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(54) **HOLLOW HANDLE FLATWARE AND METHOD OF MAKING A HOLLOW HANDLE FLATWARE**

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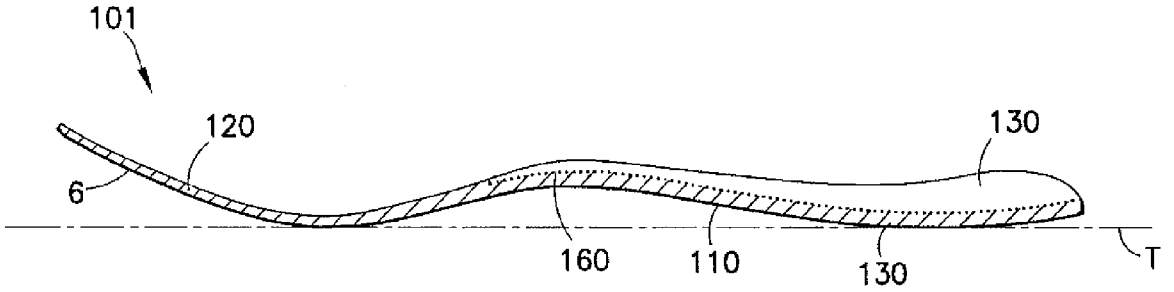
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(57) **ABSTRACT**

A hollow handle flatware includes a main body extending between a service end and a handle end. The main body includes a service portion at the service end and a handle portion at the handle end. The hollow handle flatware also includes a handle part, which is formed separately from the main body and permanently fixed to the handle portion of the main body to form a hollow handle. The handle part and the handle portion of the main body enclose a hollow chamber. Also disclosed is a method of making a hollow handle flatware by separately forming a main body and a handle part and joining the main body and the handle part as a unitary hollow handle flatware.



