A kitchen utensil kit including a multi-tool device having a single handle with one or more easily attachable accessories such as peelers, pizza cutters, cheese slicers, zesters, ice cream scoops, graters, juicers, jar openers, etc. The kit includes stationary or slidable attachable and/or stackable holders or trays for the compact, organized storage of the kitchen implements in drawers or on countertops. Indicia are provided for each receptacle to identify the implement which the receptacle is designed to hold. The preferred indicia is the shape of the receptacle, which matches the shape of the article.
MULTI-TOOL KITCHEN UTENSIL KIT AND CONTAINER


The crowding and jumble of kitchen utensils in the usual kitchen drawer is a hindrance of long standing. The jumble makes it difficult to find individual implements, and often extends the time and exasperation in obtaining a utensil from the drawer due to the fact that the drawer cannot be closed until the utensils in the drawer are rearranged.

One of the causes of the foregoing problems is the amount of space occupied by each implement.

Proposals have been made in the past to provide a partial solution to this problem by supplying a single handle with a plurality of attachments to be attached to the handle, each being an implement for a different purpose.

Such prior proposals have been considerably less than fully satisfactory. Although, in theory, those proposals result in a reduction of the volume occupied by the kitchen utensils, they are believed to do little to lessen the jumble and difficulty of finding and retrieving specific implements.

Furthermore, the means used to attach the individual accessories to the handle are relatively difficult to use and/or less than fully satisfactory in other ways.

Another problem with some kitchen implements, especially those whose handles are visible when the implements are stored such as kitchen knives, the handles are not dishwasher-safe; that is, the handles, usually made of wood or heat-sensitive plastics, will fade, crack or otherwise deteriorate if they are washed frequently in the dishwasher.

Accordingly, it is an object of the present invention to provide a kitchen utensil device which alleviates or resolves the above problems.

In particular, it is an object to provide a utensil system in which the components are ordered and housed so as to minimize tangling and disorder of the components, and to minimize the use of kitchen drawer and other storage space.

It is another object of the invention to provide a multi-tool kitchen implement device with a handle and a plurality of attachments easily and securely attachable to and detachable from the handle.

It is a further object of the invention to provide such a multi-tool device which is relatively strong, durable, simple in construction and easy to use and store.

Another object of the invention is to provide such a device which is ergonomically shaped so as to make it easy to grasp and comfortable to use.

It is a further object of the invention to provide a method of manufacturing the multi-tool device of the invention and the kit with economy, speed and quality.

Another object of the invention is to provide an organizer tray or receptacle for organizing and compactly storing kitchen implements in the kitchen.

Still further, it is an object to provide improved kitchen implements with superior performance, and/or structural strength and cost advantages over prior comparable implements.

Another object of the invention is to provide packaging for the separate sale of individual implements and trays so as to assure that the implements are properly matched to the trays in which they fit.

In accordance with the present invention, the foregoing objectives are satisfied by the provision of a multi-tool kitchen utensil kit with a container to hold and organize a plurality of components of a multi-tool device in the container.

An additional object is to provide a multi-tool kitchen device and kit in which the tools are both attractive in appearance and yet are made dishwasher-safe at a moderate to low cost.

Preferably, the container has a plurality of recesses, each shaped to hold a component of the multi-tool device. Each kit is adapted to be secured together with other containers containing different components of the multi-tool device to form a organization system to keep the tool components in an orderly fashion in a kitchen drawer or on a shelf, or in another available space.

In one embodiment, each recess is shaped to receive a specific component, and means are provided for attaching various containers together to form a unitary support structure for holding and organizing the multi-tool components neatly in a kitchen drawer. Thus, space is saved and the usual jumble of kitchen implements in the drawer is avoided.

Alternatively, the kit includes a container for storage on a counter-top or similar surface.

The implements can be stored with one end up in a relatively deep container, or flat in a relatively shallow container for use in shallow drawers.

The single handle needed for use with a variety of tools, and the tools themselves, can be made both dishwasher-safe and attractive in appearance at a modest cost.

In one embodiment of the kit, the handle and a plurality of accessories are stored in units suitable for display on a kitchen counter-top, shelf or other such surface. The kit also is useful for display of the product in stores, on television and in other advertising.

In another embodiment of the kit, the handle and a plurality of accessories are stored in stackable trays. The trays preferably have upstanding posts which are used to support and accurately align one tray on top of the other. Preferably, the trays have side walls which are substantially shorter in height than the attachments which fit into the trays, thus saving material for the trays and making the attachments easier to grasp and remove. The stackable trays occupy a smaller footprint than the other trays designed for use inside drawers, thus allowing for more flexibility in the use of the drawer space.

The multi-tool device includes a handle with attachment means mating with similar attachment means on each of a plurality of accessories so that each accessory can simply be inserted and snapped into place and held tightly in
the handle. This holds the accessory onto the handle very securely. The accessory then can be detached by the simple act of pushing a button or lever with one finger or separated from the handle by simply tipping the handle to allow gravity to do the work.

[0027] The handle advantageously is ergonomically shaped, and is manufactured by co-molding a flexible elastomeric cover over a molded plastic handle to provide a handle which can be firmly, easily and comfortably gripped while wielding the kitchen implement attached to it.

[0028] In another aspect, the invention includes an organizer tray for kitchen implements. Preferably, the trays are assembled together, either side-by-side, or stacked on top of one another. Either upstanding posts are used to support the top of the bottom tray, or the top tray is made so as to slide on the bottom tray.

[0029] Indicia are provided to identify the implement which is to go into the receptacle. The indicia can take several forms, including shaping the receptacle like the shape of the article to go into it; marking the receptacle with a representation of the implement; and color coding or alphanumeric marking of the implement and the receptacles.

[0030] An improved reamer-type citrus fruit juicer is provided with alternating large and small recesses in the reamer body for better juice extraction.

[0031] An improved jar opener is provided with hinged clamp jaws which can be folded into a compact unit for space-saving storage in the tray and in a kitchen drawer.

[0032] A packaging system is provided in which components of the kit are sold separately with indicia, preferably color-coding, on the packages of implements and trays to indicate the tray that each implement is designed to fit into so that the purchaser buys the right tray for each implement purchased.

[0033] The foregoing and other objects and advantages of the invention will be described in or apparent from the following description of the drawings.

IN THE DRAWINGS

[0034] FIG. 1 is a perspective view of a multi-tool kitchen utensil kit of the present invention;

[0035] FIG. 2 is a cross-sectional, broken away view illustrating the attachment of the two kit modules of FIG. 1 together;

[0036] FIG. 3 is a top plan view of a kitchen drawer with various kit modules located in the drawer to organize and arrange the components of a multi-tool kitchen utensil or implement system;

[0037] FIG. 4 is a perspective view of a preferred embodiment of the handle of the multi-tool device of the present invention;

[0038] FIG. 5 is an exploded perspective view of the handle shown in FIG. 4;

[0039] FIG. 6 is a phantom side elevation view of the handle shown in FIG. 4;

[0040] FIG. 7 is a schematic cross-sectional view taken along lines 7-7 of FIG. 4;

[0041] FIGS. 8 and 9 are front elevation views showing the handle of FIG. 4 in two different operative configurations;

[0042] FIG. 10 is a perspective view of a component of the handle shown in FIG. 4;

[0043] FIG. 11 is a broken-away perspective view of another component of the handle of FIG. 4;

[0044] FIG. 12 is a perspective view of a pizza cutter accessory for the handle down in FIG. 3;

[0045] FIGS. 13 and 14 are perspective views showing the process of attachment of the pizza cutter of FIG. 12 to the handle of FIG. 4;

[0046] FIG. 15 is a perspective view of a cheese slicer accessory;

[0047] FIG. 16 is a perspective view of a citrus peel scraper or “zester” accessory;

[0048] FIG. 17 is an exploded view of the device shown in FIG. 16;

[0049] FIG. 18 is a perspective view of a citrus fruit reamer accessory;

[0050] FIG. 19 is a perspective view of an ice cream scoop accessory;

[0051] FIG. 20 is a perspective view of a “horizontal: accessory” peeler accessory;

[0052] FIG. 21 is a perspective view of a melon baller accessory;

[0053] FIG. 22 is an exploded view of a “straight” peeler accessory;

[0054] FIG. 23 is a perspective assembly view of the device shown in FIG. 22;

[0055] FIG. 24 is a perspective view of another embodiment of the invention;

[0056] FIG. 25 is an exploded perspective view of the device shown in FIG. 24;

[0057] FIG. 26 is a cross-sectional, partially schematic broken-away view taken along line 26-26 of FIG. 24;

