(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 January 2008 (24.01.2008)

PCT

(10) International Publication Number
WO 2008/009126 A2

(51) International Patent Classification:
A47G 21/00 (2006.01) *A47G 21/08* (2006.01)
A47G 21/02 (2006.01) *A47J 43/28* (2006.01)

(21) International Application Number:
PCT/CA2007/001287

(22) International Filing Date: 20 July 2007 (20.07.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/831,559 20 July 2006 (20.07.2006) US

(71) Applicants and
(72) Inventors: **WEDDERBURN, James** [CA/CA]; P.O. Box 23014, Moncton, New Brunswick E1A 6S8 (CA). **BONNER, Mark** [—/US]; 2992 Daniel Bray Hwy, Frenchtown, NJ 08825 (US).

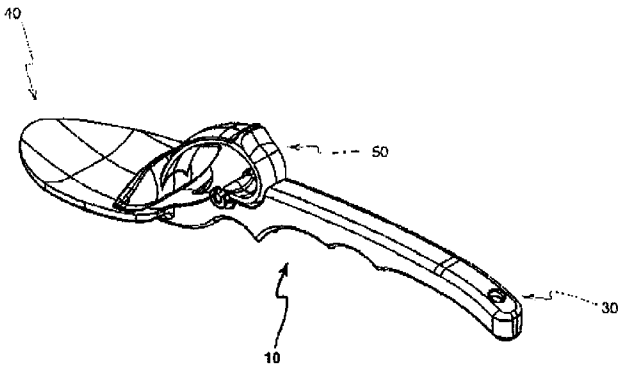
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

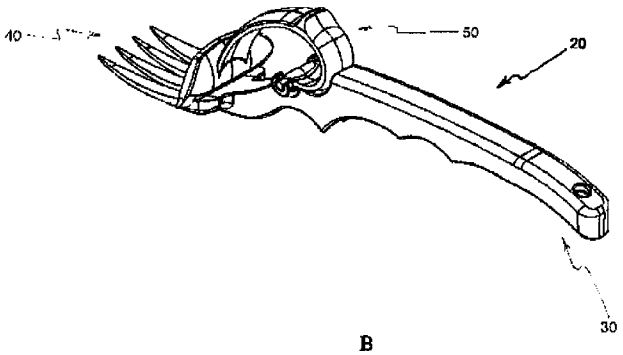
Published:
— *without international search report and to be republished upon receipt of that report*

[Continued on next page]

(54) **Title:** UTENSIL



A



B

(57) **Abstract:** A serving utensil comprises a handle having a gripping portion that is gripped by the user, A serving receptacle is operatively connected to the handle. There is mounted to the serving utensil a serving scraper having a resilient arm with a bowed shape. The resilient arm has a scraping end and a mounting end. A mounting means at the mounting end is for mounting the resilient arm to the serving utensil forwardly of the gripping portion of the utensil used to grip the utensil and rearwardly of the serving-receptacle. A scraper-remover is disposed at the scraper end of the resilient arm so that food can be scraped off of the food receptacle of the utensil when the serving scraper is actuated by the user.

WO 2008/009126 A2

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

UTENSIL

[0001] This application is a non-provisional application claiming priority to U.S. provisional patent application Ser. No. 60/, filed on July 20, 2006, which is herein incorporated by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to utensils, and more particularly to dispensing utensils.

BACKGROUND OF THE INVENTION

[0003] Serving utensils have long been used for food service. When food is served onto individual plates, however, food sometimes sticks or clumps onto the utensil and can only be removed by awkward assistance of another utensil or object.

[0004] Attempts have been made in the prior art to provide dispensing utensils that have mechanisms which scrape the food from the utensil's serving receptacle. Such devices are shown in United States patent 1,065,433 issued to G. Dow et al.

[0005] Dow teaches a serving utensil with a food pushing spring arms incorporated into the handle. The handle is squeezeable in the vertical plane to move the food ejector forwardly and push food off of the serving receptacle. This type of device, however, does have some awkwardness in use. The the handle is comprised of two arms angularly arranged and resiliently connected to each other. It is not as easy to hold these types of handles and one has to be careful not to squeeze the handle when food is in the receptacle and ejection is not desired.

[0006] There are also devices such as those taught in U.S. Patent 1,816,904 issued to Heimroth wherein the handle for service two armed but the handle arms act on parallel planes. As well, in Heimroth, there are resiliently arranged vertical arms that can be squeezed in the horizontal direction to push the food off of the server-receptacle. This arrangement is awkward because of its size and it also requires the user to move his hand from the handle to surround the vertical arms and squeeze them or to operate the device with two hands.

[0007] The art would be advanced if there was a device which had a firm handle, and that had a serving scraper mounted onto the device which could be activated without the user having to substantially release or alter their grip on the handle to scrap the food off of the utensil's receptacle.

[0008] It is an object of the present invention to provide a serving scraper for a serving utensil which is mounted to the utensil forwardly of where the user grips the utensil and is easily operable without compromising the user's grip on the handle.

[0009] It is another object of the present invention to provide a serving utensil with a handle, a serving receptacle and a serving scraper for removing food from the receptacle wherein the serving scraper is mounted forwardly of where the user grips the serving utensil and is easily operable without compromising the user's grip on the handle.

[00010] It is yet another object of the present invention to provide a serving scraper for a serving utensil that is easy to use, simple in design and easy to manufacture.

[00011] It is yet another object of the present invention to provide a serving utensil with a handle, a serving receptacle and a servingscraper for removing food from the receptacle that is easy to use, simple in design and easy to manufacture.

[00012] It is yet another object of the present invention to provide a serving utensil having a compact design for such a serving utensil, which minimizes the overall size and bulk of this type of utensil as well as minimizing the hand motion needed in order to fully actuate the utensils scraping or pushing mechanism.

[00013] Other objects will be apparent from reading the specification.

SUMMARY OF THE INVENTION

[00014] In accordance with one aspect of the present invention there is disclosed a novel serving scraper mountable to a serving utensil forwardly of the gripping portion and rearwardly of the serving receptacle of the serving utensil used by the user to grip the utensil comprising a resilient arm with a bowed shape and having a scraping end and a mounting end; mounting means at the mounting end for mounting the resilient arm to the serving utensil forwardly of the portion of the utensil used to grip the utensil and rearwardly of the serving-receptacle; and a scraper-remover disposed at the scraper end of the resilient arm so that food can be scraped off of the food receptacle of the utensil when the resilient arm of the serving scraper is actuated by the users hand to move the scraper-remover with respect to the serving-receptacle.

[00015] In accordance with another aspect of the present invention there is disclosed a novel serving utensil comprising a handle having a gripping portion which is gripped by the user; a serving receptacle operatively connected to the handle; there being mounted to the serving utensil a serving scraper having a resilient arm with a bowed shape; the resilient arm having a scraping end and a mounting end; mounting means at the mounting end to mount the resilient arm to the serving utensil forwardly of the gripping portion of the utensil used to grip the utensil and rearwardly of the serving-receptacle; and a scraper-remover disposed at the scraper end of the resilient arm so that food can be scraped off of the food receptacle of the utensil when the serving scraper is actuated by the user.

[00016] In accordance with another aspect of the present invention there is disclosed a novel serving utensil with a handle having a gripping portion which is gripped by the user and a serving receptacle for serving food, there being formed on the serving utensil a mounting means between the gripping portion and serving receptacle to permit the mounting of a resilient serving scraper.

[00017] In accordance with another aspect of the present invention there is disclosed a novel mounting clamp for an eating utensil comprising a mounting base formed with a channel for receiving the handle of a serving utensil, there being an opening formed for the channel to permit the mounting of the mounting base onto the handle of the eating utensil, there being resilient grip members to grip the handle during mounting and cause the mounting base to be frictionally mounted to the handle of the serving utensil, there being a serving-scraper mounting means formed on the mounting base to permit mounting of the serving scraper to the base.

[00018] In accordance with another aspect of the present invention there is disclosed a novel utensil comprising a handle having a gripping portion that is grippable by a user; a substance carrying means operatively connected to the handle; and a resilient arm having a thumb engaging portion extending, at least in part, substantially vertically upwardly from the handle, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion at the substance carrying means; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[00019] In accordance with another aspect of the present invention there is disclosed a novel utensil comprising a handle having a gripping portion that is grippable by a user; a substance carrying means operatively connected to the handle; and a resilient arm having a tightly curved thumb engaging portion extending upwardly from the handle, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to

situate a substance engaging portion at the substance carrying means; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[00020] In accordance with another aspect of the present invention there is disclosed a novel utensil comprising a handle having a gripping portion that is grippable by a user; a substance carrying means operatively connected to the handle; and, a resilient arm having a thumb engaging portion extending upwardly and rearwardly from the handle, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion at the substance carrying means; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[00021] In accordance with another aspect of the present invention there is disclosed a novel utensil comprising a handle having a gripping portion that is grippable by a user; a substance carrying means operatively connected to the handle; and a resilient arm having a thumb engaging portion extending upwardly from the handle and connected to the handle by a hinge means, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion at the substance carrying means; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[00022] In accordance with another aspect of the present invention there is disclosed a novel utensil comprising a handle having a gripping portion that is grippable by a user; a substance carrying means operatively connected to the handle; and a resilient arm having a thumb engaging portion extending upwardly from the handle, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion at the substance carrying means, wherein the resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming the resilient arm such that the longitudinal curve of the resilient arm is decreased, effects a corresponding decrease in the lateral curve of the resilient arm; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[00023] In accordance with another aspect of the present invention there is disclosed a novel utensil comprising a handle having a gripping portion that is grippable by a user; a substance carrying means operatively connected to the handle in downwardly offset relation; and a resilient arm having a thumb engaging portion extending upwardly from the handle, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion at the substance carrying means; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[00024] In accordance with another aspect of the present invention there is disclosed a novel removal apparatus for use with a utensil, the removal apparatus comprising a resilient arm having a mounting means for mounting the removal apparatus to the utensil, and a thumb engaging portion extending, at least in part, substantially vertically upwardly from the mounting means; an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of the utensil; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means, when the removal apparatus is mounted via the mounting means on the utensil.

