Sept. 3, 1957 J. B. McCABE 2,804,966

BOTTLE POCKET

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Fig. 1.

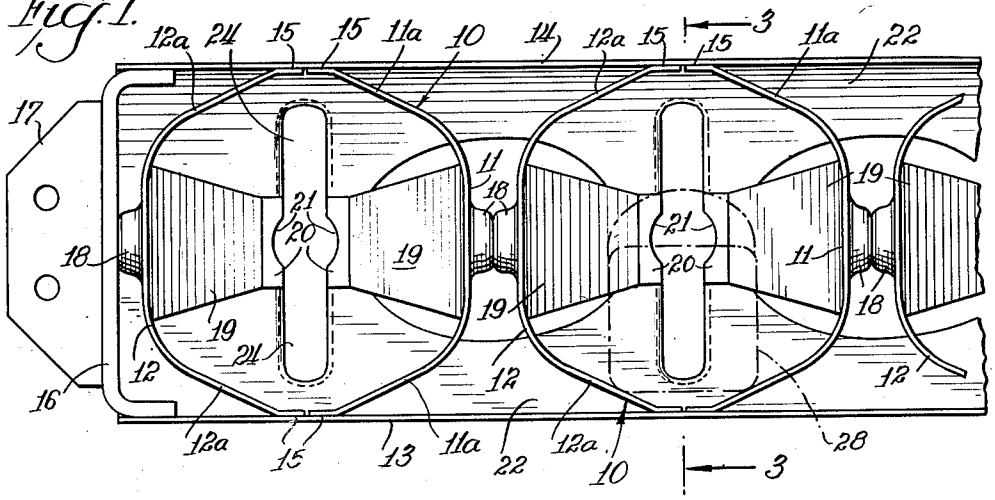
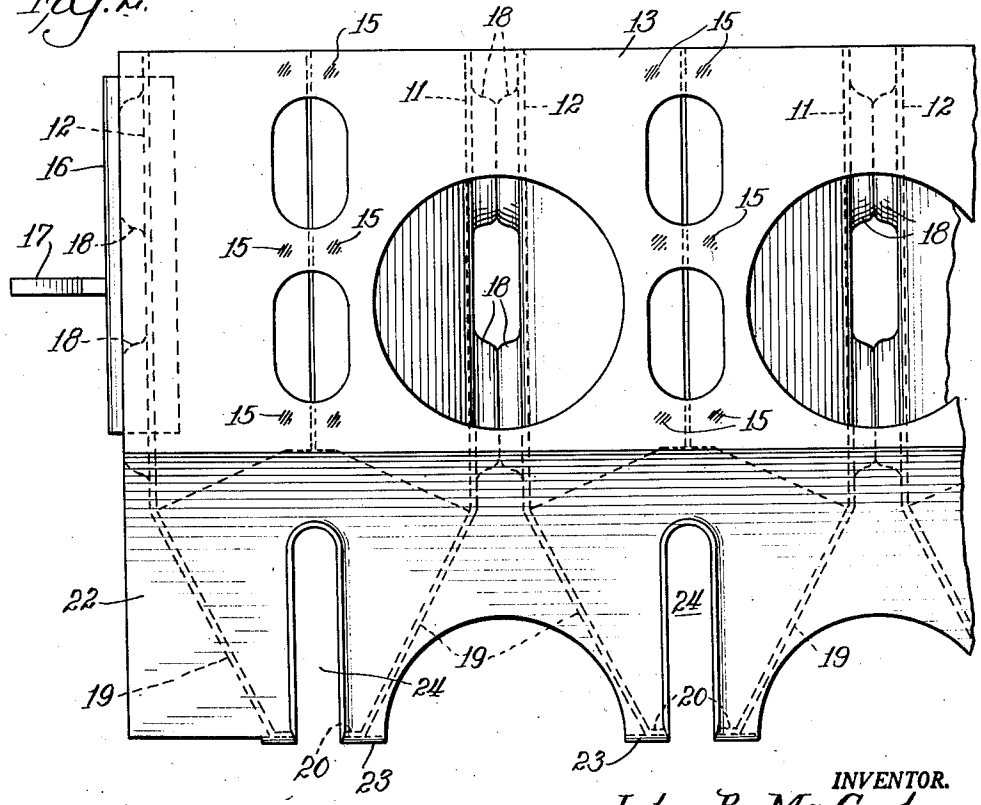


Fig. 2.



