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(54) **A CONSTRUCTABLE UTENSIL**

(57) A constructible utensil (1) has a handle (2) and a head (3) of biodegradable wood material. The handle has a slot (17) at its distal end forming a pair of jaws (15, 16) with converge towards a mouth at the distal end of the handle. The head (3) has a slot (34) at its proximal end forming a pair of jaws (32, 33) and these also converge in a similar manner. The handle is planar and has a central through hole (20), and the head has a planar part with a central through hole (35). The user grasps the handle and the head by different hands, mutually rotates the handle and the head about their longitudinal axes, pushes the handle and the head together with the jaws of each engaging opposed surfaces of the other and continues this action until the jaws snap fit in the holes (20, 35) of the other part. The assembled utensil is robust due to the strength of engagement of the handle and the head and that it extends in mutually perpendicular directions.

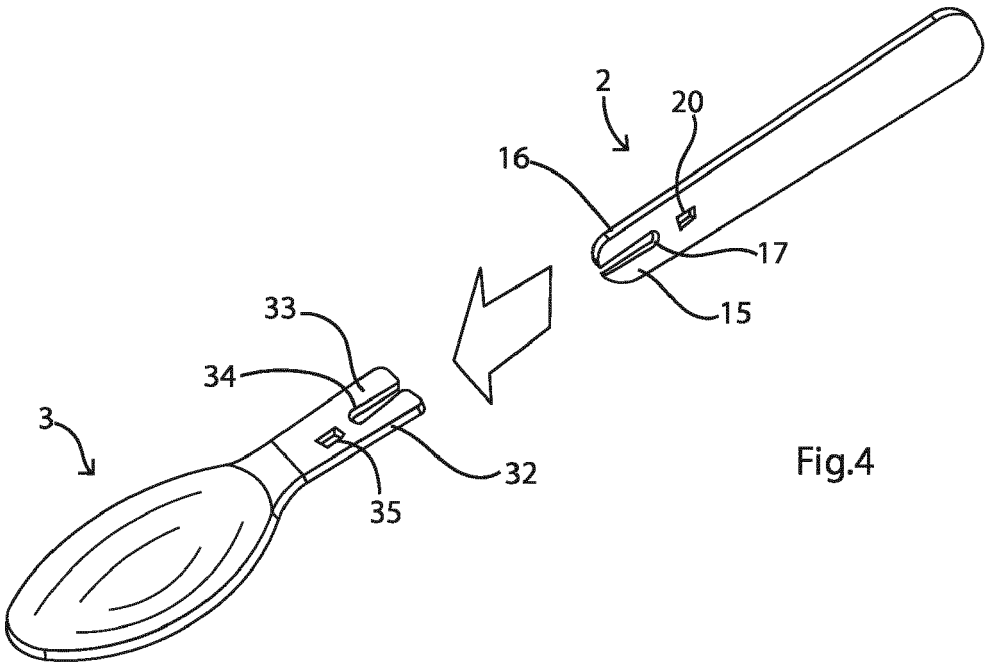

Fig.4

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Description

Introduction

[0001] The present invention relates to utensils which are provided as part of food products to allow convenient consumption of the food.

[0002] It is known to provide such utensils of fibre-based materials such as wood, card, paper or moulded fibre, which are therefore biodegradable, renewable and do not contribute to plastics waste. An example is described in US1521768 (Herrmann). In this example a spoon is provided as a paper blank with fold lines to allow mutual rotation of sides to convert the blank from two dimensions to three dimensions with additional strength and conforming to the shape of a spoon bowl. Other examples of approaches are described in US9869575 (Ecotensil) and US3931925 (R. Stanley), and GB2281689

[0003] The present invention is directed towards providing an improved utensil in terms of its manner of packaging with the food product and also in its utility as a spoon, spork or fork.

Summary of the Invention

[0004] The invention provides a constructible utensil comprising a handle part and a head part of biodegradable material, said parts being configured to engage each other to form a utensil, wherein:

the handle part comprises a slot at its distal end forming a pair of jaws,
the head part comprises a slot at its proximal end forming a pair of jaws, and
said handle part and head part jaws are configured to engage the other part when the parts are pushed together at a mutual angle with the proximal end of the head part being received in the slot of the handle part and the distal end (14) of the handle part being received in the slot of the head part.