[0058] FIG. 27 is a top plan view, partially cross-sectional and partially schematic, of the device shown in FIGS. 24 through 26;

[0059] FIG. 28 is a perspective view of another embodiment of the invention with a zester accessory;

[0060] FIG. 29 is an exploded view of the device shown in FIG. 28, with a straight peeler accessory;

[0061] FIG. 30 is an exploded perspective view of the device of FIG. 28 with an ice cream scoop accessory;

[0062] FIGS. 31 and 32 are top plan views, partially schematic, and partially cross-sectional, of two additional embodiments of the invention;

[0063] Each of FIGS. 33 through 39 is a top plan view of a different accessory for use with the handle of the invention;
FIG. 40 is a side elevation view of a component holder and kit provided in accordance with the present invention;

FIG. 41 is a cross-sectional view of another component holder and kit provided in accordance with the invention;

FIG. 42 is a perspective, partially exploded view of another component holder and kit provided in accordance with the present invention;

FIG. 43 is a rear elevation view of each of the modules shown in FIG. 42;

FIG. 44 is a perspective view of another accessory provided in accordance with the present invention;

FIG. 45 is a perspective view of another kit including stacked individual kits or trays;

FIGS. 46 and 47 are front elevation views of the separate trays of FIGS. 45;

FIGS. 48 and 49 are perspective views of the trays of FIGS. 46 and 47, without implements in them;

FIGS. 50 and 51 are front and rear perspective views of another accessory provided in accordance with the present invention;

FIGS. 52 and 53 are front perspective and side elevation views, respectively, of another accessory provided in accordance with the present invention;

FIG. 54 is a top plan view of another embodiment of the implement holder or tray of the present invention;

FIG. 55 is a cross-sectional view taken along line 55-55 of FIG. 54, with implements in place in the tray;

FIG. 56 is a cross-sectional, partially broken away view like that of FIG. 55 but of a different embodiment of the implement holder or tray of the present invention;

FIG. 57 is a top plan view of another implement holder or tray constructed in accordance with the present invention;

FIG. 58 is a top plan view of another embodiment of the implement holder or tray of the present invention;

FIGS. 59 and 60 are perspective and side elevation schematic views, respectively, of a portion of another embodiment of the holder or tray of the present invention;

FIG. 61 is a schematic, side elevation view of another embodiment like that shown in FIGS. 59 and 60;

FIG. 62 is a cross-sectional view of a portion of the structure shown in FIG. 63, taken along lines 62-62 of FIG. 63;

FIG. 63 is a perspective, partially schematic view of another embodiment of the holder or tray of the present invention;

FIG. 64 is a perspective view of another implement holder or tray of the present invention;

FIG. 65 is a perspective view of sliding tray assembly provided in accordance with the present invention;

FIG. 66 is an enlarged, broken away view of a detail of the structure of FIG. 65;

FIG. 67 is a perspective view of a garlic press implement of the present invention;

FIG. 68 is a side elevation view of the citrus fruit reamer shown in perspective view in FIG. 18;

FIGS. 69, 70 and 71 are cross-sectional views taken, respectively, along lines 69-69, 70-70, and 71-71;

FIGS. 72 and 73 are top and bottom perspective views, respectively, of a jar opener implement of the present invention in closed position;

FIGS. 74 and 75 are top and bottom perspective views of the device shown in FIGS. 72 and 73, in an open condition;

FIG. 76 is a perspective view of another embodiment of the slideable trays of the present invention;

FIG. 77 is a top plan view of a kitchen drawer with the assembly of FIG. 76 inside;

FIG. 78 is a top plan view of the superimposed trays shown in FIG. 65 in place in a kitchen drawer;

FIG. 79 is a cross-sectional, broken away view taken along line 79-79 of FIG. 76;

FIGS. 80 and 81 are top plan views of packages, each containing a single implement (FIG. 80) or a combination of implements (FIG. 81) for sale as components of the kit of the present invention; and

FIG. 82 is a front perspective, partially broken-away view of a package in which a tray constructed in accordance with the invention is sold.

MULTI-TOOL KITCHEN UTENSIL KIT

FIGS. 1-3 illustrate one embodiment of the multi-tool kitchen utensil or implement kit 50 constructed in accordance with the present invention.

The kit 50 includes at least one container 52 containing a plurality of components for interconnection to one another to form various kitchen tools. Two such containers 52 and 54 are shown in FIG. 1 to illustrate the different forms that the containers and their contents can take.

The container 52 is generally rectangular in shape, and has four vertical side walls 56 and a top wall 55. The top wall 55 has a plurality of depressions 62, 64, 66 and 68, each of which is shaped to receive a specific component of a multi-tool device.

The components to be used in a particular grouping can be varied as desired. However, the grouping shown in container 52 includes a handle 88, an ice cream scoop 82, a pizza-cutting wheel 84 and a peeler 86.

Container 54 also has four vertical side walls 60 and an upper wall 58. It is smaller in size than the container 52, and contains different components of the multi-tool system. The upper wall 58 has recesses 70, 72, 74 and 76 in which are located, respectively, a handle 88, a melon bailer 90, a citrus fruit skin scraper or “zester”92, and a citrus reamer or juicer 94.
[0102] A cover 59 is shown for the container 54, which would cover the container when sold in stores. A similar cover normally will be provided for the container 52.

[0103] Each of the containers 52 and 54 is preferably molded of a thermoplastic resin such as ABS. Its walls are thick and sturdy enough to serve not only as packaging in which the product is shipped and sold, but durable storage and organizing means for the multi-tool components in the kitchen.

[0104] To this end, the container 52 is provided with an elongated upstanding tab 80 on the lower edge of at least one side wall.

[0105] FIG. 2 is a cross-sectional view showing the attachment of the two containers 52 and 54 together by use of the tab 80. The lower edge of the rear side-wall 60 of container 54 (not visible in FIG. 1) has a shallow notch slightly longer than the tab 80. The front wall of the unit 54 is inserted into the clip formed by tab 80, so as to secure the containers together to form an enlarged container and organizer structure.

[0106] The container 54 has two separate tabs 81 which can be used to join the units 52 and 54 side-by-side, with the tabs 81 fitting into notches 83 in the side walls of the unit 52.

[0107] The notches in the lower edges of the rear and side walls are provided in order to accommodate the material of the tabs 80, 81 to ensure the bottom and top edges of the containers are aligned with one another.

[0108] FIG. 3 is a schematic top plan view of a kitchen drawer 96 containing several containers 98, 100 and 102 fastened together by clips formed by tabs 80 or 81 to occupy a portion of the drawer and provide organization and storage for a variety of components of the multi-tool system.

[0109] As an example, the container 98 is larger than the containers 100 and 102. It contains accessories for the multi-tool system, but no handles. Instead, it includes an ice cream scoop 82, a cheese slicer 104, a pizza-cutting wheel 84 and a grater 106.

[0110] Each of the containers 100 and 102 contains a handle 88 together with other accessories to be attached to the handles.

[0111] These containers and their arrangement in the kitchen drawer 96 are strictly by way of example to show just some of the combinations that can be used advantageously to store and organize the components of the multi-tool system neatly and compactly. Other kits constructed in accordance with the present invention are shown in other figures of the drawings and are described below.

Handle

[0112] FIGS. 4 through 11 illustrate the preferred handle 88 of the multi-tool system.

[0113] The handle 88 has a hand grip portion 108 with a tapered shape and a pointed end 140. At the opposite end there is a rotatable locking ring 110 and a receptacle 112 for receiving a mounting projection on an accessory. The locking ring 110 operates in a snap-acting manner to lock an accessory in place and attach it to the handle by the simple step of inserting a projection into the receptacle 112. The attaching structure also allows the accessory to be detached easily, with one finger, merely by turning the locking ring 110 through a relatively small angle to free the accessory and allow it to fall out of the receptacle under the force of gravity, with the use of only one hand.

[0114] Referring now to FIG. 5, which is an exploded view of the handle 88, the handle has a hard molded plastic base 114. In one embodiment, the base 114 has a plurality of circumferential ribs 116 and longitudinal ribs 118. Preferably, the ribs 116 and 118 are of approximately the same thickness. The ribbed construction reduces the use of material and increases the molding speed with which the handles can be manufactured.

[0115] In accordance with another aspect of the invention, the handle also includes an elastomeric cover 130 which is co-molded in place over the base 114 during manufacturing.

[0116] The material of which the base 114 is made preferentially is a very strong thermoplastic resin such as a polycarbonate material, and the cover 130 is made of an elastomeric material such as Sanoprene.