[00025] In accordance with another aspect of the present invention there is disclosed a novel removal apparatus for use with a utensil, the removal apparatus comprising a resilient arm having a mounting means for mounting the removal apparatus to the utensil, and a tightly curved thumb engaging portion extending upwardly from the mounting means; an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of the

utensil; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means, when the removal apparatus is mounted via the mounting means on the utensil.

[00026] In accordance with another aspect of the present invention there is disclosed a novel removal apparatus for use with a utensil, the removal apparatus comprising a resilient arm having a mounting means for mounting the removal apparatus to the utensil, and a thumb engaging portion extending upwardly and rearwardly from the mounting means; an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of the utensil; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means, when the removal apparatus is mounted via the mounting means on the utensil.

[00027] In accordance with another aspect of the present invention there is disclosed a novel removal apparatus for use with a utensil, the removal apparatus comprising a resilient arm having a mounting means for mounting the removal apparatus to the utensil, and a thumb engaging portion extending upwardly from the mounting means, and wherein the mounting means comprises a hinge means; an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of the utensil; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means, when the removal apparatus is mounted via the mounting means on the utensil.

[00028] In accordance with another aspect of the present invention there is disclosed a novel removal apparatus for use with a utensil, the removal apparatus comprising a resilient arm having a mounting means for mounting the removal apparatus to the utensil, and a thumb engaging portion extending upwardly from the mounting means, wherein the resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming the resilient arm such that the longitudinal curve of the resilient arm is decreased, effects a corresponding decrease in the lateral curve of the resilient arm; an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of the utensil; wherein the resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means, when the removal apparatus is mounted via the mounting means on the utensil.

[00029] Other advantages, features and characteristics of the present invention, as well as methods of operation and functions of the related elements of the structure, and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following detailed description and the appended claims with reference to the accompanying drawings, the latter of which is briefly described herein below.

BRIEF DESCRIPTION OF THE DRAWINGS

[00030] The novel features which are believed to be characteristic of the utensil according to the present invention, as to its structure, organization, use and method of operation, together with further objectives and advantages thereof, will be better understood from the following drawings in which a presently preferred embodiment of the invention will now be illustrated by way of example. It is expressly understood, however, that the drawings are for the purpose of illustration and description only, and are not intended as a definition of the limits of the invention. In the accompanying drawings:

[00031] Figure 1A is a perspective view of the first embodiment of this invention showing the utensil as a spoon;

[00032] Figure 1B is a perspective view of an alternative embodiment to the first embodiment of this invention showing the utensil as a fork;

[00033] Figure 2 is an exploded perspective view of the first embodiment of this invention showing the mechanism removed from the spoon specifically showing the hinged connection;

[00034] Figure 3A shows a perspective view of the removal apparatus;

[00035] Figure 3B shows a perspective view of an alternative embodiment removal apparatus of Figure 3B;

[00036] Figure 3C shows the front view of the removal apparatus;

[00037] Figure 3D shows the top view of the removal apparatus;

[00038] Figure 3E shows the top view of the removal apparatus;

[00039] Figure 4A shows the side view of a spoon and mechanism illustrating a user's hand placement relative to the spoon and mechanism;

[00040] Figure 4B is a cross section view of the spring arms compound curve showing a cross section of the spring arms secondary curve when the mechanism is un-actuated and in a static state;

[00041] Figure 5A is a perspective illustration of the first embodiment of this invention showing the mechanism partially extended illustrating a user's hand placement relative to the spoon and mechanism;

[00042] Figure 5B is a cross section view of the spring arms secondary curve showing the dynamics of how such a contour responds as the mechanism is actuated;

[00043] Figure 6A is a perspective illustration of the first embodiment of this invention showing the mechanism fully extended illustrating a user's hand placement relative to the spoon and mechanism;

[00044] Figure 6B is a cross section view of the spring arms secondary curve showing the dynamics of how such a contour responds when the mechanism is fully actuated;

[00045] Figure 7A is a perspective illustration of second embodiment of this invention showing a spoon with an attachable and detachable hub connected to these standard utensils with the mechanism of this invention connected to the hub;

[00046] Figure 7B is a perspective illustration of an alternative embodiment of this invention showing a spoon with an attachable and detachable hub connected to these standard utensils with the mechanism of this invention connected to the hub;

[00047] Figure 8A is an exploded perspective illustration of the second embodiment of this invention showing the mechanism removed from the attachable and detachable hub, which is disconnected from a spoon;

[00048] Figure 8B shows a perspective view of an alternative embodiment removal apparatus of Figure 8A;

[00049] Figure 9 is a perspective illustration of another alternatve embodiment of this invention showing the mechanism on a long handled barbeque fork;

[00050] Figure 10 is a diagrammatic representation of the forces and stresses involved when a thick material is bent; and,

[00051] Figure 11 is a diagrammatic representation of the forces and stresses involved when a thin material is bent.

DETAILED DESCRIPTION OF THE PREFERRED AND ALTERNATIVE EMBODIMENTS

[00052] Referring to the embodiments illustrated in Figures 1 and 2, there is shown a serving utensil, generally referred to by the numeral 8, with a scraper server, generally referred to by the numeral 10. In Figure 1A the serving utensil includes a fork, generally referred to by the numeral 12, and, in Figure 1B and 2, the serving utensil includes a spoon, generally referred to by the number 14. Whether the serving utensil is a spoon or a fork, this invention has equal application and like parts of the two different utensils will be referred to using the same numbers.

[00053] The serving utensil has a gripping portion 16 which forms part of the handle. The gripping portion 16 is where the user picks up and holds the utensil during serving. Each serving utensil 8 also has a serving receptacle 18. On the spoon 14, the serving receptacle is a concave cradle for scooping and holding food, whereas, on the fork 12, the serving receptacle 18, although usually, as is illustrated in the present embodiment has a concave disposition, includes prongs for picking and holding the food.

[00054] As shown, for mounting the serving scraper 10, there is formed on both the fork 12 and the spoon 14, a male hinge member 20, which is lateral in disposition to the direction of the length of the utensil. The male hinge member 20 provides for the snap-mounting of the serving scraper 10 by use of complimentarily engageable female hinge members 22. Adjacent the male hinge member 20 in the embodiments of Figures 1 to 4, 7 and 10, but not in the embodiments of Figures 6, 8 and 9, there is also provided a sloped seating surface 24 which will provide a support for the serving scraper 10 when mounted onto the fork 12 or spoon 14 as shown in Figure 1. The elevation of the seating surface, from a design point of view, is preferably sloped to be disposed at a lower elevation than the gripping portion of the handle to facilitate easier finger actuation and to prevent any interference of the serving scraper 10 and the fork 12 or spoon 14, during use. It is also easier to assert pressure from the thumb in the downward-forward direction than purely in the forward direction in the context of operating this type of utensil. However, although a preferable design feature which adds to the utility, the invention has utility without this feature as well.

[00055] The serving scraper 10 of the first embodiment is illustrated apart from the spoon 14 in Figure 2. The serving scraper 10 comprises a resilient arm 28 which is bowed in shape. The resilient arm 28 has a scraping end 26 and a mounting end 30.

[00056] There is a scraper-remover 32 for removing food from the serving-receptacle 18, mounted to the resilient arm at the scraping end 26 and a mounting means, for mounting the serving scraper 10 to the spoon 14 or fork 12 at the male hinge member 20, by snapping the female hinge member 22 onto the male hinge member 20.

[00057] Preferably, the resilient arm 28 with a thumb locater 34 to provide the user with traction when the resilient arm 28 is flexed during the serving process. As well, the inventors have found it preferable, although not necessary, to configure the resilient arm so that it extends first rearwardly from the mounting means, then upwardly and forwardly to pass the hinge members to reach the scraper-remover 32.

[00058] This shaping has been found to be the most ergonomic in providing for the easy placement of the thumb and movement of the thumb forwardly to push the scraper-remover 32 the necessary distance along the serving receptacle 18. It will be apparent that the user does not have to move his finger forwardly the complete

length of distance of the receptacle. A mechanical advantage can be achieved by the disposition of the curvature of the resilient arm 28 as required by the designer's circumstances and needs.

[00059] Alternatively, the configuration of the resilient arm 28 could be as shown in the embodiment of Figure 8, with all of the curvature all being forwardly of the mounting placement.

[00060] Once the serving scraper 10 is mounted to the fork 12 or spoon 14, it is ready for use in the manner as shown in Figures 7A and 7B. The user can operate the serving scraper 10 by gripping the gripping portion 16 of the serving utensil 8 and pushing the resilient arm 28 forwardly by asserting thumb pressure the area below the thumb locater 34. An individuals thumb will move the scraper-remover 32 forwardly towards the service end of the serving receptacle 18 as shown, moving from Figure 7A to 7B. Thus, the primary curve of the resilient arm 28 will begin to flatten out under the thumb using the securement of the scraper-server at its mounting point as its base about which the thumb force is acting.

[00061] The scraper-remover 32 will scrap the surface of the serving receptacle 18 and, as well, push the food off the serving receptacle 18.

[00062] It will be apparent that the bowed arm, at least, must be made from a resilient plastics material which permits mounting and dismounting. It also permits for the resilient operation and transformation of the shaped of the bowed contour of the arm.

[00063] The configuration of the mounting means which determines how the serving scraper is mounted to the serving utensil can vary. One alternative is as Figures 3, 4A and 4B. In that case, the female hinge member 22 is formed on the spoon 14 and the male hinge member 20 is formed on the serving scraper rather than vice versa. The mounting fundamentals are the same as for the embodiment shown in Figures 1 and 2.

