July 22, 1958 I. A. KOVACH 2,844,279

FOLDING CARRIER FOR BOTTLES

Filed Nov. 8, 1956

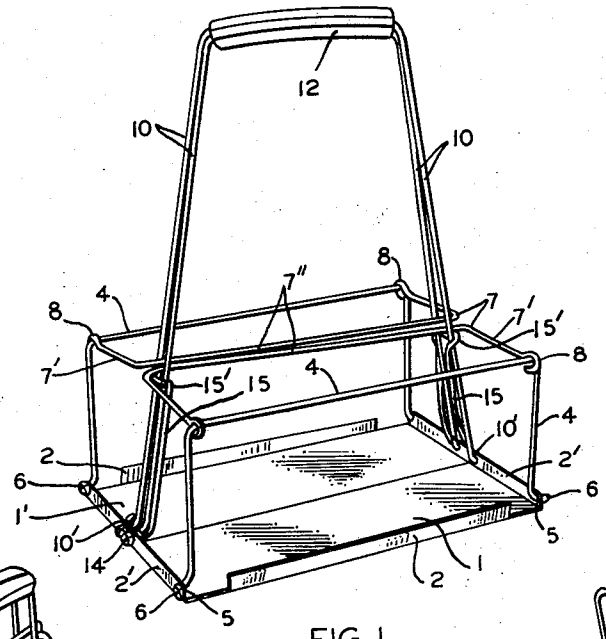


FIG.1

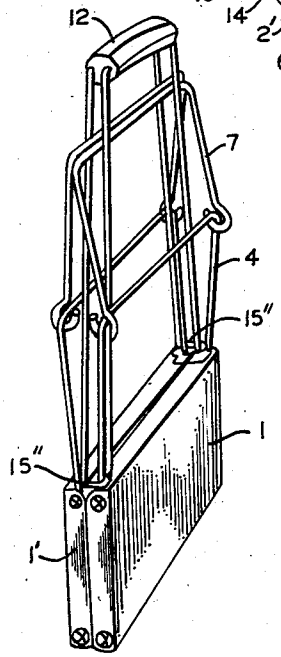


FIG.3

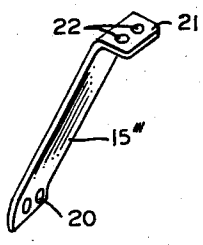


FIG.4

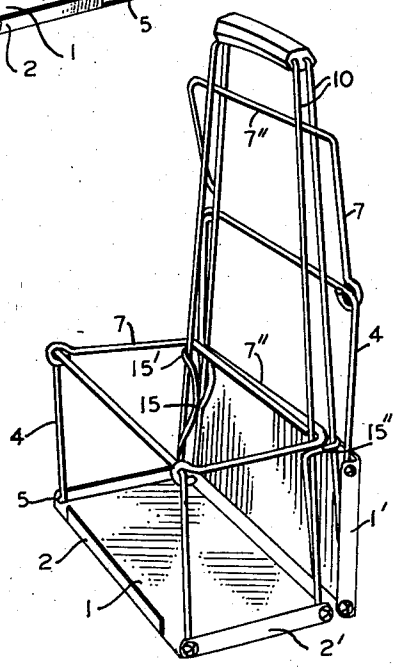


FIG.2

INVENTOR.
IMRE A. KOVACH

BY Robert V. Morse

ATTORNEY

United States Patent Office 2,844,279 Patented July 22, 1958

2,844,279

FOLDING CARRIER FOR BOTTLES

Imre A. Kovach, Ithaca, N. Y.

Application November 8, 1956, Serial No. 621,073

1 Claim. (Cl. 220—110)

This invention relates to folding frames which can be opened to provide a convenient means for carrying bottles and small packages, and which can be collapsed into a small space when not in use. Many types of carriers for that purpose have been constructed in the past, and the present invention is particularly directed to eliminating unnecessary complexity, reducing the cost of manufacture, making it neat and easy to clean, and rugged enough to endure careless handling. It is intended to be sold at a low price or loaned or given away to customers of milk stores as a goodwill item, and yet be of such permanent construction that it will seldom have to be repaired or replaced.

The number of parts are reduced to a minimum to facilitate assembly and they are of a character that can be put together by relatively unskilled help. The device includes two carrying trays, one on either side of the handle, and these can be opened jointly or separately so that when half the number of bottles are to be carried the holder is not unnecessarily bulky. The general purpose is to increase the convenience and utility of such devices so that they may go into more general use.

Referring now to the drawings forming part of this specification:

Fig. 1 is a perspective drawing of the carrier in the open or bottle carrying position.

Fig. 2 shows one half of the carrier folded as in carrying half the number of bottles or other packages.

Fig. 3 shows the carrier collapsed when not in use.

Fig. 4 is a detail view of an alternative form of inclined guide for the handle wires.

Similar reference numerals refer to similar parts thruout the various views.

Referring now to Fig. 1, the carrying base or tray of the device is divided into two parts 1 and 1', preferably made of sheet aluminum with turned up flanges 2 on the outer sides of the long edges and 2' on the outer sides of the shorter edges at the ends. There is no flange at the middle between the two base plates 1 and 1'. Pivoted near the outer ends of the flanges 2' are inverted U-shaped rectangular bails or frames 4 made of heavy wire, the lower ends of which pass out thru pivot holes 5 in the flanges 2' and are secured in place by the nuts 6. Each of these bails 4 has attached to its near the ends of its horizontal bar a supplementary bail 7 of somewhat similar rectangular U shape and made of heavy wire, this bail 7 having two side portions 7' with ends 8 bent into pivotal loops around the end portions of the horizontal run of the frames 4. The horizontal runs 7'' of the supplementary bails 7 are made a part of the same wire as the side portions 7', and these horizontal runs 7'' extend between the central double wire handle bails 10 having the handle 12 by which the apparatus is carried.

