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CONTAINER ENGAGING MECHANISM

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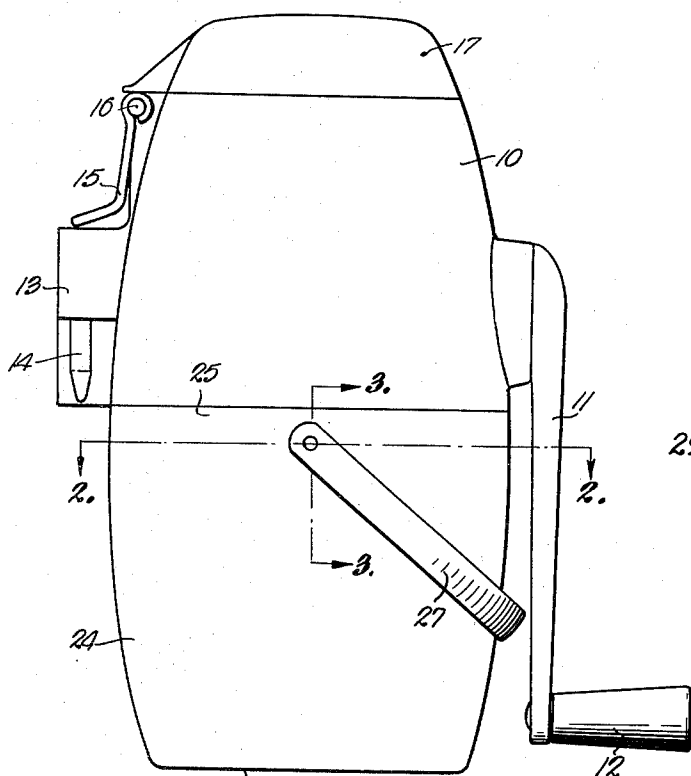


Fig. 1.

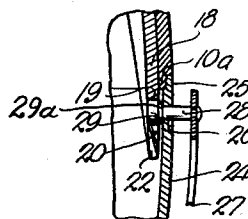


Fig. 3.

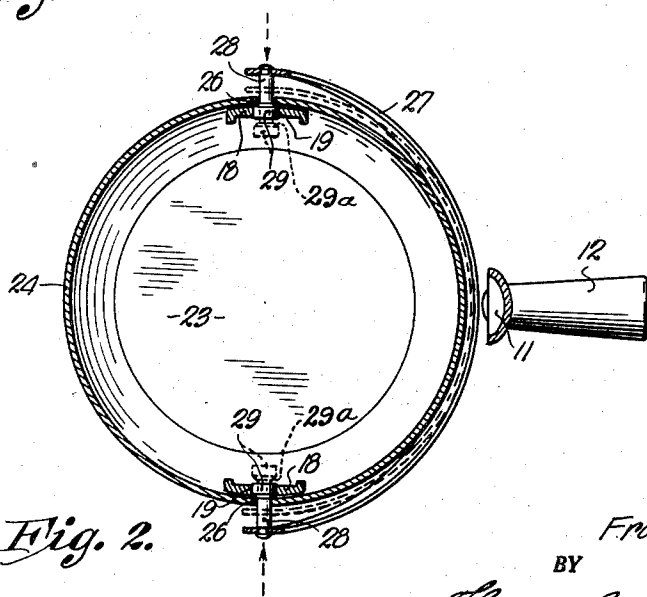


Fig. 2.

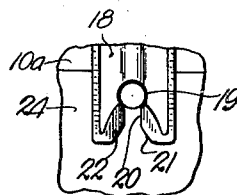


Fig. 4.

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CONTAINER ENGAGING MECHANISM

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2 Claims. (Cl. 220—4)

This invention relates to home ice crushers and ice receiving and conveying containers and refers more particularly to a mechanism for disengaging the units of a combined ice crushing and conveying device having an upper ice crushing unit and lower ice conveying container unit.

Separate home ice crushing devices and crushed ice receiving and conveying containers are well-known in the art and in common use in homes. Several disadvantages are inherent in such separate ice crushing and ice conveying units used in the home. When ice is crushed in one device and then transferred to another for conveying, the operations require an excess of effort and time and permit melting of the ice both during the crushing operation and the transfer from unit to unit. If an open-bottom ice crusher is employed to allow the crushed ice to fall into a separate container positioned therebelow, a support must be provided for the ice crusher, there is possibility of spilling the ice and, again, there is excess time and opportunity for the melting of the crushed ice. Additionally, in the storage and handling of the separate crushing and conveying units inconvenience is found. Should a combined ice crushing and conveying unit be provided, the major difficulty is found in connecting and disconnecting the units while supporting the required large-size container with one hand and manipulating the engaging and disengaging means with the single free hand.