[00064] Yet another variation of the mounting means is shown in Figures 5 and 6. In that case, there is a mounting base member 36 which in cross section has an inner concavity and an opening 38. Inwardly disposed locking members 40 are provided with sloped surfaces so that they are flexed outwardly to mount onto the shaft of the spoon and reassert their position to hold the mounting base onto the spoon due to the resilience of the material used to make the base. By forming the mounting means separately, with a mountable base member 36, standard pre-existing utensils can be fitted with serving scrapers 10 made in accordance with this invention. Formed on the base member can be any suitable type of means for securing the serving scraper to the spoon or fork. In the embodiment shown, female hinge members 22 are formed on the base member 36 and corresponding male hinge members 20 are formed on the serving scraper 10. In all other respects the design is analogous to those of the embodiments with resilient arm of the type that extends rearwardly, then up and forwardly pass the mounting placement.

[00065] It will also be apparent that the scraper-remover 32 can also be separated from the resilient arm 28 by a pushing rod 42 as shown in Figure 10. As shown, the pushing rod mounts the scraper-remover 32 to the scraping end 30 of the arm. Use of a pushing rod 40 would permit adaption of this invention to multiple length sizes of serving utensils.

[00066] It will be apparent throughout that the parts of the serving utensil of this invention can be made of any material providing it is strong enough to bear the forces of the scraper during use for the particular application and utensil it is being used for. The composition of the material will depend on the characteristics desired by the manufacturer and user and are ordinary skill in the art. For instance, the serving utensil can be made of a structurally suitable plastic, wood or metal. However, the inventors prefer to use a plastics material because they are easily mouldable and the scraper-server (or scraper remover) can also be made from the same material if configured in dimensions which permit the resilience of the material to be used for the operation of the bowed arm.

[00067] In another alternative embodiment of the present invention, it is contemplated that the hinge means could be a "living" hinge. Accordingly, the removal apparatus and the handle could be integrally formed one with the other, or at least partially so.

[00068] In Referring to the drawings, there is shown in Figure 1 a serving spoon referred to generally by the numeral 10 and a serving fork referred to generally by the numeral 20 where each of these dispensing utensils consist of a holding end referred to generally by the numeral 30, a service end referred to generally by the numeral 40 and a resiliently flexible scraping or pushing mechanism of this invention referred to generally by the numeral 50.

[00069] The preferred embodiment illustrated in Figures 2 by a spoon is shown as an exploded view to further illustrate the mechanisms 50 male hinging member 52, compound spring arm 54, users thumb positioning location 53, substance pusher 51, spoon body 11 and the spoon bodies female hinging member 12.

[00070] One skilled in the art will readily recognize that the hinging members 52 & 12 can be any appropriate means which would allow the hinging area of the mechanism to be securely fixed to the spoon body 11 while also allowing the mechanisms hinging member 52 to freely rotate about its axis.

[00071] The substance pusher 51 on the mechanisms spring arm 54 can be any appropriate shape that would facilitate its function. For a spoon or fork it could be shaped as shown or it could be wider and taller to meet a specific need or application. For a stabbing utensil such as a fork the shape of the substance pusher 51 need only dislodge the substance from the prongs and could consist of only a flat bar. The design features of the pusher 51 are many and not the specific focus of this invention. The pusher 51 of this invention can and will most likely be custom designed to meet the need of a specific utensils requirements, purpose, application and function.

[00072] The side view of the preferred embodiment of the mechanism 50 is illustrated in Figure 3A. This view shows the primary curve of the spring arms compound curve illustrating its shape and the relative positioning of the substance pusher 51 and the hinging member 52.

[00073] The shape of the spring arms 54 primary curve, beginning at the hinging member 52, starts in a direction towards the utensils holding end then curves up to loop around and down towards the service end 40 where it connects to the substance pusher.

[00074] The side view of the preferred embodiment of the spoon specifically compatible with the scraping or pushing mechanism 50 is illustrated in Figure 4 and shows a users hand placement relative to the spoon 11 and mechanism 50.

[00075] A section view of the preferred embodiments spring arm is illustrated in Figure 4a where cross section AA shows the secondary curve 57 in the spring arms 54 compound curve where this contour is shown when the mechanism 50 is un-actuated and in a static state.

[00076] In Figure 3B, the alternative embodiment mechanism 50' comprises a resilient arm 53' that is not curved across its width, but instead is made from spring steel that is substantially flat and straight across its width, having a substantially constant thickness. The substance pusher 51' and the hinge 52' are each made from a suitable plastic material.

[00077] The preferred embodiment illustrated in Figures 5A shows the dynamics of the hand motion required to partially extend the mechanism 50. An individuals thumb will move the mechanism 50 forward towards the service end 40 of the utensil where the primary curve of the spring arm will roll out, similar to a wheel, under the thumb about hinging members 52 & 12. This action will begin to uncoil or striated out the spring arm, which will in turn move the pusher 51 in a somewhat linear fashion down the surface of the utensils service end 40.

[00078] The design of the spring arms 54 primary curve provides for an ergonomic design but the shape of this curve was principally intended to provide a means to translate a substance pusher 51 the necessary distance down the length of the utensils service end 40. The spring arms 54 coil of material was compact, user friendly, ergonomic, aesthetically pleasing as well it provides an uncoiled length capable of translating the substance pusher 51 down the length of the utensils service end 40 as it is uncoiled by an individuals thumb.

[00079] Section BB of the mechanisms compound spring arm 54 is illustrated in Figure 5a and shows how the arch of the compound curves secondary curve 57 opens up to become a bit flatter as the compound spring arm 54 is flexed to become straiter. The changing shape or flattening profile of this cross sectional curvature BB reduces the spring constant (reference Hooks law & engineering mechanics) of the compound spring arm thus reducing the force needed to depress the mechanism. As well the dynamics of these 2 straitening curves; spring arm 54 and its cross sectional curvature, acts to minimizes the bending stresses on the spring arms material (reference engineering mechanics), which in turn increases the effective elastic life of the mechanism.

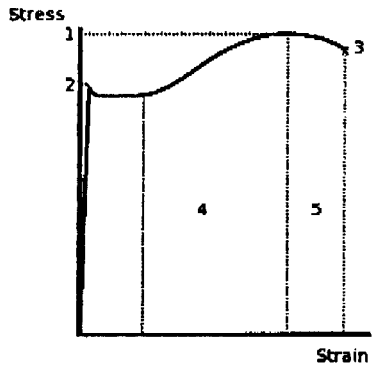
[00080] The flattening of the cross sectional curvature of the spring arms secondary curve 57 reduces the internal moment forces around the Z axis which occurs within the material as it is being actuated thus reducing the force needed to actuate the mechanisms compound spring arm. The dynamics of these two compound curves enables the spring arm to be constructed of a thinner cross sectional thickness Ts.a. (see Figures 4a, 5a & 6a). The thinner cross sectional thickness Ts.a. minimizes the compression stress that is created in the top surface of the spring arm material and tension stress created in the bottom surface of the spring arm material as the spring arm is flexed towards a straighter profile.

[00081] The compound curves ability to reduce the stress within the material provides the spring arm with a greater range of elastic flexure and longer useful life of elastic flexibility.

[00082] The increased elastic flexibility of the spring arm of this invention has allowed the design of the spring arms curvature to be a smaller tighter curve and it has enabled the design of the spring arm to begin by head back towards the holding end of the utensil before curving towards the service end of the utensil and this looping curvature of the spring arm 54 provides a rolling ribbon of material to place the thumb on which as the thumb moves the mechanism 50 forward the spring arm 54, pivoting about the hinge means 52, will seem to roll like a wheel under the motion of the thumb.

[00083] According to engineering mechanics bending (also known as flexure) characterizes the behavior of a structural element, which is subject to a load. When material is subject to a bending force, the thicker a material is, the larger the stress will be on the surface of that material. For example if a thick piece and a thin piece of the same material are bent by the same amount the thick piece of material will experience a much larger amount of stress across its surfaces than the thinner piece. The thinner material will have a greater range of flexure than a thicker piece, which if subject to the same degree of flexure will yield, fatigue, weaken, crack and fail far before the thinner piece. In material under the same deflection conditions where T2 is < T1; F2 will be < F1, TC2<TC1, TF2<TF1, S2<S1 & M2<M1.

[00084] The thick piece of material is stiffer than a thin piece and the thicker piece will have a smaller range of elastic flexure because the compression and tension stresses experienced in the surface of a thicker material will cause the thicker sample to yield before the thinner material will.



Stress vs. Strain curve for: (DUCTILE MATERIALS)

* 1 - Ultimate Strength
* 2 - Yield Strength
* 3 - Rupture
* 4 - Strain hardening region
* 5 - Necking region

[00085] The nature of the spring arm of this invention is that the cross sectional profile becomes thinner as the spring arm is flexed H3<H2<H1. (Reference Figures 4a, 5a & 6a).

[00086] For the mechanism 50 of this invention in the un-flexed static state, the H1 dimension of Figure 4a is comparable to the T1 dimension. The shape of the cross sectional profile provides a thickness or height H1 dimension that produces a greater rigidity of the spring arm. The arching cross sectional shape 57 provides the rigidity and strength of the spring arm 54 while allowing the thickness Ts.a. of the material itself to be thinner than if the same rigidity were accomplished with a rectangular cross section or otherwise.

[00087] For the function of this invention, the spring arm material needs to be thin so that the material doesn't yield as the spring arm covers the range of flexure needed to in order to become straitened.

[00088] The compound curve of the spring arm 54 provides the mechanism 50 with the flexibility and resiliency needed in order to extend and return to its original static state shape as well this changing shape reduces the spring constant (reference Hooks law & engineering mechanics) within the material which relaxes the pusher making it easier to actuate as it is extended.

[00089] The preferred embodiment illustrated in Figures 6 shows the dynamics of the hand motion required to fully extend the scraping or pushing mechanism 50.

[00090] Section CC of the mechanisms 50 compound spring arm 54 is illustrated in Figure 6a and shows how the curvature of this arch 57 has opened up even further to become flatter as the compound curves of the spring arm 54 are flexed.