[0005] Preferably, at least one pair of jaws have inner edges which converge towards a mouth, and at least one part comprises a recess for snap-fitting engagement with the jaws of the other part.

[0006] Preferably, both of the parts comprise said recess. Preferably, the recess of the handle part is proximal of the handle part slot, and the recess of the head part is distal of the head part slot.

[0007] Preferably, the recess of at least one part is aligned in the longitudinal direction with the slot of the same part. Preferably, at least one of the recesses comprises a through hole. Preferably, the slot of at least one part converges with a taper to narrow towards the mouth of the slot. Preferably, the handle part is planar. Preferably, a proximal end of the head part is planar.

[0008] Preferably, side edges of the handle part converge distally to form a taper shape. Preferably, thickness of material in each part does not exceed 2mm, and optionally thickness of material in each part does not exceed 1mm. Preferably, the parts comprise wood material. In various examples, the utensil is selected from a spoon, a fork, and a spork.

[0009] We also describe a convenience food product comprising a food container and a utensil of any example described herein with the parts separate and one part overlying the other.

[0010] Preferably, the utensil is stored in a recess in a base of the container, or in an over-lid cavity.

[0011] We also describe a method of assembling/constructing a utensil of any example described herein, the method comprising grasping the parts by different hands, mutually rotating them about their longitudinal axes, pushing the parts together with the jaws of each part engaging opposed surfaces of the other part and continuing this action until the jaws snap fit in the recess or recesses.

[0012] We also describe a constructible utensil comprising a handle part and a head part of biodegradable material, the handle part having a slot at its distal end forming a pair of jaws, and the head part having a slot at its proximal end forming a pair of jaws, and said jaws are configured to engage the other part when the handle and the head parts are pushed together at a mutual angle with the proximal end of the head part being received in the slot of the handle part and the distal end of the handle part being received in the slot of the head part.

[0013] Preferably, at least one pair of jaws have inner edges which converge towards a mouth.

[0014] Preferably, at least one part comprises a recess for snap-fitting engagement with the jaws of the other part. Preferably, both of the parts comprise said recess.

[0015] Preferably, the recess of the handle part is proximal of the handle slot, and the recess of the head part is distal of the slot. Preferably, the recess of at least one part is aligned in the longitudinal direction with the slot of the same part. Preferably, the recess comprises a through hole.

[0016] Preferably, the handle part is planar. Preferably, a proximal end of the head part is planar.

[0017] Preferably, the side edges of the handle part converge distally to form a taper shape. Preferably, the thickness of material in each part does not exceed 2mm. Preferably, the thickness of material in each part does not exceed 1mm.

[0018] Preferably, the parts are of wood material, but could be card, paper or moulded fibre. The utensil may be a spoon, a fork, or a spork.

[0019] We also describe a convenience food product comprising a food container and a utensil of any example described herein with the parts separate and one part overlying the other. The utensil may be stored in a recess in a base of the container.

[0020] We also describe a method of assembling a utensil of any example, the method comprising grasping the parts by different hands, mutually rotating them about

their longitudinal axes, pushing the parts together with the jaws of each part engaging opposed surfaces of the other part and continuing this action until the jaws snap fit in the recess or recesses.

[0021] In various examples, a constructible utensil has a handle and a head of biodegradable wood or other biodegradable material. In one example other than the distal end of the head the utensil is of planar configuration. The handle has a slot at its distal end forming a pair of jaws with converge towards a mouth at the distal end of the handle. The head similarly has a corresponding slot at its proximal end forming a pair of jaws and these also converge in a similar manner. The handle is planar and has a central through hole, and the head has a planar part with a central through hole. The user grasps the handle and the head by different hands, mutually rotates the handle and the head about their longitudinal axes, pushes the handle and the head together with the jaws of each engaging opposed surfaces of the other and continues this action until the jaws snap fit in the holes of the other part. The assembled utensil is robust due to the strength of engagement of the handle and the head and due to the fact that they are of wood and the shape and size of the slot and jaws.

Detailed Description of the Invention

[0022] The invention will be more clearly understood from the following description of some embodiments thereof, given by way of example only with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a constructible spoon when wrapped for a food product container, and Fig. 2 is a similar view of a constructible fork;

Fig. 3 is a perspective view of the spoon with the two parts separated, showing features of the spoon parts in detail;

Fig. 4 is a perspective view showing the two parts being brought together, and Fig. 5 shown them when together as a constructed spoon ready for use; and

Figs. 6, 7, and 8 are views similar to Figs. 3, 4, and 5 of the fork.