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Fig. 3

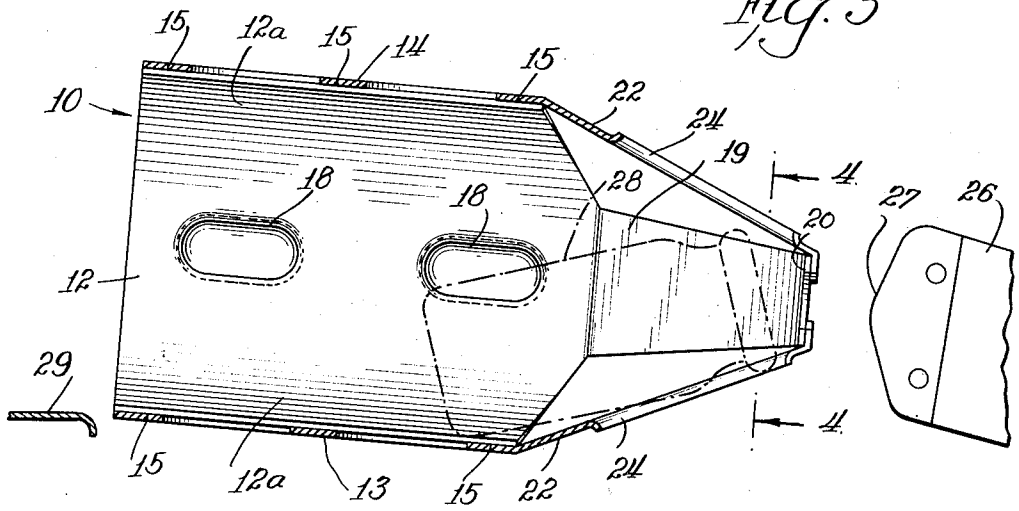
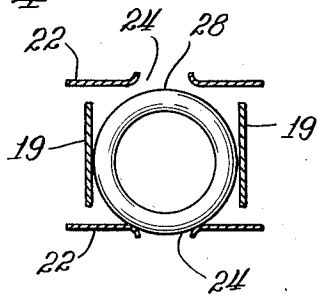


Fig. 4



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BOTTLE POCKET

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Application May 6, 1954, Serial No. 427,967

2 Claims. (Cl. 198—131)

My invention relates to a bottle carrying pocket and has reference more particularly to a pocket or cage of the type for receiving and conveying milk bottles or the like through a commercial bottle washing machine.

Bottle washing machines are more or less standard equipment in every dairy which uses glass bottles. These machines are usually automatic in operation and employ a continuous bottle conveyor system. The conveyor consists of successive rows of bottle-receiving facilities known as "pockets" and the rows usually range from about four to sixteen bottle pockets in width.

It is the usual practice for the bottle conveyor to move intermittently, and during each pause one row of bottle pockets is unloaded and an adjacent row is loaded, so that both the loading and the unloading operations occur at the same end of the machine. In some of the small size models, the loading is done by hand, and in others, the loading is automatic from conveyors.

The bottles are inserted into the pockets with the top or open end projecting inwardly. The conveyor then takes them downwardly to a soaking compartment containing heated caustic solution, the bottles being in upright position as they pass through this compartment. The conveyor then takes the bottles up to a top return level where they pass in inverted position over a succession of jets which flush out the interiors of the bottles. The bottles are then conveyed to the unloading position where they are resting on their sides in the bottle pockets and at that time ejector fingers enter the pockets and push the bottles out onto a horizontal discharge plate which is then tipped upwardly to place the bottles in upright position.

