

Dec. 20, 1966

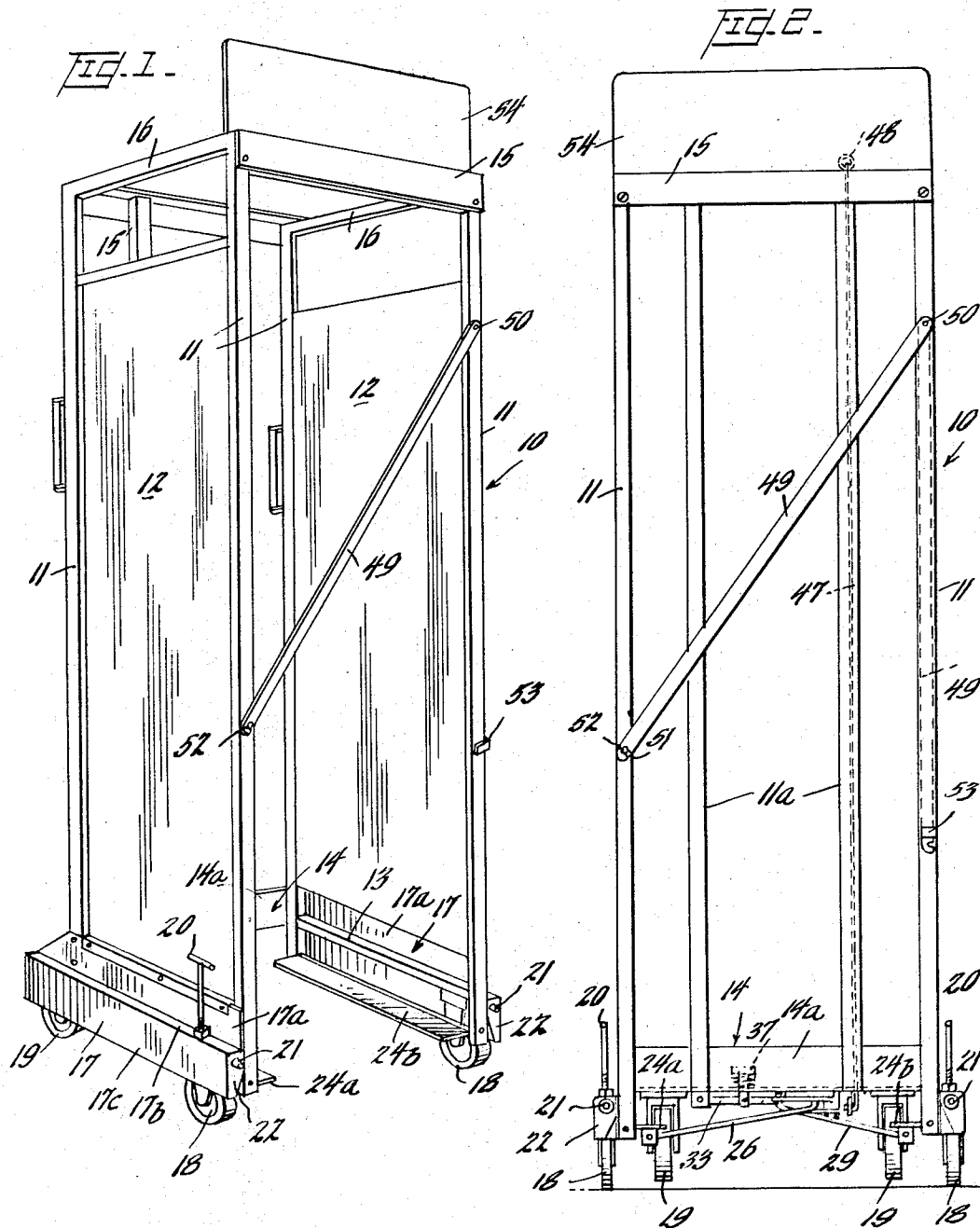
D. K. WALZ ETAL

3,292,801

DEVICE FOR STACKING AND TRANSPORTING CASES

Filed Feb. 8, 1965

3 Sheets-Sheet 1



INVENTORS

David K. Walz
Rawlings L. Burnette,

BY Watson, Cole, Grindle & Watson,
ATTORNEYS

Dec. 20, 1966

