July 31, 1962 H. W. GUNDERSON, JR., ETAL 3,047,329

DROP BOTTOM BASKET

Filed Oct. 16, 1959 2 Sheets-Sheet 1

FIG. 1

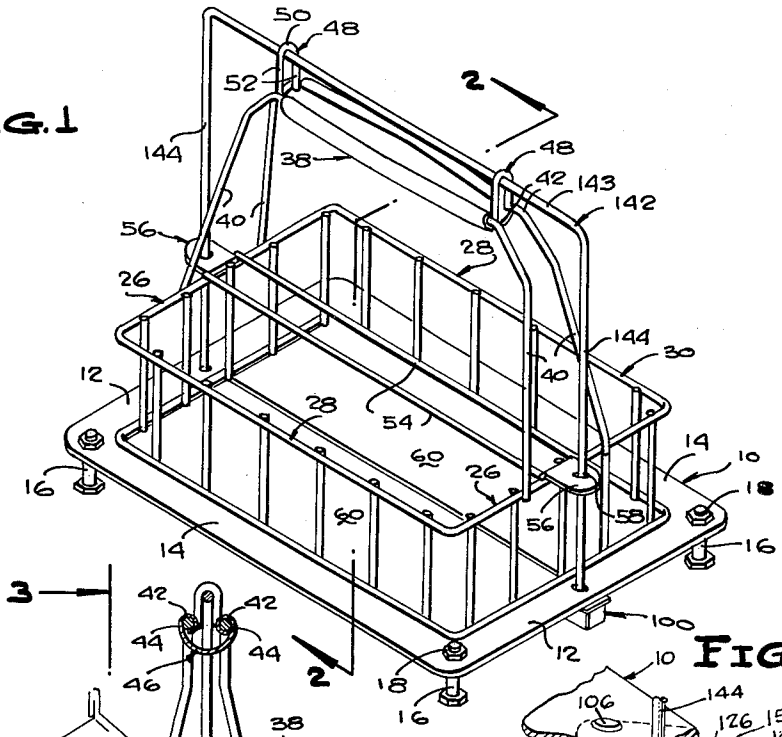


FIG. 2

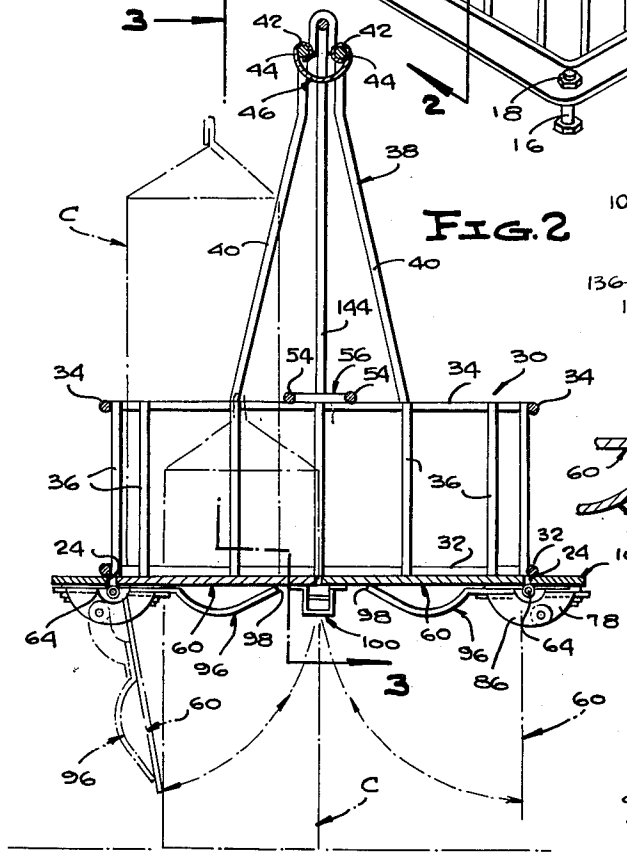


FIG. 7

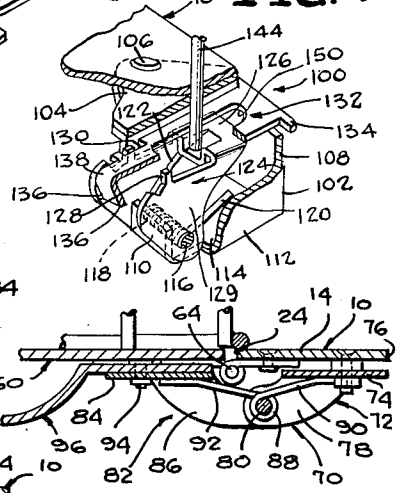


FIG. 5

INVENTORS
HENRY W. GUNDERSON, JR.
& ALBERT A. McGRATH
BY

McMorrow, Berman & Davidson
ATTORNEYS

July 31, 1962 H. W. GUNDERSON, JR., ETAL 3,047,329

DROP BOTTOM BASKET