The handle bails 10 are also made of heavy wire similar to that used thruout except for the sheet metal base trays 1 and 1', and the lower or supporting ends 10' of the handle bails 10 are bent to extend out thru suitable

holes near the inner ends of the flanges 2' and are secured by suitable nuts 14.

In order to hold the handle bails 10 apart so that the horizontal wires 7'' of the supplementary bails 7 may slide freely up and down between them, the handle bails 10 are anchored in spacing socket wires 15 which at their lower ends loop around the lower supporting ends 10' of the handle bails 10 near where they pass thru the holes in the flanges 2', so as to be held in place by the nuts 14. The upper portion of the spacing wires 15 is bent to provide a loop or guide 15' for each handle bail 10, these guide loops 15' being held apart a fixed spacing distance by the cross piece 15'' of the wires 15. The wires 15, with their guide loops 15' and cross-pieces 15'', are similar at both ends of the handle bail 10. There is thus provided enough space between the two wires composing the handle bails 10 to insure that there will be no binding of the horizontal wires 7'' when the carrier is being opened or closed as will be described. The handle bails 10 have their side wires inclined inward toward the handle 12 as are the socket spacing wires 15, to provide adequate clearance for the side wires 7' as well as to make a stronger and more economical construction. The trapezoidal form made by the handle 12 and the inclined handle bails 10 permit the handle to be of the shortest possible convenient length, and such a structure greatly reduces cantilever stresses in the load carrying elements 10. The use of two such elements 10 insures safety with wires of readily workable size without bulk, and at the same time provides an easily operated guide in which the bails 7 may slide freely up and down without binding, to fold and open the structure. The supporting arms 10 of the trapezoidal structure are almost wholly in tension, even though they spread from the short handle to almost the full width of the base tray.

When the carrier is in use and fully open to carry a full load of bottles, the two base plates 1 and 1' are down in a horizontal position forming a broad floor for the bottles or other articles, which are held from falling off by the bails 4 and 7'; while the runs 7'' of the bails 7 are at the lower portion of the gap between the handle bail wires 10.

When one side of the carrier is folded up as in transporting a half load as shown in Fig. 2, one of the cross wires 7'' of the supplementary bail 7 slides up to the upper portion of the gap between the handle bail wires 10 while the other one of the cross-wires 7'' for the working side of the carrier remains down. This brings one set of bails 4 and 7 to a vertical or flat position as well as one section of the base or tray 1 or 1'. It is thus made easier to carry a half load since the tray is not extended unnecessarily.

When the carrier is not in use, and it is desired to fold it into the most compact form for storage or shipment as shown in Fig. 3, both of the two base plates 1 and 1' are folded up together and both the wire frames 4 and 7 are also folded up in substantially the same plane between the bases and the handle. In this form it takes up little room and can be tossed on the floor of a car or shelf without damage.

In Fig. 4 there is shown a form of guide and spacer 15''' which employs sheet metal in place of the spacing wires 15. This guide 15''' has two holes 20 thru which the lower ends 10' of the handle bails 10 may pass, while the upper end is bent to form a short flange 21 drilled with two suitably spaced holes 22 thru which the handle bails 10 may also pass and be held apart the desired spacing to insure free action of the sliding wires 7'' when the carrier is being folded or opened.

It will be seen that the foregoing construction reduces the device to a minimum of parts, there being only four wire formed elements and one metal base element, each

of which elements is duplicated in the assembly, and a simple tubular handle grip which could be omitted if desired. Yet with these few elements a practical device can be assembled that is adaptable to a variety of uses. It is so inexpensive that it at times may be given away as a bonus or in connection with an advertising campaign; and it is sufficiently durable so that with ordinary care it will last indefinitely.

It will be understood that the size and proportions of this carrier may be made to accommodate various types of load for which it may be particularly designed, such as bottles, cartons, cans or packages, without departing from the scope of the invention as stated in the following claim.

I claim:

In a folding carrier, the combination of a pair of wire handle bails having horizontal cross-portions for a handle and downwardly diverging side portions forming a trapezoidal structure of wires mainly in tension and with a minimum of cantilever stresses for supporting a load, said wire side portions being spaced from each other to maintain a clearance therebetween, spacers for each pair of said side portions to hold them at the desired clearance, a pair of load supporting bases pivotally attached to the lower outer ends of the downwardly diverging side portions of said bails, each load supporting base being pivotally attached to a separate bail so that it may be folded up independently of the other base and bail, the

pivotal axes for folding being close to the inner edges of said bases and substantially in the planes of the handle bails, a pair of wire side holding frames one for the outer side of each base, each of said side holding frames having a pair of vertical runs pivotally attached at their lower ends near to the outer corners of their respective base and having a horizontal run extending substantially parallel to the outer edge of its base and parallel to the plane of the handle bails so as to hold a load in place, and a pair of wire end holding frames similar in general conformation to the side holding frames and pivotally attached thereto near the ends of the horizontal run of said side holding frames, each of said end holding frames having a horizontal run between the end holding portions and with their horizontal runs lying between the spaced side portions of the pair of wire handle bails, whereby either or both of the load supporting bases and their wire holding frames may be folded together into a compact form or opened independently or jointly to carry a half or full load respectively.

References Cited in the file of this patent

UNITED STATES PATENTS

2,333,954	Rocker	Nov. 9, 1943
2,419,413	McCalla	Apr. 22, 1947
2,508,062	Fowler	May 16, 1950
2,522,080	Wyatt	Sept. 12, 1950