[00091] The compound curves of the spring arms design also provides for additional stress distributing and elastic enhancing dynamics within the spring arm 54, which further enhance its performance and durability.

[00092] As the two curve of the spring arms 54 compound curve straiten out and tend towards lying in the same plane as in Figure 6 the material on the center line 56 (see Figure 3b top view) of the spring arm 54 will be

21/07/2007 0:01 953-2476 received

compressed and the material on the outside edges 55 of the spring arm 54 will be in tension. This is due to the fact that the material on the centerline 56 of the spring arm 54 covers a longer linear distance than the material on the outside edge 55. For example, if you were to draw a line from the substance pusher 51 to the hinging means 52 following the centerline 56 of the mechanism, this line would be longer than a line, which followed the outside edge of the spring arm 55. The compound curve feature of the design means that as the mechanism is actuated and the compound curves of the spring arm straitens out to approach the same plane, the length of the material on the outside edge 55 and the length of the material on the centerline 56 will approach the same length and be forced to find an equilibrium. The material on the outside edge 55 will be stretched as the material on the centerline 56 is compressed.

[00093] The dynamic compound curve design of this invention distributes the forces and stresses within the spring arm more evenly throughout the entire spring arm so as to avoid any areas of high stress or strain concentration, which could ultimately result in fatigue of the material which would result in yielding or fracture, reducing the useful life of the mechanism 50.

[00094] There is shown in Figure 7 a secondary embodiment illustrated by a standard type spoon referred to generally by the numeral 60 and a standard type fork referred to generally by the numeral 70 where each consists of a holding end referred to generally by the numeral 30, a service end referred to generally by the numeral 40, an attachable and detachable hub referred to generally by the numeral 80 connected to these standard utensils and the resiliently flexible scraping or pushing mechanism 50 of this invention.

[00095] A secondary embodiment illustrated in Figures 8 by a standard typical spoon is shown as an exploded view to further illustrate the attachable and detachable hub 80, which allows the mechanisms 50 of this invention to be mounted to a standard spoon where the hubs 80 attachment means 83 is shown in the form of a snap on snap off style clip but one skilled in the art will readily recognize that for the varied usefulness of this embodiment any appropriate means of attachment may be applied be it temporary or permanent in nature. The hubs 80 hinging means 82 is shown in the form of a female hinging connection compatible with the mechanisms male hinging means 52 but one skilled in the art will readily recognize that a number of effective alternatives exists.

[00096] In addition to these standard sized utensils one skilled in the art can see how it would be possible to adapt the function of the mechanism 50 to a barbeque fork referred to generally by numeral 90 in Figure 9 where the service end 40 and the holding end 30 is typically separated by a long arm 95.

[00097] A guided shaft 96 could be fitted in between the substance pusher 91 and where the substance pusher 91 connects to the spring arm 104 in order to translate the thumb motion down the long arm 95 of the barbeque utensil to the substance pusher 91. The substance pusher 91 would be attached to the service end 40 by means, which would facilitate sliding motion. The guided shaft 96 would connect the substance pusher 91 with a guide 97, which would attaches to the long arm 95 of the barbeque utensil 90 in such a way so as to be able to slide to and fro along its length as the mechanism 100 is being actuated. The guide 97 shown is one representation of how the shaft 96 could be guided but one skilled in the art will readily recognize there are numerous different means in which this translation could be accomplished.

[00098] The mechanism 100 functions similarly to mechanism 50 except that mechanism 100 directly actuates a guide 97 and not a substance pusher 51 as with mechanism 50. There are hinging attachment means 92 represented on this guide 97 and compatible hinging attachment means 102 on the mechanism 100 which appropriately transfer the motion of the mechanism 100 to the guide 97, long arm 95 and in turn substance pusher 91.

[00099] In Figure 8B, the alternative embodiment mechanism 50" comprises a resilient arm 53" that is not curved across its width, but instead is made from spring steel that is substantially flat and straight across its width, having a substantially constant thickness. The substance pusher 51" and the hinge 52", 82" 83" are each made from a suitable plastic material.

[000100] The barbeque utensil illustrated in Figure 9 is a fork but one skilled in the art can see how the mechanism of this invention could be easily adapted for a spatula, spoon and other such utensils.

[000101] In the above mentioned embodiments of the mechanism 50 & 100 the preferred material would be plastic but one skilled in the art will realize that a number of resiliently elastic material could work such as metal or specifically spring steel etc.

[000102] In these embodiments discussed above the spring arm 54 & 104 makes use of a compound curve which is an appropriate design feature but not entirely necessary in all production situations and material applications. In situations where the construction material is plastic the performance of the mechanism benefits greatly by the compound curve design feature but depending on the choice of plastic materials the secondary curve 57 of the compound curve may or may not be desirable or necessary. In situations where the construction material is metal the performance of the mechanism can benefit from the compound curve design but the secondary curve 57 would most likely be unnecessary especially if the spring arm is constructed of a spring steel or a composite of spring steel and plastic. A rectangular or other cross section for the spring arm could be sufficiently durable and perform suitably.

[000103] In another aspect of the present invention, there is a utensil 10 comprising a handle having a gripping portion that is grippable by a user. The handle has a arm-receiving recess therein for receiving a portion of the resilient arm therein.

[000104] There is a substance carrying means operatively connected to the handle. The substance carrying means is operatively connected to the handle in downwardly offset relation.

[000105] There is also a resilient arm having a thumb engaging portion extending, at least in part, substantially vertically upwardly from the handle, and an elongate interconnecting portion extending forwardly from the thumb engaging portion to situate a substance engaging portion at the substance carrying means.

[000106] The resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means.

[000107] The present invention further comprises a mounting means disposed on at least one of the resilient arm and the handle, for mounting the resilient arm to the utensil. The mounting means comprises a hinge means, and the resilient arm is connected to the handle by the hinge means. The hinge means comprises a male hinge member and a female hinge member.

[000108] The resilient arm has a tightly curved thumb engaging portion extending upwardly from the handle, and has a thumb engaging portion extending upwardly and rearwardly from the handle. Further, the resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming the resilient arm such that the longitudinal curve of the resilient arm is decreased, effects a corresponding decrease in the lateral curve of the resilient arm.

[000109] In another aspect, the present invention comprises a removal apparatus for use with a utensil. The removal apparatus comprises a resilient arm having a mounting means for mounting the removal apparatus to the utensil, and a thumb engaging portion extending, at least in part, substantially vertically upwardly from the mounting means. An elongate interconnecting portion extends forwardly from the thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of the utensil. The resilient arm is resiliently deformable by a user's thumb to move the substance engaging portion with respect to the substance carrying means, to thereby remove a substance from the substance carrying means, when the removal apparatus is mounted via the mounting means on the utensil.

[000110] As can be understood from the above description and from the accompanying drawings, the present invention provides a utensil that has features that are unknown in the prior art, and that meets the objects of the present invention.

[000111] Other variations of the above principles will be apparent to those who are knowledgeable in the field of the invention, and such variations are considered to be within the scope of the present invention. Further, other modifications and alterations may be used in the design and manufacture of the utensil of the present invention without departing from the spirit and scope of the accompanying claims.

I CLAIM:

1. A serving scraper mountable to a serving utensil forwardly of the gripping portion and rearwardly of the serving receptacle of the serving utensil used by the user to grip the utensil comprising:

a resilient arm with a bowed shape and having a scraping end and a mounting end;

mounting means at the mounting end for mounting the resilient arm to the serving utensil forwardly of the portion of the utensil used to grip the utensil and rearwardly of the serving receptacle; and,

a scraper remover disposed at the scraper end of the resilient arm so that food can be scraped off of the food receptacle of the utensil when the resilient arm of the serving scraper is actuated by the users hand to move the scraper remover with respect to the serving receptacle.

2. A serving scraper mountable to a serving utensil forwardly of the gripping portion and rearwardly of the serving receptacle of the serving utensil used by the user to grip the utensil as claimed in claim 1, wherein the bowed shape of the resilient arm is contoured to extend rearwardly from the mounting means, then upwardly and then forwardly to the scraper end.

3. A serving scraper mountable to a serving utensil forwardly of the gripping portion and rearwardly of the serving receptacle of the serving utensil used by the user to grip the utensil as claimed in claim 1, wherein the mounting means comprises hinging members which secure the serving scrapper to the utensil and permit hinged movement of the serving scraper during use.

4. A serving scraper mountable to a serving utensil forwardly of the gripping portion and rearwardly of the serving receptacle of the serving utensil used by the user to grip the utensil as claimed in claim 3, wherein the hinged members comprise a male hinged member formed on the serving scraper.

5. A serving scraper mountable to a serving utensil forwardly of the gripping portion and rearwardly of the serving receptacle of the serving utensil used by the user to grip the utensil as claimed in claim 3, where the hinged members comprise a female hinged member formed on the serving scraper.

6. A serving utensil comprising:

a handle having a gripping portion which is gripped by the user;

a serving receptacle operatively connected to the handle;

there being mounted to the serving utensil a serving scraper having a resilient arm with a bowed shape;

said resilient arm having a scraping end and a mounting end;

mounting means at the mounting end to mount the resilient arm to the serving utensil forwardly of the gripping portion of the utensil used to grip the utensil and rearwardly of the serving receptacle; and,

a scraper remover disposed at the scraper end of the resilient arm so that food can be scraped off of the food receptacle of the utensil when the serving scraper is actuated by the user.

7. A serving utensil as claimed in claim 6, wherein the bowed shape of the resilient arm is contoured to extend rearwardly from the mounting means, then upwardly and then forwardly to the scraper end.

8. A serving utensil as claimed in claim 7, wherein the mounting means comprises hinging members which secure the serving scrapper to the utensil and permit hinged movement of the serving receptacle during use.

9. A serving utensil as claimed in claim 8, wherein the hinged members comprise a male hinged member formed on the serving scraper.

