

June 7, 1966

V. C. STERRETT

3,254,810

CONTAINER LATCHING SYSTEM

Filed Sept. 11, 1964

2 Sheets-Sheet 1

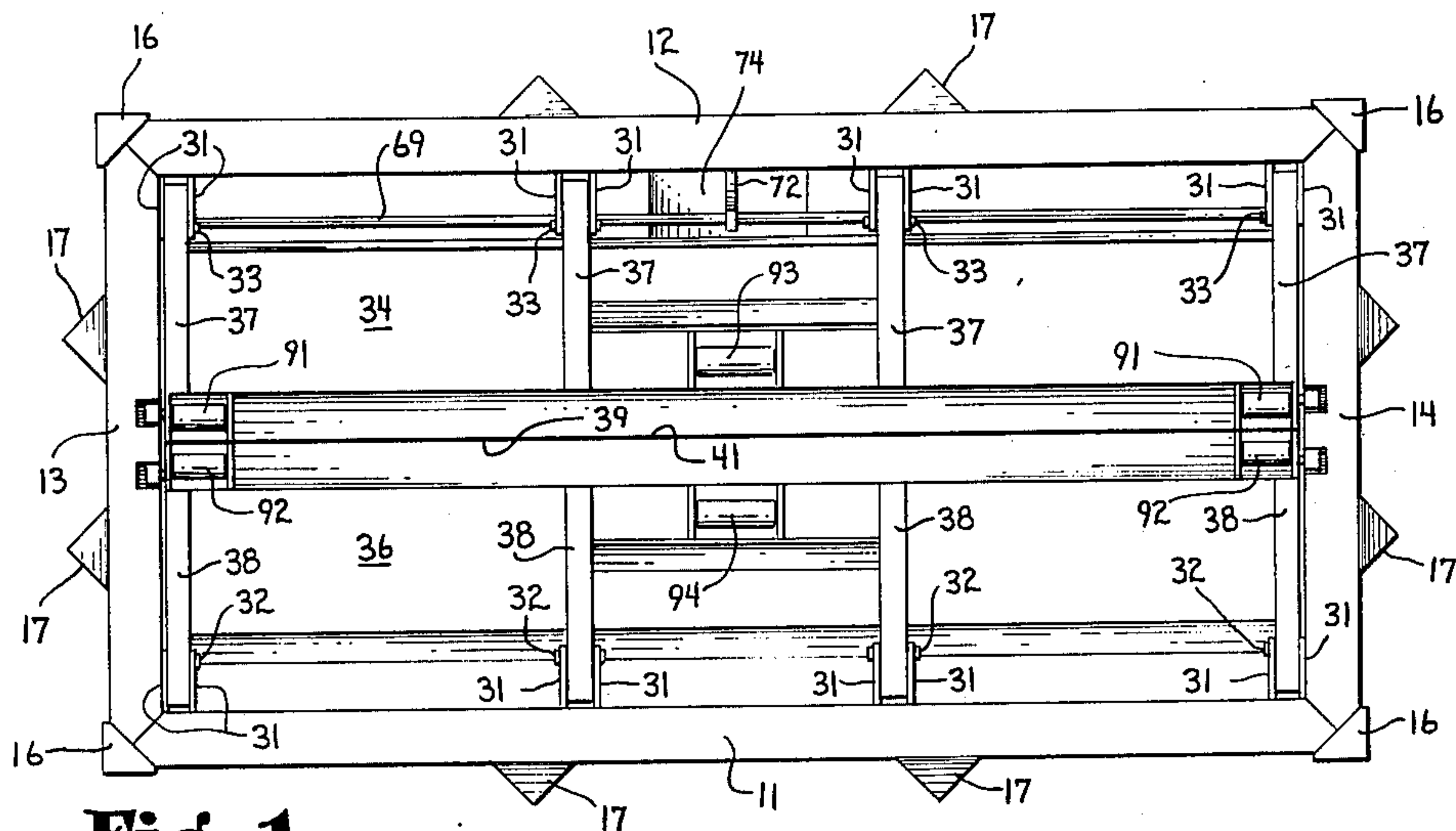


Fig. 1.

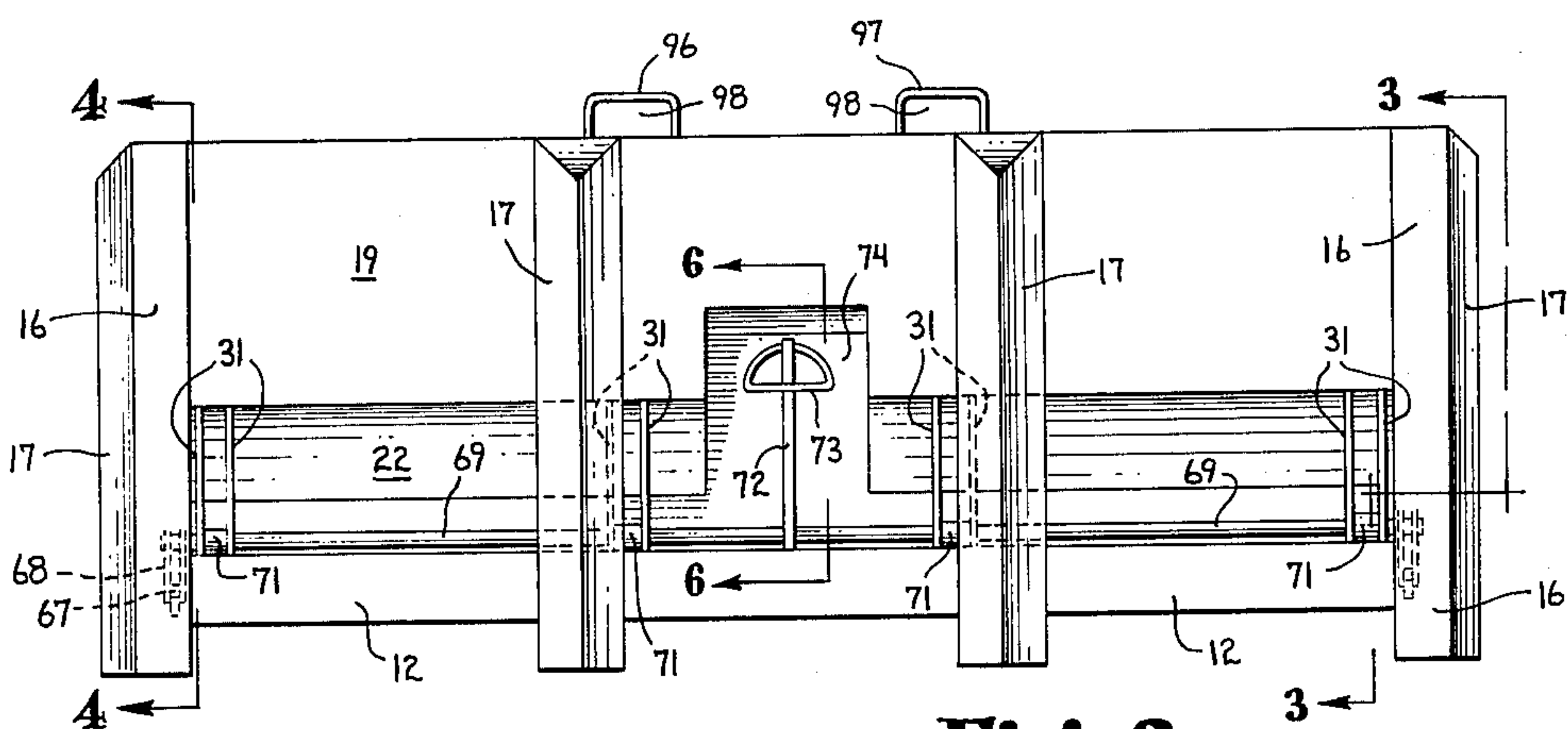


Fig. 2.

