to hold the members in position.

5. The combination with a railway car of longitudinal rows of positioners carried thereby adjacent the opposite edges of the car, a comparatively long container adapted to be mounted lengthwise of the car between said rows of positioners, comparatively short containers adapted to be mounted interchangeably with the long containers, the short containers being mountable crosswise of the car with said positioners coming between adjacent containers, blocks on the longitudinal sides of the long container adapted to engage opposite longitudinal edges of the positioners, and blocks on the transverse sides of the cross containers adapted to engage lateral faces of the positioners.

6. The combination of a vehicle having a substantially flat floor with a row of recesses adjacent each longitudinal edge extending from an intermediate region to the adjacent edge of the car, a positioner hinged to the car on a fixed axis adjacent the inner end of the recess and adapted to be folded down into the recess or stand upright and when upright receive a body between opposed positioners, said positioners having recesses in the faces adjacent the body and the body having blocks with lugs adapted to occupy the recesses, whereby the positioners may hold the body down on the vehicle.

7. The combination of a vehicle, a positioning member hinged thereto adapted to lie substantially horizontal and stand upright, a strut secured to the positioning member and adapted to act as a diagonal brace when the positioning member is upright, and a hook operatively secured to the vehicle and engageable with the strut for anchoring the lower end of the strut to hold the positioning member in upright position.

8. The combination of a vehicle having a platform, a positioning member hinged thereto adapted to stand upright and to be folded down within the limits of the platform substantially flush with its top surface, a strut pivotally secured to

the positioning member to brace it in the upright position, and a movable member to engage the lower end of the strut and lock it in such position.

9. The combination of a vehicle, a positioning member hinged thereto, a strut for holding the positioning member in upright position, a hook carried by the vehicle and arranged to engage and disengage the strut, and a dog carried by the strut arranged to engage the hook in a manner to prevent it from disengaging the strut.

10. The combination of a car, a container adapted to rest on the car, positioners hingedly carried by the car in two rows parallel with but some distance inside of the longitudinal edges of the car, said positioners being adapted to fold down outwardly, the car floor having recesses which hold the positioners in recumbent positions, such that they do not project materially above the floor surface, a strut pivotally connected to each positioner and adapted to extend diagonally outward therefrom, members adapted to engage the lower ends of the struts to hold them upright, dogs for locking the members to the struts, and blocks carried by the container adapted to engage the positioners when upright to limit horizontal shifting of the container.

11. The combination of a vehicle, a positioning member hinged thereto adapted to lie idle and also to stand vertically, a movable brace pivoted to the positioning member, and a movable member pivoted coaxially of the hinge and adapted to engage the brace and anchor it to hold the positioning member vertical.

12. The combination of a vehicle, a positioning device hinged thereto and adapted to stand substantially upright, a diagonal strut pivotally connected at its upper end to the positioning device, a hook adapted to extend over a shoulder at the lower end of the strut to hold the strut in position, a member for supporting the strut and hook in substantially horizontally extending inactive position, a projection on the strut adapted to engage the hook and raise it consequent upon the positioning member being swung to elevated position, whereby the hook is caused to pass over the shoulder on the strut.

13. The combination of a vehicle, a positioning member hinged thereto adapted to stand upright or to be substantially horizontal, extending outwardly, said positioning member being recessed on the side which is outward when the member is vertical, a strut pivotally secured to the member to brace it when upright and seat within the recess thereof when horizontal, and means for anchoring the lower end of the strut operative only when the member is in operative position.

14. The combination with a railway car of two longitudinal rows of positioners carried thereby adjacent the opposite edges of the car, a comparatively long container adapted to be mounted lengthwise of the car between said rows of positioners, a comparatively short container adapted to be mounted crosswise of the car, certain of the positioners in said longitudinal rows engaging the longitudinal faces of said comparatively long container and others of the positioners engaging abutments on the transverse face of said comparatively short container.

15. The combination of a pair of parallel angle bars with horizontal flanges facing each other, a shaft carried by vertical flanges of the angle bars, a positioning member mounted on the shaft

- and adapted when horizontal to rest on the horizontal flanges of the angle bars, a pair of links pivoted to the positioning member and adapted in their active position to bear downwardly on the horizontal flanges of the angle bars when the positioning member is in upright position and means carried by said shaft adapted to act on the links to hold them in their active position.
16. The combination with a railway car having longitudinal rows of positioners carried thereby adjacent opposite edges of the car, said positioners being adapted to stand upright or be folded down outwardly to idle position, blocks on the containers adapted to coact with one surface of the positioners while the wall of the container adjacent the blocks coacts with another surface of the positioner, the positioners having notches in their corners and the blocks on the containers having lugs adapted to occupy the notches when the positioners are upright, whereby the containers are held against shifting longitudinally or laterally and also against upward movement.
17. The combination of a vehicle, a set of positioning members hinged thereto on fore-and-aft axes and adapted to stand upright and to swing down outwardly to lie substantially horizontally, there being upwardly facing recesses in the floor of the vehicle extending outwardly above a side sill, the effective bottoms of the recesses supporting the positioners when turned down, and braces bearing against the outer sides of the positioners adapted to hold them upright.
18. The combination of a vehicle, a positioning member hinged thereto adapted to extend upright and also to lie substantially horizontally, a strut pivoted at one end to the positioning member and free at the other end, and movable means actuated by the member when raised to upright position for anchoring the free end of the strut to hold it in inclined position bracing said member.
19. The combination of a vehicle, a positioning member hinged thereto adapted to extend upright and to be held substantially horizontally, extending and terminating outwardly a relatively insignificant distance beyond the side of the ve-

hicle, a strut pivotally secured at one end to the member and means for anchoring the other end of the strut to enable it to brace said member, said means being actuated by said hinged member when raised to upright position.

20. The combination of a railway car, with a plurality of containers standing thereon side by side comparatively close together, and a row of movable positioners on the car adapted to be folded down to idle position or raised to active position while the containers are on the car, said positioners being each located in the space between adjacent containers and having portions formed to coact with such adjacent containers whereby a single positioner may be moved into coaction with two adjacent containers.

21. The combination of a railway car, two adjacent containers resting thereon and extending crosswise of the car, and a positioner entirely in the space between the containers hinged to the car on an axis extending fore-and-aft of the car and adapted to be turned down to idle position or project upwardly independently of the presence or absence of either container, said positioner having container-engaging portions which, when in the upright position, coact with both containers.

22. The combination of a railway car, pairs of transverse guideways thereon, a plurality of containers having skid rails on their bottoms adapted to coact with the guideways, said guideways and skid rails being so positioned with reference to the side walls of the containers that when the containers are mounted on the car as closely as permitted by the guideways, the transverse walls of the adjacent containers are a comparatively short distance apart, and positioners hinged to the car adjacent the edges, but some distance inwardly therefrom in the region between the containers and beyond those portions of the car which stand beneath the containers, so that when the positioner is upright said positioner may coact with two previously positioned containers, said positioner being adapted to be turned down to idle position, and means for holding the positioner in upright active position.

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