11. A serving utensil as claimed in claim 9, wherein the hinged members comprise a female hinged member formed on the serving scraper.

12. A serving utensil as claimed in claim 7, wherein there is formed a thumb locator on the resilient arm to facilitate the placement of the thumb and the application of pressure by the user using his thumb to the serving scraper during use.

13. A serving utensil with a handle having a gripping portion which is gripped by the user and a serving receptacle for serving food, there being formed on the serving utensil a mounting means between the gripping portion and serving receptacle to permit the mounting of a resilient serving scraper.

14. A serving utensil as claim in claim 13, wherein the mounting means comprises a male hinged member.

15. A serving utensil as claimed in claim 13, wherein the mounting means comprises a female hinged member.

16. A mounting clamp for an eating utensil comprising a mounting base formed with a channel for receiving the handle of a serving utensil, there being an opening formed for the channel to permit the mounting of the mounting base onto the handle of the eating utensil, there being resilient grip members to grip the handle during mounting and cause the mounting base to be frictionally mounted to the handle of the serving utensil, there being a serving scraper mounting means formed on the mounting base to permit mounting of the serving scraper to the base.

17. A utensil comprising:

a handle having a gripping portion that is grippable by a user;

a substance carrying means operatively connected to said handle; and,

a resilient arm having a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle, and an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion at said substance carrying means;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means.

18. The utensil of claim 17, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

19. The utensil of claim 18, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

20. The utensil of claim 19, wherein said hinge means comprises a male hinge member and a female hinge member.

21. The utensil of claim 17, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

22. The utensil of claim 17, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

23. The utensil of claim 17, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

24. The utensil of claim 17, wherein said substance carrying means is operatively connected to said handle in downwardly offset relation.

25. The utensil of claim 17, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

26. A utensil comprising:

a handle having a gripping portion that is grippable by a user;

a substance carrying means operatively connected to said handle; and,

a resilient arm having a tightly curved thumb engaging portion extending upwardly from said handle, and an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion at said substance carrying means;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means.

27. The utensil of claim 26, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

28. The utensil of claim 27, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

29. The utensil of claim 28, wherein said hinge means comprises a male hinge member and a female hinge member.

30. The utensil of claim 26, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

31. The utensil of claim 26, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

32. The utensil of claim 26, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

33. The utensil of claim 26, wherein said substance carrying means is operatively connected to said handle in downwardly offset relation.

34. The utensil of claim 26, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

35. A utensil comprising:

a handle having a gripping portion that is grippable by a user;

a substance carrying means operatively connected to said handle; and,

a resilient arm having a thumb engaging portion extending upwardly and rearwardly from said handle, and an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion at said substance carrying means;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means.

36. The utensil of claim 35, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

37. The utensil of claim 36, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

38. The utensil of claim 37, wherein said hinge means comprises a male hinge member and a female hinge member.

39. The utensil of claim 35, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

40. The utensil of claim 35, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

41. The utensil of claim 35, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

42. The utensil of claim 35, wherein said substance carrying means is operatively connected to said handle in downwardly offset relation.

43. The utensil of claim 35, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

44. A utensil comprising:

a handle having a gripping portion that is grippable by a user;

a substance carrying means operatively connected to said handle; and,

a resilient arm having a thumb engaging portion extending upwardly from said handle and connected to said handle by a hinge means, and an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion at said substance carrying means;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means.

45. The utensil of claim 44, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

46. The utensil of claim 45, wherein said hinge means comprises a male hinge member and a female hinge member.

47. The utensil of claim 44, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

48. The utensil of claim 44, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

49. The utensil of claim 44, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

50. The utensil of claim 44, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

51. The utensil of claim 44, wherein said substance carrying means is operatively connected to said handle in downwardly offset relation.

52. The utensil of claim 44, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

53. A utensil comprising:

a handle having a gripping portion that is grippable by a user;

a substance carrying means operatively connected to said handle; and,

a resilient arm having a thumb engaging portion extending upwardly from said handle, and an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion at said substance carrying means, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means.

54. The utensil of claim 53, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

55. The utensil of claim 54, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

56. The utensil of claim 55, wherein said hinge means comprises a male hinge member and a female hinge member.

57. The utensil of claim 53, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

58. The utensil of claim 53, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

59. The utensil of claim 53, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

60. The utensil of claim 53, wherein said substance carrying means is operatively connected to said handle in downwardly offset relation.

61. The utensil of claim 53, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

62. A utensil comprising:

a handle having a gripping portion that is grippable by a user;

a substance carrying means operatively connected to said handle in downwardly offset relation; and,

a resilient arm having a thumb engaging portion extending upwardly from said handle, and an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion at said substance carrying means;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means.

63. The utensil of claim 62, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

64. The utensil of claim 63, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

65. The utensil of claim 64, wherein said hinge means comprises a male hinge member and a female hinge member.

66. The utensil of claim 62, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

67. The utensil of claim 62, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

68. The utensil of claim 62, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

69. The utensil of claim 62, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

70. The utensil of claim 62, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

71. A removal apparatus for use with a utensil, said removal apparatus comprising:

a resilient arm having a mounting means for mounting said removal apparatus to said utensil, and a thumb engaging portion extending, at least in part, substantially vertically upwardly from said mounting means;

an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of said utensil;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means, when said removal apparatus is mounted via said mounting means on said utensil.

72. The utensil of claim 71, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

73. The utensil of claim 72, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

74. The removal apparatus of claim 73, wherein said hinge means comprises a male hinge member and a female hinge member.

75. The removal apparatus of claim 71, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

76. The removal apparatus of claim 71, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

77. The removal apparatus of claim 71, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

78. The removal apparatus of claim 7, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

79. A removal apparatus for use with a utensil, said removal apparatus comprising:

a resilient arm having a mounting means for mounting said removal apparatus to said utensil, and a tightly curved thumb engaging portion extending upwardly from said mounting means;

an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of said utensil;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means, when said removal apparatus is mounted via said mounting means on said utensil.

80. The removal apparatus of claim 79, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

81. The removal apparatus of claim 80, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

82. The removal apparatus of claim 81, wherein said hinge means comprises a male hinge member and a female hinge member.

83. The removal apparatus of claim 79, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

84. The removal apparatus of claim 79, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

85. The removal apparatus of claim 79, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

86. The removal apparatus of claim 79, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

87. A removal apparatus for use with a utensil, said removal apparatus comprising:

a resilient arm having a mounting means for mounting said removal apparatus to said utensil, and a thumb engaging portion extending upwardly and rearwardly from said mounting means;

an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of said utensil;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means, when said removal apparatus is mounted via said mounting means on said utensil.

88. The removal apparatus of claim 87, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

89. The removal apparatus of claim 88, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

90. The removal apparatus of claim 89, wherein said hinge means comprises a male hinge member and a female hinge member.

91. The removal apparatus of claim 87, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

92. The removal apparatus of claim 87, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

93. The removal apparatus of claim 87, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

94. The removal apparatus of claim 87, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

95. A removal apparatus for use with a utensil, said removal apparatus comprising:

a resilient arm having a mounting means for mounting said removal apparatus to said utensil, and a thumb engaging portion extending upwardly from said mounting means, and wherein said mounting means comprises a hinge means;

an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of said utensil;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means, when said removal apparatus is mounted via said mounting means on said utensil.

96. The removal apparatus of claim 95, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

97. The removal apparatus of claim 96, wherein said hinge means comprises a male hinge member and a female hinge member.

98. The removal apparatus of claim 95, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

99. The removal apparatus of claim 95, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

100. The removal apparatus of claim 95, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

101. The removal apparatus of claim 95, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm.

102. The removal apparatus of claim 95, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

103. A removal apparatus for use with a utensil, said removal apparatus comprising:

a resilient arm having a mounting means for mounting said removal apparatus to said utensil, and a thumb engaging portion extending upwardly from said mounting means, wherein said resilient arm is curved longitudinally along its length and is curved laterally across its width, and wherein deforming said resilient arm such that the longitudinal curve of said resilient arm is decreased, effects a corresponding decrease in the lateral curve of said resilient arm;

an elongate interconnecting portion extending forwardly from said thumb engaging portion to situate a substance engaging portion in place so as to be disposed at the substance carrying means of said utensil;

wherein said resilient arm is resiliently deformable by a user's thumb to move said substance engaging portion with respect to said substance carrying means, to thereby remove a substance from said substance carrying means, when said removal apparatus is mounted via said mounting means on said utensil.

104. The removal apparatus of claim 103, further comprising a mounting means disposed on at least one of said resilient arm and said handle, for mounting said resilient arm to said utensil.

105. The removal apparatus of claim 104, wherein said mounting means comprises a hinge means, and said resilient arm is connected to said handle by said hinge means.

106. The removal apparatus of claim 105, wherein said hinge means comprises a male hinge member and a female hinge member.

107. The removal apparatus of claim 103, wherein said resilient arm has a thumb engaging portion extending, at least in part, substantially vertically upwardly from said handle.

108. The removal apparatus of claim 103, wherein said resilient arm has a tightly curved thumb engaging portion extending upwardly from said handle.

109. The removal apparatus of claim 103, wherein said resilient arm has a thumb engaging portion extending upwardly and rearwardly from said handle.

110. The removal apparatus of claim 103, wherein said handle has a arm-receiving recess therein for receiving a portion of said resilient arm therein.