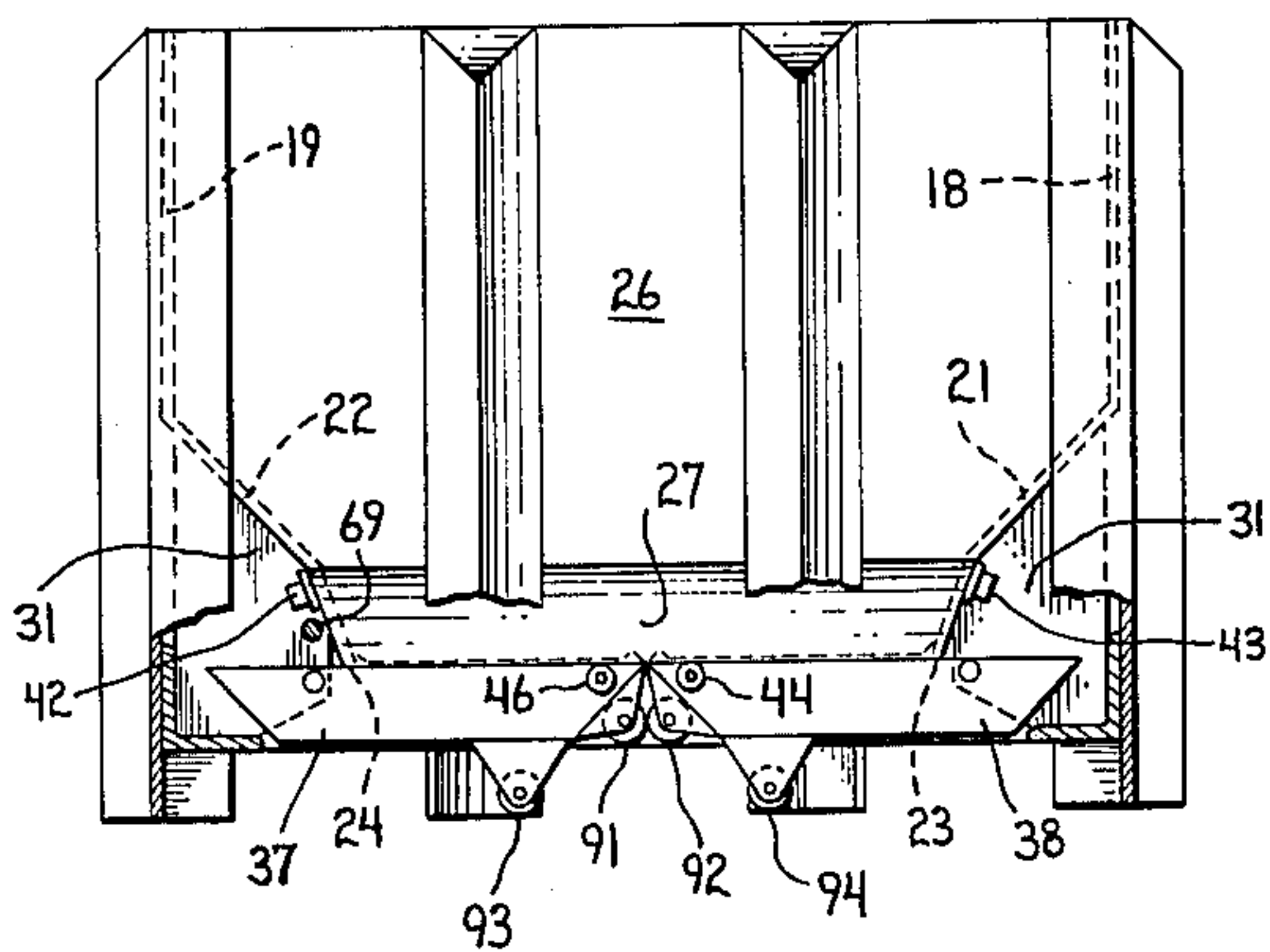


Fig. 3.