[0023] Referring to Fig. 1 a constructible utensil is in this example a spoon 1, having a handle part ("handle") 2 and a spoon head part ("head") 3. When packaged on a substrate 5 the handle 2 overlies the head 3 in a compact arrangement with a low profile. This is helped by the fact that the handle and the proximal end of the head are planar, and with the handle overlying the concave spoon surface the packaged height is only about 7.5 mm in this example. In general, it is preferred that the packaged thickness does not exceed 10mm, and it is preferred that the thickness of the material in each part does not exceed 2mm, preferably less than 1mm.

[0024] The overall dimensions of the parts 2 and 3 are in this example: the spoon head 3 is c. 66 mm in length and the handle is c. 60 mm in length. In another example these dimensions are 67.5 mm and 65.5mm, respectively. The lengths can be as desired and as space allows.

[0025] Fig. 2 shows an alternative constructible utensil, in this case a fork 100 packaged into a substrate 105. This has the handle 2 and a fork head 103 having an overall configuration which differs from the spoon 1 only at the distal end of the head.

[0026] Both utensils are entirely of wood material, in this case birch wood. In other examples the material may be different, such as bamboo, card, paper, or moulded fibre. Hence, they are completely biodegradable. As is explained in more detail below they have the major benefits of being compact when packaged because they are in two parts overlying each other with a low profile, and being long enough for convenient use when constructed, and also being strong because they are of wood material and the manner of inter-engagement of the handle and head, as described in more detail below.

[0027] A utensil of the invention may be of any type, including a knife or chopstick for example.

[0028] Referring to Figs. 3 to 5 the spoon 1 is described in more detail. The handle 2 is of planar wood configuration, having a planar body 10 with a proximal end 13 and a distal end 14 and the longitudinal direction is defined as that extending between the proximal and distal ends. The proximal end 13 end has a convex curved edge. Side edges 11 and 12 of the handle converge with a narrowing taper towards the distal end 14. The latter has a cut-out slot 17 extending in the longitudinal direction so that the planar body 10 forms a pair of jaws 15 and 16. Due to the shape of the slot 17 these jaws converge distally to form a narrow mouth of the slot 17. The handle 2 also has a central through-hole 20 proximally of the jaws 15 and 16 and on the longitudinal axis, aligned with the slot 17.

[0029] The spoon head 3 has a proximal portion 30 which is planar, having the same thickness as the handle 2. Its proximal end 30 has a cut-out slot 34 forming opposed jaws 32 and 33, which converge proximally with a similar taper angle as the jaws 15 and 16 of the handle. The slot 34 has the same dimensions as the slot 17 of the handle. The head proximal portion 30 also has a through-hole 35 which is distal from the jaws 32 and 33 and spaced from them on the longitudinal axis of the head 3 by the same extent as the hole 20 is from the jaws 15 and 16 of the handle. The distal end 31 of the head 3 is of conventional spoon shape having a concave portion 40.

[0030] Fig. 4 shows that, in use after removal from the packaging substrate 5, the handle and the head are orientated at a mutual angle of 90° about the longitudinal axes and pushed together so that the slots 17 and 34 engage each other. This pushing action is continued against the friction resistance of the ends of the jaws

15/16 and 32/33 rubbing against the planar surfaces of the other part. This resistance continues until the leading ends of the jaws snap-fit into the hole 20/35 of the other part. This informs the user that the parts 2 and 3 have fully engaged. In this position the inner edges of the jaws engage the planar surfaces of the opposed part, and this together with the snap-fitting engagements provides sufficient strength of engagement for the two parts to form a unitary spoon suitable for use with the food of the package. As is clear from Fig. 5 there is a considerable degree of overlap and the 90° mutual angle helps to provide anti-bending strength in use.

[0031] Referring to Figs. 6, 7, and 8 the fork 100 parts 2 and 103 are similar to the parts 2 and 3, except for the fork head 104 of the head part 103. Like parts are given the same reference numerals, and assembly of the fork 100 is the same as that of the spoon 1.

[0032] It will be appreciated that the utensil of the invention may take any suitable form, the distal end of the head being shaped as desired to suit the use.

