ABSTRACT: Support means for containers adapted for location transfer and selected detached surface placement, wherein adjustable length of legs provide for surface support in an extended condition, and when in a retracted condition being substantially housed within the confines of the containers to facilitate their transfer, with appropriate lock means for the different leg conditions, and container and leg construction providing strength, ease of operation and protective confinement of the legs within the horizontal periphery of the container.
CONTAINER SUPPORT MEANS

BACKGROUND OF THE INVENTION

Heretofore portable cargo containers adapted for vehicular transfer from one location to another have been known and which incorporated surface support means for the containers for semipermanent or temporary use or cargo storage, such apparatus has not incorporated a completely satisfactory means of support providing strength to the leg type of support nor ease of use and locking and latching means for safe use. In many heretofore known constructions, leg assemblies have been wholly detachable from the container body with consequent inconvenience and structural strength characteristics. In other known constructions, the support means extended beyond the horizontal periphery of a container with a consequent possibility of creating an obstruction and a possibility of damage.

SUMMARY OF THE INVENTION

It is accordingly a principal feature of the present invention to provide support means for portable cargo containers and the like adapted for vehicular transfer from point to point and surface placement for temporary or semipermanent use of storage over coming the drawbacks of prior known constructions. The support means consist of extendible legs which are retractable within the confines of the container to facilitate transfer thereof and which can easily be placed in a container support condition. The support means consisting of the legs, when retracted, are confined within vertically arranged pockets preferably at the interior corners of the container with the construction providing strength and protective confinement of the legs in a nonprojecting manner within the horizontal periphery of the container. Lock and latch means are provided for securing the legs in extended and retracted positions.

Other and further objects and advantages of the invention will become more readily apparent from the following detailed description of an embodiment thereof when taken together with the accompanying drawings, in which:

FIG. 1 is a side-elevational view of a container embodying the present invention in a surface-supported condition;

FIG. 2 is a side-elevational view showing a container positioned on a truck chassis for transfer with the support means in a facilitating retracted condition;

FIG. 3 is an end-elevational view taken at right angles to FIG. 1;

FIG. 4 is a fragmentary end-elevational view taken at right angles to FIG. 2;

FIG. 5 is a perspective fragmentary view through a corner of a container embodying the invention, parts thereof being broken away for clarity;

FIG. 6 is a fragmentary bottom perspective view of a portion of the apparatus of FIG. 5;

FIG. 7 is a fragmentary elevational view of a ground support condition;

FIG. 8 is a fragmentary elevational view taken at right angles to FIG. 7, with parts being broken away for clarity, disclosing a support leg and container construction with the leg in extended position;

FIG. 9 is a fragmentary sectional view taken on line 9—9 of FIG. 8;

FIG. 10 is a fragmentary elevational view of a leg in retracted position disclosing locking means therefor;

FIG. 11 is a sectional view through a leg showing a leg lock assembly in plan view, the leg being partially horizontally extended;

FIG. 12 is a view similar to FIG. 11 with the leg in a horizontally retracted position;

FIG. 13 is a sectional view taken on line 13—13 of FIG. 11;

FIG. 14 is a sectional view taken on line 14—14 of FIG. 13; with the leg-locking means in open vertical locking position; and

FIG. 15 is a view similar to FIG. 14, corresponding to FIG. 12, showing the leg lock in closed or leg sliding position.

While the drawings and following description relate to transportable and portable cargo containers adapted for movement on a truck bed or the like, it is to be understood that the support means for the container are more generally applicable. The description and showing are therefore directed to a workable embodiment as being illustrative of a setting or use of the invention and the invention is not to be construed as limited thereto.