INVENTOR.  
VANCE C. STERRETT

BY  
*Lockwood, Woodard, Smith & Veikart*  
Attorneys

June 7, 1966

V. C. STERRETT

3,254,810

CONTAINER LATCHING SYSTEM

Filed Sept. 11, 1964

2 Sheets-Sheet 2

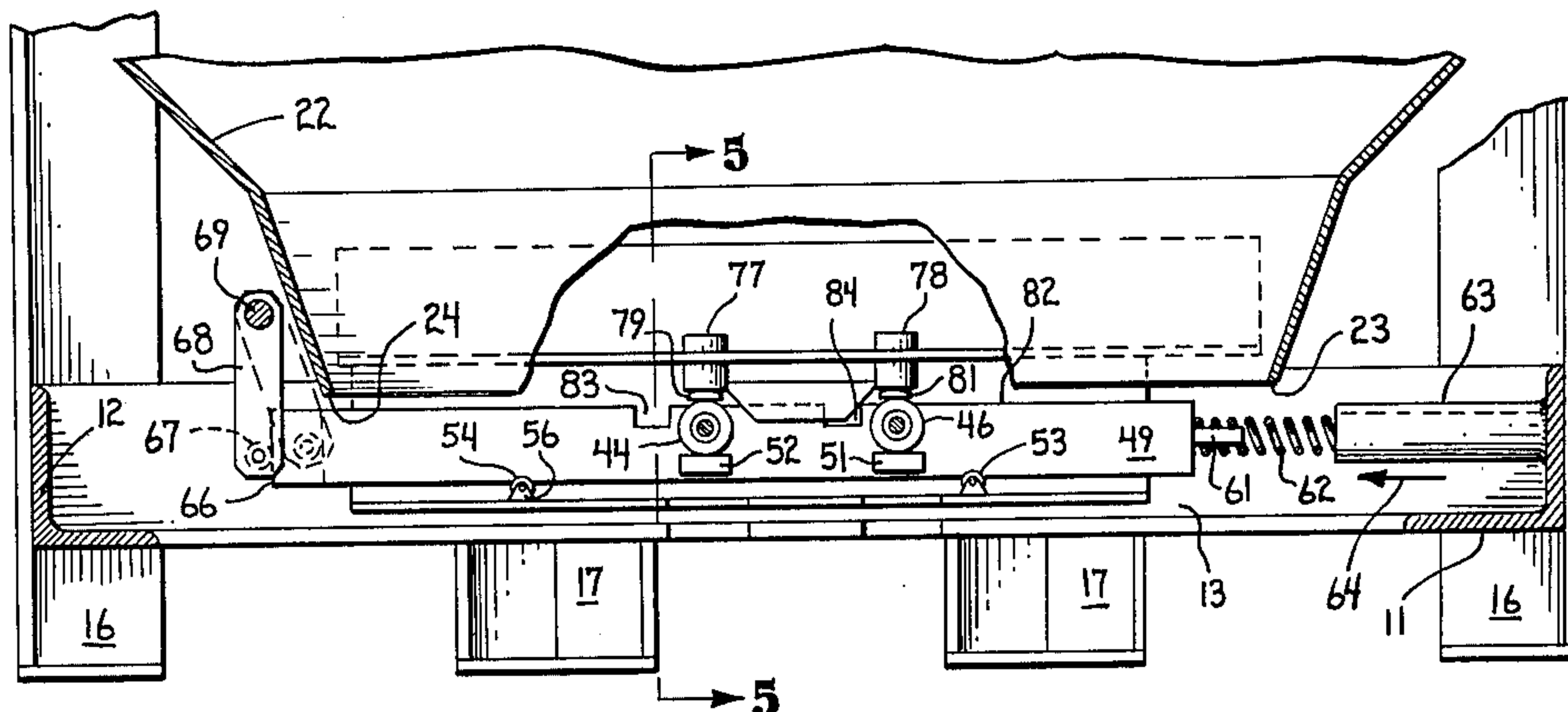


Fig. 4.

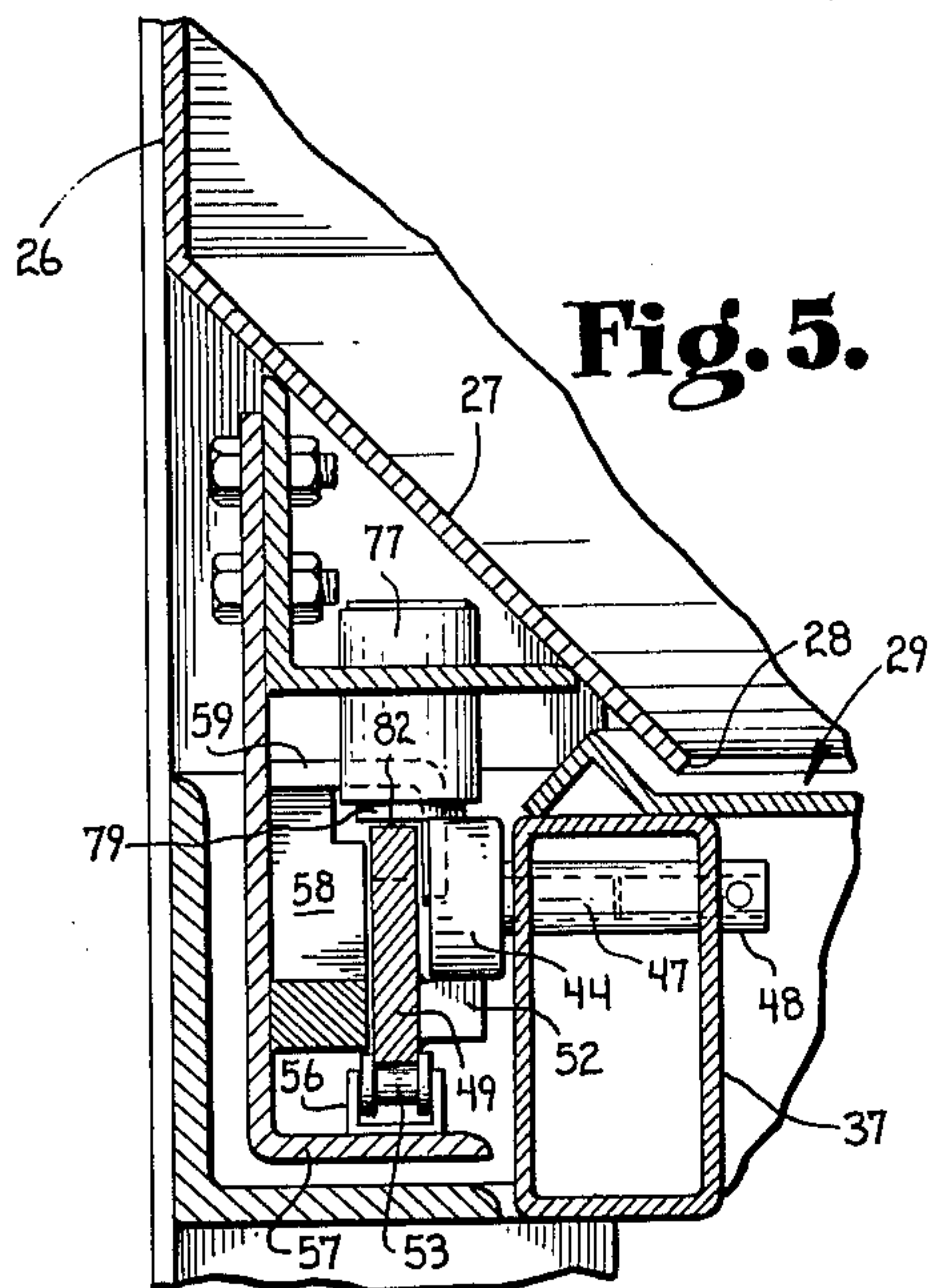


Fig. 5.