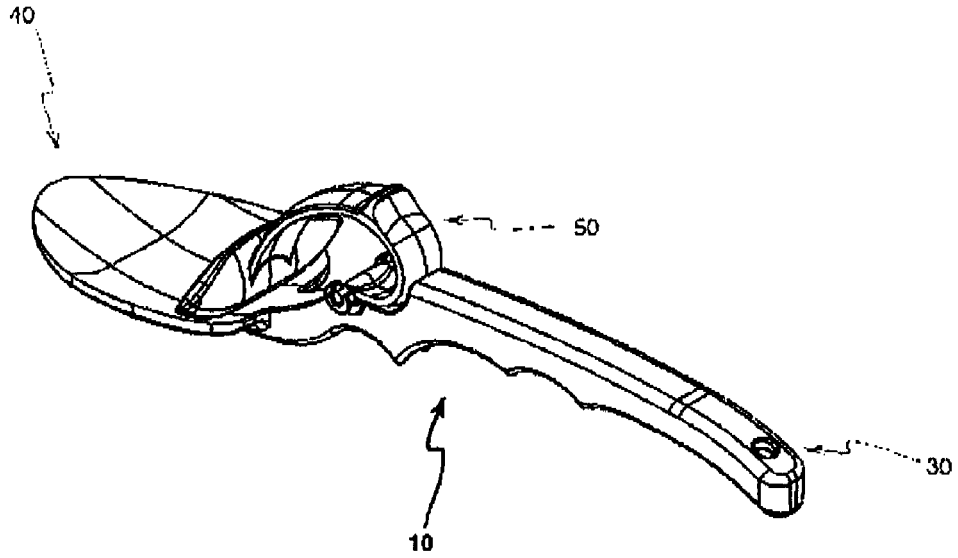


FIGURE 1A

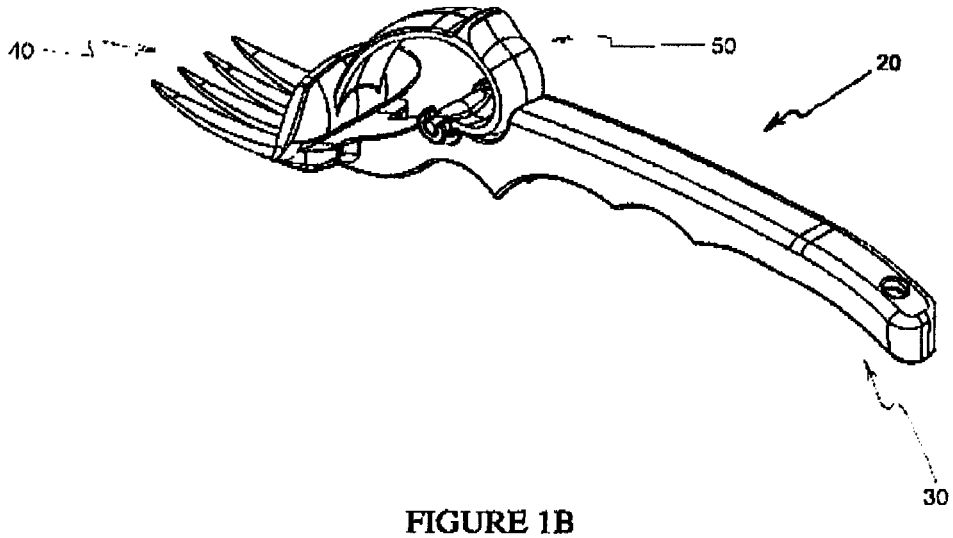


FIGURE 1B

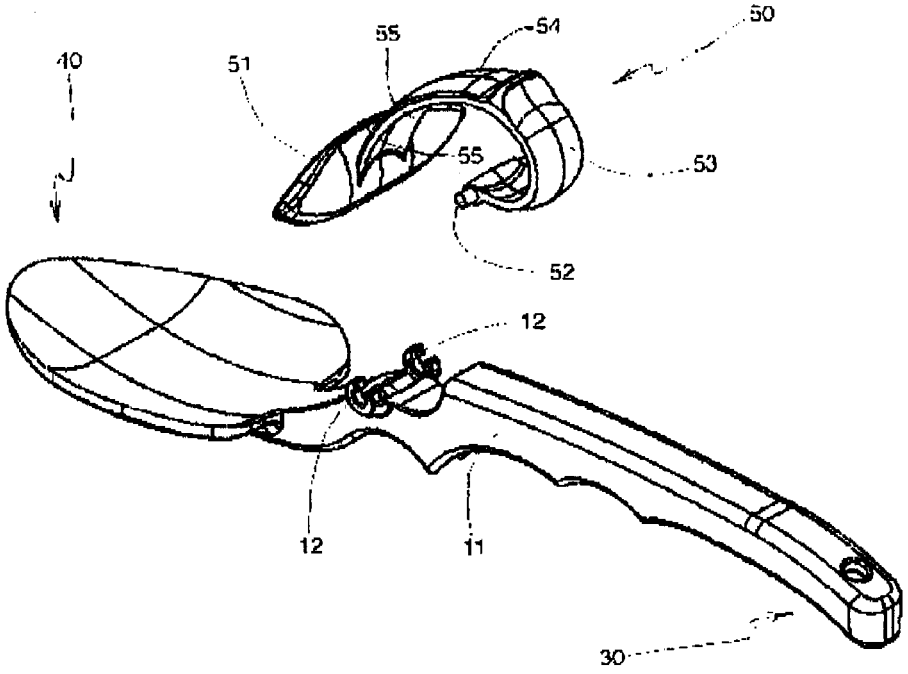


FIGURE 2

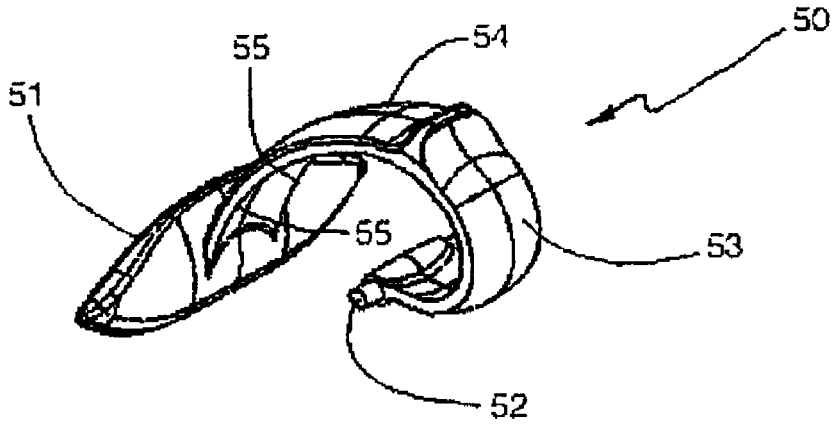


FIGURE 3A

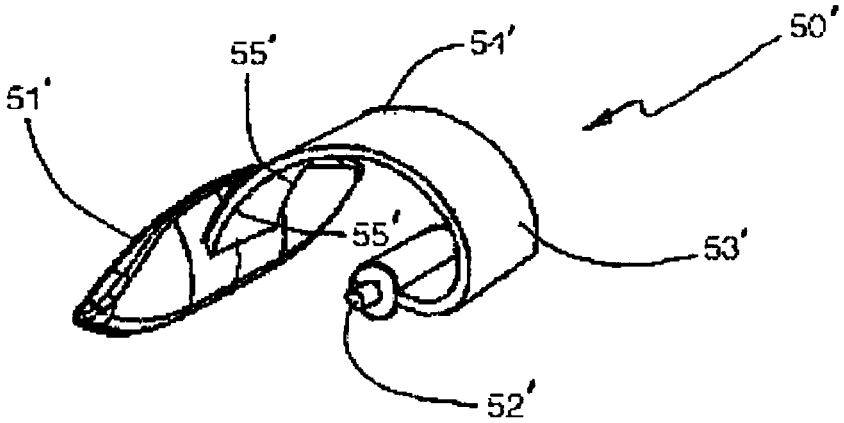


FIGURE 3B

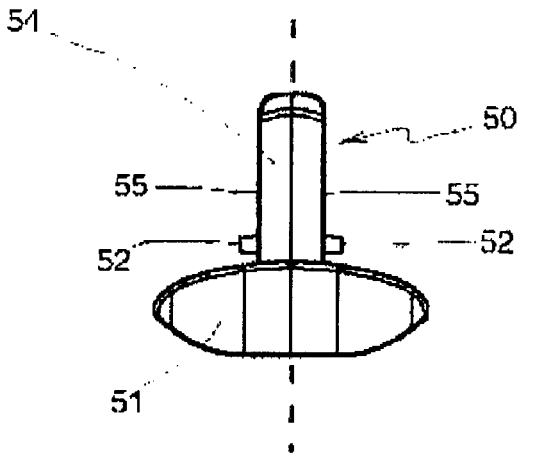


FIGURE 3C

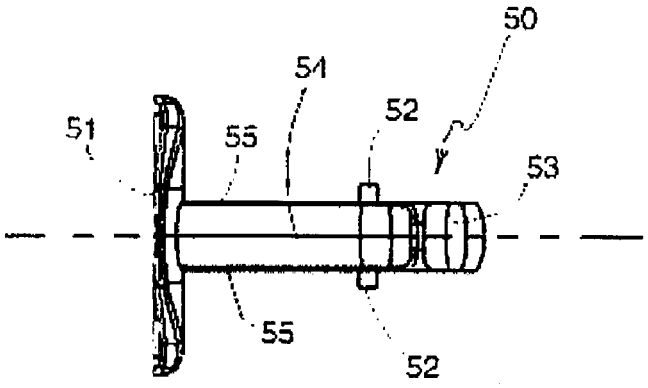


FIGURE 3D