[0033] A utensil of the invention is compact when packaged, can be easily assembled, and has excellent strength due to the manner of engagement of the parts. It is particularly preferred that the material is of wood due to its biodegradable nature and strength and suitability for snap-fitting engagement as described. The overall length of the assembled utensil is nearly double that of the parts. Importantly, the jaws and the cut-out slots give the utensil particular strength whereby the handle remains firmly attached to the head while in use. The two corresponding slots also ensure strong vertical and horizontal strength

[0034] The invention is not limited to the embodiments described but may be varied in construction and detail as would be readily understood by a person of ordinary skill in the art. For example, the distal ends of the jaws may have features which extend laterally more prominently for snap-fitting into the aperture of the other part. For example, the jaws may have protruding spigots for snap-fitting engagement with the recess or through hole of the other part. However, it is particularly preferred that the slots (as shown for the slots 17, 24) narrow gradually towards their mouths because this gives a large extent of surface contact for firm inter-engagement.

[0035] Also, at least one part may have material which extends beyond the end of the mouth of the slot, possibly to provide additional stability.

[0036] The recesses which are engaged by the jaws may be blind recesses instead of through holes. However, through holes are preferred because they provide maximum extent of jaw snap-fitting movement and are easier to manufacture. The jaws of any one pair may be of different length so that they engage the other part at different longitudinal positions. Other variations are material and overall length shape of the cutlery item. For example, the material may comprise any one or more of wood, card, paper or in some cases recyclable or biodegradable plastics. The composition may be fibre moulded pulp made from wood or bagasse.

Claims

1. A constructible utensil (1) comprising a handle part and a head part of biodegradable material, said parts being configured to engage each other to form a utensil, **characterized in that**,

   the handle part comprises a slot (17) at its distal end forming a pair of jaws (15, 16),
   the head part (3) comprises a slot (34) at its proximal end forming a pair of jaws (32, 33), said handle part and head part jaws are configured to engage the other part when the parts are pushed together at a mutual angle with the proximal end (30) of the head part being received in the slot (17) of the handle part and the distal end (14) of the handle part being received in the slot (34) of the head part (3),
   at least one pair of jaws (17, 34) have inner edges which converge towards a mouth, and at least one part comprises a recess (20, 35) for snap-fitting engagement with the jaws of the other part.

2. A utensil as claimed in claim 1, wherein both of the parts comprise said recess.

3. A utensil as claimed in either of claims 1 or 2, wherein the recess (20) of the handle part is proximal of the handle part slot (17), and the recess (35) of the head part is distal of the head part slot (34).

4. A utensil as claimed in any preceding claim, wherein the recess (20, 35) of at least one part is aligned in the longitudinal direction with the slot (17, 34) of the same part.

5. A utensil as claimed in any preceding claim, wherein at least one of the recesses comprises a through hole (20, 35).

6. A utensil of any preceding claim, wherein the slot of at least one part converges with a taper to narrow towards the mouth of the slot.

7. A utensil as claimed in any preceding claim, wherein the handle part is planar (10).

8. A utensil as claimed in any preceding claim, wherein a proximal end (30) of the head part is planar.

9. A utensil as claimed in any preceding claim, wherein side edges (11, 12) of the handle part converge distally to form a taper shape.

10. A utensil as claimed in any preceding claim, wherein thickness of material in each part does not exceed 2mm, and optionally thickness of material in each part does not exceed 1mm.

11. A utensil as claimed in any preceding claim, wherein the parts comprise wood material.

12. A utensil as claimed in any preceding claim, wherein the utensil is selected from a spoon, a fork, and a spork.

13. A convenience food product comprising a food container and a utensil of any preceding claim with the parts separate and one part overlying the other.

14. A product as claimed in claim 13, wherein the utensil is stored in a recess in a base of the container, or in an over-lid cavity.

15. A method of assembling a utensil of any of claims 1 to 12, the method comprising grasping the parts by different hands, mutually rotating them about their longitudinal axes, pushing the parts (2, 3) together with the jaws (15/16, 32/33) of each part engaging opposed surfaces of the other part and continuing this action until the jaws snap fit in the recess (20, 35) or recesses.