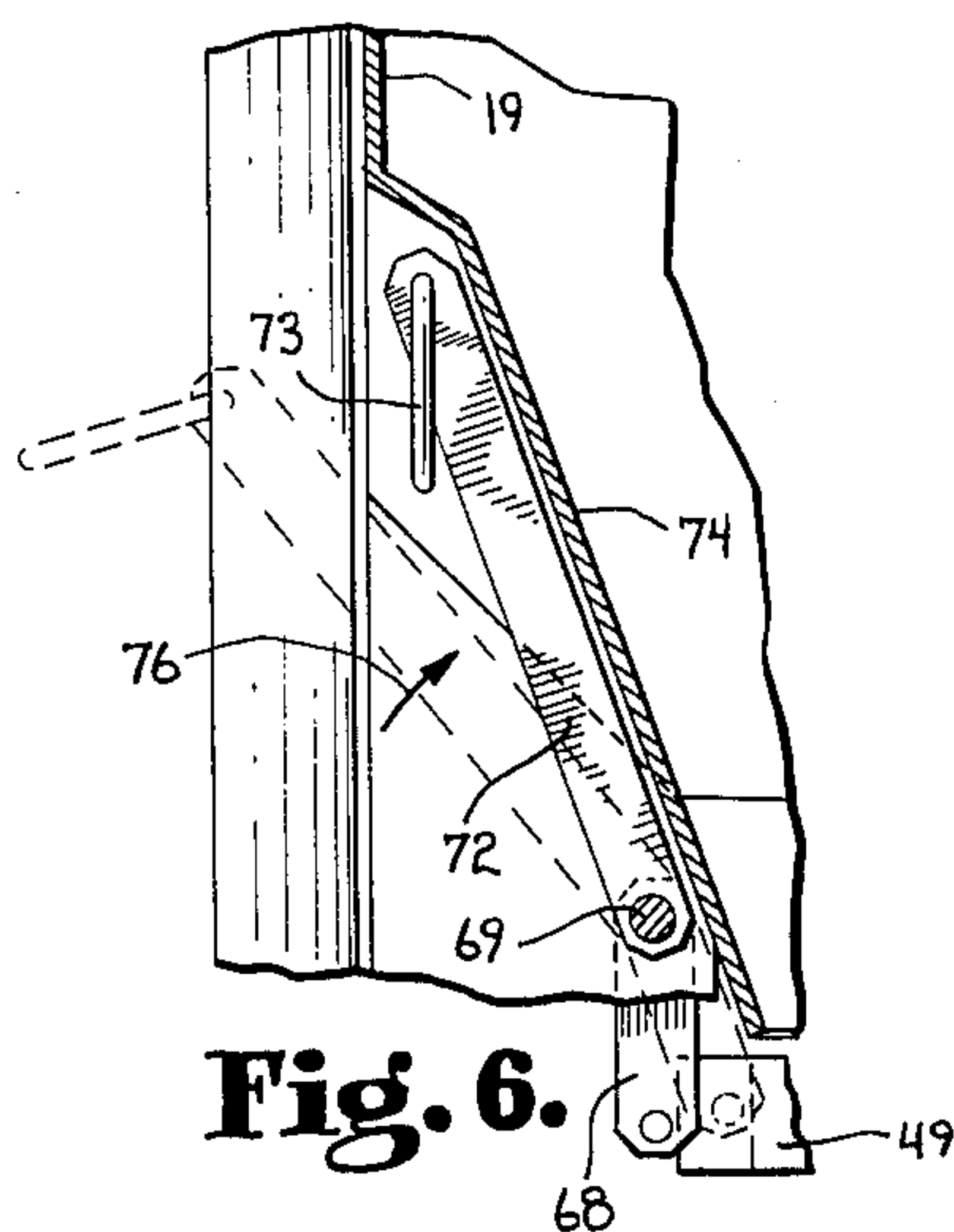


Fig. 6.

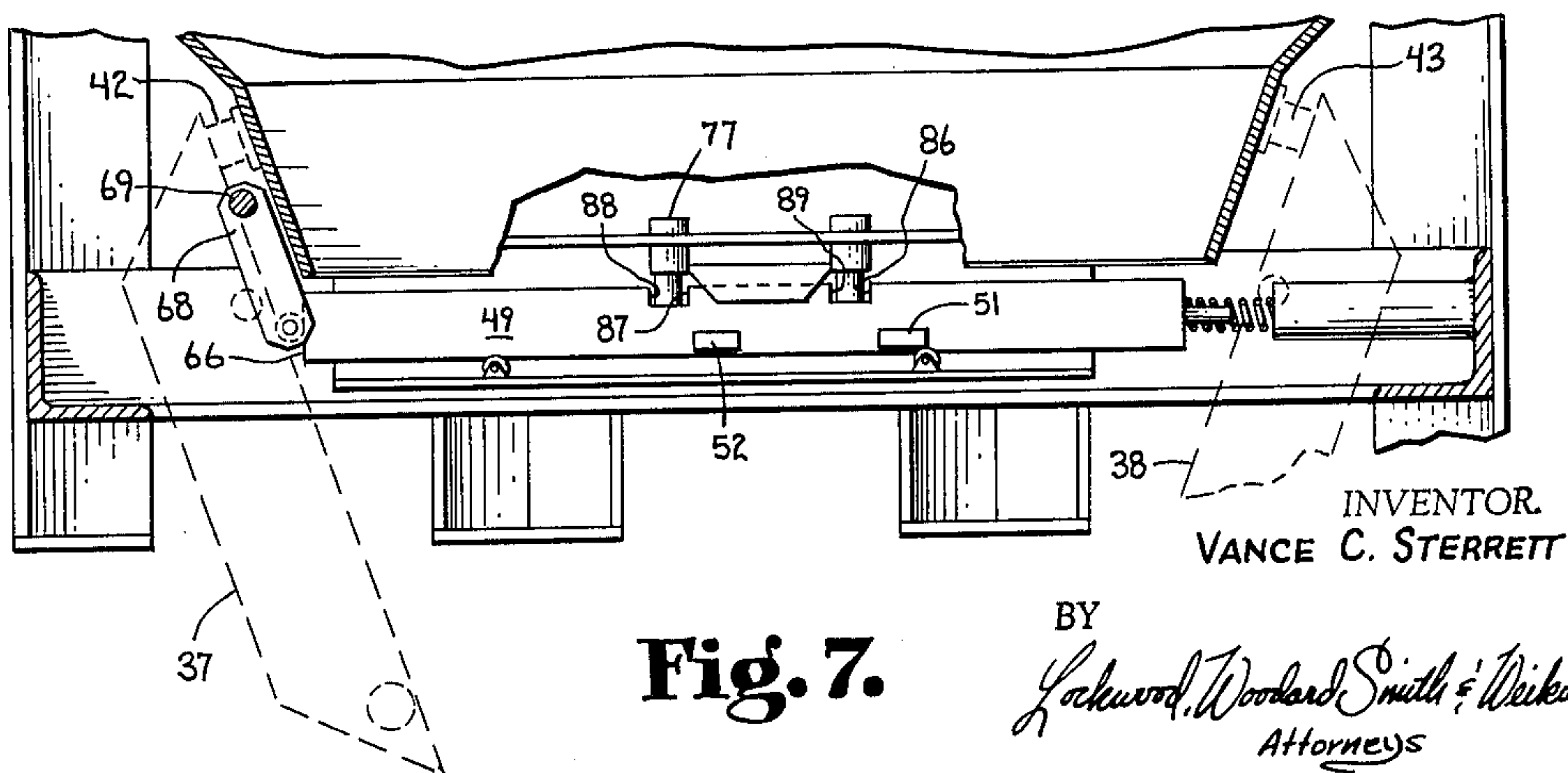


Fig. 7.