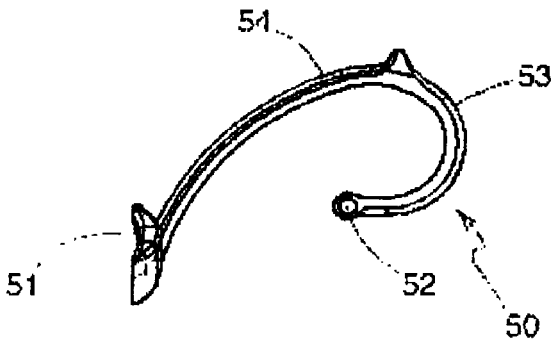


FIGURE 3D

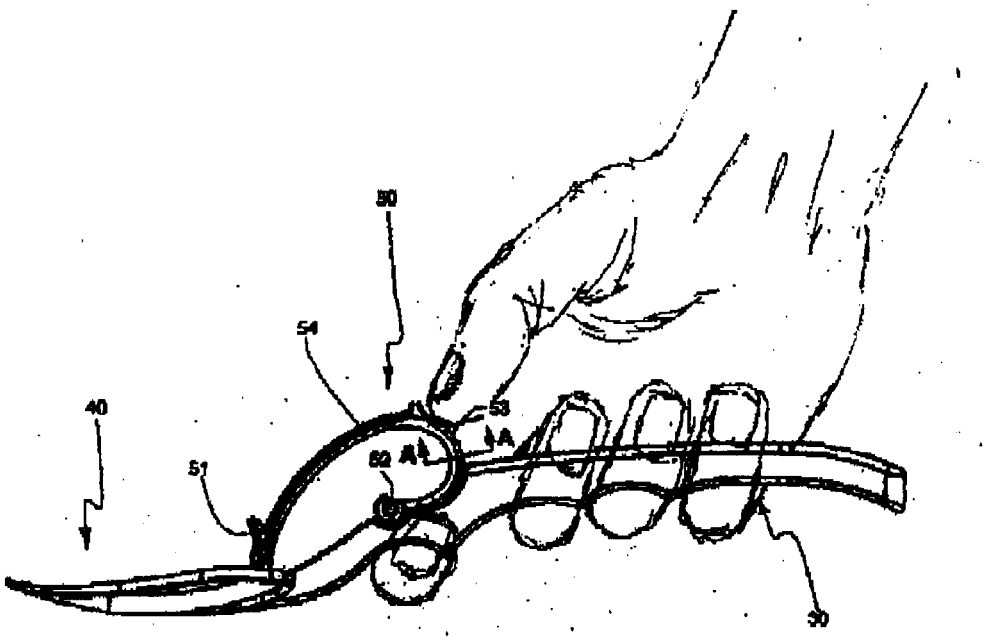


FIGURE 4A

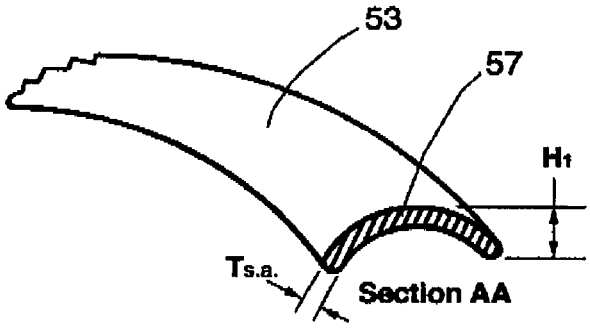


FIGURE 4B

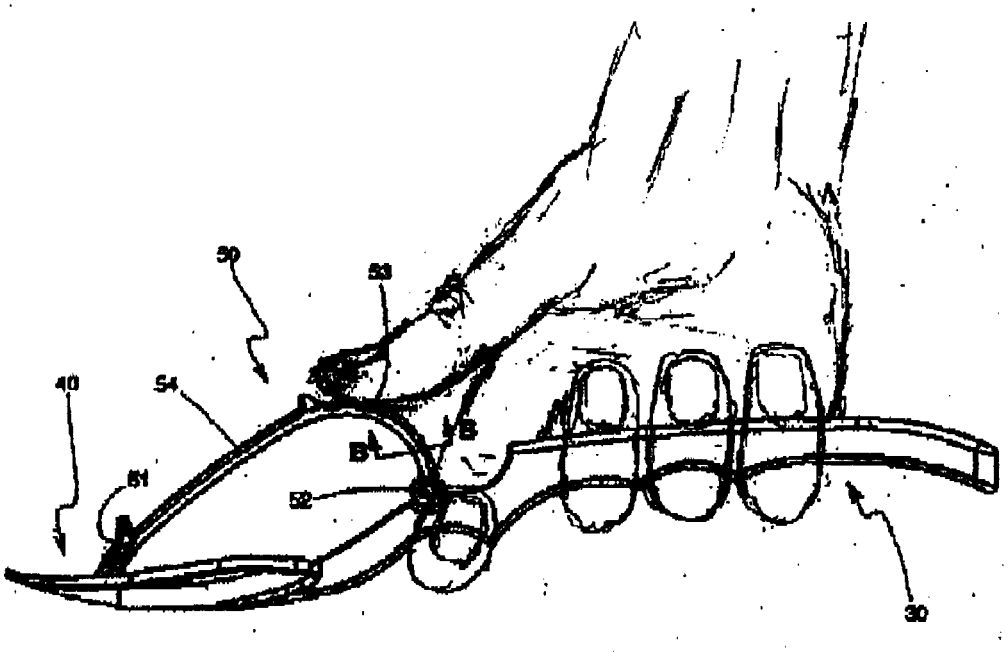


FIGURE 5A

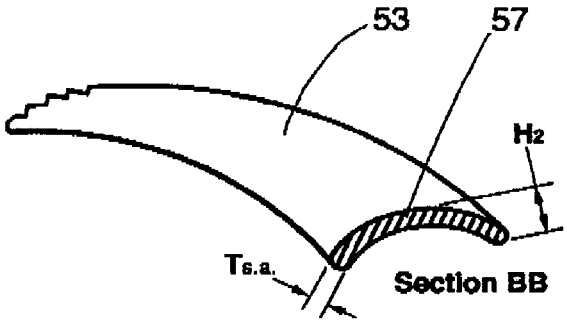


FIGURE 5B

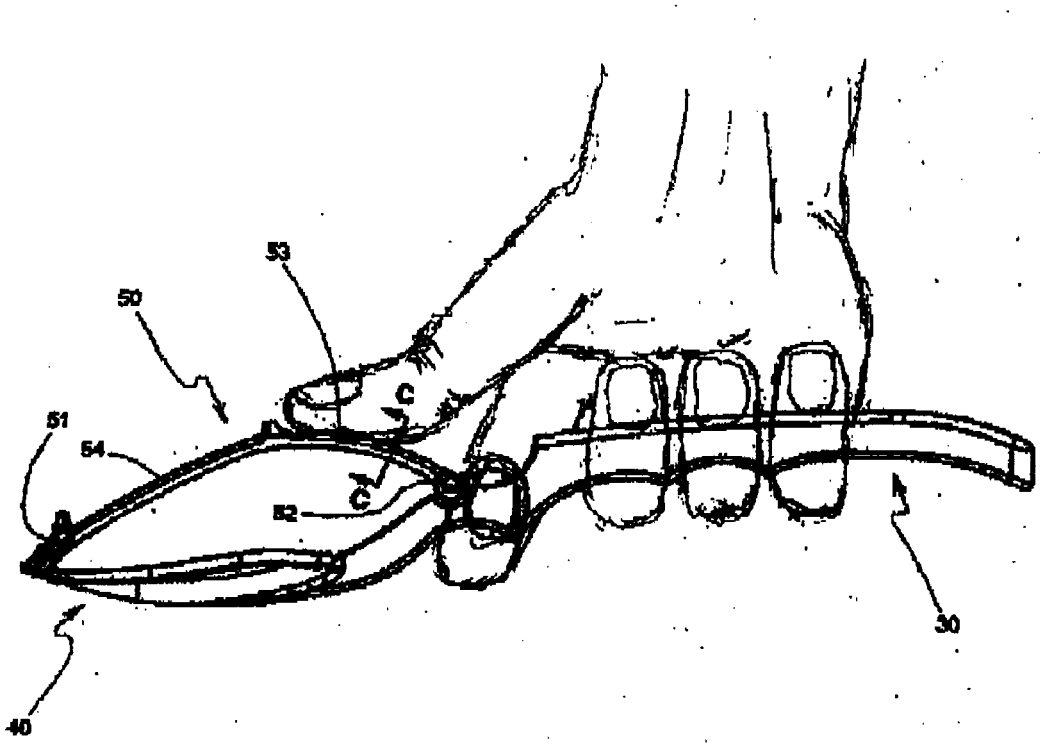


FIGURE 6A

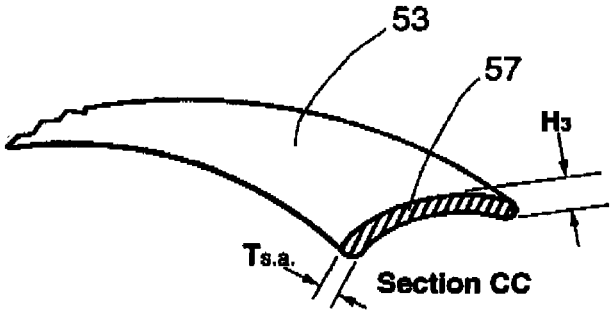


FIGURE 6B