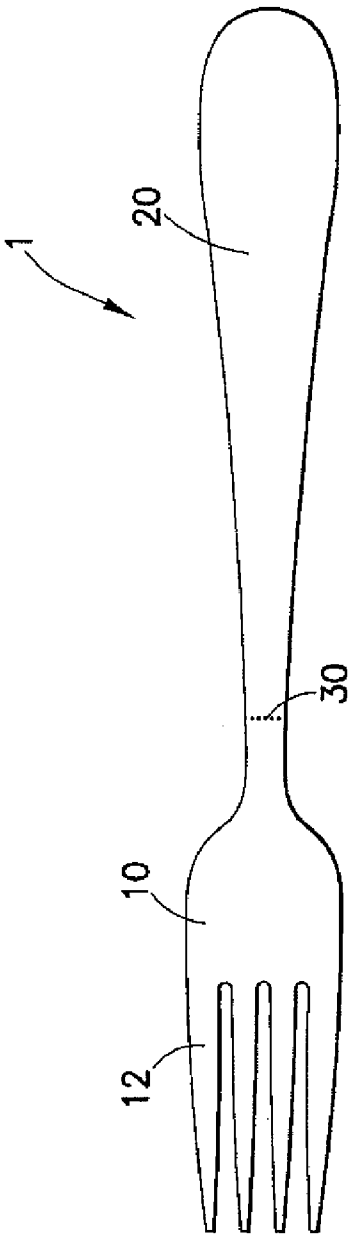


FIG. 1A

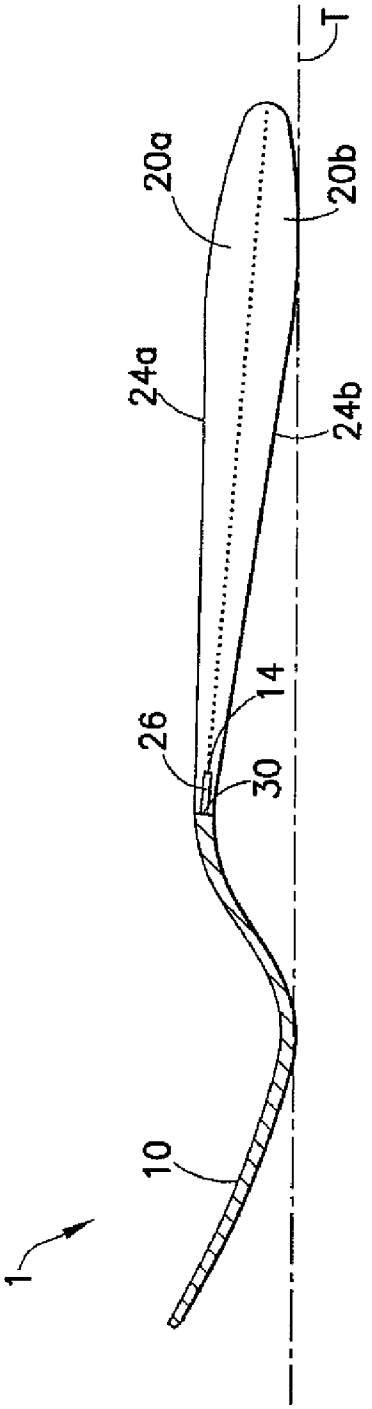


FIG. 1B

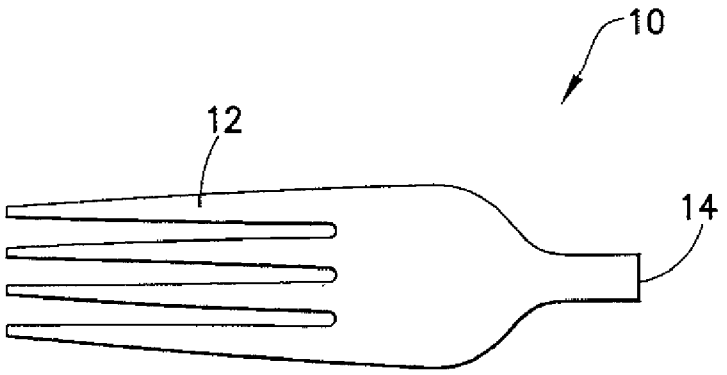


FIG.2A

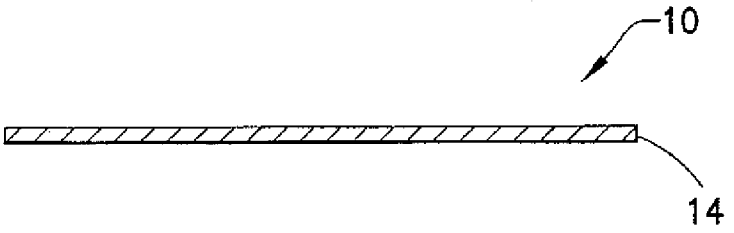


FIG.2B

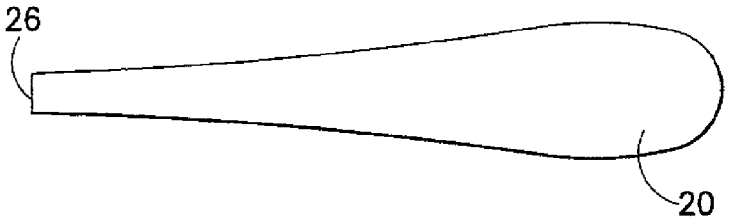


FIG.3A

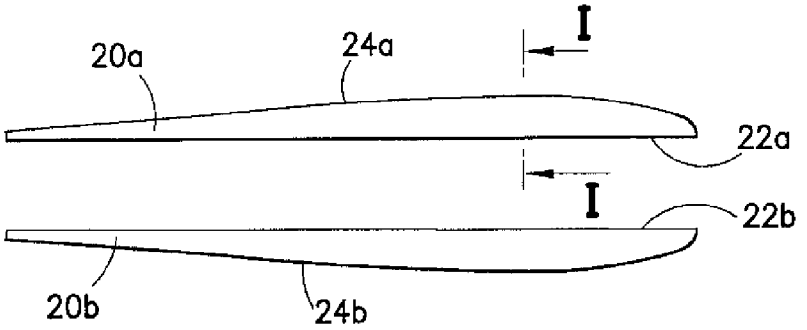


FIG.3B