INVENTOR.  
VANCE C. STERRETT

BY  
*Lockwood, Woodward Smith & Wickart*  
Attorneys



1

3,254,810  
CONTAINER LATCHING SYSTEM  
Vance C. Sterrett, Indianapolis, Ind.  
(501 W. Linden Ave., Logansport, Ind.)  
Filed Sept. 11, 1964, Ser. No. 395,752  
6 Claims. (Cl. 222-502)

This invention relates generally to container latching systems and more particularly to container door latching apparatus of simple construction and which is particularly useful in bulk cargo transportation containers of the bottom-opening type.

Many door latching devices for containers are already known. Certain containers impose unusually severe operating conditions on the doors and door latching mechanisms thereof. One example is a bulk material transportation container of the type frequently used in heavy industry and which has one or more bottom-opening doors for bottom dumping the container while the container is suspended from a crane or other container handling apparatus or machinery. An example of such a container is shown in the patent to Johansson, 2,697,002, granted December 14, 1954.

It will be observed in the aforementioned patent, that the latching mechanism is located at the swinging end of the door and that the door opens at the side of the container where an operator must stand when the handle is pulled. Furthermore, that latching mechanism occupies space within the container and cannot feasibly be used with a double-door container. Yet one advantage of the double-door type of container is a balanced force effect upon the doors during opening which prevents any resultant side thrust upon the container when it is dumped. On the other hand, with the single door construction shown in the above mentioned patent, there is a substantial side thrust on the container when the door is opened and the tendency is to move the container in one direction and the contents in the opposite direction, the latter direction being toward the workman who opens the container.

It is, therefore, a general object of the present invention to provide an improved latching system for containers.

A further object is to provide a sturdy, reliable, and easily operated door latching mechanism which can be easily incorporated in existing conventional containers and in new containers and which can be easily manufactured in a variety of sizes with sufficient strength and durability to withstand the most rugged and severe environmental conditions.

A further object is to provide a mechanism achieving the foregoing objects and which can be readily incorporated with single or multiple opening doors.

A still further object is to provide a device achieving the foregoing objects and which has a positive locked-open condition and a positive locked-closed condition and incorporating fail-safe features.

A still further object is to provide a device achieving the foregoing objects and which either locks all doors simultaneously or locks none, and whose condition can, therefore, be readily ascertained by the user.

Described briefly, in a typical embodiment of the present invention as applied to a double-door, bottom-opening container, two shuttle bars are incorporated, one at each end of the container, each shuttle bar being movable on an axis perpendicular to the pivotal axes of the bottom-opening doors. Each shuttle bar is linearly movable upon its axis between a door retaining position and a door releasing position. A spring normally holds each shuttle bar in the door retaining position and a laterally extending block is provided on each shuttle bar which ex-

2

tends under a cam roller mounted to the end of a door, whereby the blocks support the rollers and thereby support the doors in the closed condition when the shuttle bar is in the door retaining position.

5 An operating lever is pivotally mounted to the container and has portions engaging an end of each of the shuttle bars. A handle is provided on the lever and, when pulled, moves the lever to push the shuttle bars from the door retaining position to the door releasing position whereupon the blocks move from under the rollers and the doors swing downwardly and open.

Two notches are provided in the upper edge of each of the shuttle bars and are positioned so that, when the shuttle bar is moved to the door releasing position, drop-pins mounted in the container frame fall into the notches to lock the shuttle bar in the door releasing position. These pins are positioned so that, when the container is lowered and the doors are closed by lowering the container, the rollers on the doors will push the pins up out of the notches when the doors close allowing the shuttle bars to return to the door retaining position whereupon the blocks move under the rollers and support the doors in the closed condition.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

FIG. 1 is a bottom plan view of a container incorporating a typical embodiment of the present invention.

FIG. 2 is a side elevational view thereof.

30 FIG. 3 is a section therethrough taken along the line 3-3 in FIG. 2 and viewed in the direction of the arrows.

FIG. 4 is an enlarged fragmentary elevational section taken along the line 4-4 in FIG. 2 and viewed in the direction of the arrows.

35 FIG. 5 is a greatly enlarged fragmentary sectional view taken along the line 5-5 in FIG. 4 and viewed in the direction of the arrows.

40 FIG. 6 is a greatly enlarged fragmentary section illustrating operating handle details, the section being taken along the line 6-6 in FIG. 2 and viewed in the direction of the arrows.

FIG. 7 is an enlarged fragmentary sectional view similar to FIG. 4, but illustrating the locked-open condition of the shuttle bar.

45 Referring now to the drawings in detail, and particularly FIGS. 1 through 3 thereof, a rectangular assembly of angle sections 11, 12, 13, and 14 is provided with up-standing angle sections 16 at the corners providing support legs, and eight additional angle sections 17 on the sides and ends which provide additional support legs as well as bumper guards for the container. The side walls 18 and 19 of the container are provided with inwardly convergent slope sheets 21 and 22, respectively, the lower portions of the slope sheets terminating in lower marginal edges 23 and 24 defining the sides of a discharge opening in the container. Similarly, each of the end walls 26 has a slope sheet 27, the lower marginal edge 28 of which defines one end of the discharge opening 29 (FIG. 5).

50 Gusset plates 31 are spaced along the sides of the container and support the door hinge rods 32 and 33. Two bottom-opening doors 34 and 36 are provided, door 34 having a series of supporting cross members 37 pinned to the gussets by the hinge pins 33, and door 36 having a series of cross members 38 pinned to the gussets 31 by the hinge pins 32. The inner marginal swinging edges 39 and 41 of the doors 34 and 36, respectively, are disposed in closely spaced facing relationship to each other at the longitudinal center line of the container.

70 Each of these doors is swingable downwardly on its hinge axis for dumping the container. FIG. 7 shows the attitude of these doors when they have swung downwardly



to dump the container. In FIG. 7, the doors are shown by the dotted outlines 37 and 38 representing the end cross members thereof. When the doors have opened to this point, rubber bumpers 42 and 43 secured to the container frame are engaged by members to stop the downward swinging of the doors. Obviously, for the doors to reach this condition, the container must be suspended above a surface, and this can be accomplished by any number of devices such as traveling cranes, stationary cranes, fork-lift trucks, for example. The manner in which the doors are normally held closed when the container is suspended, will now be described.

At each end of the container doors, there is provided according to this invention a shuttle bar, and because the construction at the opposite ends of the doors and of the shuttle bars is substantially identical, the construction at one end only will be described. Referring now particularly to FIG. 3, it will be observed that each of the end cross members 37 and 38 has a roller 44 and 46, respectively, thereon. The rollers 44 and 46 project outwardly from the cross members 37 and 38, respectively, toward the end of the container. This is well illustrated in FIG. 5. Each of the rollers is mounted on needle bearings on an axle or shaft 47 received in a tube 48 secured to the end cross member of the respective door. The roller is thus free to rotate on a horizontal axis parallel to the hinge axes of the doors and is mounted securely enough to adequately support the entire weight of the door and the load on the door when the roller is resting on a supporting surface.