Referring now more specifically to the drawings, a portable cargo container 20 is shown and is of a type generally known in the art. This type of portable cargo container is adapted for mounting on a chassis 22 or bed of a truck generally designated 24, also of a known type, or could be used with other types of conveying vehicles. The container 20 is provided with surface of ground support means consisting of legs 26 provided at the corners thereof adapted to support the container when positioned on the ground or other surface for temporary or semipermanent use, such as for storage. Such apparatus is generally known in the art and has consisted in different types and constructions. The present invention, however, is directed primarily to a new support assembly as will be described hereinafter. In the known embodiment container lift mechanisms or devices generally designated 28 are incorporated with the conveying vehicle adapted to elevate or seat a container with respect to the chassis and permit operations whereby the legs or other support means can be activated by placement, lowering, adjustment and the like to permit ground placement and support of the container. Such features generally being known, and forming no part of the present invention, will not be described in detail hereinafter.

The support means of legs generally designated 26 include inner vertical leg portion 30 having a foot end-connector portion 32 in telescopic relation thereto and adjustable by means of pin and hole connections 34 which permit of a gross vertical adjustment for adaption of the support to different terrains and conditions. Foot end connector 32 as shown is adjustably attached at the lower end of leg portion 30 and, by means of an eccentric 38 cooperating with mating openings in the leg and foot connector is locked. By adjustment of the pin a vertical adjustment of the leg can be effected in an obvious manner.

A vertically extending housing portion 40 is provided in the interior corner of the container body adapted for telescopic reception of leg 26 in retracted condition. A horizontal slide 42 is telescopically mounted in a structural box member 44, fixed to the chassis frame. The outer end of horizontal slide 42 has a upper leg portion 46 surrounding leg 30. Vertical leg movement for extension or retraction is indicated by arrow 48, FIG. 5, and horizontal movement of the overall leg assembly is indicated by arrow 50 for horizontal movements of slide member 42 and leg 26 with respect to box member 44 and the container body. The fully extended leg position is shown in FIG. 7 as indicated by arrow 48a, and also shown in FIG. 8. The fully retracted position is shown in FIG. 10 as indicated by arrow 48c. A leg latch assembly shown at 54 includes a slidable lever having a nose portion 56 engageable under the foot (FIG. 10) to maintain the vertical leg in the elevated or fully retracted position. A handle 58 can also be provided on the lever which preferably can be of a spring-biased closed-type. Movement into latching or locking position is indicated by arrow 54a. A cover plate 60 is provided at the outer end of horizontal slide 42 and connected to leg portion 46. A telescopically arranged brace slide 62 is mounted in channel 64 for further support of the leg when in extended container support position. A stop plate 66 on member 44, for coaction with a plate 68 on the horizontal slide, limits outward travel of the horizontal slide (FIG. 5). An automatic leg lock assembly generally designated 70 is provided and used to lock the leg in vertical extended position.

The leg lock assembly will be more clearly understood with reference to FIGS. 8 and 11-15 inclusive. A lock housing 72 is attached on the interior of leg 30 is proximity to the upper end thereof and slidably supports opposed slidable blocks 74 on
support surface 76 in the interior bottom of the housing 72. Each block 74 carries a lock pin 78 for movement of the support surface 76 is supported within the leg by means of pins 80 or the like and grooves 82 are provided in the upper face in which the blocks 74 are guidable. An upper plate 84 is mounted above the blocks 74 and confines the blocks within the housing. The plate 84 has apertures 86 therethrough, and pins 88 extend through the apertures 86 and extend 90 through the upper faces of the blocks. The apertures 86 and slots 96, from a retracted position of lock pins 78 shown in FIG. 15 to an extended leg-locking position shown in FIG. 14. This action is automatically accomplished upon outward or inward movement of a leg 26.