FIG.3C

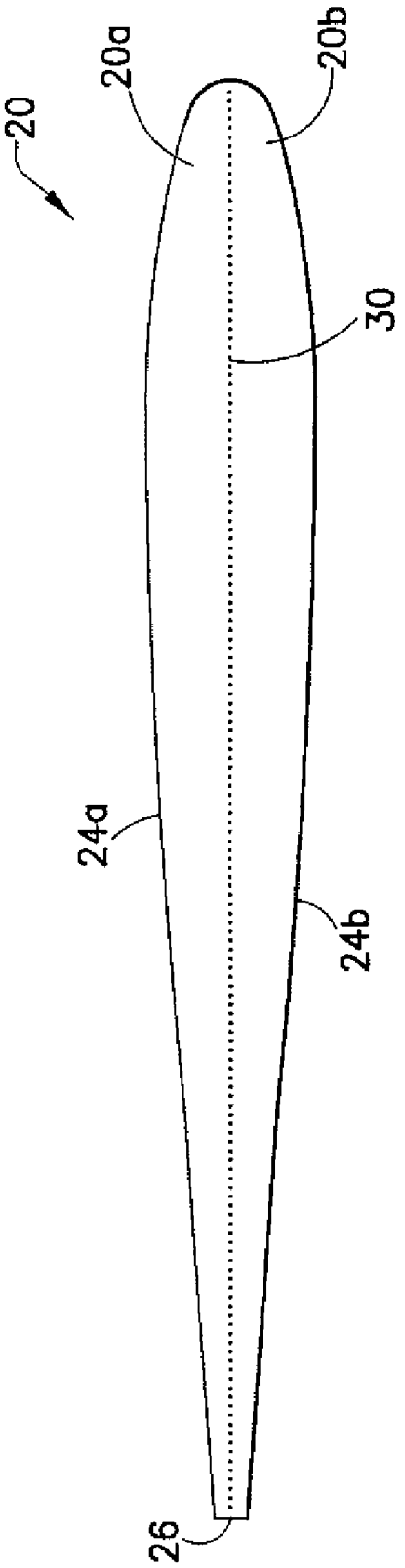


FIG.3D

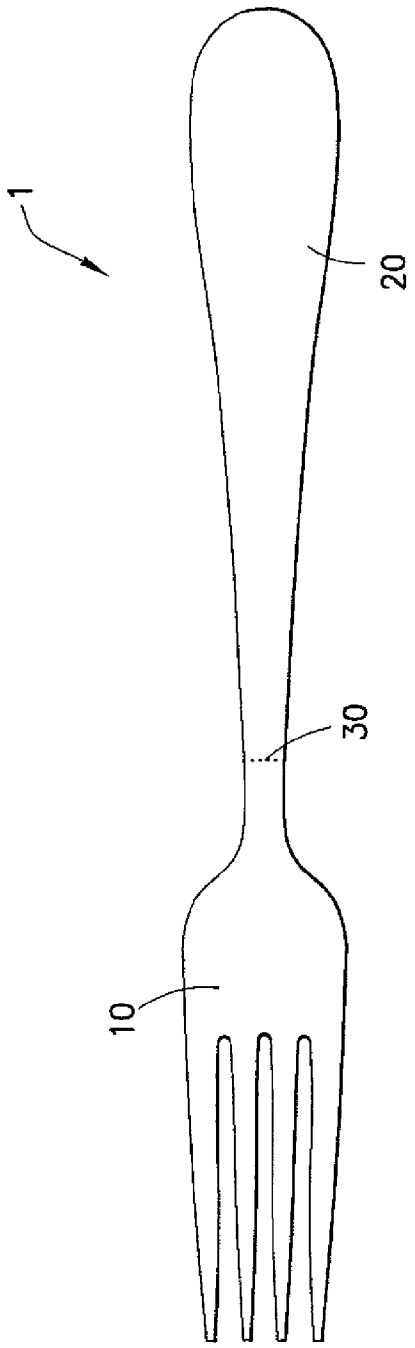


FIG.4A

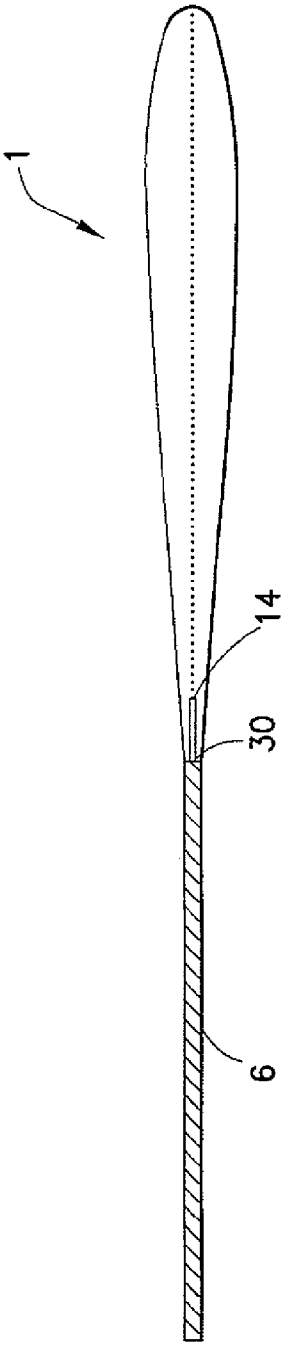


FIG.4B

FIG.5A

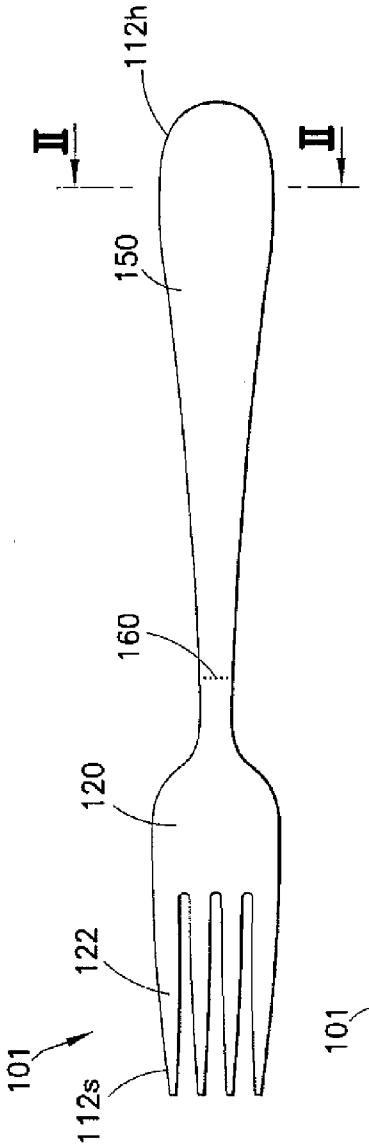


FIG.5B

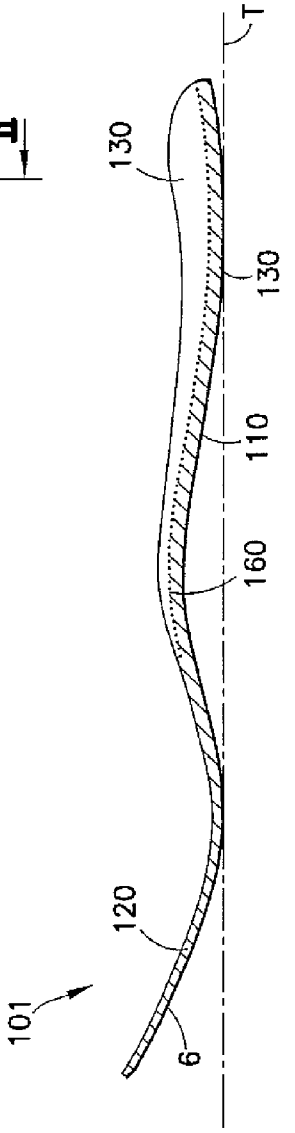
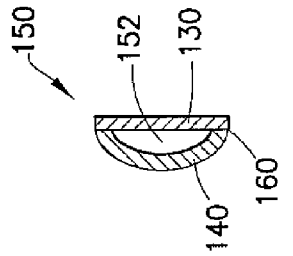