To provide a supporting surface for each of the rollers 44 and 46, a shuttle bar 49 is provided with support blocks 51 and 52 affixed thereto and extending inwardly therefrom toward the doors. These blocks have the same horizontal spacing as the horizontal spacing between the axes of the rollers 44 and 46, and extend under these rollers for the support thereof. As shown in FIGS. 4 and 5, the shuttle bar 49 is supported on a pair of flanged track rollers 53 and 54 which are in turn mounted in yokes 56 mounted on the inwardly turned flange 57 of the fixed container structure. The flanges on these rollers serve to guide the shuttle bar as do the fixed guide members 58 and 59 also. Lengths of roller chain may be used for supports and guides, if desired.

A spring guide post 61 projects from one end of the shuttle bar 49 and receives the inner end of a return spring 62, the other end of which is received in a tube 63 secured to the container. This coil spring 62 normally biases the shuttle bar in the direction of the arrow 64. The other end 66 of the shuttle bar engages a thrust roller 67 received in a clevis 68 which forms a part of the operating lever assembly. The clevis 68 is affixed to a torque bar 69 which extends longitudinally of the container and is supported in suitable bearings 71 mounted in the gusset plates 31. A lever 72 is affixed to the torque bar 69 at the center of the container and has a hand ring 73 pivotally mounted at the distal end thereof. A recessed wall portion 74 is provided in the container wall 19 and slope sheet 22 to accommodate the hand lever 72 as shown in FIGS. 2 and 6. Engagement of the lever 72 with the wall 74 can occur over a substantial length of the lever and this can be used to stop the motion of the lever 72 in the direction of the arrow 76. Therefore, when the lever 72 and the clevis 68 are in the positions shown by the solid outlines in FIGS. 4 and 6, there can be no movement thereof about the axis of shaft 69 in the direction of the arrow 76. Consequently, the engagement of the end 66 of the shuttle bar with the thrust roller 67 stops the motion of the shuttle bar in the direction of the arrow 64 and opposes the bias of the spring 62. This shuttle bar is, therefore, held in the position shown in FIG. 4 by the spring 62 which is strong enough to prevent movement of the shuttle bar opposite the arrow 64 as a result of any conceivable horizontal inertia force which might be ap-

plied externally to the container as a result of it swinging and striking an abutment such as a wall, for example.

By pulling the hand ring 73 out, and thereby rocking the lever 72 and clevis 68 to the position shown by the dotted outlines in FIGS. 4 and 6, the shuttle bar is moved to the position shown by the solid outlines in FIG. 7 whereupon the blocks 51 and 52 have moved out from under the rollers 44 and 46 removing the support therefrom whereupon the doors will drop open to the position shown by the dotted outlines in FIG. 7. When the shuttle bar has moved to the position whereupon it releases the rollers 44 and 46, it is considered to be in the door releasing position. It is retained in the door releasing or locked-opened condition in a novel way which will now be described.

Two downwardly opening cylindrical cups 77 and 78 are secured to the container and each of these cups encloses an upwardly opening cylindrical cup which functions as a detent pin. A coil compression spring is disposed between the upper and lower cups inside the lower cup and biases the detent pin downwardly. Detent pin 79 in cup 77 has a portion resting on the top of the roller 44 in FIGS. 4 and 5. Similarly, the detent pin 81 has a portion resting on the top of the roller 46. These rollers, therefore, support these detent pins in a position above the upper marginal edge 82 of the shuttle bar 49.

It can be observed in FIG. 5 that, while a portion of the detent pin 79 is supported by the roller 44, another portion of the pin is disposed above the upper marginal edge 82 of the shuttle bar. When the shuttle bar is moved against the return spring 62 by pulling down the hand ring, the rollers 44 and 46 roll off the blocks 51 and 52 and drop with the doors. The result is that the detent pins are forced down by the springs therein. They would normally engage the upper edge 82 of the shuttle bar except for the fact that detent notches 83 and 84 are provided in the upper edge of the shuttle bar. These notches are horizontally spaced equal to the spacing of the detent pins and are offset with respect to the support blocks 51 and 52 on the shuttle bar such that as soon as the blocks 51 and 52 have moved sufficiently to allow the rollers 46 and 44 to drop free, the detents will have moved sufficiently for the detent pins 79 and 81 to be received therein in locking relationship to the shuttle bar. The locking relationship is achieved by reason of the fact that the walls 86 and 87 of the notches 84 and 83, respectively, are vertical as are the cylindrical walls of the detent pins. Therefore, if the shuttle bar is pushed slightly toward the left by the spring 62, the walls of the notches and the detent pins will abuttingly engage each other and prevent further movement of the shuttle bar. Consequently, the shuttle bar is locked in the open condition. Although contact of the clevis 68 with the slope sheet upon pushing the shuttle bar to the door releasing position will limit the extent of travel of the clevis and thereby effectively but indirectly limit the extent of travel of the shuttle bar against the spring 62, the walls 88 and 89 of the shuttle bar notches can also serve to limit the extent of travel of the shuttle bar against the direction 64 of spring bias thereon.

The manner in which the doors are again closed and the shuttle bar again returned to door retaining position will now be described. Each of the doors has a roller thereon which is the lowermost part of the whole container assembly when the doors have swung to the open condition. For door 36, the roller 92 is provided and for door 34, the roller 91 is provided. The arrangement of the doors is such that even though they are swung completely open as shown in FIG. 7, the rotational axes of these rollers 91 and 92 are disposed inwardly of vertical planes through the hinge axes of the doors. Therefore, as the container is lowered against a hard supporting surface, these rollers are the first to contact the supporting surface and, as the container is lowered still further, the rollers roll toward each other raising the doors with respect to the container. At some point in the travel



of the doors toward the closed condition, the rollers 93 and 94 will contact the ground surface and will complete the closing operation as the container is lowered to a point where the legs either touch or almost touch the ground surface.

During this door closing operation, the roller 44 at the end of the door 34 will contact the lower end of the detent pin 79. Likewise, the roller 46 will contact the lower end of the detent pin 81. As the door closing continues, the upward motion of the rollers 44 and 46 with respect to the container will push the detent pins out of the detents whereupon the shuttle bar will be snapped in the direction 64 by the return spring 62. This again places the support blocks 51 and 52 under the rollers 44 and 46 and the doors are locked closed.

From the foregoing description, several important advantages of the present invention can be readily appreciated. Including among these are the fact that all doors must be closed before the shuttle bar is movable out of the locked-open position into the locked-closed position. As long as the shuttle bar is in the locked-closed position, not a single door is movable from the closed position, and all doors are locked closed. The closing of a single door will not allow the shuttle bar to move to the locked-closed position. This means that all doors are always locked simultaneously or no door is locked.

