July 24, 1951 J. F. CELLA 2,561,561

STACKING GUIDE FOR CRATES, BOXES AND CASES

Filed June 7, 1949

Fig. 1.

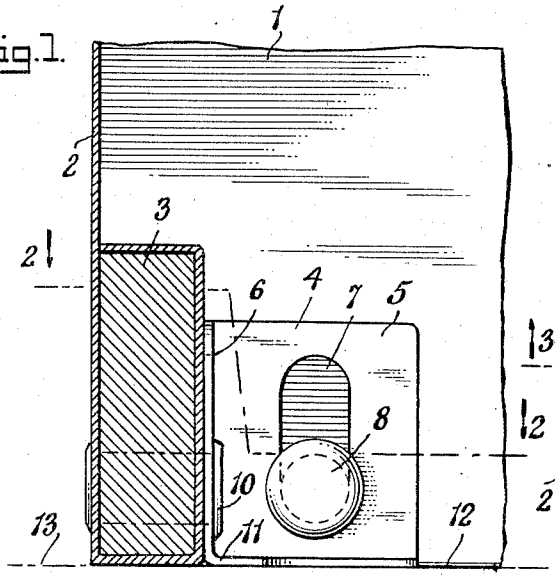


Fig. 2.

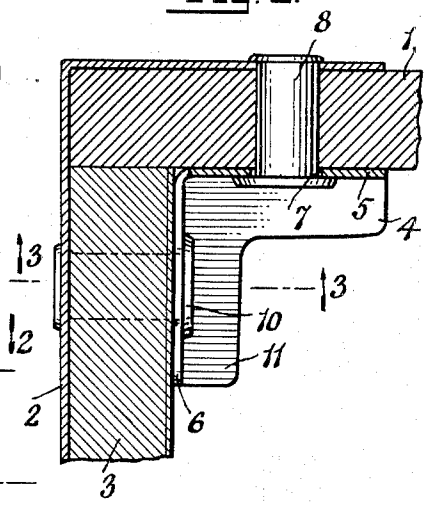


Fig. 3.

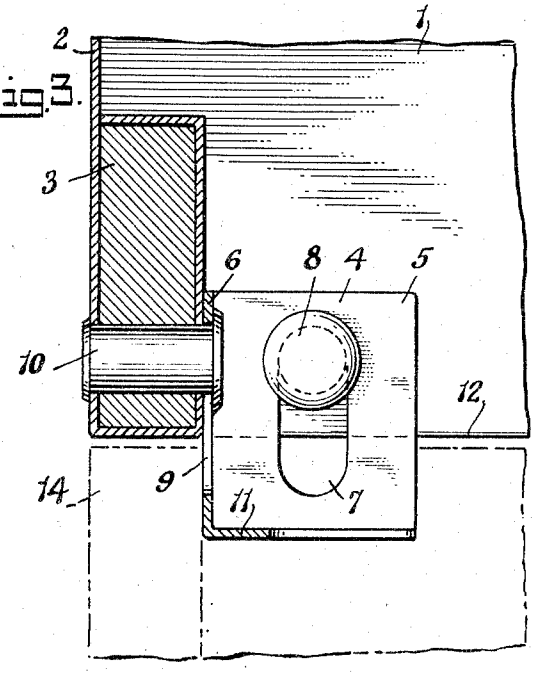


Fig. 4.

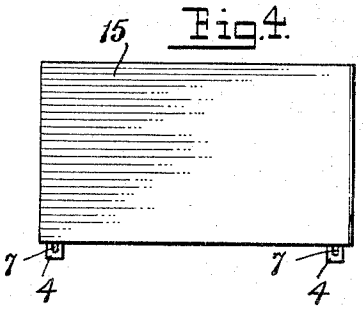
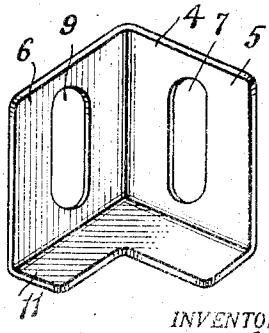


Fig. 5.