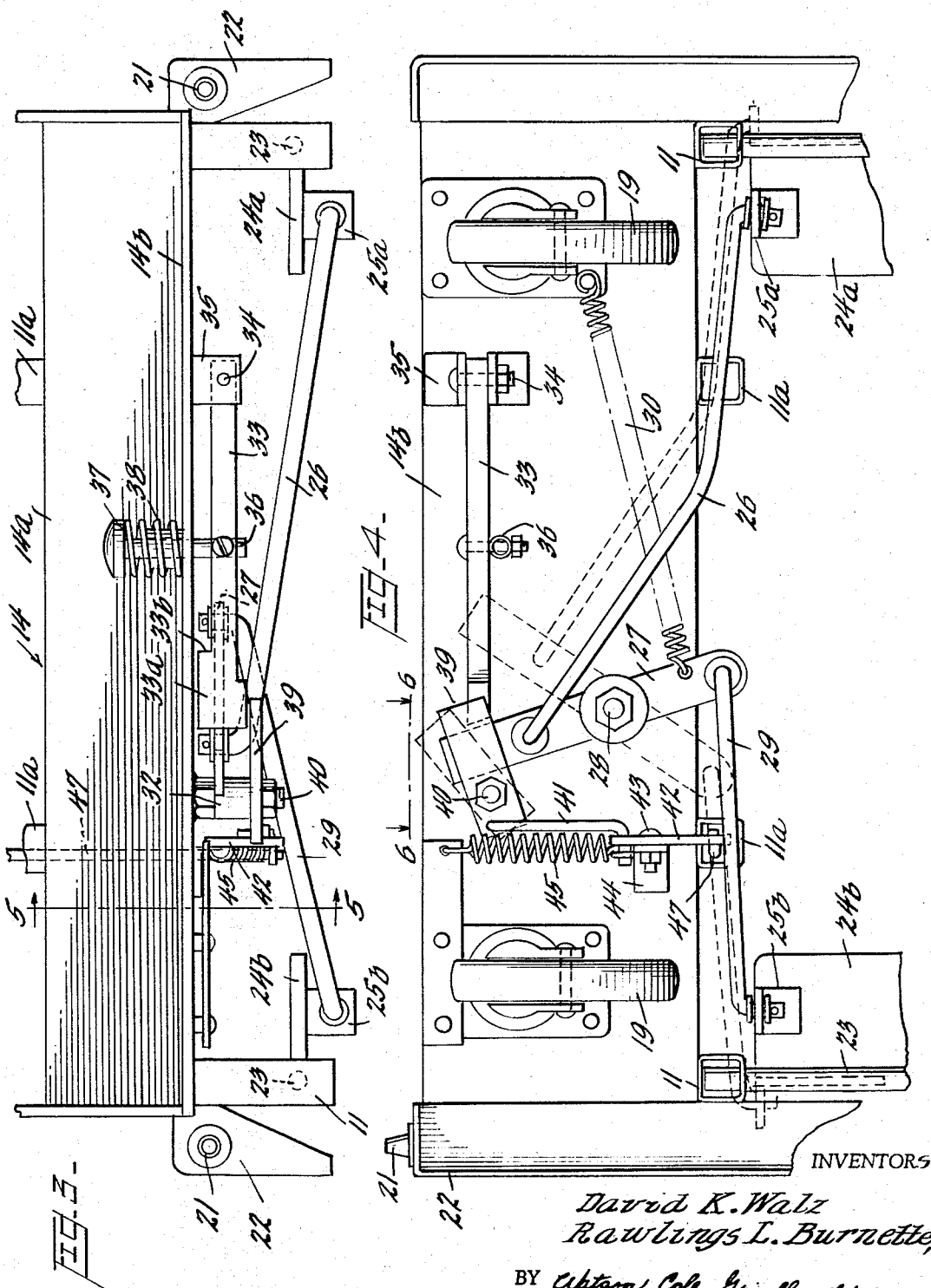
D. K. WALZ ETAL

3,292,801

DEVICE FOR STACKING AND TRANSPORTING CASES

Filed Feb. 8, 1965

3 Sheets-Sheet 2



Dec. 20, 1966

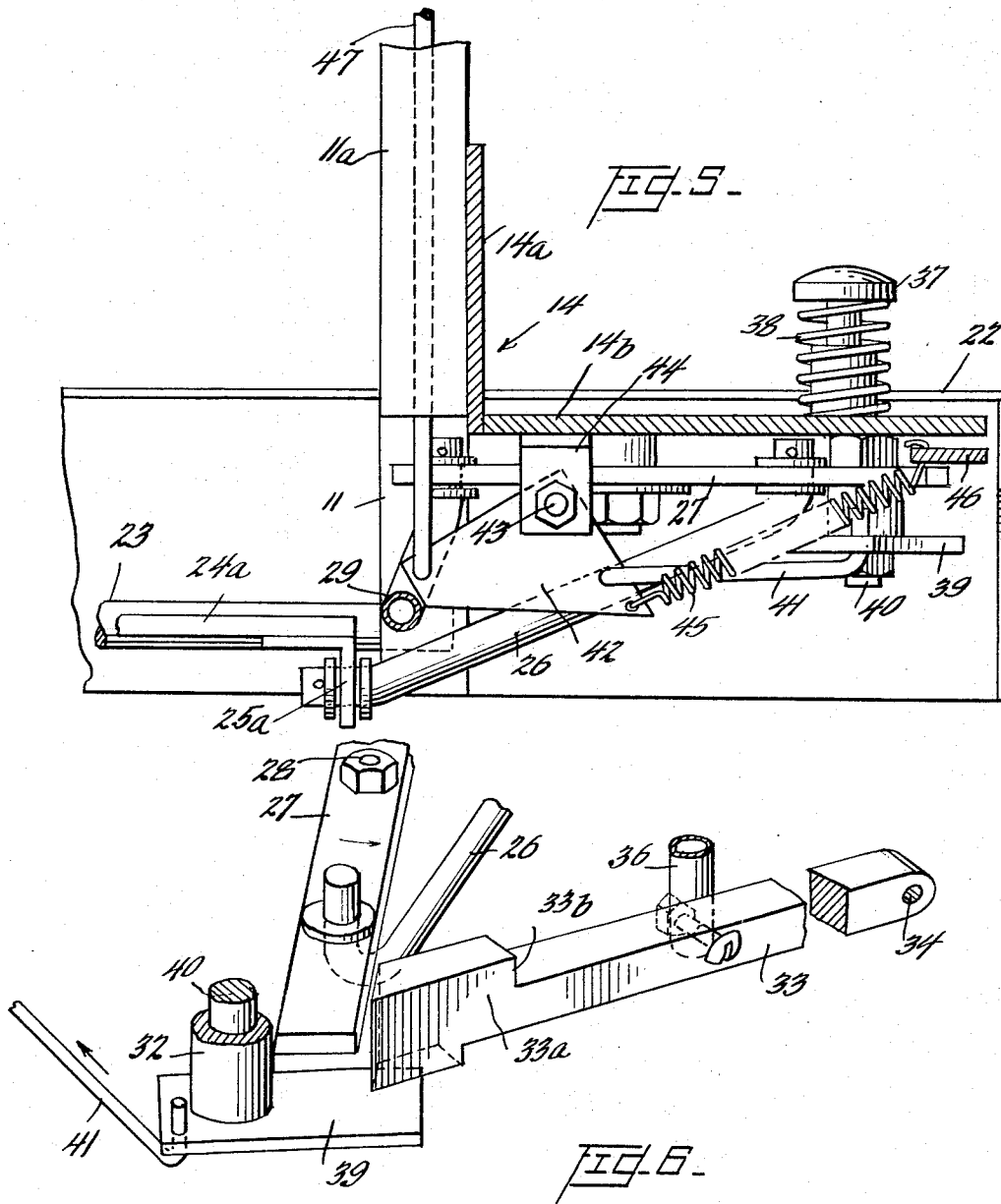
D. K. WALZ ETAL

3,292,801

DEVICE FOR STACKING AND TRANSPORTING CASES

Filed Feb. 8, 1965

3 Sheets-Sheet 3



1

3,292,801

DEVICE FOR STACKING AND TRANSPORTING CASES

David K. Walz, Decatur, Ga., and Rawlings L. Burnette, Lynchburg, Va., assignors to The Coca-Cola Company, Atlanta, Ga., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 431,137
3 Claims. (Cl. 214—390)

