

Oct. 8, 1963

L. E. DIEGUEZ
BOX HANDLE

3,106,332

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2 Sheets-Sheet 1

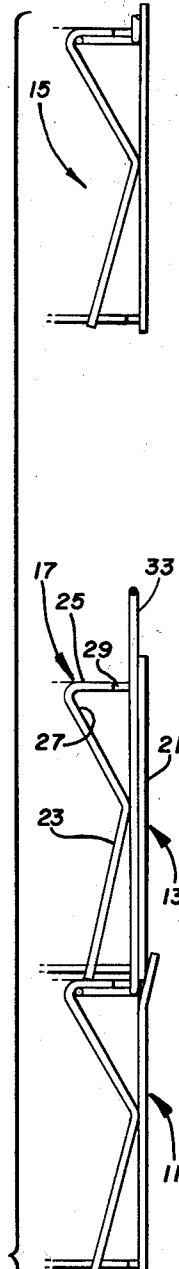
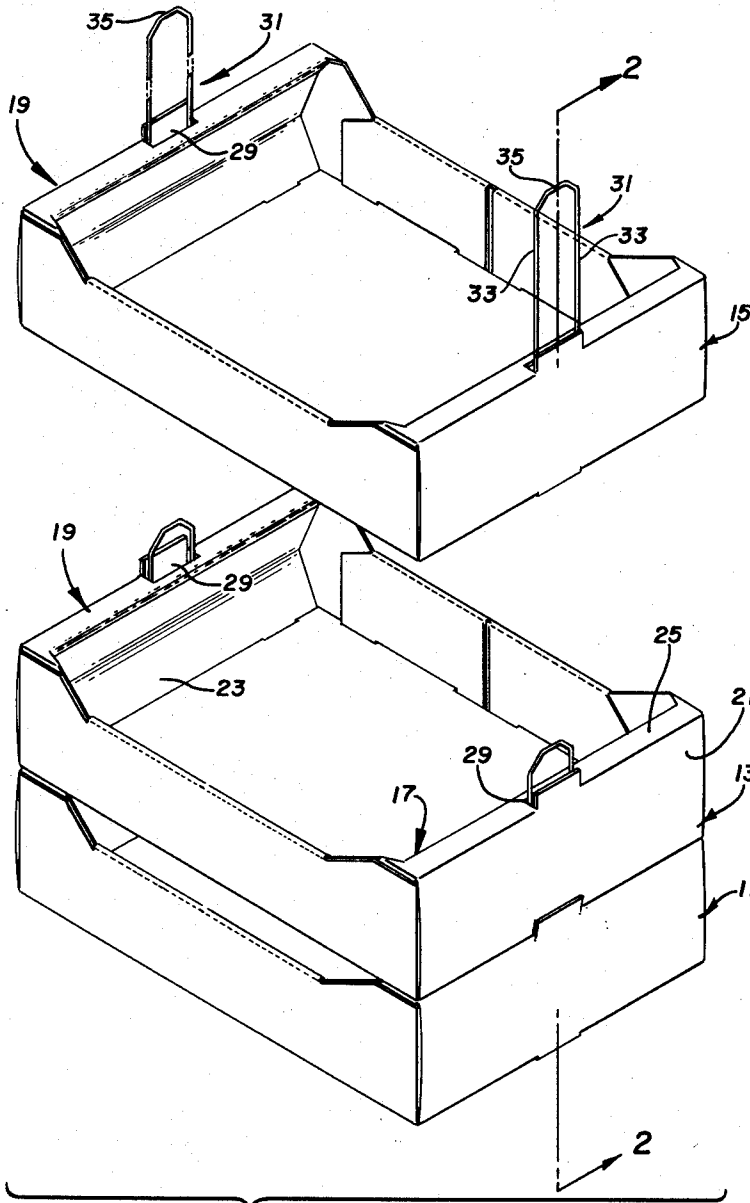