[0117] Although the ribbed construction for the base 114 saves polycarbonate material and some molding time, the spaces between ribs are filled with elastomeric material during co-molding of the cover 130. Because the elastomeric material can be considerably more costly than polycarbonate material, it is preferred to make the base member solid with a rough surface to which the elastomeric material adheres.

[0118] Surrounding the receptacle 112 is a circumferential groove 128 in which the latching ring 110 is seated for rotation.

[0119] The latching ring 110 preferably includes two halves 120 and 122, which are assembled and sonically welded together while an inner ring 154 is seated in the groove 128 and after a coil spring 126 has been inserted into the group. The leading edges 132 and 134 of the two halves of the locking ring are flared so as to give a rounded outside edge to help guide projections into the square opening formed by joining the ring halves 102 and 122. The inside edge of the ring around the central opening is flat. A protrusion 124 extends outwardly from the upper ring half 120 for use in rotating the ring 110.

[0120] As it is shown in FIG. 6, in which the base 114 is shown in dashed outline, the elastomeric cover 130 is of varying thickness along the length of the handle. It is relatively thin in a necked-down region 136 and is thicker towards the larger trailing end of the handle, thus providing extra softness in the areas to be gripped with the most pressure by the hand. This extra cushioning makes the handle easier and more comfortable to use.

[0121] The handle also is given a wasp-like cross-sectional shape, as also is apparent in FIG. 6, and is curved downwardly, also so as to conform to the shape of the hand holding the handle. However, this shape also is provided for decorative effect, and gives the handle a sleek, streamlined and attractive look.

[0122] FIG. 7 is a cross-sectional schematic view showing the locking ring 110, the spring 126 which is used in the operation of the locking ring, and the inner construction of the attachment mechanism.
The handle has a body end portion 144 in which the rectangular-shaped recess 112 is formed. A first stop member 142 is attached to the body 144 member, and a second stop member 146 is attached to the internal surface of the ring 110.

A second stop member 148 extends from the body 144, and another stop 150 member extends from the inner surface of the ring 110. With the components in the rest position shown in FIG. 7, the stop members 148 and 150 are separated by an angle A of approximately 21°.

The operation of the locking ring will be explained below after the following description of the locking structure on the accessories.

Accessory Locking Structure

FIGS. 12 through 14 show the pizza-cutting wheel accessory 84 which is one of a number of accessories which can be attached to the handle 88.

FIG. 13 is an exploded view showing the insertion of the pizza wheel locking structure into the handle 88 in the direction indicated by arrow 80. FIG. 14 shows the pizza wheel and the handle assembled together and ready for use.

Referring particularly to FIG. 12, at one end of the pizza wheel 84 is a projection 166 with a square cross-section matching that of the receptacle 112 in the handle but with slightly smaller dimensions so that it fits into the receptacle 112 easily. The projection 166 has a rounded front end 168 for use as a camming surface.

A circumferential groove 170 extends around the projection 166 at its base. A flange 172 which is flared or rounded on its left surface and is of approximately the same outer diameter as the ring 110, is provided and forms one wall of the groove 170.

A molded plastic curved arm 174 extends from the flange 172 and a stainless steel cutting blade 176 is rotatably mounted on the end of the arm 174 by means of a fastener 178. Preferably, the arm 174 and the fastener 178 are molded plastic, as is the projection 166 and the other components of the pizza wheel, except for the cutting blade 176.

It should be understood that each of the accessories to be attached to the handle has a projection 166 and groove 170 and is attached to and detached from the handle in the same way as the pizza wheel. The pizza wheel is being used as a vehicle for explanation of the attachment function.

Operation

Refering again to FIGS. 7 through 11, as well as FIGS. 12 through 14, the attachment of an accessory to the handle 88 will be described.

FIG. 8 shows the locking ring 110 in its relaxed or stable condition as shown in FIG. 7, in which the coil spring 126 holds the ring in the position shown in FIG. 7. In this position, the square opening in the ring 110 is rotated clockwise by approximately 21° with respect to the square receptacle 112 so that the four straight sides of the opening in the ring extend over the four corners of the opening 112, as shown at 156, 158, 160 and 164 in FIG. 8. With the ring 110 in this position, and the projection 166 inserted into the receptacle 112, the projection 166 and the accessory are locked in position due to the fact that the edges 156, 158, 160 and 164 of the ring 110 extend into the groove 170 and prevent the accessory from coming free from the handle. The inner edge of the ring around the central hole is flat, as is the outermost wall of the groove 170 (FIG. 12) so that the arrangement of the two flat surfaces, perpendicular to the longitudinal axis of the projection holds the components together.

In addition, the square shape of the projection 166 and the corresponding square shape of the receptacle 112 prevent the accessory from rotating relative to the handle.

It is highly advantageous that the locking of the accessory in place is performed very simply. As it is illustrated in FIG. 13, one merely inserts the projection 166 into the receptacle 112. The rounded front surface 168 (FIG. 12) of the projection bears against the edge portions of the hole in the center of the ring 110 so as to compress the spring 126 and rotate the ring 110 counterclockwise to the position shown in FIG. 9 in which the square hole in the ring 110 is aligned with the receptacle 112 to permit the projection to be inserted into the receptacle. The resilience of the spring 126 causes the edges of the hole in the ring 110 to snap into the groove 170.

The release of an accessory from the handle is also relatively easy. All that need be done is to press on the upstanding projection 124 on the ring 110 in the direction of arrow 162 (FIG. 7) to compress the spring 126 and rotate the ring 110 to the position shown in FIG. 9, thus releasing the accessory. As a result, with the simple one finger motion, the user may release the accessory and it will drop away from the handle if the handle is turned slightly upward to take advantage of the force of gravity. The release thus can be accomplished with one hand.

Cheese Slicer

FIG. 15 shows the cheese slicer 104 which also is shown in FIG. 1. The cheese slicer has a die-cast zinc body. The projection 166 and the flange 172 are die cast with the body. The body has a pair of support arms 182 and 184 and mounting supports 186 and 188. A stainless steel cutting wire 192 is secured to the supports 186 and 188 by stainless steel pins 193. The wire extends over the front edges of the supports and is stretched taut to form a stable cutting element. A plastic roller 190 is rotatably mounted in the supports 186 and 188 at a pre-determined distance from the wire. The combination of the cutting wire 192 and the roller 190 are used in a known manner to cut cheese slices of a relatively constant desirable thickness. The attachment structure has the strength and durability to stand up to the sometimes heavy pressure extended on the slicer during use.

In a lower cost version, the body can be molded polycarbonate instead of die-cast zinc.

Zester

The zester 92 includes a mounting projection 166 and flange 177 with a pair of arms 194 and end supports 196. A stainless steel scraper element pivotally mounted on the supports 196. Preferably, the body, including the projection 166, is molded of polycarbonate material.

Although a single molding step is preferred, the projection or "insert" 166 also can be made separately and
attached as shown in FIG. 17, to a square post 210 which is provided at one end of the accessory. The post is force-fitted into a square hole 112 in the insert 166 to secure it to the body of the accessory. This method can be used advantageously when the insert 166 and the body are made of different materials.

Citrus Reamer

[0141] FIG. 18 shows the citrus reamer or juicer 94. It has a die-cast zinc body with a projection 166 fastened to the body by a polycarbonate insert. The body is an oblate spheroid with ridges 202, 204 and 206, and a blunt pointed end 200. The ridges are formed by alternating large and small elongated recesses 205 and 207, respectively. The larger recesses 205 extend from the near end of the reamer, where a flange 172 and handle attachment member or projection 166 are located, to near the tip 200. The smaller recesses 207 are not only narrower and shorter than the recesses 205, but they also are shallower, as it is shown in FIGS. 58 through 71.

[0142] As it can be seen in FIGS. 69-71, the recesses 205 are both substantially deeper and wider, as well as being longer than the smaller recesses 207.

[0143] This is believed to be highly advantageous in that it sharpens the edges 209 formed between the recesses so as to dig into the fruit more effectively. Furthermore, it is believed that the larger recesses 205 augment the flow of juice squeezed from the fruit.

[0144] When a handle 88 is snapped onto the projection 166, the reamer can be used by pushing the point 200 into a cut half of a fruit and rotating the reamer to extract juice from the fruit. It is particularly useful in juicing lemons, limes, oranges and other such fruit quickly and easily.

Ice Cream Scoop

[0145] FIG. 19 shows the ice cream scoop 82. It is die-cast zinc and consists of the projection 166, flange 172, a support arm 208, and a bowl shaped scoop portion 209.