FIG.5C



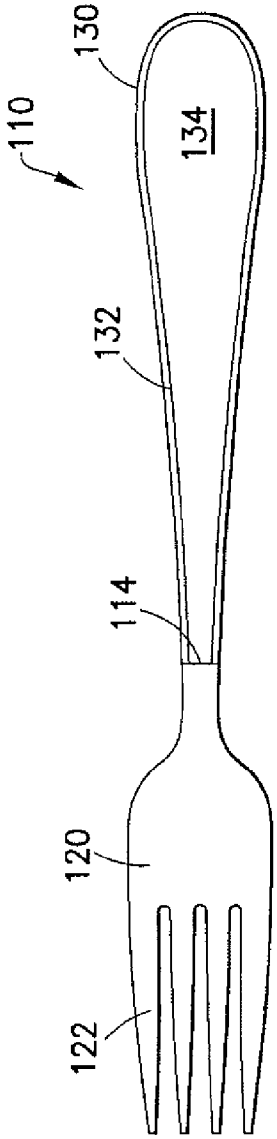


FIG.6A

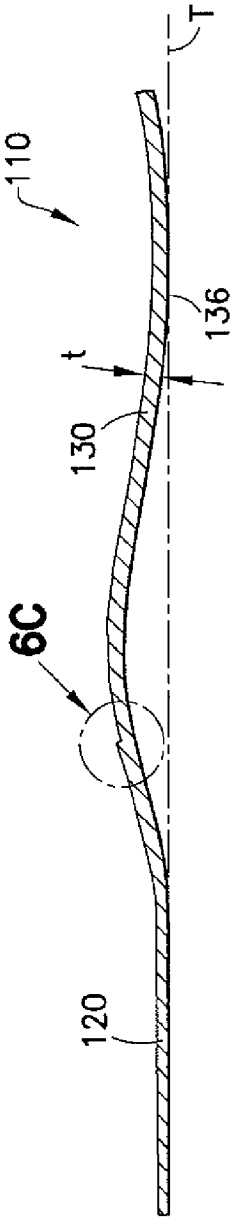


FIG.6B

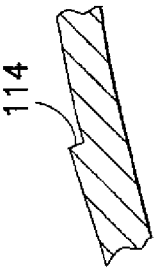


FIG.6C

FIG.7A

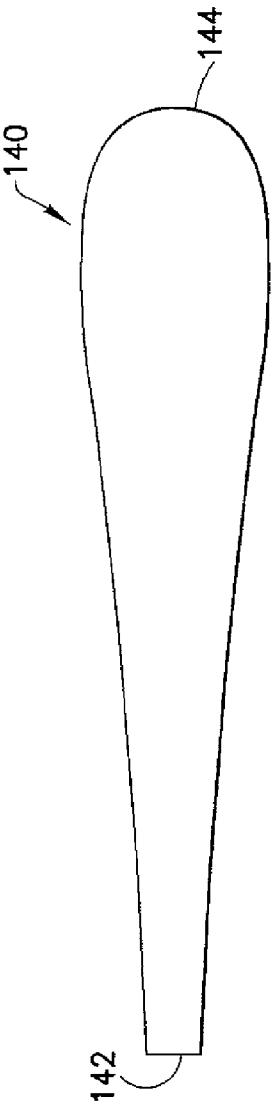


FIG.7B

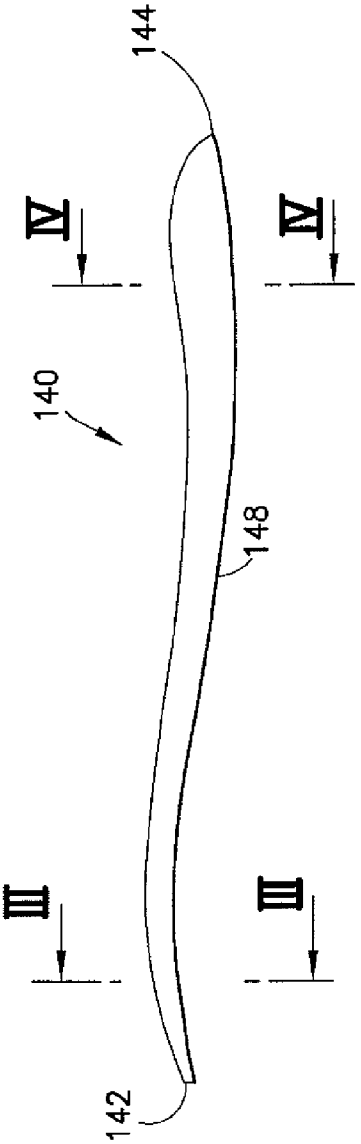


FIG.7D

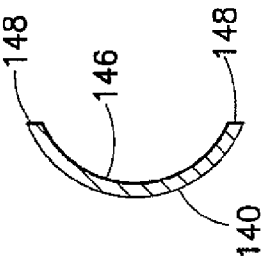
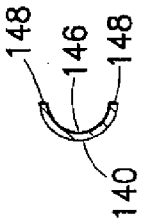


FIG.7C



HOLLOW HANDLE FLATWARE AND METHOD OF MAKING A HOLLOW HANDLE FLATWARE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates generally to flatware and, in particular, to hollow handle metal flatware. Moreover, the invention relates to a method of making hollow handle metal flatware.

[0003] 2. Description of the Related Art

[0004] Various flatwares have been formed with hollow handles, such as to provide an enlarged handle for an ergonomic grip by the user while reducing both the weight of the flatware and the material consumption for making the flatware. As is shown in FIGS. **1**A and **1**B, a conventional flatware **1** is typically formed with a service member **10** and a handle member **20** fixed to each other through a joint **30**. The conventional flatware can be a fork or spoon; a fork being shown as an example in the figures. For the illustrated fork, the service member **10** will include fork tines **12**. The service member **10** includes a connecting end **14** opposite from the fork tines **12** (FIG. **2**A).