Fig. 1

Fig. 2

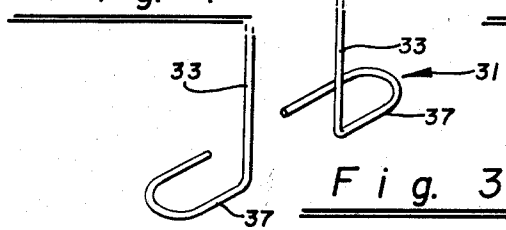


Fig. 3

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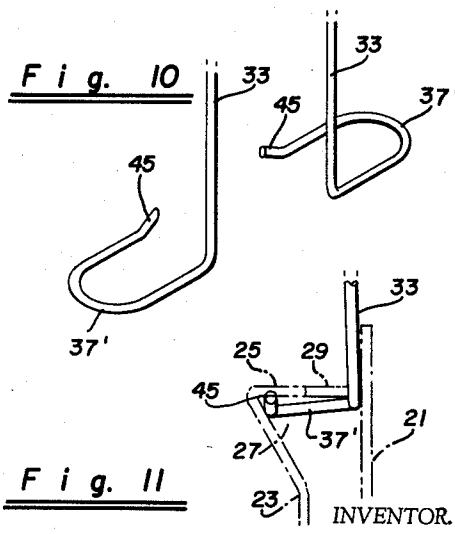
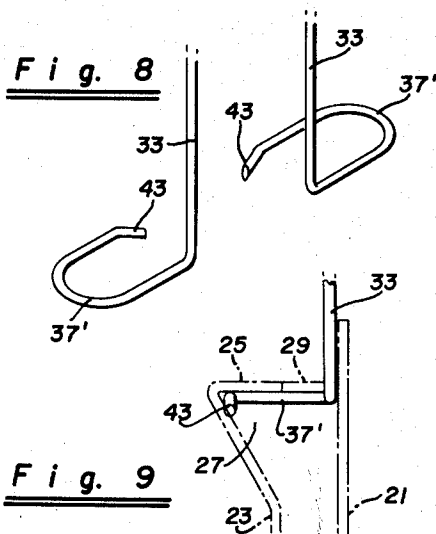
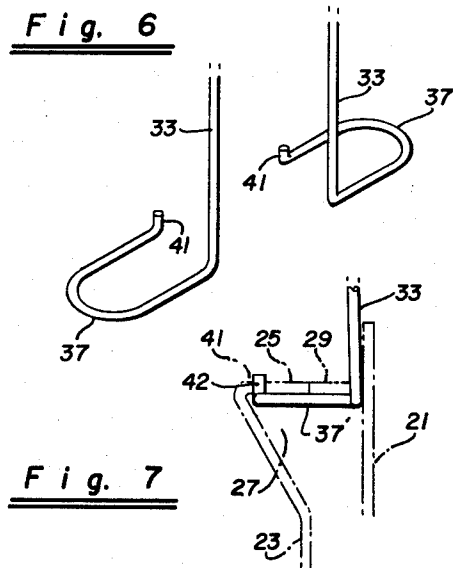
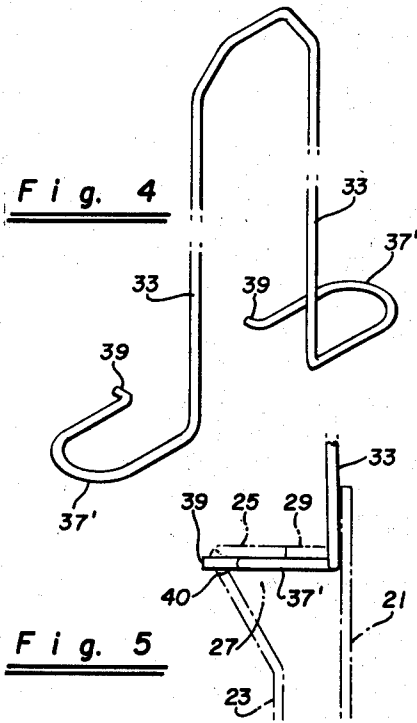
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2 Sheets-Sheet 2



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3,106,332

BOX HANDLE

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This invention relates to box handles and more particularly to box handles which may be employed with open face boxes or trays such as are used in the berry picking industry for storing and transporting berries.

Generally, when picking, storing and transporting berries, the berries are usually placed in open face boxes or trays which are relatively flat containers having merely a bottom and four side walls. A plurality of these trays are stacked upon one another with handles extended upward from alternate ones of the trays. Each handle extends through the tray immediately above and engages the second tray above to form a relatively stable vertical column of stacked trays.

These trays ordinarily are received at the berry picking location in a collapsed condition and are assembled in the field. After the trays are assembled they are packed with berries and after packing, the wire handles are inserted to further facilitate handling and to assist in the stabilizing of the stacks of trays.

In the past, insertion of these handles has required that the bottom edge of the tray be exposed and the handle inserted from the bottom toward the top. Thus, if the tray is sitting on a table or other flat surface it must be either tilted upward or extended over the side of the table in order to insert the handle in one side of the tray. In order to insert a handle in the opposite side of the tray a subsequent duplicate operation is necessary. Although each of these operations is relatively simple in itself, it is clearly time consuming when a large number of trays are to be handled. Moreover, since the wire handles are passed into the trays from the bottom, the handle itself must not only extend upward to the trays above but must also extend to the full length of the tray within which it is situated. Thus, the amount of wire required is, when considering a large number of handles, substantial.