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STACKING GUIDE FOR CRATES, BOXES, AND CASES

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3 Claims. (Cl. 220—97)

1

This invention relates to stacking guides adapted for use on various types of containers, such as crates, boxes or cases used for holding milk bottles or other bottled goods, and various other commodities.

In cases or crates of this character rigid projections are generally provided at the four top corner portions of the crate, such projections arising from the top of the crate on the inside of the same. When another crate is placed on top of the first, the four upwardly projecting stacking guides will extend upwardly into the open bottom of the upper crate at the inside corners thereof and thus align the upper crate with respect to the under one. These rigid, upwardly-extending guides are often damaged by crates placed on top of them, often becoming bent and thus disaligned and preventing proper stacking of the crates. To withstand the rough treatment imposed upon them, these rigid stacking guides must be made of heavy gauge metal and despite this are very often knocked out of alignment.

The present invention therefore contemplates the provision of a stacking guide which will be free from the disadvantages above mentioned; which will be located at the bottom of the case or crate rather than at the top thereof, and which will automatically be moved out of projecting position when the crate is rested upon a floor, conveyor or other flat surface. Another object of the invention is to provide a stacking guide which will be gravity-controlled; that is to say, will descend into operative or projecting position only when the crate is raised or elevated from a supporting surface and will drop into guiding position when one plate is placed on top of another.

These and other objects are attained by the invention, a more particular decription of which will hereinafter appear and be set forth in the claims appended hereto.

In the accompanying drawing, wherein an illustrative embodiment of the invention is disclosed, Fig. 1 is a sectional view through an end wall of a crate or case, looking at one of the corners of the crate on the inside of the same and showing one of the improved stacking guides; Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1, looking in the direction of the arrows; Fig. 3 is a sectional view, taken on the line 3—3 of Fig. 2, looking in the direction of the arrows and showing the guide in its lowered position; Fig. 4 is a side elevation of a case or crate, on a reduced scale, showing two of the stacking guides in lowered or guiding position, and Fig. 5 is a perspective view of one of the stacking guides.

In the drawing is shown a box, case or crate of a character generally employed for containing milk bottles or other commodities. Such a crate usually has an open or mesh bottom and wire

2

partitions or separators located between the bottles, and other elements not herein shown. In the form shown, one of the side walls of the box, which may be either of metal or of relatively thick wood, is shown at 1, and a metal end wall shown at 2. The lower end of the end wall 2 is reinforced by a metal-enclosed cross brace 3. The open bottom of the crate is shown at 12.

The side wall 1 and the end wall 2 are disposed at right angles to one another and joined to provide the conventional corner joint in which the stacking guide is located. It will be understood that a similar stacking guide is located in each of the four corners of the crate, hence a description of one will suffice for the others.

One of the stacking guides is generally indicated at 4 and is shown in detail in Fig. 5. It will be therein noted that the same is an angular metal member or piece having a vertical flange 5 which is disposed flatwise against the inner face of the side wall 1 near the corner junction of this wall with the end wall 2. The flange 5 is formed with a vertically-arranged slot 7 which fits loosely around a projecting part of a headed pin or rivet 8 secured in and extending from the wall 1 of the crate.

Located at right angles to the vertical flange 5 is a similar vertical flange 6 which is disposed against the inner face of the lower portion of the end wall 2 or against the inside face of the cross brace 3 near the corner junction of the same with the side wall 1 substantially as shown in Fig. 2. At its lower end, the guide 4 is formed with an inturned reinforcing flange 11 lending rigidity and strength to the guide.