Horizontal Peeler

[0146] FIG. 20 shows what is called a “horizontal” peeler. It is given this name in order to distinguish it from the so-called “straight” or “swivel” peeler shown in FIGS. 22 and 23.

[0147] The peeler 214 includes a projection 166 and flange 172 forming part of a die-cast zinc body which has arms 216 and mounting supports 218 for rotatably supporting a blade mounting structure 220 with a cutting blade 222. The blade 222 is used in a known manner to peel vegetables, etc.

[0148] Alternatively, a lower cost version is made of molded polycarbonate.

Melon Baller

[0149] FIG. 21 shows the melon baller 90, which has a molded polycarbonate projection 166 and flange 172, joined with a stainless steel stem 226 and cutting bowl 228 which is used to cut a melon ball in a known manner.

[0150] The enlarged section 224 is a joint which is formed to join the stainless steel elements to the plastic elements. The end of each segment is enlarged to increase the surface area of contact between the parts, projects are provided from the metal surface, and the plastic is molded to the metal.

Straight Peeler

[0151] FIGS. 22 and 23 show the “straight” or “swivel” peeler 86. It consists of a metal or polycarbonate body including the flange 172 and the projection 166, and a body with spaced-apart support arms 232 with a support member 234 secured to the outer ends of the arms 230 and 232. A stainless steel cutting blade 236 with an incuse pair of cutting edges 238 is rotatably mounted in the flange 172 and the support 234.

[0152] The assembled peeler shown in FIG. 23 is used in a known manner to peel vegetables, etc.

[0153] Although a single molding or casting is preferred, the insert 166 can be secured by the post 210 in the hole 212, as shown in FIG. 22.

Grater

[0154] FIG. 44 is a perspective view of the grater 106. The grater 106 includes a stainless steel grater blade 378 with grater teeth 390, and a molded polycarbonate frame 374, projection 166 and flange 172. The frame is solidly secured to the edges of the blade 368 by forming the edges of the blade into bent tabs and co-molding the polycarbonate material over the edges.

[0155] The flange 172 and projection 166 form a substantial angle to the blade 378. The angle is provided in order to allow the grater to be held easily at the most desirable angle for most grating jobs, when the unit 106 is attached to the handle 88.

[0156] The rear surface of the border at the lower or outer end 379 of the grater is given a co-molded coating (not shown) of elastomeric material to inhibit the grater from slipping when its rear lower edge is resting on a countertop, cutting board or other such support surface.

[0157] FIG. 45 is a perspective view of a stackable tray kit embodiment of the invention; FIGS. 46 and 47 are, respectively, front elevation views of the upper and lower components of the kit shown in FIG. 45.

[0158] FIG. 48 is a perspective view of the upper component of the kit of FIG. 45 without implements; and FIG. 49 is a perspective view of the lower component of the kit of FIG. 45, without the implements.

Further Accessories

[0159] FIGS. 33 through 39 show some of the many additional accessories which can be used with the handle 88, or, with suitable modifications with any of the other handle and attachment structures shown.

[0160] FIG. 33 shows a fork 320; FIG. 34 shows a medium-sized carving knife 322; FIG. 35 shows a bread knife 324; FIG. 36 shows a spoon 326; FIG. 37 shows a turner 328 such as a pancake turner; FIG. 38 shows a paring knife 330; and FIG. 39 shows an apple corer 332.

[0161] Preferably, the utensils are made of stainless steel and the flange 172 and projection 166 are made of polycarbonate co-molded over one end of the shaft of the utensil, such as the end 321 of the fork 320 shown in FIG. 33. Holes
323 in the end of the shaft are penetrated and filled with plastic during molding so as to solidly secure the plastic parts to the metal parts.

[0162] Each of these additional accessories has the square projection 166 with the groove 170 and the flange 172 so that they can be fastened to and used with the handle 88 shown above.

[0163] FIG. 40 shows a butcher block type of support 334 with a sloping face 336 and slots or holes cut into the face 336 to receive various different sizes of knives 324 and 330. This also comprises another version of the kit of the present invention. Advantageously, the projections 166 extend outwardly from the surface 336 so that a handle easily can be pushed downwardly on one of the projections 166 to secure the handle and the accessory together.

[0164] The mounting 334 can be made of wood, or transparent plastic to allow the utensils to be seen, and can have different shaped holes to receive other accessories so that they can be stored outside of the drawers in the kitchen.

[0165] FIG. 41 is another kit, similar to the one shown in FIG. 40. A block of wood 338 has circular holes, such as holes 344 and 342, of a depth greater than the combined length of the flange 172 and the projection 166 of each accessory, and slots or other shaped receptacles to receive kitchen utensils such as the paring knife 330 and a butter knife 346. A further wooden block 339 supports the block 338 which leans at an angle so as to present the upper surface 340 of the block at an angle.

[0166] The openings 342 and 344 preferably are made considerably larger in diameter than the diameter of the flange 172, in order to easily receive the attachment end of one of the handles 88 so that the handle can be inserted into the cavity to attach to each of the tools stored in the block 338.

[0167] By this means, the attachment ends of the knives 330 and 346 are recessed out of view.

[0168] If desired, the block 338 in FIG. 40 can be made transparent, or windows can be provided to allow the utensils within to be seen. Alternatively, or in addition, a marking next to each opening can be provided to identify its contents.

[0169] The variety of utensils which can be used to advantage in the multi-tool system is extensive. In addition to those shown, such utensils include can openers, jar openers, bottle/can openers, garlic presses, whisks, ladles, turning fork for spaghetti, strainer spoons and ladles, pie servers, spatulas, potato mashers, meat tenderizers, strainers, pots and pans, or any other utensils which have handles.

[0170] Each of the multi-tool system components is made dishwasher-safe; that is, the component can be washed regularly in a dishwasher without significant deterioration. The cracking and deterioration of wooden and some prior plastic handles has been avoided, at a cost that is considerably reduced because there are many more accessories than handles.

Alternative Attachment Structure

[0171] FIGS. 24 through 27 illustrate an alternative attachment structure for attaching accessories to the handle in the multi-tool system. The assembled device shown in FIG. 24 includes a handle 238 with an attached horizontal peeler 242, whose construction is substantially the same as the horizontal peeler 214 shown in FIG. 20, except for the means used for attaching it to the handle.

[0172] Referring now to FIG. 26, which is a cross-sectional view taken along line 26-26 of FIG. 24, the attachment means includes a rounded flange 244 to which a projection structure is attached and extends to the left as shown in FIG. 26. The projection structure includes side walls 246 and a pair of opposed projections 248 forming catching receivers.

[0173] A pair of release push-buttons 240 is mounted on opposite sides of the handle (see FIGS. 24 and 25). Each of the push buttons actually is the end of a molded lever mechanism which has a pivot point 52 and catch arms 256.

[0174] When the projection of the accessory is pushed into the receptacle shown in FIG. 25, the forward edges of the projections 248 push the flexible plastic catch arms 250 aside, and those arms snap back into the notches or receivers formed by the projections 248, thus providing a snap-action catch which locks the accessory to the handle.

[0175] In order to release the accessory from the handle, the buttons 240 are pushed with the fingers. This rocks each of the arms 250 around the pivot points 252 and pulls them away from engagement with the projections 248, thus releasing the accessory from the handle.

[0176] As it is shown in FIG. 25, a further projection 254 shaped to mate with a receiving hole 256 in the handle is provided on the accessory in order to further guide the accessory accurately into the handle cavity.

Second Alternative Attachment Structure

[0177] FIGS. 28 through 30 show a second alternative attachment structure.

[0178] The structure shown in FIGS. 28 through 30 includes a handle 258 and three different accessories 260, 277 and 280 for attachment to the handle. The accessory 260 is a zester, the accessory 276 is a straight peeler with a blade 278, and the accessory 280 is an ice cream scoop.

[0179] The attachment structure includes a pair of inclined latch members 264 and 270 with catch surfaces 266 and 271 respectively. Both elements 264 and 270 are pivotably mounted on pins 268 attached to a mounting member 272 which is secured within the housing 259 of the handle 258.

[0180] A spring 274 also is mounted to rotate on the pin 268, and serves to thrust the two members 264 and 270 apart.

[0181] Two release buttons 262 are mounted in holes 265 in the housing of the handle and holes 263 in the members 264 and 270. By depression of the release buttons 262, the elements 264 and 270 are pivoted inwardly towards the center of the handle to withdraw each of the catch edges 266 and 271 from a corresponding receiver in the accessory.