From the foregoing description, it can now be appreciated that the present invention is exceptionally well suited to incorporation in a container having a single bottom-opening door such as the container shown in the aforementioned patent. As applied to such a container, the operating handle may be on the hinge side of the door just as it is with respect to the door 34 in the drawings herein. This means that if the container is being carried in a suspended manner by a fork-lift truck, the handle will be readily accessible to the operator who can merely pull it allowing the door to swing open and dump the contents of the container. The swing edge of the door is away from the truck upon dumping and the contents tend to be discharged away from the truck rather than toward the truck. This has a specific and important advantage over the container shown in the aforementioned patent which, if suspended from a fork-lift truck, cannot be dumped without the operator getting off the truck and walking around to grasp the handle, and which, when dumped, will dump toward the operator.

For the purposes of enabling the dumping of this container when it is being handled by a fork-lift truck, inverted channel sections 96 and 97 are secured across the top of the container and welded thereto. The lifting forks of a fork-lift truck can thereby enter the longitudinal tunnels 98 and 99 provided by the channels and can thereupon lift the container. By having the hand ring facing the fork-lift truck, it is readily accessible to the operator of the truck permitting him to easily dump the container without getting off the truck.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. A bulk material transportation container comprising:

- a frame;
- wall members secured to said frame and having lower marginal edges defining a discharge opening;
- a first horizontal door hinged to said frame and normally closed and covering a first part of said opening and swingable downwardly on its hinge axis to uncover said first part;
- a second horizontal door hinged to said frame and normally closed and covering a second part of said

opening and swingable downwardly on its hinge axis to uncover said second part, the swinging edges of said doors normally facing each other when said doors are closed;

legs supporting said doors and discharge opening above a horizontal supporting surface engaged by said legs;

first and second substantially identical elongated shuttle bars mounted to said frame at opposite ends of said doors, each of said shuttle bars being linearly movable horizontally in said frame perpendicular to said hinge axis between a door retaining position and a door releasing position, said first shuttle bar having a first detent notch in an upper marginal edge thereof adjacent one end of said first door and a second detent notch in said upper marginal edge adjacent one end of said second door;

a first coil compression spring connected to said frame and to one end of said shuttle bar and normally holding said shuttle bar in door retaining position;

first and second detent pins mounted in downwardly opening cylindrical cups secured to said frame for free vertical movement therein, said pins being spring loaded and thereby downwardly biased, each of said detent pins having a portion disposed above said upper marginal edge of said first shuttle bar, and said detent pins having a horizontal spacing therebetween equal to the horizontal spacing between said detent notches whereby said pins are receivable in said notches when said first shuttle bar is moved to door releasing position, said pins having vertical walls abuttingly engageable with vertical walls of said notches when said pins are received in said notches to thereupon lock said shuttle bar in door releasing position;

a first roller mounted to said one end of said first door between said one end and said first shuttle bar and having an axis of rotation parallel to the hinge axis of said first door, said first roller being normally disposed below a portion of said first pin and supporting said first pin in vertically spaced relationship to said upper marginal edge of said shuttle bar;

a second roller mounted to said one end of said second door between said door end and said first shuttle bar and having an axis of rotation parallel to the hinge axis of said second door, said second roller being normally disposed below a portion of said second pin and supporting said second pin in vertically spaced relationship to said upper marginal edge of said shuttle bar;

a first block affixed to said first shuttle bar and extending under said first roller toward said first door and supporting said first roller and thereby supporting said first door in closed condition when said shuttle bar is in door retaining position;

a second block affixed to said first shuttle bar and extending under said second roller toward said second door and supporting said second roller and thereby supporting said second door in closed condition when said shuttle bar is in door retaining position;

lever means pivotally mounted to said frame, said lever means including a hinge bar extending parallel to said hinge axes, a handle lever secured to said hinge bar on one side of the pivotal axis thereof and a clevis secured to said hinge bar, said clevis having at its distal end a shuttle bar engaging thrust roller on the other side of the pivotal axis of said hinge bar, said handle having a hand ring pivotally mounted at the distal end thereof and movable outwardly and downwardly to cause said thrust roller to move said first shuttle bar against the bias of said coil spring from door retaining position to door releasing position, said blocks being of a length such that they move out from under said first and second rollers



7

when said first shuttle bar is moved to door releasing position to allow said doors to swing downwardly and dump the contents of the containers;

a third roller mounted to said first door adjacent said swinging edge of said first door;

a fourth roller mounted to said second door adjacent the swinging edge thereof, the rotational axes of said third and fourth rollers being parallel to said hinge axis;

door stop means on said doors and said container to limit the amount of opening of said doors at points where the axes of said third and fourth rollers are between vertical planes containing said hinge axes, the peripheries of said third and fourth rollers being the lowermost points of said container when said doors are open, whereby said peripheries first contact and roll on a horizontal surface as said container is lowered with the doors open, to close said doors;

and fifth and sixth rollers mounted below said first and second doors respectively to complete closure of said doors;

said first shuttle bar remaining locked in said door releasing position by at least one of said detent pins until external closing forces applied to said doors return both of said doors to closed position whereupon said first and second rollers release said first and second detent pins, respectively, to release said first shuttle bar and permit said first shuttle bar to return to door retaining position with said blocks below said first and second rollers, said lever means and doors being operably associated with said second shuttle bar for control thereof identical to control of said first shuttle bar by said lever means and said doors.

2. A bulk material transportation container comprising:

a body having wall members with lower marginal edges defining a bottom discharge opening;

a first door pivotally mounted to said body and normally closed and covering a first part of said opening and swingable downwardly on its pivotal axis to uncover said first part;

a second door pivotally mounted to said body and normally closed covering a second part of said opening and swingable downwardly on its pivotal axis to uncover said second part;

the swinging edges of said doors normally facing each other when said doors are closed;

a shuttle bar mounted to said body at one end of said doors and linearly movable in said body between a door retaining position and a door releasing position, said shuttle bar having a first detent notch in an upper marginal edge thereof adjacent one end of said first door and a second detent notch in said upper marginal edge adjacent one end of said second door;

a first spring connected to said body and to said shuttle bar and normally holding said shuttle bar in door retaining position;

first and second detent pins mounted in said body for free vertical movement therein, said pins being spring loaded and thereby downwardly biased, each of said detent pins having a portion disposed above said upper marginal edge of said shuttle bar, and said detent pins having a horizontal spacing therebetween equal to the horizontal spacing between said detent notches whereby said pins are receivable in said notches when said shuttle bar is moved to door releasing position, said pins having walls formed for lockingly engaging walls of said notches when said pins are received in said notches to thereupon lock said shuttle bar in door releasing position;

a first roller mounted to said end of said first door between said end and said shuttle bar and having an axis of rotation parallel to the pivotal axis of said

