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(54) **FOLDABLE EATING UTENSIL**

(57) A foldable eating utensil (100) includes a cutlery head (10), a first rod (20), and a second rod (30) that are sequentially connected. A bottom portion of the second rod (30) has a restricting portion (X). When the second rod (30), the first rod (20), and the cutlery head (10) are folded, the cutlery head (10) is restricted by the restricting portion (X) of the second rod (30). With such design, the foldable eating utensil (100) could be retained in a compacted state after folding, so that the folded part could not hinder the work of automatic machine. Therefore, the foldable eating utensil (100) of the present invention is suitable for automated packaging.

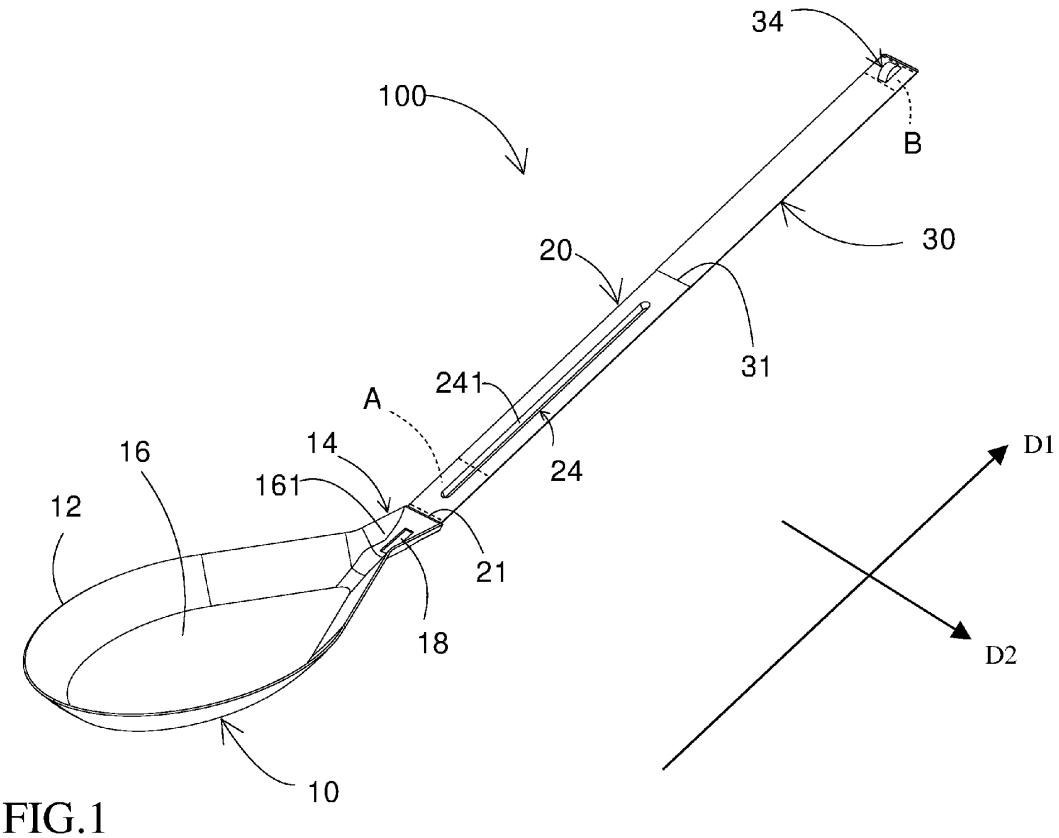

FIG.1

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Description

BACKGROUND

Technical Field

[0001] The present invention relates generally to a foldable utensil, and more particularly to a foldable eating utensil.

Description of Related Art

[0002] A conventional beverage lid with cutlery is disclosed in Taiwan patent application No. 084211279 "Structure of Lid with Spoon", wherein an annular wall formed by protruding away from a circumference of a bottom plate of the lid, and positioning pistons, engaging plates, and hooking plates are disposed on and between the bottom plate of the lid and the annular wall. The positioning pistons, the engaging plates, and the hooking plates are adapted to be engaged with the folded spoon. The user could simply take out the folded spoon by poking folded spoon on the lid.