[0005] The handle member **20** of the flatware **1** is made of two handle sections **20***a*, **20***b* joined to each other in receiving arrangement with connecting end **14**. The upper and lower handle sections **20***a*, **20***b* have respective connecting edges **22***a*, **22***b* joined to each other in the finished flatware **1**. The respective outside surfaces **24***a*, **24***b* of the upper and lower handle sections **20***a*, **20***b* can be formed in various decorative shapes and/or with various decorative patterns. As FIGS. **3**B and **3**C show, the outside surfaces **24***a*, **24***b* of the handle sections **20***a*, **20***b* can each have a convex shape so as to form a bulged handle member **20** for an ergonomic grip of the flatware **1**.

[0006] The various components of the flatware **1** can be formed by various ways. For example, the service member **10** can be formed by stamping a sheet material, resulting in a substantially flat shape as is shown in the side view of FIG. **2**B.

[0007] The handle member **20** can be formed by joining the two handle sections **20***a*, **20***b* to each other. Each of the handle sections **20***a*, **20***b* have longitudinal shell shapes, as is illustrated by the arch shaped cross-section shown in FIG. **3**C. The flatware is assembled by positioning the longitudinal joining edges **22***a*, **22***b* of each shell shaped handle section **20***a*, **20***b* such that they are opposite each other, receiving connecting end **14** therebetween such that the service member tines **12** extend from an end of the handle sections, and then securing the three pieces together. Welding is typically used for this purpose. FIG. **3**D shows a joint **30**, such as a welding line, connecting the two handle sections **20***a*, **20***b* and the service member. The handle member **20** has a connecting end **26** through which the connecting end **14** on the service member **10** extends, whereupon it is attached at that location.

[0008] In the conventional flatware **1**, the joint **30** between the service member **10** and the handle member **20** often becomes weakened through use and by bending of the flatware. Additionally, manufacture of the conventional flatware **1** is cumbersome because it requires joining three components to each other, with two of the components, namely, the handle section, being aligned properly about the connecting end **14** before welding.

[0009] Accordingly, it is desirable to provide a flatware that can improve the strength at the joint between the handle sections and the service member and that can be easily manufactured.

SUMMARY OF THE INVENTION

[0010] A hollow handle flatware is described having a main body with a service portion and a handle portion which are integrally formed with each other. The main body has a length substantially defining a length of the hollow handle flatware, and the handle portion has an upper surface and a bottom surface. The bottom surface is configured for positioning on a table top. A handle part is formed separately from the main body and permanently fixed to the upper surface of the handle portion of the main body to form a hollow handle. The handle part and the handle portion of the main body enclose a hollow chamber therebetween.

[0011] In one embodiment main body includes a step formed on the upper surface of the main body between the service portion and the handle portion for receiving a front edge of the handle part.

[0012] In another embodiment the handle portion of the main body is configured as a substantially flat contact portion for contacting a tabletop surface when the hollow handle flatware is set on the tabletop surface. The contact portion on the handle portion of the main body extends across a width of the handle portion of the main body.

[0013] A method is also disclosed for making hollow handle flatware. The method includes the steps of providing a main body having a service portion and a handle portion which are integrally formed with each other. The main body has a length substantially defining a length of the hollow handle flatware, and the handle portion has an upper surface and a bottom surface, the bottom surface configured for positioning on a table top. The method includes providing a handle part separately from the main body, and permanently fixing the handle part to the upper surfaced of the handle portion of the main body. The handle part and the handle portion of the main body enclose a hollow chamber therebetween.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. **1**A is a plan view of a conventional flatware;

[0015] FIG. **1**B is a partial side cross-sectional view of the conventional flatware in FIG. **1**A;

[0016] FIG. **2**A is a plan view of the service member of the flatware in FIG. **1**A;

[0017] FIG. **2**B is a side cross-sectional view of the service member shown in FIG. **2**A;

[0018] FIG. **3**A is a plan view of the handle member of the conventional flatware in FIG. **1**A;

[0019] FIG. **3**B is a side view of the sections of the handle member in FIG. **3**A;

[0020] FIG. **3**C show the cross-section of a handle section along line I-I in FIG. **3**B;

[0021] FIG. **3**D is a side view of the handle member shown in FIG. **3**A;

[0022] FIG. **4**A is a plan view of an assembly of service member and handle sections of the conventional flatware shown in FIG. **1**;

[0023] FIG. **4**B is a partial side cross-sectional view of the assembly in FIG. **4**A;

[0024] FIG. **5**A is a plan view of a hollow handle flatware according to one embodiment of the invention;

[0025] FIG. **5**B is a side cross-sectional view of the hollow handle flatware in FIG. **5**A;

[0026] FIG. **5**C shows a cross-section of the flatware taken along line II-II in FIG. **5**A;

[0027] FIG. **6**A is a plan view of a main body of a hollow handle flatware according to one embodiment of the invention;

[0028] FIG. **6**B is a side cross-sectional view of the main body shown in FIG. **6**A;

[0029] FIG. **6**C is a partial enlarged view of the main body shown in FIG. **6**B;

[0030] FIG. **7**A is a plan view of a handle part according to the invention;

[0031] FIG. **7**B is a side view of the handle part shown in FIG. **7**A; and

[0032] FIGS. **7**C and **7**D show different cross-sections of the handle part taken along lines and IV-IV in FIG. **7**B.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0033] Various embodiments of the hollow handle flatware **101** are described below with reference to FIGS. **5**A to **7**D. In the following description of different embodiments, similar components are designated with the same numeral reference and redundant description is omitted.