8

first door, said first roller being normally disposed below a portion of said first pin and supporting said first pin in vertically spaced relationship to said upper marginal edge of said shuttle bar;

a second roller mounted to said end of said second door between said door end and said shuttle bar and having an axis of rotation parallel to the pivotal axis of said second door, said second roller being normally disposed below a portion of said second pin and supporting said second pin in vertically spaced relationship to the upper marginal edge of said shuttle bar;

a first block affixed to said shuttle bar and extending under said first roller toward said first door and supporting said first roller and thereby supporting said first door in closed condition when said shuttle bar is in door retaining position;

a second block affixed to said shuttle bar and extending under said second roller toward said second door and supporting said second roller and thereby supporting said second door in closed condition when said shuttle bar is in door retaining position;

lever means pivotally mounted to said body, said lever means including a handle on one side of the pivotal axis thereof and a shuttle bar engaging thrust roller on the other side of the pivotal axis thereof, said handle having a hand ring pivotally mounted at the outer end thereof and movable outwardly and downwardly to cause said thrust roller to move said shuttle bar against the bias of said first spring from door retaining position to door releasing position, said blocks being of a length such that they move out from under said first and second rollers when said shuttle bar is moved to door releasing position to allow said doors to swing downwardly and dump the contents of the container;

said shuttle bar remaining locked in said door releasing position by at least one of said detent pins until external closing forces applied to said doors return both of said doors to closed position whereupon said first and second rollers release said first and second detent pins, respectively, to release said shuttle bar and permit said shuttle bar to return to door retaining position with said blocks disposed below and supporting said first and second rollers.

3. A bulk material transportation container comprising:

a body having wall members with lower marginal edges defining a bottom discharge opening;

a first door pivotally mounted to said body and normally closed and covering a first part of said opening and swingable downwardly on its pivotal axis to uncover said first part;

a second door pivotally mounted to said body and normally closed and covering a second part of said opening and swingable downwardly on its pivotal axis to uncover said second part;

the swinging edges of said doors normally facing each other when said doors are closed;

a shuttle bar mounted to said body at one end of said doors and linearly movable in said body between a door retaining position and a door releasing position, said shuttle bar having a first detent notch therein and a second detent notch therein;

a first spring connected to said body and to said shuttle bar and normally holding said shuttle bar in door retaining position;

first and second detent pins mounted in said body for free movement therein, said pins being spring loaded and biased thereby, each of said detent pins having a portion disposed adjacent a marginal edge of said shuttle bar, and said detent pins having a spacing therebetween equal to the spacing between said detent notches whereby said pins are receivable in said notches when said shuttle bar is moved to door re-



leasing position, said pins having walls formed for lockingly engaging walls of said notches when said pins are received in said notches to thereupon lock said shuttle bar in door releasing position;

a first door support means mounted to said first door 5 adjacent said shuttle bar and normally holding said first pin in spaced relationship to said shuttle bar when said first door is closed;

a second door support means mounted to said second door adjacent said shuttle bar and normally holding 10 said second pin in spaced relationship to said shuttle bar when said second door is closed;

a third door support means affixed to said shuttle bar and extending under said first door support means and supporting said first door support means and 15 thereby supporting said first door in closed condition when said shuttle bar is in door retaining position;

a fourth door support means affixed to said shuttle bar and extending under said second door support means 20 and supporting said second door support means and thereby supporting said second door in closed condition when said shuttle bar is in door retaining position;

and actuator means pivotally mounted to said body, 25 said actuator means including means engageable with said shuttle bar to move said shuttle bar from door retaining position to door releasing position, said third and fourth support means being disposed to move away from said first and second support means, re- 30 spectively, when said shuttle bar is moved to door releasing position to allow said doors to swing downwardly and dump the contents of the container;

said shuttle bar remaining locked in said door releasing position by at least one of said detent pins until ex- 35 ternal closing forces applied to said doors return both of said doors to closed position whereupon said first and second support means release said first and second detent pins, respectively, to release said shuttle bar and permit said shuttle bar to return to door 40 retaining position with said third and fourth support means disposed below and supporting said first and second support means.

4. A container comprising:

a body having wall members with marginal edges de- 45 fining an opening;

a first door pivotally mounted to said body and normally closed and covering said opening and swingable on its pivotal axis to uncover said opening;

a shuttle bar mounted to said body and movable in 50 said body between a door retaining position and a door releasing position, said shuttle bar having first locking means therein;

a first spring connected to said body and to said shuttle bar and normally holding said shuttle bar in door 55 retaining position;

second locking means mounted in said body, one of said locking means being movable and lockingly engageable with the other of said locking means when said shuttle bar is moved to door releasing position; 60

a first door support means mounted to said door and normally holding said movable locking means in an unlocked condition when said door is closed;

a second door support means affixed to said shuttle bar 65 and normally supporting said first door support means and thereby supporting said door in closed condition when said shuttle bar is in door retaining position;

and actuator means movably mounted to said frame, said actuator means including a handle exterior to one of said wall members and on the same side of the container as the pivotal axis said door, and said actuator means including a shuttle bar engaging portion to move said shuttle bar from door retaining

position to door releasing position, said second support means being disposed to move away from supporting engagement of said first support means when said shuttle bar is moved to door releasing position to allow said doors to swing and open the container; said shuttle bar remaining locked in said door releasing position by said locking means until external closing force applied to said door returns said door to closed position whereupon said first door support means unlocks said locking means to release said shuttle bar and permit said shuttle bar to return to door retaining position with said second door supporting means supporting said first door supporting means.

5. A container comprising:

a body having wall members with marginal edges defining an opening;

a first door pivotally mounted to said body and normally closed and covering said opening and swingable on its pivotal axis to uncover said opening;

a shuttle bar mounted to said body and movable between a door retaining position and a door releasing position, said shuttle bar having first locking means therein;

a first spring connected to said body and to said shuttle bar and normally holding said shuttle bar in door retaining position;

second locking means mounted in said body, one of said locking means being movable and lockingly engageable with the other of said locking means when said shuttle bar is moved to door releasing position;

a first door support means mounted to said door and normally holding said movable locking means in an unlocked condition when said door is closed;

a second door support means affixed to said shuttle bar and normally supporting said first door support means and thereby supporting said door in closed condition when said shuttle bar is in door retaining position;

and actuator means movably mounted to said frame, said actuator means including means engageable with said shuttle bar to move said shuttle bar from door retaining position to door releasing position, said second support means being disposed to move away from said first support means when said shuttle bar is moved to door releasing position to allow said doors to swing and open the container.

6. A container comprising:

a body;

a door movably mounted to said body;

a movable member having a portion normally engaging a portion of said door and holding said door in a closed condition when said member is in a retaining position;

an actuator connected to said movable member, and movable to move said movable member to a release position disengaging said portions to thereby release said door;

locking means lockingly engageable with said movable member when said movable member is in said release position, to lock said movable member in release position while said door is released;

said locking means being releasable by said door portion when said door is closed, to thereby release said movable member permitting return of said movable member to said retaining position.

References Cited by the Examiner

UNITED STATES PATENTS

1,783,621	12/1930	Johnson	251—299 X
2,622,771	12/1952	Tulou	222—502

LOUIS J. DEMBO, *Primary Examiner*.

CHARLES R. CARTER, *Assistant Examiner*.