[0003] The folded spoon is folded manually. The spoon is manually folded, and then locking the folded spoon by the positioning pistons, engaging plates, and the hooking plates of the lid. The conventional foldable spoon is difficult to be automatically folded by a machine, because during a process of folding each part of the foldable spoon, the folded parts may return back to hinder the operation of the automated folding process, even stuck the operation of the automatic machine. Additionally, during the process of folding the spoon and engaging the folded spoon with the lid manually, the foldable spoon is probably polluted, thereby leading to sanitary problems.

SUMMARY OF THE INVENTION

[0004] In view of the above, the primary objective of the present invention is to provide a foldable eating utensil, the restricting portion could retain different parts of the foldable eating utensil in a folded position, so that the foldable eating utensil becomes suitable for being automatically folded by an automated machine instead of manual folding, thereby saving the manpower and avoiding the sanitary issue of packing.

[0005] The present inventive subject matter provides a foldable eating utensil including a cutlery head, a first rod, and a second rod, which are sequentially connected in a first direction, which is defined as a direction from a front end to a rear end of the foldable eating utensil. The he cutlery head includes a functional portion and a neck, wherein the neck extends in the first direction from the functional portion. A front end of the first rod is foldably connected to a rear end of the neck; a front end of the second rod is foldably connected to a rear end of the first rod. A bottom portion of the second rod has a restricting portion; after the first rod and the second rod are folded, the cutlery head is then folded to the first rod and the second rod that are folded, and the cutlery head could be restricted by the restricting portion of the second rod, thereby the foldable eating utensil is retained in a compacted state.

[0006] With such design, when the second rod and the first rod are folded, the second rod is restricted by the restricting portion at the folded position. After that, during a process of folding the cutlery head toward the second rod and the first rod that are compacted, the second rod is not going to hinder or stuck the folding process because the second rod is not disengaged from the restricting portion of the first rod. Thus, the foldable eating utensil is suitable for automatically folding and mounting into the lid. Compared to the traditional foldable spoon that needs for folding manually, the foldable eating utensil of the present invention could avoid sanitary issues due to manual folding.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The present invention will be best understood by referring to the following detailed description of some illustrative embodiments in conjunction with the accompanying drawings, in which

FIG. 1 is a perspective view of the foldable eating utensil of a first embodiment according to the present invention;
FIG. 2 is a top view of the foldable eating utensil of the first embodiment according to the present invention;
FIG. 3 is a sectional view taken along the 3-3 line in FIG. 2;
FIG. 4 is a sectional view taken along the 4-4 line in FIG. 2;
FIG. 5 is a sectional view taken along the 5-5 line in FIG. 2;
FIG. 6 is a right side view of the foldable eating utensil of the first embodiment according to the present invention;
FIG. 7 is a schematic view, showing the second rod of the foldable eating utensil of the first embodiment is going to be folded;
FIG. 8 is a schematic view, showing the second rod of the foldable eating utensil of the first embodiment is folded to be aligned with the first rod;
FIG. 9 is a schematic view, showing the foldable eating utensil of the first embodiment is completely folded;
FIG. 10 is a perspective view of the foldable eating utensil of a second embodiment according to the present invention;
FIG. 11 is a perspective view of the foldable eating utensil of a third embodiment according to the present invention;
FIG. 12 is a right side view of the foldable eating utensil of the third embodiment according to the

present invention;

FIG. 13 is a perspective view of the foldable eating utensil of a fourth embodiment according to the present invention;

FIG. 14 is a perspective view of the foldable eating utensil of a fifth embodiment according to the present invention;

FIG. 15 is an enlarged partial view of a marked region 15 in FIG. 14;

FIG. 16 is a perspective view of the foldable eating utensil of a sixth embodiment according to the present invention;

FIG. 17 is a top view of the foldable eating utensil of the sixth embodiment according to the present invention;

FIG. 18 is a sectional view taken along the 18A-18A line in FIG. 17; and

FIG. 19 is a perspective view of the foldable eating utensil of the sixth embodiment, wherein the first rod and the second rod are folded.