[0034] FIGS. **5**A and **5**B show an embodiment of a hollow handle flatware **101**. The hollow handle flatware **101** has a main body **110** which, as is further illustrated in FIGS. **6**A and **6**B, includes a service portion **120** and a handle portion **130**. The hollow handle flatware **101** also has a handle part **140** which is permanently fixed to the handle portion **130** of the main body **110** to form a hollow handle **150** of the hollow handle flatware **101**. Although the hollow handle flatware **101** is shown as a fork in the various drawing figures, the invention is not limited to a fork but is applicable to other flatware, such as a knife, spoon or other flatware.

[0035] The service portion **120** of the main body **110** is formed at a service end **112***s* of the main body **110**. The service portion **120** can be in various forms similar to a service member **10** of a conventional flatware **1**. For example, the service portion **120** is provided with fork tines **122** so as to form the hollow handle flatware **101** as a fork. The service portion **120** can also be in various other forms, such as a knife blade or a spoon bowl.

[0036] As FIGS. **6**A and **6**B show, the handle portion **130** of the main body **110** can be formed to have an elongated shape as part of the hollow handle **150**. In the example shown in FIG. **6**A, the handle portion **130** has an edge area **132** formed on the top surface of the handle portion **130** for joining to the handle part **140** by a joint **160**, such as a welding line. The center area **134** on the top surface of the handle portion **130** partially defines the hollow chamber **152** inside the hollow handle **150** after the handle portion **130** joins the handle part **140** to form the hollow handle **150**.

[0037] The handle portion **130** of the main body **110** can be formed to have various configurations. In the example shown in FIG. **6**B, the handle portion **130** of the main body **110** can be bent in a transverse direction of the handle portion **130**. For example, the handle portion **130** can be formed by bending a sheet material in the transverse direction of the handle portion **130**. In one example, the handle portion **130** can have a wavy profile as is shown in the longitudinal cross-sectional view of FIG. **6**B. The handle portion and the service portion are integrally formed from a resilient material, such as stainless steel, by molding or stamping, as is known in the art.

[0038] Additionally or alternatively, the handle portion **130** of the main body **110** can comprise a substantially flat portion **136** on the bottom surface of the handle portion **130**. Such contact portion **136** is adapted to contact a tabletop surface T, after the hollow handle flatware **101** is set on the tabletop surface T, and prevent the hollow handle flatware **101** from shaking when the table is inadvertently bumped. In one example best shown in FIG. **6**B, the contact portion **136** is formed to extend across the width of the handle portion **130** of the main body **110**. In another example, the contact portion **136** smoothly merges into the remaining bottom surface of the handle portion **130** so that the bottom surface of the handle portion **130** has a continuously curved or wavy profile, as is shown in FIG. **6**B.

[0039] As mentioned above, the main body **110** is formed as a single piece, in which the service portion **120** and the handle portion **130** are integrally formed. As an example, the main body **110** can be formed by stamping a continuous sheet material, as will be described in the embodiments below. In the example shown in FIG. **6**B, the main body **110** can have a substantially uniform thickness t. For example, the thickness of the main body **110** can be about 3 mm. In another example, the service portion **120** and the handle portion **130** of the main body **110** can smoothly merge into each other at the bottom surface of the main body **110** and form a continuously curved or wavy profile. One skilled in the art will appreciate that the main body **110** can be formed by various other methods as described in the embodiments below.

[0040] In one example, the main body **110** of the hollow handle flatware **101** is formed with a step **114**, preferably positioned at a dividing line between the service portion **120** and the handle portion **130**. In the example shown in FIG. **6**B, the step **114** is formed on a top surface of the main body **110** and extends down from the service portion **120** to the handle portion **130**. The step **114** is configured to accommodate the front end **142** of the handle part **130**, as is shown in FIG. **5**A. In the example shown in FIG. **6**A, the step **114** extends across the width of the main body **110** in its transverse direction.

[0041] The handle part **140** of the hollow handle flatware **101** can be elongated and extend between a front end **142** and a rear end **144** of the handle part **140**. In one example best shown in FIG. **5**A, the front end **142** of the handle part **140** is configured to conform to the step **114** on the main body **110**. As is described in greater detail below, the bottom surface of the handle part **140** is adapted to be joined to the top surface of the main body **110**, as is shown in FIG. **5**B. The top surface of the handle part **140** forms at least part of the top surface of the hollow handle flatware **101** after the handle part **140** is fixed to the main body **110**.

[0042] The handle part **140** can be formed to have any of various decorative shapes or pattern designs. In the example shown in FIG. **7**A, the handle part **140** has a narrower front end **142** and a widened rear end **144**. The handle part **140** can gradually transit from the narrower front end **142** to a widened rear end **144** along a longitudinal direction of the handle part **140**. In the example shown in FIG. **7**B, the handle part **140** can have a curved or wavy profile in a longitudinal direction of the handle part **140**. For example, the handle part **140** can have wavy top and bottom surfaces in the longitudinal direction of the handle part **140**, as is shown in FIG. **7**B.