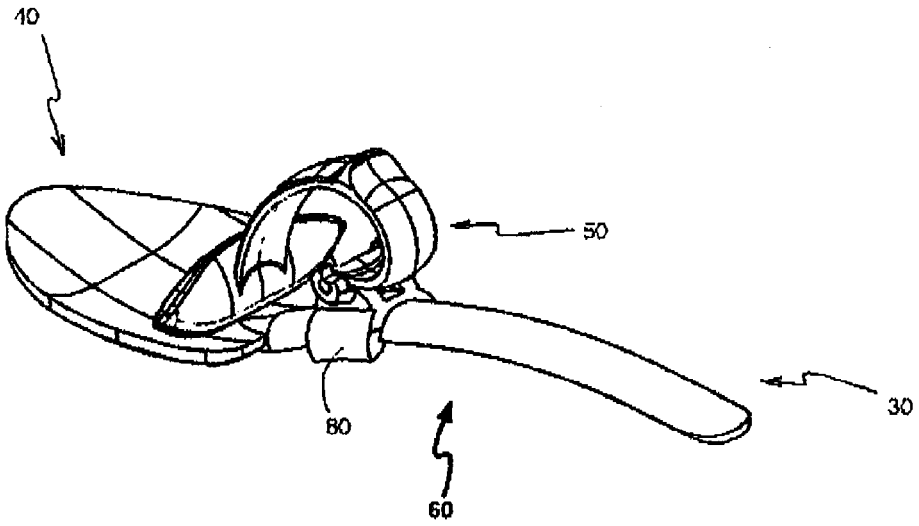


FIGURE 7A

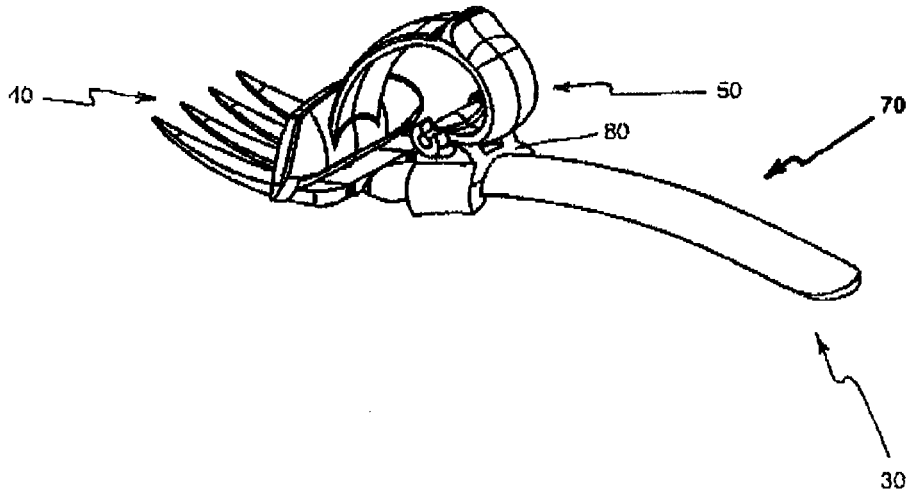


FIGURE 7B

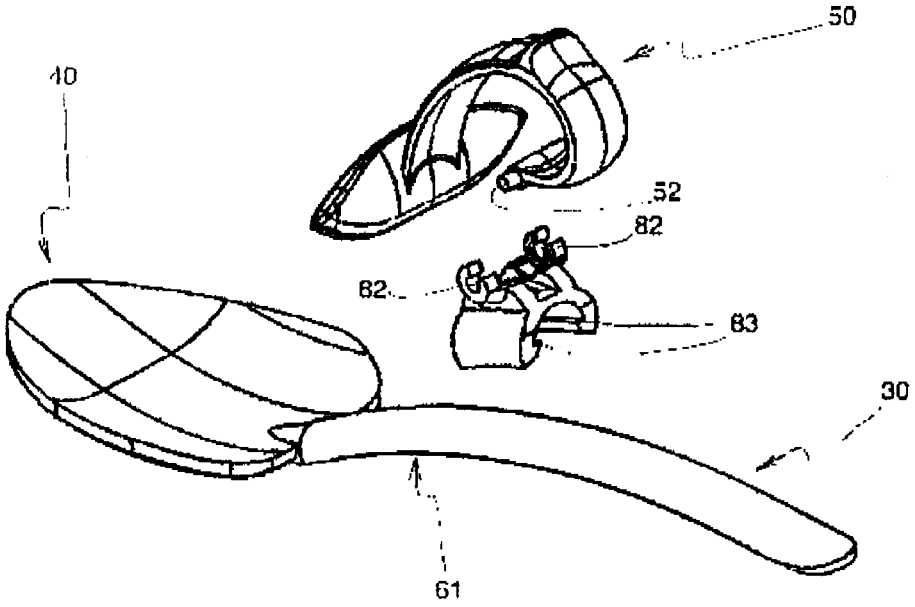


FIGURE 8A

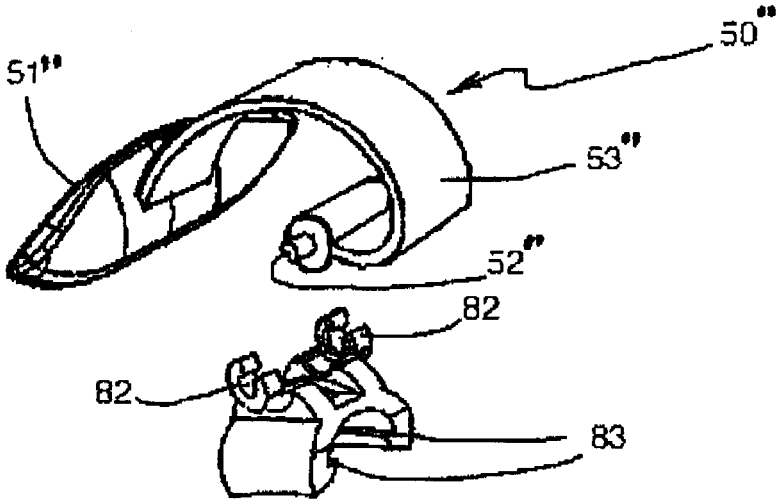


FIGURE 8B

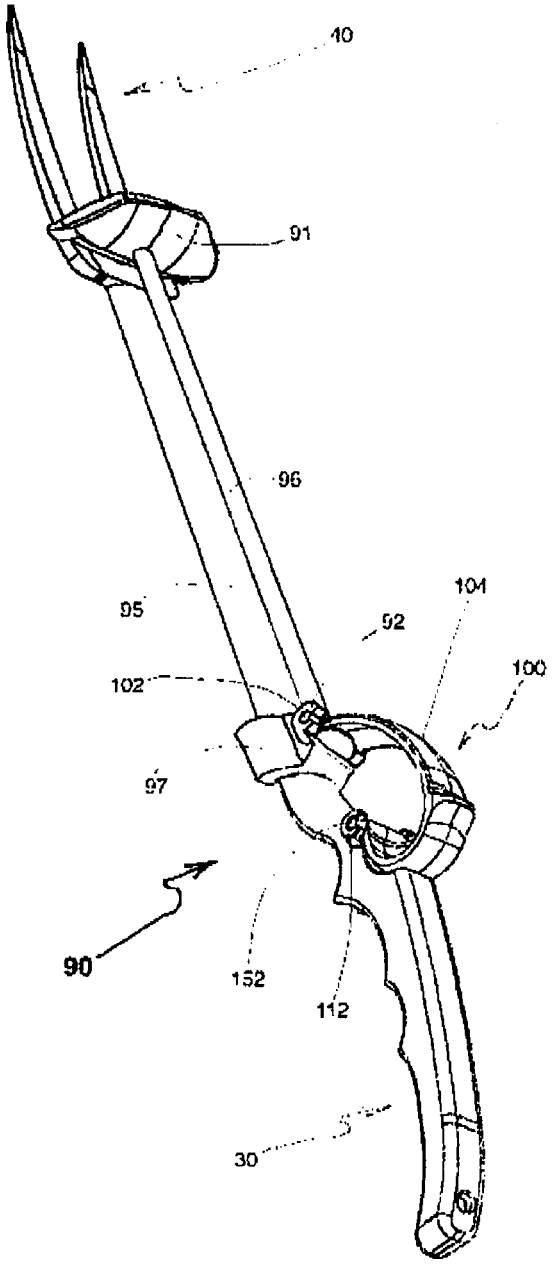


FIGURE 9

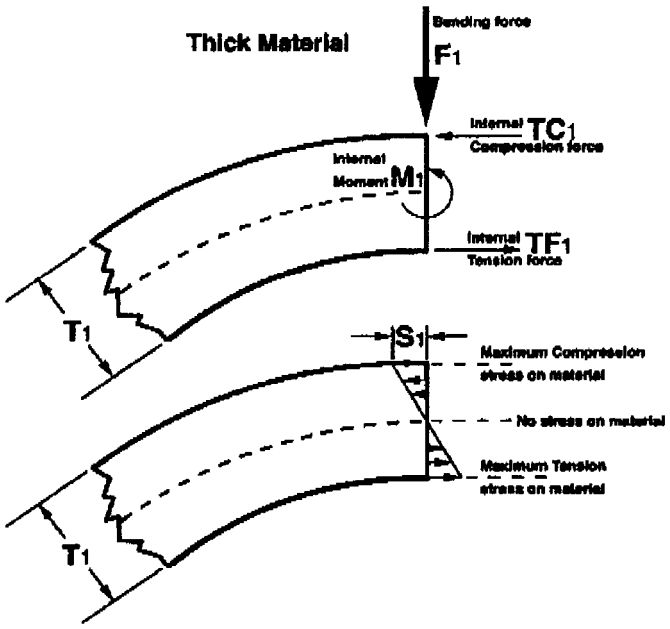


FIGURE 10

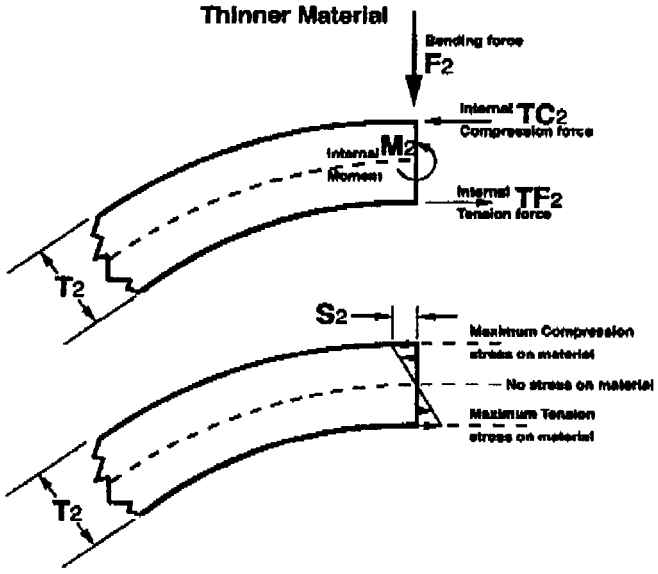


FIGURE 11