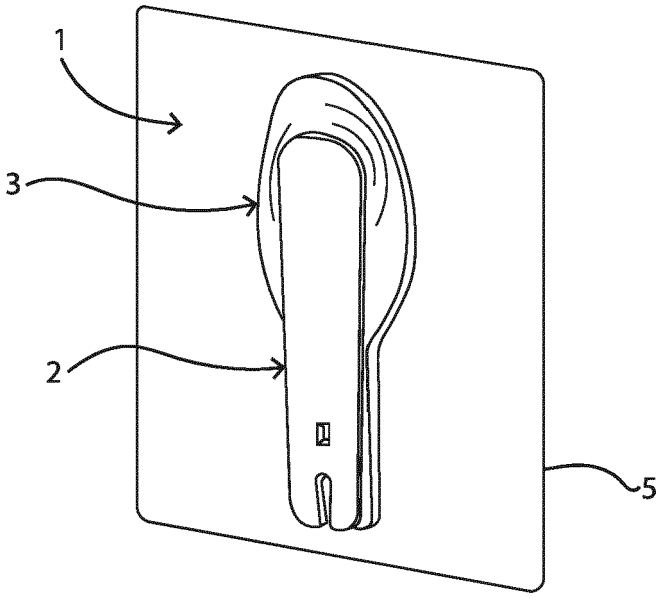

Fig.1

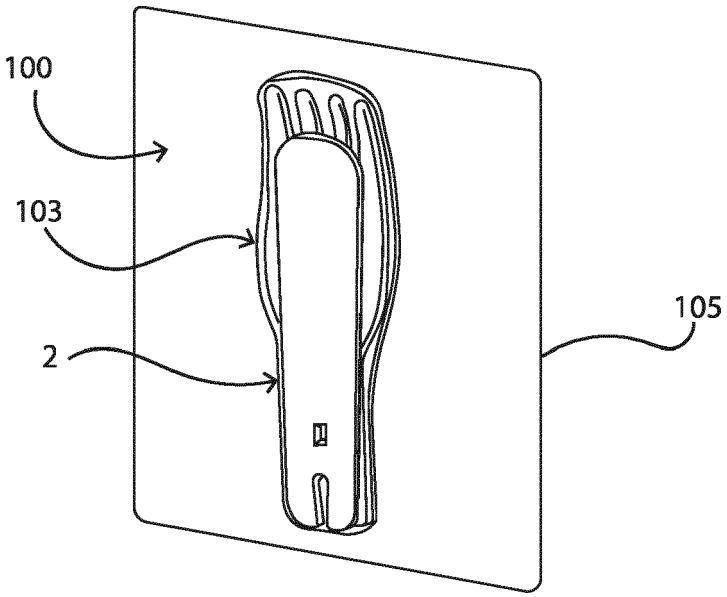

Fig.2

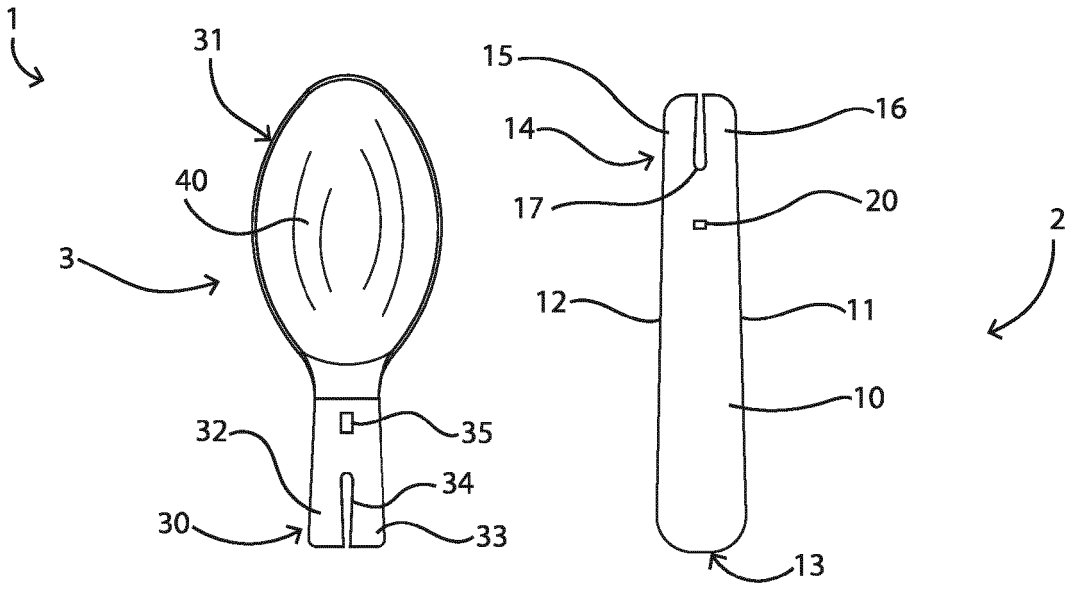

Fig.3

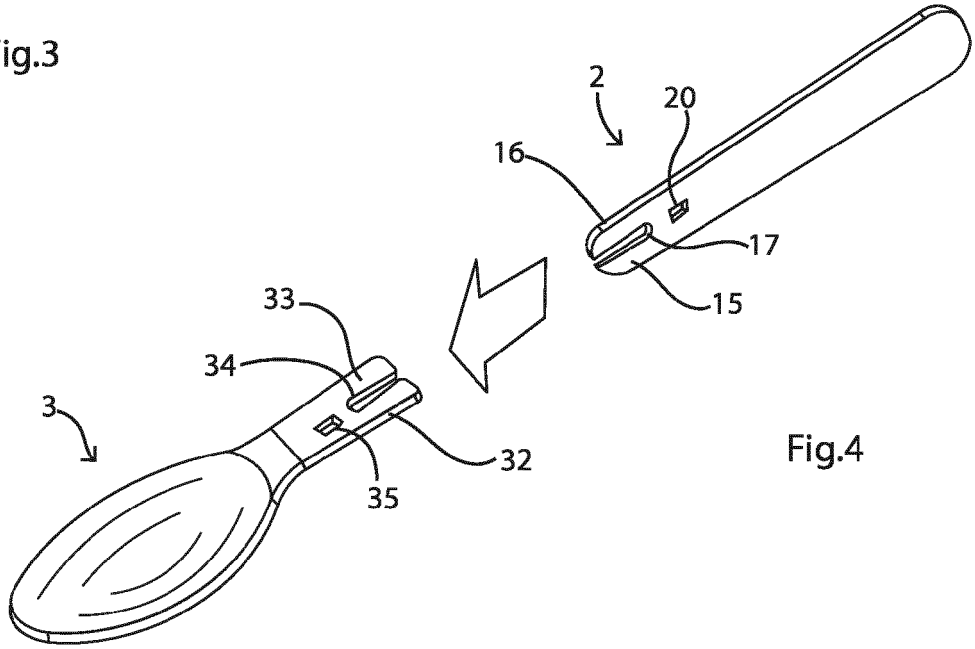

Fig.4

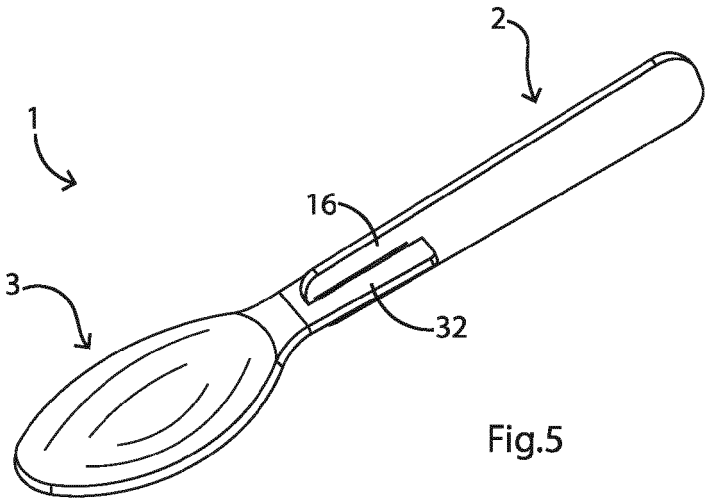

Fig.5