Recently there has been developed a tray which incorporates end walls having a relatively wide shoulder at the top thereof. The end walls are formed by two relatively upright members forming a space therebetween. The two members are joined together by means of a triangular shaped shoulder at the top whereby an internal triangular slot is formed. This particular type of shoulder has the advantage of highly increasing the total strength of the tray.

It is an object of this invention to provide a handle for use with a tray having the aforementioned type of wide shoulder.

It is another object of this invention to provide a handle for use in stacking trays which incorporates a relatively small amount of wire.

It is still another object of this invention to provide a wire handle having the aforementioned characteristics which is particularly simple to insert into the tray.

It is a further object of this invention to provide a wire handle with the above mentioned characteristics wherein the wire handle, although simply installed and employing a relatively small amount of wire, is firmly retained in the tray.

These and other objects and features of the invention will become more clearly apparent upon a review of the following description in conjunction with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a stack of trays employing handles in accordance with the invention;

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FIGURE 2 is a sectional view taken along the line 2-2 of FIGURE 1;

FIGURE 3 is a partial perspective view of a handle in accordance with one embodiment of the invention;

FIGURE 4 is a perspective view of a handle in accordance with another embodiment of the invention;

FIGURE 5 is a partial cross sectional view of a tray showing the engagement of a handle as shown in FIGURE 4;

FIGURE 6 is a perspective view of still another embodiment of the invention;

FIGURE 7 is a partial cross sectional view showing the installation of a handle in accordance with FIGURE 6;

FIGURE 8 is a perspective view of a further embodiment of the invention;

FIGURE 9 is a partial cross sectional view of a tray showing the installation of a handle of FIGURE 8;

FIGURE 10 is a perspective view of still another embodiment of the invention; and

FIGURE 11 is a partial sectional view of a tray showing the installation of a handle in accordance with FIGURE 10.

Referring particularly to FIGURES 1 and 2 there is shown a stack of trays 11 and 13 with the third tray 15 in a position above, ready to be stacked on top of the tray 13. It is noted that the trays include end walls 17 and 19 each of which has an outer portion 21 and an inner portion 23.

Inner and outer portions 21 and 23 are joined together at the upper end of the tray by means of a wide shoulder 25 which forms an internal triangular shaped cavity 27. The inner portion 23 extends at an acute angle from the inner edge of the shoulder 25 outward to the inner face of the outer portion 21 and then inward again to the bottom of the tray. Thus, the inner and outer portions together form an end wall having a K shaped cross section.

It is noted that the shoulder 25 includes a central opening 29 through which is passed a wire handle 31. The wire handle 31 is preferably made of a spring type material and includes upwardly extending arms 33 joined together at the top by means of a cross member 35. The lower portion of the handle 31, as can be seen more clearly in FIGURE 3, includes a pair of U shaped members 37 depending from the arms 33 in a plane substantially perpendicular to the arms 33. The U shaped members open toward each other.

Installation of the handles 31 is simply accomplished by compressing the upright members 33 together in a scissor cross fashion whereby the U shaped members 37 overlap. The U shaped members 37 of the compressed handle are then held in an inclined or substantially vertical plane and inserted into the slots 29. After the U shaped members 37 are inserted into the slots the upright members 33 are rotated toward the ends of the box to a vertical plane while maintaining the U shaped members close to the under side of the shoulder 25. The handle is then released and the spring action thereof causes the upright arms 33 to assume the position shown in FIGURE 1, whereby the U shaped members are lodged adjacent the underside of the shoulder 25 in the triangular shaped cavity 27. It is apparent that due to the shape of the cavity 27 and the U shaped member 37 that a downward force on the handle 31 will not dislodge the handle. Moreover, twisting movement of the handle is resisted by the outspread U shaped member 37 directly beneath the shoulder 25.

Referring to FIGURES 4 to 11, other embodiments of the invention are shown. In each of these embodiments the upright members 33 and the cross member 35 is identical to that shown in the embodiment of FIGURES 1 to 3. Moreover, the U shaped members 37' are similar to

the U shaped members 37 in FIGURE 3. However, in each of the embodiments shown in FIGURES 4 to 11 the U shaped members 37' include a further outward extending appendage which will be described presently.

Referring particularly to FIGURES 4 and 5, it is noted that the U shaped members 37' include appendages 39 lying in the same plane as the U shaped members 37' but extending in a direction away from the upright arms 33.