To this end the lever 92 has a first lobe 98 and a second lobe 100. A lever-operating block 102 having a rounded nose portion is attached to the container by means of bracket 104 and extends outwardly in the path of movement of lock lever 92 and contacts lobe 98 to release the lock as the leg is horizontally moved from retracted to extended position. Wit the leg horizontally retracted on the horizontal slide into the leg housing, the leg can be raised vertically as indicated by arrow 48, FIG. 5, and in horizontal retraction movement the leg 100 will contact the back surface of the housing to thereby rotate the lock lever 92. A lever 92 has elongated slots 96 therethrough and mating openings generally designated 108 in the housing the leg 30, the leg portion 46 and lock plate 106 on the exterior of the leg 46. With the leaf 78 retracted as shown in FIG. 15, the legs can be raised vertically within the container housing, and specifically leg housing 46, to an uppermost position, whereas upon the leg latch assembly 54 is actuated as indicated by arrow 54c, FIG. 10, to lock the leg in the vertically retracted position. When it is desired to utilize the legs to support the container on a surface, the legs are horizontally moved outward with respect to the container, which at that time, the leg 98 is contacted by lever-operating block 102 which serves to rotate the lever and thereby extend the pins, after the latch assembly has been released, and the leg permitted to vertically extend. The pins 78 when fully extended to the position shown in FIG. 14 serve to lock the leg in its extended downward position.

It will thus be seen that the leg lock assembly or system functions automatically as the leg is manipulated for vertical and horizontal extension or retraction to permit the desired positioning thereof. As pointed out hereinbefore, when the leg is retracted both horizontally and vertically it is within the horizontal peripheral confines of the container body to prevent possible damage through accidental contact with structures external to the body. The construction and operation of the present invention will be readily apparent from the foregoing description, when taken together with the drawings and a further discussion is not considered necessary herein.

Manifestly, minor changes in details of construction can be effected in the invention without departing from the spirit and scope thereof, as defined in, and limited solely by the appended claims.

I claim:

1. Support means for containers comprising:
A. a plurality of vertically disposed, axially extensible support legs attached to said containers;
B. said legs being vertically axially movable from a retracted storage position to an extended container support position;
C. means mounting said legs for horizontal movement in horizontally retracted and extended position;
D. vertically disposed pockets within the body of said container, said legs in retracted position confined within said pockets;
E. latching means to secure the said legs in a vertically retracted position;
F. said legs including inner and outer leg portions telescopic with respect to one another, one said portion being attached to said means mounting said legs for horizontal movement;
G. means carried by said legs including movable lock pins for interengaging and locking the inner and outer leg portions, and means operatively associated with said lock pins and the container body for movement of said lock pins into interengaging lock position when said horizontal movement means are horizontally extended, and to disengage said lock pins from said legs upon retraction of said horizontal movement means, said legs being axially vertically extended prior to horizontal movement.

2. Apparatus as claimed in claim 1, a lock housing within the upper end of the inner leg portion, blocks mounting said lock pins, horizontally supported in said housing and being slidable toward and away from one another, said outer and inner leg portions having side openings therethrough, said lock pins being extendible between and into mating side openings upon vertical extension of said leg portions to lock the same in extended position.

3. Apparatus as claimed in claim 2, a cam-shaped leg lock lever rotatably mounted on said lock housing, said lever, said housing and said blocks having mating openings therein, pins extending in said openings interengaging said lever and said blocks and adapted upon rotation of said lever to slide said blocks in said housing for extension or retraction of said lock pins into and out of locking positions.

4. Apparatus as claimed in claim 3, including a lever operating block attached to said container body within said vertical pocket, and position for engagement by said leg lock lever upon horizontal movement of said legs from retracted to extended position to rotate said lever to extend said pins into locking position.

5. Apparatus as claimed in claim 4, a portion of said cam-shaped lever being engageable with an inner wall of said pocket upon movement of said leg horizontally into said pocket to rotate said lever for retraction of said lock pins to permit vertical telescopic retraction of said leg portions.

6. Apparatus as claimed in claim 5 and including a surface engaging foot on the lower end of said inner leg portion adapted for surface contact and support of said leg, and latch means on said container selectively controllable with said foot, with said leg in vertically retracted position, for vertical securement of said leg.

7. Apparatus as claimed in claim 8, said openings in said lever and said block housing being elongated and angularly arranged with respect to one another to permit relative sliding movement of said pins therein upon rotation of said lock lever.