Filed Oct. 16, 1959 2 Sheets-Sheet 2

FIG. 3

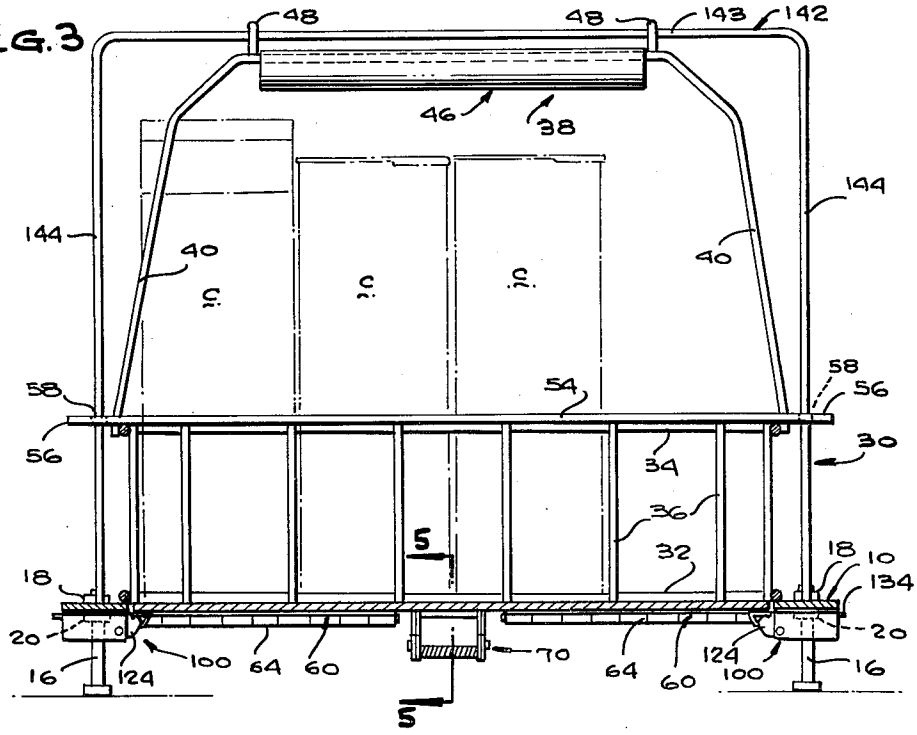


FIG. 4

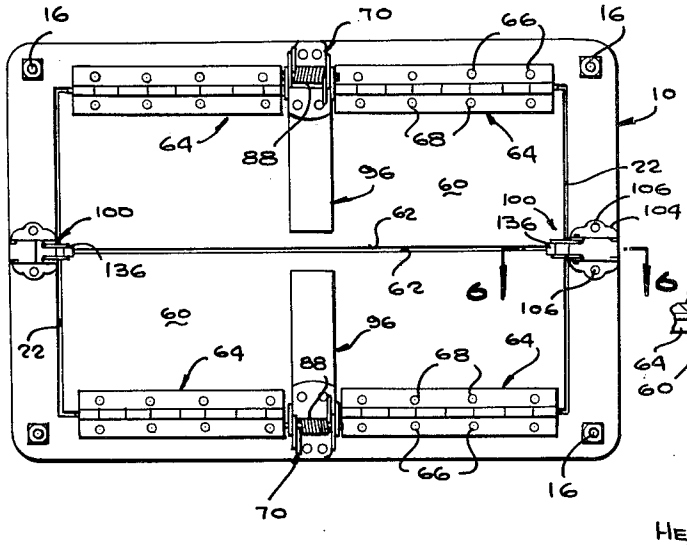
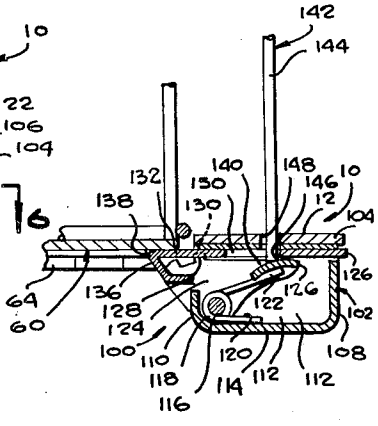


FIG. 6



INVENTORS
HENRY W. GUNDERSON, JR.
& ALBERT A. McGRATH
BY

McMorrow, Berman & Davidson
ATTORNEYS

United States Patent Office 3,047,329 Patented July 31, 1962

3,047,329

DROP BOTTOM BASKET

Henry W. Gunderson, Jr., Box 696, and Albert A. McGrath, 1819 Ruby St., both of Ely, Nev.