[0182] Referring to FIG. 30, one such receiver edge is shown at 286. Another (not shown) is located at the upper part of the opening in the accessory 280. The accessory 280 includes a support arm 282 and an ice cream scoop bowl 284.
The body of the accessory has a tapered inlet opening which receives the tapered projection formed by the elements and the straight sides of the opening keep the accessory from rotating on the handle.

Third Alternative Attachment Structure

FIG. 31 is a schematic diagram of another attachment device of the invention. The structure shown in FIG. 31 includes a handle having a housing with a longitudinal shaft and a coil spring surrounding the shaft and bearing against a bulkhead through which the shaft passes.

The shaft has a rack structure at its left end which mates with gear teeth on mounted catch members rotatably mounted in the housing. It should be understood that the rack is not shown engaged with the gear teeth, for the sake of clarity in the drawings. However, it should be understood that they are so engaged.

The accessory has a tapered cavity with opposed receivers for the catch members. The forward end of the handle is tapered as shown.

In operation, the spring tends to hold the projections in their fully extended position, as shown in FIG. 31, so as to keep the members engaged in the receivers to hold the accessory onto the handle.

When it is desired to release the accessory from the handle, an externally-extending end attachment is pushed inwardly in the direction indicated by arrow. This rotates the members about their pivots and withdraws them from the receiving notches so as to release the accessory from the handle.

When the tapered end of the handle is inserted into the tapered cavity in order to attach the accessory to the handle, the sloping side walls of the cavity rotate the elements backwardly until they move far enough to snap into the receiving notches.

Fourth Alternative Attachment Structure

FIG. 32 shows a fourth alternative attachment structure, which is the same as that shown in FIG. 31 except that the coil spring bears against the bulkhead, and the pivotally mounted catch members are rotated by means of a linkage instead of a rack and pinion arrangement such as that shown in FIG. 31.

The linkage includes a first link pivotally attached at one end to the shaft and pivotally connected at its other end to one end of the lever arm forming part of the catch member.

When it is desired to release the accessory from the handle, the end extension is pulled in the direction indicated by arrow to compress the spring and withdraw the catch elements from the receiving grooves in the accessory.

When the tapered forward end of the handle is inserted into the tapered cavity of the accessory, the side walls of the cavity cam the catch members in the direction shown by the arrows and then, when they reach the receiving cavities, they snap into place under the urging of the spring.

It can be seen from the foregoing that in all of the attachment embodiments, it is possible to engage an accessory with the handle simply by pushing the two together. The accessory snaps into place without requirement of the operation of a lever or the like.

Also, releasing the accessory from the handle involves no more than button pushing, and can be done with one hand while allowing gravity to remove the accessory from the handle.

Counter-top Display Kit

FIG. 42 is a perspective view of another kit constructed in accordance with the invention. The kit allows the storage, organization and display of the handle and accessories on a cupboard shelf or counter-top, or a counter-top or shelf in a store selling the product, etc.

The kit includes a handle mounting and storage unit with a curved and sloping top wall and a recess shaped to receive and hold the handle where it can be easily seen, grasped and replaced.

Also included are modular storage and display units, etc., for holding and displaying accessories for use with the handle.

Each of the units is identical to the other. Each has four upstanding projections or bosses of which each has a flat, horizontal upper surface with a central square hole slightly larger than the projections on the attachments so that the attachments can be stored upright with the attachment projections extending into the holes.

One such attachment, a straight peeler, is shown mounted in one of the holes in the unit. As it can be seen, the flange portion of the peeler rests on the upper surface of the boss and the working portion of the peeler extends upwardly where it can be seen, grasped and replaced easily.

Each of the three units and has an upper arcuate surface from which the bosses extend. Each unit also has a front side wall and a rear side wall shown in FIG. 43.

Each front side wall has a pair of vertical notches or gaps, and the rear wall has a pair of upstanding tabs spaced apart by the same distance as the notches or gaps. The width of each of the tabs is greater than the width of each of the gaps. The tabs are molded with a vertical member attaching it to the rear wall.

The tabs can be fitted into the gaps to tightly secure each of the units and together.

The handle storage and display unit also has a rear structure such as that shown in FIG. 43 whereby one of the units and can be attached to the rear of the unit.

Thus, for a person wishing to start with only a few accessories, he or she can buy a kit including, for example, only the units and which provides a handle and four accessories.
Later, if the person decides he or she wants to add to the original multi-tool system, one or more additional units 354 or 356 can be purchased with one to four additional accessories and attached to the other units to form a readily expandable multi-tool system.

The units 350, 352, 354 and 356 preferably are molded of thermoplastic material such as ABS.

The counter-top units shown in FIGS. 42 and 43 also serve well to display the multi-tool system on store counters and shelves, and in television and other advertising. Thus, the units serve double-duty; saving space and adding convenience in the kitchen, while serving to show the product in a good light.

Stackable Tray Kit

FIGS. 45 through 49 show further embodiments of the kit of the present invention.

FIG. 45 shows a kit 390 consisting of a stack of individual storage trays 392 and 394, each of which comprises a separate multi-tool implement kit. The trays 392 and 394 are identical to one another, except for the types of implements they are designed to hold.

The trays shown in FIGS. 45 through 49 differ from the trays shown in FIGS. 1 through 3 primarily in that the trays 392 and 394 are made to be easily stackable on top of one another.

Now referring to FIGS. 45, 48 and 49, each of the trays 392 and 394 has a flat upper wall 396 and vertical side walls 398 and 400 which support the upper wall 396 above a flat surface on which the tray rests, such as the bottom of a drawer. Rear side walls are indicated at 402 and 404, but are not visible in the drawings.

At each of the four corners of the tray is a vertical post 406 which has an upper end 408 with a curved approximately semi-circular flange 410 extending around the innermost half of the post and extending slightly above the surface of the upper end 408.

Thus, the flange 408 forms semi-circular receptacles at the tops of the posts 406.

Extending from the bottom of the tray directly below each of the posts 406 is a rubber foot pad 412 which is attached by adhesive to a flange extending underneath the tray at each corner. This pad serves two purposes; first, it minimizes slipping of the tray on a flat surface upon which it is resting, and it also serves as an alignment device fitting into the receptacle formed at the top of each post. This holds the upper tray in place relative to the lower tray so that the trays will not slip out of alignment with one another after they have been stacked. By making the projections 410 only semi-cylindrical instead of cylindrical, it is easier to insert the feet 512 into the receptacles, without detracting from the function of holding the stacked trays together.

As with the trays shown in FIGS. 1 through 3, each of the kitchen implements is stored in its own individual recessed specifically to hold that implement. The implements shown in FIGS. 45 through 49 are given the same reference numerals that they have been given above in this patent application.

As with the trays shown in FIGS. 1 through 3, the implements extend out from the upper surface 396 by a substantial distance. As it can be seen in FIGS. 46 and 47, each of the implements extends outwardly by at least 50% of its height. This makes the implements easier to grasp when removing them from the tray.

As it is shown in FIG. 47, larger implements such as the citrus juicer 94, the receptacle 76 is made deeper so that the upper surface of the juicer does not extend above the plane 411 of the tops of the posts. Thus, there will be no interference between the implements in the lower tray with the upper tray when the trays are stacked.

It is preferable that approximately 40% to 60% or more of the height of each implement extend outwardly upward of the upper surface of the tray to ensure ease of removal and replacement of the implements in the tray.

FIGS. 48 and 49 show the two trays 392 and 394 without implements. The implement recesses are given the same reference numerals as in FIGS. 1 through 3, with the exception of recesses 414 and 416 in FIG. 49 which are, respectively, for the cheese slicer 104 (FIG. 15) and the horizontal parer 214 (FIG. 20), which are not shown in FIGS. 1 through 3.

It should be understood, of course, that the stackable trays also can be used on a countertop, in which case they will store the implements compactly and with the use of a minimum footprint on the countertop.

Although two trays are shown stacked atop one another, it should be understood that three or more trays can be stacked atop one another, if desired.

The trays 392 and 394 desirably are molded of a thermoplastic resin such as ABS.

It also should be understood that the structures used for holding the implements in the trays shown in FIGS. 1 through 3 and 45 through 49 can take a variety of different forms. For example, instead of using recesses in an upper wall, under some circumstances it may be advantageous to have a lower bottom wall with projections or bumps extending upwardly in the appropriate locations to form a support for the implements.

The kit and tray structures shown in FIGS. 45 through 49 have several significant advantages.

First, like the embodiment of FIGS. 1 through 3, by keeping the implement-receiving recesses shallow enough to insure that the implements extend outwardly by a substantial amount, a substantial savings of plastic material is realized, while making certain that the implements are relatively easy to grasp to remove from the trays.