DETAILED DESCRIPTION OF THE INVENTION

[0008] As illustrated in FIG. 1 to FIG. 7, a foldable eating utensil 100 of a first embodiment according to the present invention is a cutlery that has a front end, a rear end, a right side, and a left side, wherein the cutlery is defined to have two directions, including a first direction D1 and a second direction D2. The first direction D1 is defined to extend from the front end to the rear end, and the second direction D2 is defined to extend from the left side to the right side. The foldable eating utensil 100 includes a cutlery head 10, a first rod 20, and a second rod 30 sequentially connected in the first direction D1.

[0009] The cutlery head 10 includes a functional portion 12 and a neck 14 extending in the first direction D1 from the functional portion 12. The neck 14 has a slot 18. In the first embodiment, the functional portion 12 is a spoon head, and a top side of the functional portion 12 forms a bowl 16. The bowl 16 extends in the first direction D1 to an inner side of the neck 14 to form a groove 161 in the inner side of the neck 14. More specifically, the slot 18 is disposed on a bottom side of the groove 161.

[0010] The first rod 20 is a straight rod that extends in the first direction D1, wherein a front end of the first rod 20 is foldably connected to a rear end of the neck 14 by means of hinge. A first hinge joint 21 is located between the front end of the first rod 20 and the neck 14, wherein a bottom side of the neck 14 and the front end of the first rod 20 jointly form a first buckle assembly 22. The first buckle assembly 22 includes an inserting tab 221 formed at the bottom side of the neck 14 and an engaged loop 222 formed at the front end of the first rod 20. When the cutlery head 10 is folded toward the first rod 20, a portion of the first rod 20 that is covered by the neck 14 has an overlapped section A. When the second rod 30 is folded toward the first rod 20, a portion of the first rod 20 that corresponds to the second rod 30 has an indentation portion 24, and at least a portion of the indentation portion 24 is located in the overlapped section A. In the first embodiment, the indentation portion 24 is an elongated groove in the first direction D1. In other embodiments, the indentation portion 24 could be an embedded hole or an elongated perforation in the first direction D1. As illustrated in FIG. 6 and FIG. 7, when the first rod 20 and the cutlery head 10 are extended, the inserting tab 221 is inserted into the engaged loop 22 to lock the first rod 20 and the cutlery head 10 in an extended state. By simply applying force to either the first rod 20 or the cutlery head 10, the first buckle assembly 22 could be unlocked to allow the inserting tab 221 to be disengaged from the engaged loop 222, so that the first rod 20 could be folded to rotate about the first hinge joint 21.

[0011] The second rod 30 is a straight rod that extends in the first direction D1, wherein a front end of the second rod 30 is foldably connected to a rear end of the first rod 20 by means of hinge. A second hinge joint 31 is located between the rear end of the first rod 20 and the front end of the second rod 30, wherein a bottom side of the rear end of the first rod 20 and the front end of the second rod 30 jointly form a second buckle assembly 32. The second buckle assembly 32 includes an engaged recess 321 formed at the bottom side of the rear end of the first rod 20 and an engaging block 322 formed at the front end of the second rod 30. A top portion of the second rod 30 has a first engaging block 34 which corresponds to the indentation portion 24, and a bottom portion of the second rod 30 has a restricting portion X. In the current embodiment, the restricting portion X is a second engaging block 36 that corresponds to the slot 18. As illustrated in FIG. 6 and FIG. 7, the second rod 30 and the first rod 20 are extended (unfolded), the engaging block 322 is engaged with the engaged recess 321 to position the second rod 30, namely retaining the first rod 20 and the second rod 30 in a line. By simply applying force to either the first rod 20 or the second rod 30, the second buckle assembly 32 could be unlocked to allow the engaging block 322 to be disengaged from the engaged recess 321, so that the second rod 30 could be folded toward the first rod 20. After the second rod 30 is folded toward the first rod 20, the first engaging block 34 is engaged into the indentation portion 24 and the second engaging block 36 is located on the overlapped section A.