Therefore, an object of the present invention is to provide an engaging and disengaging device for the units of a unitary home crushed ice device having an upper enclosed ice crushing unit and a lower walled container engageable and disengageable one with the other, the engaging and disengaging device easily operable with a single hand of the user while the container is held with the other hand of the user.

Another object of the present invention is to provide an engaging and disengaging mechanism for the units of a home ice crushing and conveying device having an upper enclosed ice crushing unit and lower-walled container unit, engageable and disengageable one with the other, the engaging and disengaging means activated by squeezing together the ends of a handle attached to the container with one of the user's hands, thereby freeing the user's other hand to support the container.

Still another object of the present invention is to provide an engaging and disengaging mechanism for the units of a home ice crushing device having an upper enclosed ice crushing unit and a lower walled container unit, engageable and disengageable one with the other, said engaging and disengaging means cooperating between the upper crushing unit and the lower receiving and conveying container, thereby providing easy quick operation, secure engagement of the two units, simultaneous engagement and disengagement at the coupling points, and having an absolute minimum of operating parts, thereby providing long life and a pleasing appearance of the unit.

Other and further objects of the invention will appear in the course of the following description.

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In the drawings, which form a part of the specification and are to be read in conjunction therewith, embodiments of the invention are shown and, in the views, like numerals are employed to designate like parts.

Fig. 1 is a side elevation of a crushed ice unit embodying the invention.

Fig. 2 is a view taken along the lines 2—2 of Fig. 1 in the direction of the arrows.

Fig. 3 is a view taken along the lines 3—3 of Fig. 1 in the direction of the arrows.

Fig. 4 is a fragmentary detail showing the inside of the latching assembly shown in Fig. 3.

Fig. 1 is a side view of the whole crushed ice unit embodying the invention. There are two basic parts to the unit comprising an upper ice crushing unit and a lower crushed ice receiving and conveying container unit. The former will be described first.

The upper ice crushing unit comprises a walled ice receiving enclosure having circumferential side wall 10. The lower rim of wall 10 is notched 10a on its outer surface as seen in Fig. 3. Apparatus or means for crushing ice are contained within said wall 10, but are not shown in the figures and will not be described, as any conventional crushing mechanism may be employed. Handle 11 having grip 12 is the means for activating the ice crushing mechanism. Wall holding attachment 13 having prong 14 is intended to fit into a conventional wall support bracket (not shown). Lifting clip 15 on studs 16 aids in removing the crushed ice unit from said wall support bracket or in lifting the upper ice crushing unit from the lower container unit if the wall bracket is not used. Top 17 fits the upper rim of wall 10. Opposing engaging surfaces 18 are attached to and extend vertically below the lower edge of wall 10. Surfaces 18 have each a stud enclosing perforation 19 in the wall thereof and a shaft receiving passageway or channel 20 extending vertically downward therefrom. Passages 20 open into the lower portion of said perforation 19 and out of the lower edges of said surfaces 18. The walls of said channels 20 are preferably parallel for a space from their entry into perforations 19 and then preferably have outwardly and downwardly angled portion 21 to the openings of the channels from the lower edges of the surfaces 18. Preferably, outwardly angled portions 21 have bevels 22 on their inner faces.

The lower crushed ice receiving and conveying container unit comprises a unitary container having bottom 23 and side wall 24. The upper edge of side wall 24 is notched 25 on its inner side to mate with notched edge 10a of upper unit wall 10 (Fig. 3). Opposing holes 26 are formed in wall 24 near the upper rim thereof. Handle 27 comprises a strip of resilient material, preferably spring steel, which tends to return to a shape of lesser curvature. Handle 27 is attached near its ends to side wall 24 through holes 26. The attaching means comprises shafts 28 having enlarged stud heads 29. Stud heads 29 have edges 29a next shafts 28 beveled. The width of the uniform diameter portions of stud heads 29 is essentially equal to the thickness of the engaging surfaces 18 in the vicinity of perforations 19. The diameter of the uniform diameter portions of stud heads 29 is equal to the inside diameter of perforations 19 and greater than the diameter of holes 26. The ends of shafts 28 are attached to handles 27, the shafts 28 extend through holes 26 and stud heads 29 are inside the container wall. The length of the shafts 28 is such that compression of each of the ends of handle 27 simultaneously a distance equal to the width of the uniform diameter portion of a stud head 29 permits the positioning of perforations 19 around and removal of perforations 19 from the enlarged head shafts 28. In other terminology, the shafts 28 are of sufficient length in their uniform diameter portions relative the thickness