By the use of posts to make the trays stackable, the increase in material needed is kept to a minimum.

By providing trays which can be stacked atop one another, the footprint taken up by a set of different trays is minimized. This can lead to the advantageous preservation
Another advantage is that, by providing the posts for use in stacking the trays atop one another, a relatively large gap is provided between the trays into which the user can see to determine what implements are in the lower tray or trays.

A further advantage is that the trays are standardized as to size and external shape so as to enable better utilization of container space and economies of scale in manufacturing.

A still further advantage of the compartmented implement holding trays described above and in the further description to follow is that they provide very convenience organizers for storing and organizing a variety of kitchen implements in addition to multi-tool devices. These organizers are particularly beneficial for use in drawers to minimize the clutter for a wide variety of different implements, including adjustable measuring spoons and scoops and many other implements. They store such other implements with good visibility, relatively compactly, and in an organized fashion to minimize clutter.

Further Accessories

FIGS. 50-53 shows two additional accessories for use in the multi-tool device of the present invention.

Can Opener

FIGS. 50 and 51 are front and rear perspective views, respectively, of a can opener 450 with the connecting projection 166 and the flange 172 as in the other multi-tool implements described above.

The can opener is of a conventional side-opening rotary type, and includes a body 452 with a large rotary handle 454, a curved guide rail 456, a rotary drive wheel 458 driven by rotation of the handle 454, and a horizontal circular cutter blade 460.

As it is well known, the can opener is used by resting the guide rail 456 on the upper edge of the can and inserting the upstanding rim of the can between the drive wheel 458 and the body 452. Then, when the handle 454 is rotated, the cutter wheel 460 is thrust sideways into the metal of the can just beneath the upper rim and further rotation of the handle 454 causes the lid to be cut off of the top of the can. Advantageously, as it is well known, the lid then can be refitted by hand on the top of the can to close it.

Bottle/punch Opener

FIGS. 52 and 53 are perspective and front elevation views, respectively, of a combination bottle opener and punch-type can opener.

The bottle/punch can opener device 462 has a metal ring 464 secured to the flange 172 and the projection 166. The ring 464 has a lower projection 466 to fit under the rim of a bottle cap so that by pulling upwardly on the handle attached to the projection 166, leverage can be obtained to pry a bottle cap off of a bottle.

A metal punch-type can opener 468 is secured to the ring 464 to punch holes in the tops of cans for pouring fruit juice or other beverages from the can.

FIG. 67 is a perspective view of a garlic press 620 constructed in accordance with the present invention.

Unlike most other implements described herein, the garlic press does not attach to or detach from the handle 88. Instead, the handle is integrally attached. The handle comprises two halves 622 and 624 advantageously shaped like the handle 88 when the two halves are closed together as shown in FIG. 67. The garlic press itself, apart from the handles, is conventional. One handle half 622 is secured to the upper portion 626 of the garlic press, and the lower handle half 624 is secured to the lower half 628 of the garlic press. The two halves of the press are hinged together at 630.

As is well known, the garlic press is used by opening the halves of the press, and inserting a clove of garlic. Then, by pushing the handle halves 622 and 624 together, one squeezes juice from the garlic through holes 629 for use in cooking, etc.

An array: 627 of plastic projections is provided so that when the handles are rotated fully apart, the projections are aligned with and enter the holes 629 in the lower part 628 of the press 620 to clean any solid matter which may be closing the holes. The materials of which the press are made are chrome-plated zinc, except for a plastic coating on the handles and the cap 626, which is made of polycarbonate.

FIGS. 72 through 75 show a novel jar opener 640 constructed in accordance with the present invention.

FIGS. 72 and 73 are top perspective and bottom perspective views, respectively, of the jar opener when it is closed, and FIGS. 74 and 75 are, respectively, top and bottom perspective views of the jar opener 640 when it is open and ready for use.

The jar opener 640 includes a central support member 642 which is attached to the flange 172 and projection 166 for connection to a handle 88.

Two elongated gripper arms 644 and 646 are pivoted at 652 and 654 to the support member 642. The arm 646 has a serrated metal edge member 648, and the member 644 has a straight, smooth metal edge 650. The serrations on the edge member 648 are slanted in a direction to increase their penetration into the metal of a jar lid when the tool 640 is rotated counter-clockwise to remove a lid.

When it is desired to store the jar opener 640 in the receptacle provided for it in one of the trays described above, it is folded up so as to be compact as shown in FIGS. 72 and 73, and occupies relatively little space in the tray. It also can be stored in a kitchen drawer by itself, if desired, and similarly occupies relatively little space.

When it is prepared for use, the members 644 and 646 are rotated outwardly to the position shown in FIG. 75 until a metal pin 656 extending downwardly from each arm hits the end of one of two slots 657 in the bottom surface of the support member 642 to prevent the further opening movement of the arms 644 and 646.

In use, with the jar opener 640 in the position shown in FIG. 74, a screw type jar lid to be loosened is pressed into the V-shaped space between the arms 644 and
646, and turning torque is applied to the handle attached to the handle member 166 to loosen the jar lid.

[0250] When it is no longer in use, the jar opener 640 can be folded up again and stored compactly in the tray or a drawer.

[0251] The jar opener preferably is made of polycarbonate, except for the pivot pins 652 and 654, the edge members 648 and 650, and the stop pins 656. Those parts preferably are made of stainless steel.

Further Organizer Tray Embodiments

[0252] FIG. 54 is a top plan view of another embodiment of an organizer tray 470 similar to the trays shown in FIGS. 45-49.

[0253] FIG. 55 is a cross-sectional view taken along line 55-55 of FIG. 54 and shows implements in place in the tray.

[0254] The tray 470 shown in FIGS. 54 and 55 differs from that shown in FIGS. 45-49 primarily in that the tray has receptacles 472, 474, 476 and 478, for example, for storing kitchen implements on edge rather than laying flat. That is, the broadest dimension of each is vertical instead of horizontal. By this means, the organizer tray is made to have a smaller footprint so as to save horizontal space in a drawer or on a countertop.

[0255] The tray 470 includes an upper horizontal support wall 482, side walls 484 and four posts 480 each extending upwardly at one of the four corners of the tray and identical to the posts 408 and the tray shown in FIGS. 45-49, except that they are taller to accommodate the greater height that the implements on edge occupy.

[0256] Referring now to FIG. 55, the receptacle 472 contains an ice cream scoop 82 which is rotated 90° from the position in which it is shown resting in FIG. 45.

[0257] Similarly, receptacle 474 contains a pizza cutter 84 like that shown in FIGS. 12-14, except that it has a plastic guard cover 486 covering the edge of the cutter blade 176 which is easily snapped on and off of the blade, thereby minimizing the chance that the user will cut his or her fingers.

[0258] The receptacle 476 contains a straight (swivel) peeler 86 and the receptacle 478 contains a handle 88.

[0259] The depth of the receptacles varies, depending upon which implement is to be placed in it. The depth preferably is selected so that a substantial portion, preferably more than half of the object held in the receptacle extends above the surface 482 so as to make the implement easy to grasp and remove.

[0260] It is preferable that the end of the pizza cutter with the projection flange 172 and projection 166 on it (see FIG. 12—not shown in FIGS. 54 and 55) extends upwardly above the surface 482 so as to make it easy to grasp and encourage the user to grasp it instead of the blade portion of the cutter.

[0261] The peeler 86 is the same as the peeler shown in FIGS. 22 and 23, except that there is an added snap-on plastic blade guard 488 covering the cutter blade 236.

[0262] FIG. 56 is a partially broken-away cross-sectional view like that of FIG. 55 of a tray 490 which is a modification of the device shown in FIGS. 54 and 55. This modification 490 is the same as that shown in FIGS. 54 and 55, except that at least one, and as many as all receptacles in the tray are inclined at a substantial angle, e.g., 45° with respect to vertical. These receptacles can be used to store taller implements such as the pizza cutter 84 and the ice cream scoop 82 at an angle, thus reducing the height to which they extend vertically, while storing other implements such as the handle 88 in vertical receptacles. This enables a compromise between minimizing the footprint of the tray and minimizing its height.

[0263] FIG. 57 shows another organizer tray 500 constructed in accordance with the present invention. The tray 500 has side walls 502, a bottom wall 516, and horizontal and vertical divider walls 504 and 506 which divide the space in the tray into uniform square or rectangular receptacles 518, 520, 522 and 524. The size of the receptacles is determined so that it will hold the largest of the implements when laying flat as shown in dashed outline in FIG. 57. Thus, the size of the receptacles is sufficient to hold the pizza cutter 84 and the handle 88 as well as smaller implements like the peeler 86 and the ice cream scoop 82.