[0012] As illustrated in FIG. 6 to FIG. 9, in the first embodiment, when the second rod 30 is folded toward the first rod 20, the first engaging block 34 of the second rod 30 is engaged into the indentation portion 24, so that the second rod 30 does not return. Simultaneously, the second engaging block 36 as a restricting portion X is moved to a position that corresponds to the slot 18. After that, when the cutlery head 10 is folded toward the second rod 30 and the first rod 20 that are folded, the second engaging block 36 is located at a position where the slot 18 could fit around after the cutlery head 10 is folded toward the second rod 30, thereby preventing the cutlery head 10 from disengaging from the second rod 30 and

retaining the cutlery head 10 in a folded position. When the cutlery head 10 is folded toward the second rod 30 and the first rod 20 that are folded, the bowl 16 of the cutlery head 10 covers the second rod 30 and receives a part of a rear end of the second rod 30.

[0013] As illustrated in FIG. 1 to FIG. 6, the foldable eating utensil 100 of the first embodiment is described more specifically below. Since the foldable eating utensil 100 is manufactured by plastic injection molding, the cutlery head 10, the first rod 20, and the second rod 30 are flexible to a certain degree. When the second rod 30 is folded toward the first rod 20, a section of the second rod 30 that is overlapped with the overlapped section A is defined as an engaging block section B. The second engaging block 36 is connected to a bottom portion of the engaging block section B. In the first embodiment, the first engaging block 34 is connected to a top portion of the engaging block section B. A top end portion of the indentation portion 24 is located in the overlapped section A, so that the first engaging block 34 could be inserted into the indentation portion 24 as the second rod 30 is folded toward the first rod 20, namely be inserted into the top end portion of the indentation portion 24.

[0014] The indentation portion 24 has two first side walls 241 at a right and a left side, namely the two first side walls 241 are opposite in the second direction D2. The first engaging block 34 has two first side surfaces 341 at a right and a left side, namely the two first side surfaces 341 are opposite in the second direction D2. The first engaging block 34 has a first guiding surface 342 at a top side. The first guiding surface 342 is curved, wherein a middle portion of the first guiding surface 342 is the highest, and a height of the first guiding surface 342 is gradually reduced from the middle portion to two ends of the guiding surface 342 in the first direction D1. The first engaging block 34 has a width d1 in the second direction D2, which is greater than a width d2 of the indentation portion 24 in the second direction D2. A top edge of each of the two first side surfaces 341 has a first chamfer 343. Each of the first chamfers 343 is adapted to abut against an edge of one of the two first side walls 241 of the indentation portion 24. When the first engaging block 34 is engaged into the indentation portion 24, the two first chamfers 343 urges the edges of the two first side walls 241 to slightly push away the two first side walls 241 of the indentation portion 24 and to allow the two first side surfaces 341 of the first engaging block 34 tightly fitting into the two first side walls 241 of the first indentation portion 24.

[0015] The slot 18 has two second side walls 181 at a right and a left side, namely the two second side walls 181 are opposite in the second direction D2. The second engaging block 36, the restricting portion X, has two second side surfaces 361 at a right and a left side, namely the two second side surfaces 361 are opposite in the second direction D2. The second engaging block 36 has a second guiding surface 362 at a top side. The second guiding surface 362 is curved, wherein a middle portion of the second guiding surface 362 is the highest, and a height of the second guiding surface 362 is gradually reduced from the middle portion to two ends of the guiding surface 362 in the first direction D1. The second engaging block 36 has a width d3 in a second direction D2, which is greater than a width d4 of the slot 18 in the second direction D2. A top edge of each of the two second side surfaces 361 has a second chamfer 363. Each of the second chamfers 363 is adapted to abut against an edge of one of the two second side walls 181 of the slot 18. When the second engaging block 36 is engaged into the slot 18, the second chamfers 363 urges the edges of the two second side walls 181 to slightly push away the two second side walls 181 of the slot 18 and to allow the two second side surfaces 361 of the second engaging block 36 tightly fitting into the two second side walls 181 of the slot 18.