[0043] In the embodiment shown in FIGS. **7**C and **7**D, the handle part **140** is formed with one or more concave portions **146**, which are provided to form part of the hollow chamber **152** inside the hollow handle **150** of the hollow handle flatware **101**. The handle part **140** can be in the form of a curved shell with a curved profile in both the longitudinal and transverse directions of the handle part **140**. The undersurface of the curved shell **140** defines a concave portion **146**, which extends between the front and rear ends **142**, **144** of the handle part **140**. As one skilled in the art will appreciate, the concave portion **146** can be formed to have various other shapes.

[0044] Additionally or alternatively, the rim portion **148** of the shell shaped handle part **140** can be configured for joining to the edge area **132** on the top surface of the handle portion **130** of the main body **110** (see FIG. **6**A) by various methods described below to form the hollow handle **150**. In one example, the rim portion **148** of the shell shaped handle part **140** can have a similar profile to that of the edge area **132** on the top surface of the handle portion **130**. When joining the shell shaped handle part **140** to the handle portion **130** of the main body **110**, the rim portion **148** of the shell shaped handle part **140** aligns with and overlaps the edge area **132** on the top surface of the handle portion **130**, resulting in a smooth joint **160** along the side surfaces of the hollow handle **150**, as is best shown in FIG. **5**B.

[0045] In one example, the handle part **140** is formed with a predetermined pattern on the top surface of handle part **140**, so that the predetermined pattern faces upward toward the user when the finished hollow handle flatware **101** is set on a tabletop surface T. During manufacture, various handle parts **140** can be formed with various decorative patterns so that the handle parts **140** can be selectively used to combine with a "standard" or "stock" main body **110** to form a hollow handle flatware **101** with the pattern.

[0046] As is shown in FIGS. **5**A and **5**B, the handle part **140** is permanently fixed to the handle portion **130** of the main body **110** to form a hollow handle **150**. For example, the handle part **140** and the handle portion **130** of the main body **110** can be welded to each other along a joint **160**, as will be described in greater detail below. The joined handle part **140** and handle portion **130** enclose a hollow chamber **152** therebetween. As one skilled in the art will appreciate, the hollow chamber **152** inside the hollow handle **150** can effectively reduce the weight of the flatware **101** and/or the consumption of material used to form the hollow handle flatware **101**.

[0047] The hollow handle flatware **101** is formed of various materials. For example, one or both of the main body **110** and the handle part **140** can be formed of stainless steel. The main body **110** and the handle part **140** can be formed of various other materials, including but not limited to nickel silver, sterling silver, or various other metal materials and various plastic materials. In one example, the main body **110** and the handle part **140** are formed of a same material, which can be advantageous in providing a more reliable joint **160** for the main body **110** and the handle part **140**. In another example, the main body **110** and the handle part **140** can have a silver plated surface to provide an aesthetically appealing finish to the hollow handle flatware **101**.

[0048] As mentioned above, a standard or stock main body **110** can be used to form various hollow-handle flatware patterns by simply attaching various handle portion designs thereto. Thus, dinner forks of various patterns/designs will have the same tine count, shape and fork length, but the pattern will be different as a result of the different attached handle portion **130**. The same will be true for other flatware pieces, such as teaspoons, salad forks, etc. Moreover, the flat portion **130** not only provides stability for the flatware item when placed on a table, but the semi-circular cross-sectional shape, as shown in FIG. **5**C, provides a more comfortable and stable grip so that the flatware has less tendency to rotate about its longitudinal axis when being handled. In addition, the use of a main body **110** as shown in FIGS. **5**A-**7**D provides stability and strength at joint **160**, as compared to the prior art hollow handle flatware depicted in FIGS. **1**A-**4**B.

[0049] The hollow handle flatware **101** is formed by separately forming the main body **110** and the handle part **140** and joining the main body **110** and the handle part **140** as a unitary hollow handle flatware **101**. Embodiments of manufacturing the hollow handle flatware **101** will be described in great details below.

[0050] The main body **110** of the hollow handle flatware **101** can be formed by various methods. In the example best shown in FIGS. **6**A and **6**B, the main body **110** can be formed from a single piece of material. For example, the main body **110** can be fowled by stamping a sheet material, such as a stainless steel sheet, to form the service portion **120** and the handle portion **130**. In one example, the stamping process forms the folk tines **122** or other service member, such as a knife blade, and a spoon bowl, in the service portion **120**. During the stamping process, the handle portion **130** is bent in a transverse direction of the handle portion **130** to form a continuously curved or wavy profile as is shown in FIG. **6**B. In one example, a contact portion **136** is formed on the bottom surface of the handle portion **130**. Additionally or alternatively, a step **114** is stamped on the top surface of the main body **110** between the service portion **120** and the handle portion **130**. As one skilled in the art will appreciate, the main body **110** can be formed by various other methods, including but not limited to forging, swaging, and molding.

[0051] The main body **110** of the hollow handle flatware **101** can be formed in various shapes. In the example shown in FIG. **6**B, the handle portion **130** of the main body **110** can have a curved or wavy profile in a longitudinal direction. Additionally or alternatively, the handle portion **130** can have a linear profile in a transverse direction, as is best illustrated by the cross-section of the hollow handle **150** in FIG. **6**B. In one example, part of the linear portion can constitute a contact portion **136** on the bottom surface of the handle portion **130**, so as to provide stability to the hollow handle flatware **101** after it is set on a tabletop surface T.

[0052] The handle part **140** of the hollow handle flatware **101** can be formed by various methods. For example, the handle part **140** can be formed by stamping a sheet material, such as a stainless steel sheet. One skilled in the art will appreciate that the handle part **140** can be fowled by various other methods, including but not limited to forging, swaging, and molding.