[0264] Each receptacle has an indicia on its bottom which is a representation of the implement that is to fit into the compartment. Thus, compartment 518 has a small replica or representation 508 of an ice cream scoop. Similarly, the receptacle 520 has a small representation 510 of a peeler; receptacle 522 has a small representation 512 of a pizza cutter; and receptacle 523 has a representation 514 of the handle 88.

[0265] Preferably, the indicia 508, 510, 512 and 514 are marked permanently on the bottom wall 516 such as by embossing, engraving or molding the images when the trays are formed. Alternatively, images on self-adhesive labels can be applied so as to be removable to change the indicia of the implement to be stored in the receptacle. This can reduce manufacturing costs by standardizing the receptacle shape for all trays and thereby increasing the volume of production runs.

[0266] The tray 500 has upstanding posts 408 like the trays shown in FIGS. 45-49 to allow stacking.

[0267] Of course, by leaving off the indicia in each of the receptacles, the trays can be made and sold for general storage use so as to hold kitchen implements and other items.

[0268] FIG. 58 is a top plan view of a variation of the tray or receptacle shown in FIG. 57. Instead of forming the tray into receptacles of uniform size, the tray is formed into rectangular receptacles adapted to hold one or a limited number of different implements, so as to save space as compared with the tray 500 shown in FIG. 57.

[0269] The tray 530 includes side walls 502 and a vertical partition 536 and a horizontal partition 534 dividing the space in the tray into three compartments 538, 540 and 542, each of which is of a size and shape to hold a particular implement or group of implements. As in the FIG. 57 embodiment, indicia 512, 514 and 508 are marked on the bottoms of the compartments to indicate the implements which are primarily intended to be stored in the receptacles. Thus, the compartments for the handle 88 and the ice cream scoop 82 (shown in dashed outline only) are narrower than...
that for the pizza cutter 84 (also shown only in dashed outline). Of course, other implements having the same space requirements can be stored in each of the compartments, as desired.

[0270] As shown in FIG. 57, the intended contents for each of the receptacles can be indicated by indicia other than a picture of the implement. For example, letters such as the letter “H” shown at 505 can be used to indicate “handle”, and the word “HANDLE” can be spelled out as shown at 503.

[0271] Similarly, as it is shown in FIG. 56, indicia such as the letters “PC” or “PIZZA CUTTER”, or a number or other alphanumeric symbol can be marked on the receptacle 522. The implement is marked with the same symbol as its receptacle.

[0272] Similarly, each container and each implement can be color coded. For example, the handle compartment 524 can be colored black to match the black color of the handle, the ice cream scoop 82 can be colored red to match the red interior of the receptacle 518, the pizza cutter 84 can be colored green to match the green of the receptacle 522, and the poeler 86 can be colored blue to match the blue interior of the receptacle 520.

[0273] It should be readily apparent that essentially any indicia capable of distinguishing implements from one another can be used as a marking to help guide the user in returning specific implements to the desired locations. This greatly enhances the orderliness of the kitchen drawers or counter tops where the organizers are used.

[0274] Another indicia which can be used as a full-representation of the implement adhered to the bottom of the receptacle for receiving that implement.

[0275] Braille indicia can be used to aid the blind. The implements have corresponding Braille markings on them. Of course, the indicia provided by the specific shapes of the receptacles conforming to the implement shapes also can be sensed by touch and thus “read” by the blind. This can be particularly beneficial to blind people because the organization of kitchen implements by use of the invention makes it easier for blind people to find them.

[0276] Visible and/or tactile indicia also can be used in addition to the specific conforming shape of a receptacle to identify the implement at least with certain receptacles which have shapes which are confusingly similar to one another.

[0277] As with the FIG. 57 embodiment, the indicia can be marked on the bottoms of the compartments, either permanently or with removable labels.

[0278] FIGS. 59-63 show several different ways to form receptacles or holders for individual implements, other than by molding recesses in a flat plastic panel.

[0279] FIGS. 59 and 60 show a technique using a plurality of molded projections 554 extending upwardly from a bottom plastic panel 552. The length and pattern of the projections are such as to form a cradle for the implement, in the manner shown in FIG. 60.

[0280] FIG. 60 shows the projections supporting an ice cream scoop 82.

[0281] FIG. 61 shows an alternative structure for forming peaks 554, 556, 558 and 560 instead of the individual projections 54 to provide a cradle for the implement. This forms a stronger structure in which there are no individual projections to break off.

[0282] FIGS. 62 and 63 show the formation of an upstanding ridge 566 in the shape of the implement to be cradled.

[0283] As is shown in FIG. 60, a complete tray is formed by adding side walls 557 and corner posts 555 at the four corners of the bottom panel 552.

[0284] If desired, the side walls can be raised from the level shown in FIG. 60 to the level 559 shown in dashed line, or other wall construction can be used, depending upon whether the trays are to be stacked, aligned side-by-side, or made to slide one on top of the other.

[0285] FIG. 64 shows a tray substantially the same as that shown in FIGS. 45-49, except that, instead of receptacles for the handle and implements of a multi-tool kitchen set, three receptacles 572, 574 and 576 are provided for containing adjustable measuring devices 582, 584 and 586. Item 582 is a tablespoon-sized adjustable measuring spoon; item 586 is a teaspoon-sized adjustable measuring spoon; and item 584 is an adjustable scoop.

[0286] Since the scoop is larger than the other devices and stands taller, it extends upwardly out of its receptacle, thus making it easy to grasp.

[0287] The measuring spoons do not extend upwardly above the edges of their respective receptacles. Therefore, access indentations 578 and 580 are provided to allow one to insert a finger underneath a portion of the measuring spoon to easily remove it from the receptacles.

[0288] In fact, such access indentations can be provided in any of the foregoing embodiments, wherever it is necessary or expedient to provide a deep receptacle which will not allow the object in the receptacle to extend above the surface of the tray.

Sliding Tray Embodiments

[0289] FIG. 65 shows an assembly 590 of two stacked trays 592 and 594 in which the top tray 594 slides on the upper edges 602 of the parallel sides 600 of the lower tray 592 to expose the implements covered by the upper tray 594.

[0290] The opposed lower corners of the upper tray form an arcurate recess 606 which matches the curvature of the curved upper edges 602 or rails of the lower tray, as shown best in FIG. 66.

[0291] The horizontal support panel 596 and the bottom surface 610 of the upper tray for the implements in the receptacles 598 to avoid hitting the bottom 610.

[0292] In the embodiment shown in FIG. 64, the length of the bottom tray 592 is substantially greater than the length W of the upper tray 594. Thus, some of the implements in the lower tray are not covered by the upper tray and are visible at all times. If the implements are under the upper tray are needed, the user merely slides the upper tray to one side, in the direction of the arrow M, to expose them.
If preferred, the lengths of the upper and lower trays can be made the same, as if the lower tray 592 were cut along the dashed line 612. The resulting assembly occupies a smaller footprint. The top tray can be moved over a portion of the lower tray, without falling off. However, if a wider opening is desired, one can hold up the leading edge of the upper tray with one hand to prevent tilting of the tray.

**FIG. 76** is a perspective view of another embodiment of the sliding trays feature of the invention.

The assembly 660 shown in **FIG. 76** includes a relatively large tray 662, a smaller tray 664 attached side-by-side to the tray 662, and a smaller tray 666 slidably mounted on the lower trays 662 and 664.

As it is shown in the cross-sectional view of **FIG. 79**, the upper edge of one side of each tray has an inverted V-shape, thus forming a tongue for a tongue-in-groove rail structure. A groove is formed on the bottom edge of each of the trays so that when one of the trays is placed on top of the other the tongue and groove structure thus formed allows the trays to slide easily with respect to one another without easily becoming misaligned.

It should be understood, of course, that the bottom trays should have recesses deep enough to fully seat the implements therein without any part extending upwardly above the surface of the tray so that the movement of a tray which slides upon it will not be impeded.

Alternatively, the upper surface of the lower trays can be recessed in the manner shown in the embodiment of **FIG. 65**.

**FIG. 77** is a top plan view of a kitchen drawer 674 containing the assembly 660. As it can be seen, the top tray 666 slides forwardly and backwardly in the drawer in the direction indicated by the arrow 669.

**FIG. 78** is a top plan view of a wider but shallower drawer showing the assembly 590 from **FIG. 65** in a kitchen drawer 676. The top tray 594 slides from left to right in the direction of the arrow M.