Because of the variety of bottle shapes used in the dairy industry and the various sizes of bottles used in any one dairy, it has been necessary to provide special pockets of various shapes and sizes adapted to handle the various types of bottles. Attempts have been made to provide pockets capable of handling bottles of several sizes but they have usually failed to keep the various types of bottles properly aligned therein and this resulted in improper cleaning and frequent breakage. In some instances adjustable bottle pockets have been provided but because of the number of rows on each conveyor and the necessity for adjusting each row, it required a great deal of time to adjust such bottle pockets for the various size bottles and the adjustable feature often required repair and necessitated putting the washer out of operation.

It is the principal object of my invention to provide a universal bottle pocket for commercial bottle washing machines which is adapted to receive and handle bottles of a variety of shapes and sizes.

It is another object of my invention to design such a bottle pocket which will preserve the proper alignment of even the smallest bottles placed therein so as to insure proper handling and ejection of such bottles.

It is a further object of my invention to insure simplicity of design in bottle pockets of this character so as to achieve low cost and to insure dependable performance,

these and other objects being accomplished as hereinafter described, reference being had to the accompanying drawing in which

Fig. 1 is a top view showing a portion of a row of bottle pockets embodying my invention;

Fig. 2 is a side elevational view showing a portion of a row of bottle pockets;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1; and

Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

Referring now to the drawing, the bottle pockets embodying my invention are designated generally by the reference numeral **10** and each pocket **10** is made up of two small substantially U-shaped shells **11** and **12** which are substantially identical in shape and which are joined in face-to-face relation to provide a bottle enclosing pocket.

The respective bottle pockets **10** are arranged in a row as shown in Fig. 1 and are mounted between side members **13** and **14** and welded thereto at **15**, the respective side members **13** and **14** being joined at the end by an end member **16** which is provided with a flange **17** for securing the row of pockets to the conveyor (not shown), said conveyor being of the continuous type and serving to carry the respective rows of bottle pockets intermittently through the successive operational zones in the bottle washer.

Each of the U-shaped side sections **11** and **12** is provided centrally with an embossment or projection **18** and adjoining embossments **18** are preferably welded together to provide additional strength for the row of bottle pockets. The end embossment **18** is welded to the end member **16**, and the end embossment (not shown) at the opposite end of the row is secured to the corresponding end member.

Each U-shaped side section **11** and **12** has inwardly flared sides **11***a* and **12***a* forming obtuse angles with the intervening central portion. Thus when the respective side sections **11** and **12** are joined and assembled as shown in Fig. 1, the pocket formed thereby is somewhat hexagonal in cross section.

Each pocket **10** is open at the top to permit insertion and removal of bottles. The bottom portion of each pocket is of inverted truncated pyramidal form and is adapted to receive the neck portion of a milk bottle when the bottle is inserted into the pocket.

Each U-shaped side section **11** and **12** has a central depending, downwardly extending strip **19**, the respective strips **19** being slanted inwardly toward each other, and each strip **19** has at its lower end an inwardly bent lip **20**, the respective lips **20** being spaced apart sufficiently to provide a passage therebetween. The lips **20** cooperate to provide a support for the open end of a milk bottle to rest upon when such bottle is placed in the bottle pocket **10**. Each lip **20** is provided with a concave notch **21** facing the corresponding notch **21** of the other lip **20**, and the respective notches **21** cooperate to provide a circular opening to permit free flow of a jet or stream of water therethrough into the open end of a bottle in the bottle pocket **10** when the latter pauses over such jets during the intermittent operation of the bottle washing machine.

Each of the aforesaid side members **13** and **14** is provided with an inwardly slanted skirt **22** which slopes toward the lower ends of the strips **19**, each skirt **22** having a bottom edge **23** turned under the lips **20** and welded thereto to form a secure assembly therewith. Each skirt **22** is provided with slots **24** aligned with the passage between the respective lips **20**, the slots **24** being of substantially the same width as the distance between the lips **20**. Each slot **24** extends upwardly toward and terminates near the juncture of the respective skirts **22** with the side members **13** and **14**. The edges of the slots **24** are provided with outturned edges which are preferably some-

what rounded to serve as a guide for the bead around the neck of a milk bottle in the particular pocket **10**.