of the top portion of the entry passageways 20 into the perforations 19 of the engaging surfaces 18 that pressing the handle ends of handle 17 flush with the container side walls permits the enlarged heads or studs to clear the entry passageway 20 walls thereby permitting implantment and removal of the engaging surfaces on or from the shafts 28.

The operation of the handle release mechanism to permit engagement or disengagement of the top ice crushing unit with the lower ice container unit will now be described. To engage the two units, the ends of the handle 27 are pressed toward the side wall of the container thereby causing the shafts 28 to protrude into the container. The enlarged stud heads 29 are thereby displaced inwardly toward the center of the container. With the ends of the handle 27 compressed towards or to the side wall of the container, the ice crusher unit may be lowered so that the channels 20 leading to the perforations 19 engage the shafts 28. The cutaway edges 21 of the channels 20 and the beveled faces 22 of the engaging surfaces 18 guide the engaging surfaces 18 downwardly over the shafts until the shafts enter the perforations 19. When the upper and lower edges of the container unit and the ice crusher unit engage as in Fig. 3, the compressing pressure on the handle ends may be released, thereby permitting them to spring outwardly and the enlarged stud heads 29 to fit into the perforations 19. The two units are now locked into position and will remain stably connected while ice is crushed in the upper ice crushing unit with entire unit supported on a wall bracket or in any other desired manner. The crushed ice, of course, is produced by the revolution of the handle after the insertion of ice into the top enclosure through the top.

To disengage the upper ice crushing unit from the lower container unit so that the container may be used to convey the crushed ice, the following procedure is employed. Once again, the ends of the handle 27 are compressed towards or to the side wall of the container. This action forces the enlarged stud heads 29 inwardly past the engaging surfaces. Such action is shown in dotted lines in Fig. 2. The top ice crushing unit may now be lifted upwardly with the operator's free hand with the channels 20 moving past the shafts 28. When the channels 20 have cleared the shafts 28, the operator may release the handle ends and the two units are separated.

From the foregoing it will be seen that this invention is one well adapted to attain all of the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter hereinabove set forth or

shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. Engaging mechanism for open ended container sections for detachably securing said sections together comprising, in combination, first and second container sections each having wall portions and continuous rims engageable with each other, a pair of flanges connected to the wall portion of the first section having portions extending beyond the rim thereof, said flanges being positioned on the wall portion so as to be substantially opposed to each other, each flange having a slot therethrough with an enlarged slot portion in the body of said flange, said slots extending from the free end of said flange to said enlarged slot portion, said second section having a pair of openings therethrough positioned in the wall portions adjacent said rim portion and aligned with said enlarged portions of said flange slots when the rims of the sections are properly engaged, a resilient handle, and a pair of shafts each attached at one end to the end portion of said handle and extending inwardly of and normal thereto, each of said shafts having a reduced portion and an enlarged head on its inner end, said shafts being positioned through said openings with their enlarged heads positioned interiorly of the wall portion of said second section, said reduced portions of said shafts being freely slidable in said openings and flange slots, said enlarged shaft heads being of a size to pass into said enlarged slot portions and being larger than said flange slots and openings, said resilient handle having each end portion normally spaced from the outer wall portions of said second section a distance at least as great as the thickness of one of said shaft heads for normally holding said enlarged heads in their respective enlarged slot portions for locking said sections together, the length of the reduced portion of said shafts being greater than of combined thickness of the wall portion and flange through which they extend to permit the end portions of said handle to be pressed inwardly and thus move said shafts inwardly a distance sufficient to disengage said enlarged heads from said enlarged slot portions and permit disengagement of said sections.

2. Apparatus as in claim 1 wherein the wall portions are circular and the handle is arcuate in form.

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