Filed Oct. 16, 1959, Ser. No. 846,953
4 Claims. (Cl. 294—69)

This invention relates to a novel drop bottom carrier for such as milk cartons.

The primary object of the invention is to provide a more practical and efficient device of this kind, wherein spring-closed drop door means are more securely maintained in closed position by slide latch means which are operated by an element extending along the carrying handle, the said element being easily and conveniently operable by the hand holding the handle.

Another object of the invention is to provide, in a device of the character indicated above, spring-projected slide latch means which are cam-retracted, the operating element being depressible relative to the handle for operating the cam means.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a perspective view of a device of the invention;

FIGURE 2 is an enlarged vertical transverse section taken on the line 2—2 of FIGURE 1, showing the drop doors in closed position in full lines, and in dropped positions in phantom lines, a carton being shown in supported and in dropped position in phantom lines;

FIGURE 3 is a vertical longitudinal section taken on the line 3—3 of FIGURE 2;

FIGURE 4 is a bottom plan view, on an intermediate scale, of the device, the doors being closed;

FIGURE 5 is an enlarged fragmentary vertical transverse section taken on the line 5—5 of FIGURE 3;

FIGURE 6 is an enlarged fragmentary vertical longitudinal section taken on the line 6—6 of FIGURE 4, showing a slide latch in projected position; and

FIGURE 7 is an enlarged fragmentary perspective view, parts being broken away and in section, of a latch assembly.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated device comprises an open, longitudinally elongated horizontal frame 10, having flat plate or bar material end and side members 12 and 14, respectively, with feet depending from the frame 10 at its corners, such as bolts 16, extending through the corners, and secured by upper and lower nuts 18 and 20, respectively, engaging related sides of the frame.

The frame 10 has inner end and side edges 22 and 24, respectively, along which extend related end and side walls 26 and 28, respectively, of an upstanding open rectangular fence 30, which with drop doors, constitutes a container for longitudinal rows of such as milk cartons C. The container end and side walls have in common lower horizontal bars 32, suitably secured to the upper surface of the frame 10, upper horizontal bars 34, spaced parallel above the lower bars, and longitudinally spaced vertical bars 36, suitably fixed, at related ends to the upper and lower bars.

A duplex carrying handle 38 is of bail form and has, at its ends pairs of downwardly divergent legs 40 which are suitably fixed at their lower ends to the outer sides of the upper bars 34 of the end walls 26 of the container. At their upper ends of the legs 40 merge into parallel spaced horizontal cross members 42, which extend protectively through rolled beads 44 on the free edges of an upwardly opening arcuate cross section hand grip 46, as seen in FIGURE 2. Upstanding inverted U-shaped guides 48 comprise bight portions 50, and depending legs 52, which, at their lower ends, are suitably fixed to related handle cross members 42, at related ends of the hand grip 46.

Horizontal longitudinal divider or partition means for the container comprises a pair of laterally spaced longitudinal bars 54 which are suitably fixed at their ends to the upper sides of the upper bars 34 of the container end walls 26, at points midway between the container side walls 28, so as to divide the interior of the container into two similar longitudinal compartments which can be dimensioned to snugly receive rows of such as milk cartons C. Horizontal guide ears 56 are suitably fixed at their inner ends to the container end wall upper bars 34, between the divider bars 54, extend longitudinally outwardly therefrom, and have vertical holes 58 near their outer ends.

Similar drop doors 60 each slightly narrower than half of the width of the opening of the frame 10, and slightly shorter than the length of the opening, comprise flat rectangular plates, having free inner longitudinal edges 62, which substantially meet, in the closed positions of the doors, as shown in FIGURE 4. At their outer longitudinal edges the doors 60 are hinged, as by means of piano hinges 64, two to each door, which are spaced from each other at their longitudinally inward ends, as seen in FIGURES 3 and 4. The leaves of the hinges 64 are suitably secured to the undersides of the frame 10 and related doors 60, as indicated at 66 and 68, respectively. Located in the spaces between the inward ends of the hinges 64 are door closing spring assemblies 70.