Thus it will be seen that the downwardly extending strips **19** from the side sections **11** and **12**, and the skirts **22** depending from the side members **13** and **14** cooperate to form and enclose the truncated pyramidal bottom sections of the respective bottle pockets **10**.

When a particular row of bottle pockets **10** reaches the discharge position in the washer, the said pockets are in a relatively level position on their sides as shown in Fig. 3, and when they are in that position, a relatively thin ejector bar **26** is propelled outwardly from behind the bottom of the bottle pocket **10** into the interior of said pocket **10**, the ejector **26** being adapted to pass through the opening formed by the respective slots **24** and space between the lips **20** to engage the opening in the top of the bottle **28** (as shown in broken lines in Fig. 3). The ejector **26** has a relatively flat-pointed tip **27** which tends to prevent the bottle **28** from slipping out of engagement with the ejector **26**, and as said ejector **26** continues to move through the pocket **10** a sufficient distance, it pushes the bottle **28** out thereof and onto the discharge plate **29**. The movement of the ejector **26** is, of course, coordinated with the pause of the row of bottle pockets **10** between its intermittent movements so that the pocket **10** is not in movement during the time that the ejector **26** enters to push out the bottle **28**.

The respective adjacent sides of mating side sections **11** and **12** meet at something less than a 180 degree angle to form a relatively shallow V-channel which cooperates with the corresponding slot **24** as an extension thereof to provide a continuing guide for the beaded top edge of the bottle **28** as it is ejected from the bottle pocket **10**.

Thus, when the bottle pockets **10** are in use, bottles of virtually any size, ranging from tall half pints up to square, rectangular or round 2-quart bottles may be handled thereby. The bottles are inserted top first into the pockets **10**, either mechanically or by hand. The pockets **10** carrying the bottles therein downwardly through the soaking compartment, then upwardly to the return level over the successive jets and the bottles are then brought back to the discharge position, and at that point they are disposed horizontally as shown in Fig. 3 so that the bottles

tend to rest on the lower sides of the respective pockets **10**. The shallow V-channel on the lower side of the pocket **10** as shown in Fig. 1 tends to center the body of the bottle in the pocket **10**. The beaded edge around the top of the bottle tends to rest in the slot **24**. As has been indicated previously, the relatively pointed tip **27** of the ejector **26** engages the open end of the bottle **28** and tends to keep it centered. The slot **24** assists in keeping the bottle centered as it slides outwardly from the pocket **10**. And the shallow V-channel on the lower side of the pocket **10** as it is in discharge position cooperates with the tip **27** of the ejector **26** to continue keeping the bottle properly aligned while it is being pushed out of the pocket **10**.

While I have shown and described my invention in a preferred form, I am aware that various modifications can be made therein without departing from the spirit of my invention, the scope of which is to be determined by the appended claims.

I claim:

1. An article receiving pocket of the class described comprising a hollow body shell open at one end with a somewhat funnel-shaped neck portion at the other end, said body shell having a shallow longitudinal trough formed therein and said neck portion having a longitudinal slot aligned with and extending toward said trough, the margins of said neck portion along opposite sides of said slot being flared outwardly and toward each other.

2. An article receiving pocket of the class described comprising a body shell of generally hexagonal cross section, the walls of said shell forming a plurality of longitudinally-disposed angles, said shell being open at one end and having two opposed inturned scoop-shaped walls, each of said scoop-shaped walls being provided with a longitudinally-disposed slot substantially aligned with one of said angles formed by walls of said shell, the longitudinal margins of said scoop-shaped walls on each side of said slots being flared outwardly and toward each other.

References Cited in the file of this patent

UNITED STATES PATENTS

781,839	Miller	Feb. 7, 1905
2,444,925	Fischer	July 13, 1948