The present invention relates to devices for storing and transporting cases, and more particularly the familiar wooden cases associated with bottled beverages, especially "soft" drinks. According to present practice, such bottled beverages are packaged in cardboard or paper carrying devices accommodating six, eight or twelve bottles, a plurality of such cardboard carriers being fitted into a wooden tray or shell customarily designed to accommodate a total of twenty-four bottles. Trays or shells of the type mentioned are hereinafter designated as "cases."

A problem encountered in handling soft drinks in stores doing a large volume of business, such as supermarkets, is that of providing a convenient manner for accommodating the return of empty bottles with a minimum expenditure of relatively high-priced clerical labor. Customarily, case lots of soft drinks are delivered to the storage portion of a supermarket by delivery trucks, packaged in the aforesaid six, eight or twelve bottle paper or cardboard cartons, which are, in turn, carried in wooden cases, such cases being disposed in vertical stacks on pallets. The general object of the present invention is the provision of a convenient and inexpensive device for transporting such a stack of cases from the storage area into the sales area of a store, for suitably supporting one or more such cases in a convenient arrangement for the reception of cartons of empty bottles brought in by customers, and for transporting a stack of cases filled with empty bottles from the sales area of the store to the storage area and depositing them on a pallet or floor, whereupon another cycle may be initiated.

More specifically, it is an object of the invention to provide a device comprising a structural framework defining a space of dimensions suitable for the reception of one or more stacks of cases in horizontal position, anti-friction means supporting said framework for rolling movement, movable means for supporting the cases in said space and comprising retractable support members secured on the framework near its lower end, and means for moving such support members to positions for supporting a stack of cases and for releasing said cases so that they may be deposited on a pallet or on the floor.

Suitably the support means may comprise rocker rods journaled on the framework adjacent its lower end, support members secured to the respective rods and projecting, in one position, into the space adapted to receive cases in horizontal position, and linkage means enabling the rocking of said rods substantially equally and simultaneously in opposite angular senses. A stop member may be provided for preventing inadvertent operation of the device to release the supported cases.

After the filled cases are conveyed into the sales area they are removed one by one from the stack, the several cartons are removed from each case and placed on display, and the empty cases are disposed conveniently nearby or the stack of filled cases deposited at some convenient location. One or two empty cases, depending upon the

2

size of the space within the framework, are disposed horizontally upon the aforesaid support members which are now positioned to project into the central space. Customers returning cartons of empty bottles may deposit them in the said empty cases and, when the case or cases so provided are filled, a clerk places another layer of empty cases upon the bottles in the lowermost cases, and so on. When the stack of empties is complete, the device is rolled into the storage area, the stack of empties deposited, a new stack of filled cases picked up and the cycle is repeated.

The objects of the invention include the provision of a device for accomplishing the described operations, and embodying the described features.

Other and further objects, features and advantages will be apparent from the description which follows, read in connection with the accompanying drawings, in which:

FIGURE 1 is a front perspective view of a device constructed in accordance with the invention;

FIGURE 2 is a front elevational view of the device;

FIGURE 3 is a fragmentary rear elevational view;

FIGURE 4 is a fragmentary bottom view;

FIGURE 5 is a vertical section on line 5—5 of FIGURE 3; and

FIGURE 6 is a diagrammatic perspective view of a portion of the mechanism for operating the support members, as same would appear when viewed from the plane of line 6—6 in FIGURE 4, looking in the direction of the arrows.

In order to facilitate an understanding of the invention, reference is made to the embodiment thereof shown in the accompanying drawings and detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

Referring to the drawings, the device of the present invention comprises a generally upright structural framework 10 consisting of four principal vertical members 11 defining a central space 12 of suitable dimensions to accommodate one or more cases in horizontal position. Preferably, the horizontal area of the space 12 is such as to accommodate two cases, one behind the other. The vertical members 11 are secured at their lower ends to horizontal members 13, at either side of the device, and 14 at the rear of the device, defining the sides and back of the space 12 at its lower end. At their upper ends the members 11 are secured to transverse horizontal members 15 which are themselves connected by fore and aft horizontal members 16. At the rear of the structure two additional vertical members 11a extend between and are secured to the member 14 at the bottom and the transverse horizontal member 15 at the top.