As shown in FIGURES 2 and 5, each spring assembly 70 comprises a first U-shaped bracket 72 having a plate portion 74 fixed spacedly, as indicated at 76, to the underside of the frame side member 14, and spaced arms 78 reaching inwardly to a point near to and spaced from the opening of the frame 10, with a pin 80 secured to and extending between the arms 78 at their inward ends. A second U-shaped bracket 82 has a plate portion 84 from which legs 86 reach outwardly and engage the outer sides of the first bracket arms 78 and are journaled on the pin 80. A coil spring 88 is circumposed on the pin 80 and has an upwardly tensioned arm 90 which bears against the underside of the plate portion 74 of the first bracket, and an upwardly tensioned arm 92 which bears against the underside of the plate portion of the second bracket 82, so as to bias the second bracket 82 upwardly relative to the frame 10. Fixed, as indicated at 94, upon the upper side of the plate portion 84 of the second bracket 82 is the outer end portion of an inwardly extending door engaging arm 96. The arms 96 are preferably elongated flat bars of limited resilience, which are downwardly bowed, between their ends, as seen in FIGURE 2, and have free inner ends 98 which, in the closed positions of the doors 60, bear against the undersides of the doors. The weight of cartons C on the doors, in the unlatched condition of the doors, acts to swing one or both of the doors downwardly to substantially perpendicular open positions, as indicated in FIGURE 2, against the resistance of the springs 88 of the spring assemblies 70. This tensions the springs 88, so that when cartons are dropped out of the device, the springs act to swing the doors up to their closed positions.

Latch assemblies 100 are provided on the undersides of the end members 12 of the frame 10 for supportably and securely locking the doors 60 in their closed positions. Each latch assembly 100 comprises, as shown in FIGURES 3, 4, 6 and 7, an open top housing 102 having at its upper end, lateral ears 104 suitably secured, as indicated at 106, to the frame member 12, an outer end wall 108, an ab-

breviated inner end wall **110**, side walls **112**, and a bottom wall **114**. Extending across the housing **102** near the meetings of the bottom wall **114** and the inner end wall **110** is a pin **116**, on which is circumposed a coil spring **118** which has a lower arm **120** which bears upon the bottom wall **114** and a divergent upper arm **122**.

Journaled on the pin **116** are the arms of a U-shaped cam lever **124** having a cross piece **126** against the underside of which the upper spring arm **122** bears. Upstanding fingers **128**, on the upper edges of the lever arms **129** engage in notches **130** in the side edges of an elongated flat latch bar **132**, which overlies the lever **124** and is slidably engaged between the side walls **112** of the housing **102**. The latch bar **132** is longer than the housing and has lateral stop ears **134** at its outer end for stop engagement with the outer housing end wall **108**. On its inner end the latch bar **132** has a downwardly and outwardly bent terminal **136**, which provides a rounded nose **138** for harmless and friction reducing engagement with the underside of a door **60**, to reach supporting engagement with the underside of a door, as shown in FIGURE 6. As is also shown in FIGURES 6 and 7, the cross piece **126** of the lever **124** is offset outwardly from the pin **116** and has an inward and downward curvature which provides a cam surface **140** on its upper side.

Operating means for simultaneously operating the latch assemblies **100**, comprises an inverted U-shaped rod or bar operator **142**, having a straight horizontal portion **143** and perpendicular tappet or cam rods **144** having free lower ends **146**. As is clear from FIGURES 1, 3 and 6, the horizontal portion **143** extends through the guides **48** on the handle structure, on a level above the hand grip **46**, and the cam rods **144** extend slidably through the holes **58** in the guide ears **56**, and down through holes **148**, provided in the frame end members **12**, and through longitudinal slots **150** provided in the latch bars **132**, with the lower ends **146** of the rods bearing upon the cam surfaces **140** of the latch levers **124**. With this arrangement, simple downward pressure or squeezing of the horizontal portion of the operator **142**, produces downward movement of the cam rods **144** on the cam surfaces **140** of the lever **124** whereby the latch bar noses **136**, **138** are withdrawn from beneath the doors **60**. Release of the operator **142** permits the springs **118** to rotate the levers **124** and thereby cam the operator **142** upwardly, and to project the latch bars **132** to assume holding engagements with the undersides of the doors, in the elevated closed positions of the doors, at and bridging the free edges **62** of the doors.

Although there has been shown and described herein a preferred form of the invention, it is to be understood that the change and changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claims appended hereto.