Both of the assemblies shown in **FIGS. 65 and 76** have the advantage of allowing some of the implements in the lower trays to be visible at all times, and others to be easily accessible, while simultaneously increasing the organized storage capacity in the drawer.

Package Coding

**FIGS. 80-82** show a package coding system to permit the sale of trays and implements of the kits separately or in sub-combinations in a manner so as to insure that the customer will obtain the proper tray for each of the implements purchased.

**FIG. 80** shows a single straight peeler 86 mounted on a card 680 with a hanger opening 682 and a color code indicia 684. The color code marking is a large dot of a color to match the color on a box in which a tray is sold which will accommodate the peeler.

**FIG. 81** shows another card 686 with two implements mounted on it, a melon baller 90 and a can opener 450, and two indicia 690 and 649 in the form of colored dots, as well as a hanger hole 688. Since one of the implements in the package is intended for one tray, and the other implement for another tray, two different color coded indicia 690 and 649 are provided, together with a leg end indicating which indicia applies to which implement.

**FIG. 82** is a perspective view, partially broken away, of a box in which a tray depicted at 698 on the box cover is sold. The box 696 has a color code indicia 700 on an upstanding flap 702. By comparing the color code indicia on an implement package with the one on a tray package, the customer can be sure of getting the right tray for each implement purchased.

If desired, the purchases of kits and components by each customer can be stored in the memory of the store computer so that when the customer next purchases any components, the identity of those components can be compared with those stored in the computer so as to make certain that the customer has a tray to match the implements purchased.

In addition to the color code markings on the packages shown in **FIGS. 80-82**, there are alphanumeric markings such as the letters “A” and “B”, which can be used in addition to or instead of the color coding to identify the trays and implements to go in the trays. Other indicia similarly can be used for the same purpose.

The above description of the invention is intended to be illustrative and not limiting. Various changes or modifications in the embodiments described may occur to those skilled in the art. These can be made without departing from the spirit or scope of the invention.

It should be understood that some or all of the implements, in addition to the garlic press, can be made with internal handles as well as with removable handles and the protection for the invention also extends to these implements.

What is claimed is:

1. A tray for holding kitchen implements, said tray comprising a support wall forming a horizontal support surface, a plurality of kitchen implement receptacles supported by said support surface, and at least one of said receptacles having visible indicia identifying one of a plurality of kitchen implements which will fit into said receptacle.

2. A tray as in claim 1 in which said indicia is selected from the group consisting of:
   (a) said receptacle having an outline shaped like said one implement;
   (b) a visible representation of said one implement;
   (c) alphanumeric indicia;
   (d) color coding to match a color adjacent said receptacle to a color on said one implement; and
   (e) a combination of two or more members of the group.

3. A tray as in claim 1 including a plurality of posts extending upwardly from said wall to support another container of kitchen implements in a position spaced upwardly from the first-named container.

4. A tray as in claim 1 in which each of said receptacles has one of said indicia comprising a shape conforming to the contours of a specific implement.
5. A tray as in claim 1 including side walls connected to said support wall, and a slide structure on at least one of said side walls for enabling another tray to slide on the first-mentioned tray when mounted on top thereof.

6. A tray as in claim 1 having side walls secured to said support wall, and at least one wall having an upper edge shaped to comprise one element of a tongue and groove combination, and a second tray having at least one receptacle with indicia identifying an implement to be put into said receptacle, and side walls with a lower edge forming the other element of said tongue and groove combination to allow said second tray to slide on the first tray to uncover the contents of said first tray.

7. Apparatus as in claim 6 in which said first tray is substantially longer than said second tray in the direction in which said second tray slides so that a portion of the contents of said first tray are not covered by said second tray.

8. A tray as in claim 1 in which each of said receptacles is dimensioned to receive one of said implements, said implements being selected from the group consisting of:
   (a) a handle having a coupling structure for releasably securing to said handle an accessory having a mating coupling structure, and at least one accessory having said mating coupling structure;
   (b) a plurality of said accessories, each having said mating coupling structure; and
   (c) a handle having one of said coupling structures and a plurality of said accessories, each having said mating coupling structure.

9. A tray as in claim 1 in which at least some receptacles are, shaped to conform to the outline of one of said implements when said implement is placed in said receptacle in an orientation selected from the group consisting of:
   (a) with its broadest dimension substantially horizontal;
   (b) with its broadest dimension substantially vertical; and
   (c) with its broadest dimension at an acute angle to vertical.

10. A tray as in claim 9 in which at least one of said receptacles is dimensioned to allow a substantial portion of the implement within it to extend upwardly out of its receptacle for easy grasping.

11. A tray as in claim 1 including an inset to the side of at least one of said receptacles to allow insertion of a finger under the implement in the receptacle to remove it from the tray.

12. A tray as in claim 1 having a plurality of said receptacles of different sizes and shapes, each receptacle holding an adjustable measuring device.

13. A tray as in claim 1 having a plurality of said receptacles, each comprising a structure selected from the group consisting of:
   (a) a recess in said support wall;
   (b) at least one projection extending upwardly from said support wall;
   (c) side walls extending upwardly from said support wall, and partitions extending between said side walls; and
   (d) a plurality of projections extending upwardly from said support wall and forming a cradle to hold said implement.

14. A tray as in claim 1 in which each of said receptacles is open to allow an implement to be inserted into or removed therefrom in a generally vertical direction.

15. A tray as in claim 1 in a kitchen drawer with a support structure supporting a second tray above it; said support structure being selected from the group consisting of:
   (a) a slide structure for allowing said second tray to slide on said first tray to uncover at least a portion of said first tray; and
   (b) a plurality of posts extending upwardly from said support wall to support said second tray above said first tray with spacing between said trays.

16. A citrus fruit juicer comprising:
   an oblate spheroid tapered to a blunt point at one end and a handle member at the end opposite said one end;
   said oblate spheroid having a plurality of elongated, relatively deep and broad recesses extending from adjacent said opposite end to adjacent said one end and spaced circumferentially from one another; and
   a plurality of relatively shallow elongated recesses of relatively narrow width extending in the same direction as said deep recess and located at circumferentially spaced locations between said deep recesses.

17. A juicer as in claim 16 in which said narrow recesses are substantially shorter than said deep recesses.

18. A juicer as in claim 16 in which said handle member is one of a receptacle and a mating projection for engagement with another to releasably fasten a handle onto said handle member.

19. A juicer as in claim 16 in which said handle member is a projection with a polygon-shaped cross-section and including a handle having a receptacle with the same polygon-shaped cross-section and a snap-acting releasable latch for locking said handle to said handle member when said projection is inserted into said receptacle.

20. A jar opener implement, said implement comprising a support member, a pair of elongated gripper members, at least one of which is pivoted adjacent one end to said support member, said support member having a handle member extending therefrom, at least said one gripper member being rotatable towards the other gripper member to reduce the space occupied by said jar opener when stored, said one gripper member being rotatable away from the other to spread said gripper members apart, and stop means for stopping the rotation of said gripper member at a predetermined position.

21. A jar opener as in claim 20 in which said other gripper member also is pivoted to said support member at a location adjacent the point at which said one gripper member is pivoted, said stop means includes a stop surface on each of said gripper arms and stop surfaces on said support member for limiting the movement of said gripper members apart from one another.

22. A jar opener as in claim 20 in which said handle member is one of a receptacle and a mating projection for releasably fastening a handle onto said handle member.

23. A jar opener as in claim 20 in which said handle member is a projection with a polygon-shaped cross-section.
and including a handle having a receptacle with the same polygon-shaped cross-section and a snap-acting releasable latch for locking said handle to said handle member when said projection is inserted into said receptacle.

24. A kitchen implement kit comprising:
at least one implement storage holder held by an implement holder package;
a plurality of kitchen implements, each independent of any implement holder;
said implement holder having a plurality of receptacles, each receptacle having a first indicia identifying a specific one of said implements the receptacle is intended to hold;
said implement holder package, having holder indicia identifying the holder held by said package by the combination of implements which it is intended to hold;
each of said implement packages bearing at least one of said holder indicia matching that on the package of the holder intended to hold said implement.

25. A kit as in claim 24 in which said first indicia comprise a shape for each receptacle which matches the outline of the implement which is intended to fit into it.

26. A kit as in claim 24 in which said holder indicia are selected from the group consisting of
(a) a colored marking;
(b) an alphanumeric marking;
(c) a visible and/or tactile symbol;
(d) a combination of two or more of the foregoing.