The members 11, 11a, 13 and 16 are preferably of rectangular tubular form, while the members 15 are suitably of angle section and the member 14 is of angle section, the vertical portion 14a of which is secured directly to the rearward vertical members 11 and the horizontal portion 14b of which extends outwardly to the rear of the device. A Z-section plate 17 is secured externally to the bottom portions of the members 11 defining each side of the structure, each plate 17 comprising a portion 17a secured directly to the adjacent members 11, a horizontal shoulder portion 17b and a depending skirt portion 17c. Front

swivel casters 18 are mounted under the shoulder portion 17b of the side plates 17, while rear swivel casters 19 are mounted underneath the horizontal portion 14b of the rear plate 14 as best seen in FIGURE 4. If desired, wheel locks 20 may be provided for the forward casters 18 to prevent inadvertent rolling movements of the device. Rubber bumpers 21 may be provided, mounted on gussets 22 joining the shoulder and skirt portions at the forward and rearward ends of side plates 17.

On each side of the device (best seen in FIGS. 1, 3 and 4) there is journaled between the lower ends of vertical members 11 a rocker rod 23. Support members 24a and 24b are secured to the respective rocker rods 23 and normally projecting horizontally into the space 12 and angle brackets 25a and 25b are secured to the support members 24a and 24b respectively at their rearward ends. A link 26 connects the depending portion of bracket 25a with a lever 27, pivoted at 28 to the underside of horizontal plate portion 14b, on one side of said pivot, while a link 29 connects the bracket 25b with the lever 27 at a point on the opposite side of the pivot 28. Thus, angular movement of the lever 27 about its pivot will produce substantially equal, simultaneous, and opposite angular movements of the rocker rods 23 and support members 24a, 24b. A tension spring 30 connects lever 27 and a fixed point 31, urging the lever 27 in a counterclockwise direction in FIGURE 4, thus urging the support members 24a, 24b to horizontal position, the counterclockwise movement of lever 27 being limited by a stop 32.

The release lever 33 is pivoted at 34 in a clevis 35 secured to the underside of plate portion 14b and extends nearly into engagement with the lever 27 when the latter is in the full line position illustrated in FIGURE 4, thus preventing, until intentionally actuated, clockwise movement of the lever 27. Release lever 33 is formed at its free end with an enlarged portion 33a providing a shoulder 33b which serves a purpose to be disclosed hereinafter. A vertical plunger 36 is pivoted to release lever 33 intermediate the ends of the latter, and projects upwardly through plate portion 14b. The plunger 36 is provided with a button or enlarged end 37 at its upper end, and a helical spring 38 surrounds the plunger 36 between the underside of button 37 and the upper side of plate portion 14b, thus normally urging release lever 33 upwardly into the position which it occupies in FIGURE 3, in horizontal alignment with lever 27.

A lock lever 39 pivoted at 40 normally underlies release lever 33 as shown in the solid line position in FIGURE 4. As best seen in FIGURE 5 (taken along lines 5-5 of FIG. 3), the lock lever 39 is connected by link 41 to a crank lever 42 pivoted at 43 to bracket 44 secured to the underside of plate portion 14b. A tension spring 45 urges the crank lever 42 in a counterclockwise sense, the spring 45 being connected between the lever 42 and a fixed member 46. At its end opposite its connection with the link 41, the crank lever 42 is connected with a vertical rod 47 which extends upwardly through one of the vertical members 11a to the upper end of the structure, where it is provided with a pull ring 48 (FIG. 2).

The operation of the mechanism just described is as follows: The return spring 30, acting through lever 27 and links 26, 29, urges the support members 24a and 24b to their operative horizontal positions, as shown in FIGURES 3 and 4.