In the use of a handle such as shown in FIGURE 4, the inner portion 23 of the tray wall includes two spaced holes 40 located below the underside of the shoulder 25 and centrally located with respect to the lateral extension of the opening 29. The distance between the holes 40 is equal to that between the appendages 39 when the handle 33 is in its released or relaxed condition. Thus, as shown in FIGURE 5, when using the handle of the embodiment shown in FIGURE 4, not only do the U shaped members 37' lie adjacent the underside of the shoulder 25 but the appendages 39 extend through the holes 40 to further assist in locking the handle within the tray.

Referring to FIGURES 6 and 7 it is noted that, in this embodiment, appendages 41 lie in lines substantially perpendicular to the plane defined by the U shaped members 37'. Moreover, the appendages 41 extend upwardly from the U shaped members 37' in the same direction as the arms 33.

In the use of a handle having the configuration shown in FIGURE 6, the shoulders 25 of the box like member (FIGURE 7) include spaced holes 42 near the inner edge of the shoulder and centrally located with respect to the lateral dimension of the opening 29. The spacing between the holes 42 is equal to that between the appendages 41 when the handle is in its relaxed or released condition. Thus, when the handle as shown in FIGURE 6 is inserted into the end wall as shown in FIGURE 7, the upright appendages 41 extend through the holes 42.

Referring to the embodiment shown in FIGURES 8 and 10, it is noted that there are included appendages 43 and 45, each which lies at an oblique angle with respect to its adjacent leg of the U shaped members 37'. In the embodiment shown in FIGURE 8 the appendages 43 extend downward in the direction opposite the extent of the arms 33 from the U shaped member 37. Together with the adjacent legs of the U shaped members 37' the appendages 43 define a plane perpendicular to the plane of the U shaped members themselves.

The appendages 45 in the embodiment shown in FIGURE 10 also extend by oblique angles from the U shaped members 37' but upward in the same direction as the arms 33 extend from the U shaped member. In this instance also the appendages 45 and the adjacent legs of the U shaped members 37' define a plane substantially perpendicular to the U shaped member 37' itself.

FIGURES 9 and 11 show the cooperation of the handles of FIGURES 8 and 10 with the end wall of a tray. It is noted that in each case the appendages 43 or 45 are embedded into the end wall itself. In the instance shown in FIGURE 9, the downward extending appendages 43 are embedded in the triangular shaped area of the end wall inner portion 23 while in FIGURE 11 it is shown that the upward extending appendages 45 are embedded in the under side of the shoulder 25.

The embedding action is accomplished when the handle is released within the end wall and once embedded dislodgment of the handle by downward or lateral forces is extremely hindered.

Thus, it is seen that a new handle has been provided for use with a tray having an end wall with a wide should-

der at the top thereof. The shoulder need not necessarily be triangular in shape but may have any configuration which provides a vertical support for the legs of the U shaped members which are remote from the arms 33. Due to the fact that the handle need not extend the full length of the wall but merely under the shoulder itself, the amount of wire required to construct such handles is substantially reduced over that required for handles of the prior art wherein the wire must extend the full height of the end wall. Moreover, it is seen that the insertion of the handles described is extremely simple and requiring merely that the handle be compressed, inserted into an opening 29, twisted and released. There is no requirement that the bottom of the box or tray be accessible and consequently two handles may be installed simultaneously in a single tray.

I claim:

1. In a box having an end wall including inner and outer portions held together at the upper ends thereof by means of a wide shoulder forming an internal cavity, said wide shoulder defining an opening therein, a box handle including a pair of elongated arms joined together at one end thereof by a cross member, said arm adapted to be passed through said opening, a pair of U-shaped members lying in a plane substantially perpendicular to said arms and opening toward each other, one leg of each of said U-shaped members being directly connected to the other end of one of said arms and adapted to be retained in said cavity against the under side of said wide shoulder.

2. In a box as defined in claim 1, a short appendage extending outwardly from the other leg of each of said U-shaped members.

3. In a box as defined in claim 2, said appendages lying in a plane with said U-shaped members and extending in a direction away from said arms.

4. In a box as defined in claim 2, said appendages being perpendicular to the plane of said U-shaped members.

5. In a box as defined in claim 4, said appendages extending from the legs of said U-shaped members in the same direction as said arms extend from said U-shaped members.

6. In a box as defined in claim 2, said appendages extending from said other leg of the U-shaped members at an oblique angle.

7. In a box as defined in claim 6, said appendages and said other legs of the U-shaped members defining a plane perpendicular to the plane of the U-shaped members, said appendages extending from said U-shaped members in a direction opposite to that of said arms extending from the U-shaped members.

8. In a box as defined in claim 6, said appendages and said other legs of the U-shaped members defining a plane perpendicular to the plane of the U-shaped members, said appendages extending from said U-shaped members in a direction similar to that of said arms extending from the U-shaped members.

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