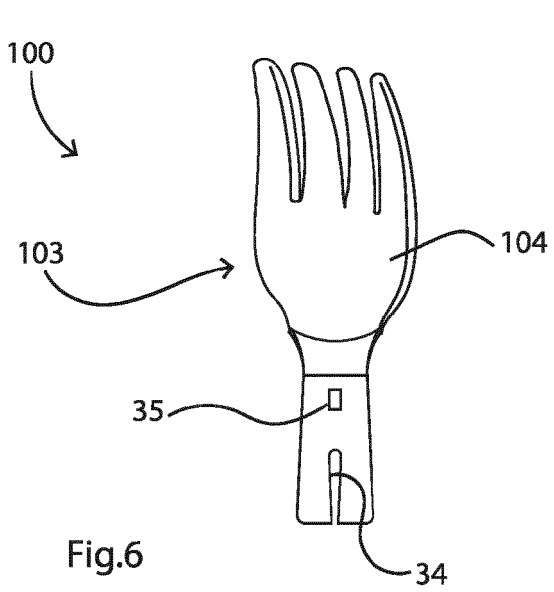

Fig.6

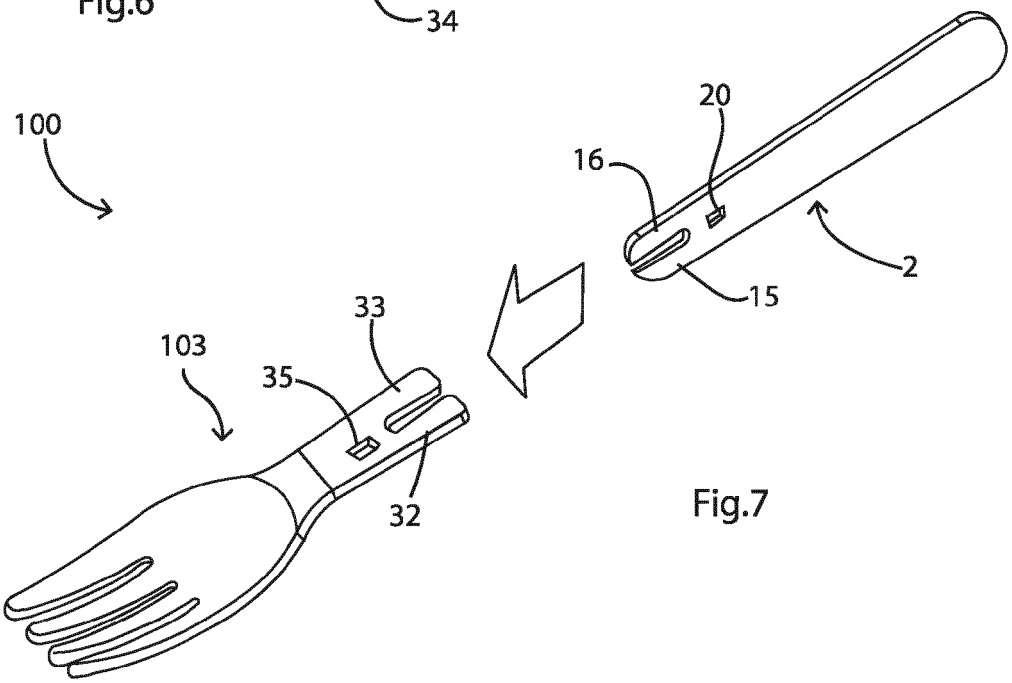

Fig.7

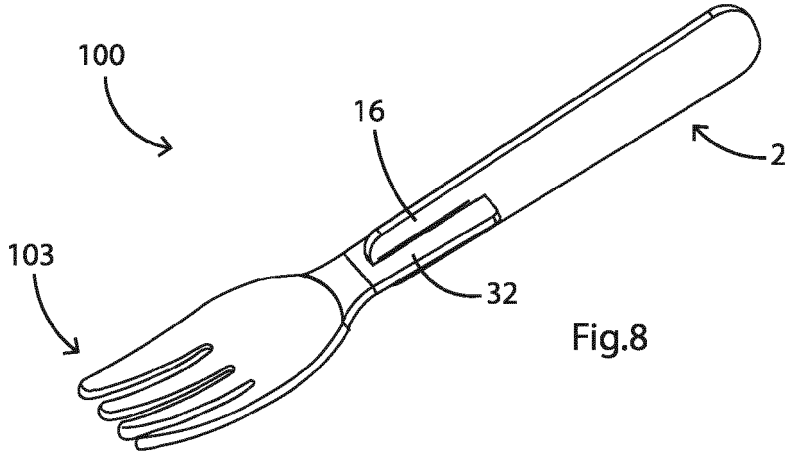

Fig.8

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EUROPEAN SEARCH REPORT

Application Number
EP 22 16 8258

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

A47G
B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 August 2022	Vistisen, Lars

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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