What is claimed is:

1. A drop bottom basket comprising a horizontal open frame having side members and end members, an upstanding fence fixed to said frame, said frame having side walls and end walls severally located on said side and end members, a pair of doors having outer side edges and inner side edges, said doors extending across the opening of said frame, means hinging the doors at their outer side edges to the side members of the frame, spring means on said side members biasing the doors upwardly toward the frame for closing the frame opening, latch assemblies mounted on the frame end members, said assemblies having spring projected latch bars normally engaged with the undersides of the doors and bridging the inner side edges of the doors in the closed positions of the doors, an inverted bail handle comprising a horizontal cross member and downwardly extending legs, said legs being fixed at their lower ends to the end walls of the fence, and an inverted U-shaped operator for the latch assemblies having a cross piece extending along the handle cross member and downwardly extending legs, the operator legs being cam rods having lower ends, means mounting the operator on the frame for vertical movement relative to the handle, said latch assemblies comprising cam levers operatively connected to their latch bars, the lower ends of the cam rods being operatively engaged with the cam levers.

2. A drop bottom basket comprising a horizontal open frame having side members and end members, an upstanding fence fixed to said frame, said frame having side walls and end walls severally located on said side and end members, a pair of doors having outer side edges and inner side edges, said doors extending across the opening of said frame, means hinging the doors at their outer side edges to the side members of the frame, spring means on said side members biasing the doors upwardly toward the frame for closing the frame opening, latch assemblies mounted on the frame end members, said assemblies having spring projected latch bars normally engaged with the undersides of the doors and bridging the inner side edges of the doors in the closed positions of the doors, an inverted bail handle comprising a horizontal cross member and downwardly extending legs, said legs being fixed at their lower ends to the end walls of the fence, and an inverted U-shaped operator for the latch assemblies having a cross piece extending along the handle cross member and downwardly extending legs the operator legs being cam rods having lower ends, means mounting the operator on the frame for vertical movement relative to the handle, said latch assemblies comprising cam levers operatively connected to their latch bars, the lower ends of the cam rods being operatively engaged with the cam levers, the fence end walls having guide ears in which the cam rods work.

3. A drop bottom basket comprising a horizontal open frame having side members and end members, an upstanding fence fixed to said frame, said frame having side walls and end walls severally located on said side and end members, a pair of doors having outer side edges and inner side edges, said doors extending across the opening of said frame, means hinging the doors at their outer side edges to the side members of the frame, spring means on said side members biasing the doors upwardly toward the frame for closing the frame opening, latch assemblies mounted on the frame end members, said assemblies having spring projected latch bars normally engaged with the undersides of the doors and bridging the inner side edges of the doors in the closed positions of the doors, an inverted bail handle comprising a horizontal cross member and downwardly extending legs, said legs being fixed at their lower ends to the end walls of the fence, and an inverted U-shaped operator for the latch assemblies having a cross piece extending along the handle cross member and downwardly extending legs the operator legs being cam rods having lower ends, means mounting the operator on the frame for vertical movement relative to the handle, said latch assemblies comprising cam levers operatively connected to their latch bars, the lower ends of the cam rods being operatively engaged with the cam levers, the fence end walls having guide ears through which the cam rods work, the cross piece of the operator being positioned along and above the cross member of the handle, the handle cross member having vertically elongated guides in which the operator cross piece works.

4. A drop bottom basket comprising a horizontal open frame having side members and end members, an upstanding fence fixed to said frame, said frame having side walls and end walls severally located on said side and end members, a pair of doors having outer side edges and inner side edges, said doors extending across the opening of said frame, means hinging the doors at their outer side edges to the side members of the frame, spring means on said side members biasing the doors upwardly toward the frame for closing the frame opening, latch assemblies mounted on the frame end members, said assemblies having spring projected latch bars normally engaged with

the undersides of the doors and bridging the inner side edges of the doors in the closed positions of the doors, an inverted bail handle comprising a horizontal cross member and downwardly extending legs, said legs being fixed at their lower ends to the end walls of the fence, and an inverted U-shaped operator for the latch assemblies having a cross piece extending along the handle cross member and downwardly extending legs the operator legs being cam rods having lower ends, means mounting the operator on the frame for vertical movement relative to the handle, said latch assemblies comprising cam levers operatively connected to their latch bars, the lower ends of the cam rods being operatively engaged with the cam levers, said spring means comprising outer arms fixed on the frame side members and having inner ends and

inner arms hinged on the inner ends of the outer arms, said inner arms having inwardly extending extensions having free ends adapted to bear against the undersides of the doors near the inner side edges of the doors, and spring elements acting between the outer and inner arms and yieldably urging the inner arms upwardly.

References Cited in the file of this patent

UNITED STATES PATENTS

627,306	O'Rourke	June 20, 1899
983,555	Kelley	Feb. 7, 1911
1,306,758	Godfrey	June 17, 1919
1,523,787	Montano	Jan. 20, 1925
1,737,898	Snowdy	Dec. 3, 1929
2,801,126	White et al.	July 30, 1957