[0053] The handle part **140** of the hollow handle flatware **101** can be formed to have various shapes. For example, the handle part **140** can be formed with a concave portion **146**, which forms part of the hollow chamber **152** inside the hollow handle **150** of the hollow handle flatware **101**. In one example, the concave portion **146** can continuously extend between the front end **142** and the rear end **144** of the handle part **140**. Additionally or alternatively, the top surface of the handle part **140** can be formed with a predetermined pattern to enhance the aesthetic appearance of the hollow handle flat-

ware **101**. In one example, the top surface of the handle part **140** has a continuously curved or wavy profile, as is shown in FIGS. **7**B to **7**D.

[0054] The separately formed main body **110** and handle part **140** can be permanently joined to each other to form a hollow handle flatware **101** by various known methods. It is preferred that the handle part **140** is welded onto the main body **110** and join the main body **110** to form a unitary piece. In one example, a joint **160** connects the rim portion **148** of the handle part **140** to the edge area **132** on the top surface of the handle portion **130** of the main body **110**. Additionally or alternatively, the joint **160** can extend between and join the front end **142** of the handle part **130** and the stepped portion **114**, as is shown in FIG. **5**A. In one embodiment, the joint **160** is formed to seal between the connecting parts to prevent moisture or dust from entering the hollow chamber **152** inside the hollow handle **150** during normal use and washing of the hollow handle flatware **101**. As one skilled in the art will appreciate, various other known methods can be used to join the main body **110** and the handle part **140** and form a unitary piece of hollow handle flatware **101**.

[0055] One or more finishing process steps can be carried out to enhance the appearance of the hollow handle flatware **101**. In one example, the hollow handle flatware **101** can be subjected to a trimming process to remove burs or bumps, which can result from joining the main body **110** and the handle part **140**. Additionally or alternatively polishing can be performed and/or a plating process, such as silver plating, can be carried out to provide an enhanced surface finishing for the hollow handle flatware **101**. The plating process can be carried out either before or after joining the main body **110** and the handle part **140** to form the hollow handle flatware **101**.

[0056] Thus, while there have shown and described and pointed out fundamental novel features of the invention as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices illustrated, and in their operation, may be made by those skilled in the art without departing from the spirit of the invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the same results are within the scope of the invention. Moreover, it should be recognized that structures and/or elements and/or method steps shown and/or described in connection with any disclosed form or embodiment of the invention may be incorporated in any other disclosed or described or suggested form or embodiment as a general matter of design choice. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

What is claimed is:

1. A hollow handle flatware comprising:

a main body having a service portion and a handle portion which are integrally formed with each other, the main body having a length substantially defining a length of the hollow handle flatware, the handle portion having an upper surface and a bottom surface, the bottom surface configured for positioning on a table top; and

a handle part formed separately from the main body and permanently fixed to the upper surface of the handle portion of the main body to form a hollow handle;

wherein the handle part and the handle portion of the main body enclose a hollow chamber therebetween.

2. The hollow handle flatware of claim **1**, wherein the handle part is permanently fixed to the handle portion by welding.

3. The hollow handle flatware of claim **1**, wherein the main body comprises a step formed on the upper surface of the main body between the service portion and the handle portion for receiving a front edge of the handle part.

4. The hollow handle flatware of claim **3**, wherein the step extends across a transverse direction of the hollow handle flatware.

5. The hollow handle flatware of claim **1**, wherein the service portion of the main body smoothly transits into the bottom surface of the hollow handle flatware.

6. The hollow handle flatware of claim **1**, wherein the handle portion of the main body forms at least part of a bottom surface of the hollow handle flatware.

7. The hollow handle flatware of claim **1**, wherein the handle portion of the main body comprises a substantially flat contact portion for contacting a tabletop surface when the hollow handle flatware is set on the tabletop surface, and wherein the contact portion on the handle portion of the main body extends across a width of the handle portion of the main body.

8. The hollow handle flatware of claim **1**, wherein the main body and the handle part are each formed of a sheet material.

9. The hollow handle flatware of claim **1**, wherein the main body and the handle part are formed of a same material.

10. A method of making a hollow handle flatware, the method comprising:

providing a main body having a service portion and a handle portion which are integrally formed with each other, the main body having a length substantially defining a length of the hollow handle flatware, the handle portion having an upper surface and a bottom surface, the bottom surface configured for positioning on a table top;

providing a handle part separately from the main body; and

permanently fixing the handle part to the upper surfaced of the handle portion of the main body;

wherein the handle part and the handle portion of the main body enclose a hollow chamber therebetween.

11. The method of claim **10**, wherein the step of providing a main body comprises stamping a sheet material to form the main body.

12. The method of claim **10**, wherein the step of providing a main body comprises forming a contact portion on a bottom surface of the main body, the contact portion extending across a width of the main body.

13. The method of claim **10**, wherein the step of providing a main body comprises forming a step on the top surface of the main body and between the service portion and the handle portion for receiving a front edge of the handle part.

14. The method of claim **13**, wherein the step of providing a handle part comprises forming a front end of the handle part to conform with the step.

15. The method of claim **10**, wherein the step of providing a handle part comprises forming a predetermined pattern on the handle part by at least one of stamping, forging, swaging, and molding.

16. The method of claim **10**, wherein the step of fixing comprises welding.

17. The method of claim **10**, wherein the main body and the handle part are formed of a same material.

18. The method of claim **10**, further comprising plating both the main body and the handle part to provide a finished surface for the hollow handle flatware.

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