Whenever one or more cases, containing either filled or empty bottles, are resting upon the support members 24a and 24b, the resulting downward swinging force produced on the support members by their weight exceeds the upward swinging force produced on them by the tension of spring 30 and tends to rock the support members 24a and 24b downwardly and, acting through the links 26 and 29, to move the lever 27 in a clockwise direction as seen in FIGURE 4. As is shown diagram-

matically in FIGURE 6, these movements, however, are prevented by release lever 33 which abuts lever 27 and prevents its clockwise movement. Inadvertent movement of the release lever 33, which would permit lever 27 to move, is prevented by the lock lever 39 which underlies the leftward end of release lever 33, as seen in FIGURE 4.

When it is desired to deposit the cases carried on support members 24a and 24b, the operator exerts an upward pull on ring 48, moving rod 47 upwardly and rocking the crank lever 42 clockwise, as seen in FIGURE 5. This movement is transmitted through link 41 to lock lever 39, rocking the latter into the dotted line position, seen in FIGURE 4, in which it no longer underlies the release lever 33. The operator then actuates the release lever 33 downwardly by exerting a downward pressure upon button 37 and compressing spring 38. Downward movement of release lever 33 removes its free end from blocking engagement with the lever 27 and permits the lever 27 to move in a clockwise direction in FIGURE 4, under the force of gravity exerted upon support members 24a and 24b by the load which they carry, and against the tension of spring 30. The filled cases are thus lowered gently to the floor or pallet beneath them.

The downward pressure upon the button 37 having been removed, the release lever 33 swings upwardly, and return movement of the lever 27 is prevented by engagement of that lever against the shoulder 33b of the release lever 33. Thus, the support members 24a and 24b are maintained in their vertical position so that the device may be rolled free of the load which has been deposited on the floor, without interference caused by friction between the support members 24a, 24b and the sides of the deposited cases. After the device is clear of the deposited cases, the button 37 is again pressed downwardly for a short interval, freeing the lever 27 from the shoulder 33b and allowing lever 27 to swing into the full line position, seen in FIGURE 4, under the tension of spring 30. After the release lever 33 again returns to its upward or normal position, the upward pull upon rod 47 is released, allowing the lock lever 39 to return to the full line position shown in FIGURE 4, thus preventing downward movement of the release lever 33, wherefor the support members 24a, and 24b are maintained in their horizontal position, ready to receive and support a further load of filled or empty cases.

In order to stabilize a stack of cases supported within the device, during transport, a crate safety strap 49 (FIG. 2) is pivoted at 50 to one of the forward vertical members 11 and is provided, at its free end, with a notch 51 which engages a lug 52 projecting from the other forward vertical member 11. When the device is stationary, the crate safety strap 49 is disengaged from the lug 52 and moved into the dotted line position, seen in FIGURE 2, where it is frictionally retained in a vertical position by means of a friction clip 53.

If desired, a panel 54 may be provided at the top of the device for carrying advertising or other information.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. Device for storing and transporting cases, comprising a structural framework defining a space of dimensions suitable for the reception of at least one stack of cases in horizontal position, anti-friction means supporting said framework for rolling movements over a floor, movable means for supporting said cases in said space, said last means comprising movable support members carried on said framework at the lower end thereof and on opposite sides of said space, linkage means connecting said support members for substantially equal and simultaneous movements into and out of said space, resilient means connected to said linkage means and urg-

5

ing the latter toward movement of said support members into said space, releasable means for locking said linkage means against movement of said support members out of said space, and releasable means for locking said linkage means against movement of said support members into said space. 5

2. Device according to claim 1, said linkage means comprising a first member mounted for reciprocal angular movement in a path, and said releasable means comprising a second member mounted for movement into and out of the path of said first member and resilient means normally maintaining said second member in said path. 10

3. Device according to claim 2, including releasable

6

means for locking said second member against movement out of said path.

References Cited by the Examiner

UNITED STATES PATENTS

894,452	7/1908	Medairy.	
1,364,562	1/1921	Laughton.	
1,827,399	10/1931	Pancake.	
3,047,329	7/1962	Gunderson et al.	----- 294—69

GERALD M. FORLENZA, *Primary Examiner.*

ALBERT J. MAKAY, *Examiner.*