From the foregoing, the operation of the stacking guide will be readily understood. It is understood that there is one of each of these guides located in each inside corner of the box or crate, two of the guides being shown in the side elevation of the box or crate in Fig. 4. When the box or crate is placed upon a flat support, such as the floor, a conveyor belt or other flat surface, the lower flanges 11 of the four stacking guides will come into contact with the surface upon which the box or crate is rested, and the guides 4 will thereupon be forced upwardly until the lower ends of the same are at least flush with the bottom 12 of the crate. This will be noted in Fig. 1, wherein 13 indicates a floor or other supporting surface on which the crate has been rested. At this time, the guide 4 has been forced upwardly so that the rivets 8 and 10 have reached the bottoms of their respective slots 7 and 9. The slots being freely movable on the rivets permit the guides to be readily raised or elevated as above described. Thus, the box or crate may be readily slid about on a floor, sidewalk, conveyor belt or other relatively flat support without damage to

the guides, since the same remain elevated and in non-projecting positions as long as they are in contact with a supporting surface.

When the box or crate is raised or is picked up from the supporting surface 13, pressure is no longer imposed upon the lower ends of the guides 4 and hence the same are at once free to drop down or descend by gravity to the downwardly-projecting position shown in Figs. 3 and 4. The limit of descent of the guides is determined by the rivets 8 and 10 reaching the upper limits of the slots 7 and 9 in which said rivets are disposed, in the manner disclosed in Fig. 3.

With the guides in the downwardly-projecting position, the crate is lifted and placed on top of another crate, the guides readily finding their way into the upper four corners of the lower crate 14 (Fig. 3) thus aligning the two crates into properly stacked relationship.

Since the stacking guides are only exposed and projected out of the bottom of the crate while the crate is raised or is held in position to be stacked, and are maintained up out of harm's way while the crate is resting on the floor or other support, it will be apparent that a considerable measure of protection is afforded for the guides and the possibility of the same being deformed or damaged by the rough handling imposed upon these crates will be greatly reduced.

I have herein shown the guides as being of a certain form and shape adapted for application to bottle crates and similar containers. However, it will be understood that the shape and form of the guide is largely determined by the type of crate or box to which it is applied, hence changes may be made both in the guides, in the form of box or crate to which it is applied, and in its manner of application to the crate or container, without departing from the spirit of the invention and the scope of the claims appended hereto.

What I claim is:

1. A stacking guide for crates comprising, a crate having a pair of inwardly projecting pins adjacent to one of its inside lower corners, an angle-piece having slotted vertical walls, the slots in said walls receiving the pins to thereby attach the angle-piece to the corner of the crate and permit said angle-piece to have a limited sliding movement, such movement allowing the piece to descend by gravity to bring its lower end below the lower end of the crate and to permit the piece to be elevated to an extent to bring its lower end flush with the bottom of the crate and house the piece within the crate when the crate is rested upon the floor or on a similar supporting surface.

2. A stacking guide for a container comprising, an open-bottom container having a side wall and an end wall connected to form a corner, an angular stacking guide located in said corner within the crate, said guide having slots, pins projecting inwardly from the walls of the slots and passing through the slots, said pin-and-slot arrangement permitting the guide to descend by gravity to the limit of its slots in one direction and to an extent to cause the lower end of the stacking guide to be disposed below the bottom of the container, said pin-and-slot arrangement also permitting the guide to be elevated in the opposite direction when the container is rested upon a flat surface to bring the lower end of the guide at least flush with the lower end of the container.

3. In a container, a side wall and an end wall angularly meeting and joined together to form a corner of the container, a stacking guide on the inside of the container overlying inner surfaces of the side wall and end walls of said container, said stacking guide being in the form of an angular member having slotted vertical flanges, pins in the walls of the container extending through the slots in said flanges and upon which the guide is slidable, said stacking guide having limited raising and lowering movement on said pins whereby upon the descent of the guide by gravity the lower end of the guide will project below the bottom of the container, said guide being capable of raising movement by contact with a flat surface when the container is resting on its base upon such surface.

JOSEPH F. CELLA.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,689,217	White	Oct. 30, 1928
1,894,649	Walp	Jan. 17, 1933
2,053,969	Olds	Sept. 8, 1936
2,457,842	Smith et al.	Jan. 4, 1949