[0016] As illustrated in FIG. 7 to FIG. 9, the cutlery head 10, the first rod 20, and the second rod 30 are approximately presented in a U-shaped after the foldable eating utensil 100 is removed from a mold of plastic injection. After that, the cutlery head 10 is clamped by an automatic machine (e.g. jig), and then the second rod 30 is pushed by the robotic arm of the automatic machine to be folded toward the first rod 20 to align with the first rod 20. As illustrated in FIG. 2 to FIG. 5, during a process of folding, the two first chamfers 343 of the second rod 30 abuts against the two first side walls 241 of the indentation portion 24 to slightly push away the two first side walls 241 of the indentation portion 24 and to be tightly engaged into the indentation portion 24. The two first side surfaces 341 of the first engaging block 34 urges the two first side walls 241 of the indentation portion 24 to prevent the second rod 30 from returning back. Next, another robotic arm of the automatic machine pushes the first rod 20 and the second rod 30 that are compacted to fold toward the cutlery head 10. The two second chamfers 363 of the second engaging block 36 of the second rod 30 abuts the two two second side walls 181 of the slot 18, the two second side walls 181 of the slot 18 could be slightly pushed away to allow the second engaging block 36 to be engaged into the slot 18. Since the two second side surfaces 361 of the second engaging block 36 is urged by the two second side walls 181, a position of the cutlery head 10 could be retained from returning back. With such design, the cutlery head 10, the first rod 20, and the second rod 30 remain in a compacted state.

[0017] In the first embodiment, the second rod 30 and the cutlery head 10 are folded sequentially. The first engaging block 34 of the second rod 30 could be restricted by the indentation portion 24 of the first rod 20, and then the slot 18 of the cutlery head 10 could be engaged with the second engaging block 36 of the second rod 30, so that the cutlery head 10, the first rod 20, and the second rod 30 could be retained in a compacted state. Therefore, during a process of automated folding, the second rod 30 could not return back to hinder the automatic machine to fold the cutlery head 10 toward the first rod 20, thereby

the automatic machine could work smoothly. With such design, the foldable eating utensil 100 of the present invention is suitable for automatically producing and packaging, which could save manpower and avoid the sanitary problem of manual folding processing.

[0018] Except for the abovementioned first embodiment, when the automatic machine could fold the foldable eating utensil 100 in a high speed, namely after the second rod 30 is folded toward the first rod 20, the first rod 20 and the second rod 30 are immediately folded toward the cutlery head 10. Thus, the second rod 30 has no time to return back, the second rod 30 and the first rod 20 are folded toward the cutlery head 10. In such situation, the restricting structure, the first engaging block 34 of the second rod 30 and the indentation portion 24 of the first rod 20, for restricting the second rod 30 from moving away from the first rod 20 is not necessary. Therefore, the first engaging block 34 and the indentation portion 24 of the foldable eating utensil 100 could be omitted. In an embodiment, the foldable eating utensil 100 merely includes the second engaging block 36 (restricting portion X) on the bottom portion of the second rod 30 and the slot 18 of the cutlery head 10, which could be correspondingly engaged with the second engaging block 36 to retain the foldable eating utensil 100 in a compacted state, which is suitable for automatic packing.

[0019] Except for the aforementioned first embodiment, the engagement between the indentation portion 24 and the first engaging block 34 could be done by other means. In other embodiments, the slot 18 and the second engaging block 36 are expandable and elastic, so that the indentation portion 24 could be designed in any geometric shape, such as a rectangle and circle, and the first engaging block 34 could be designed as a block, wherein a contour of the block is slightly greater than the indentation portion 24, so that the first engaging block 34 could be engaged into the indentation portion 24. The slot 18 could also be designed in any geometric shape, such as circle, and a contour of the second engaging block 36 could be slightly greater than the slot 18 to allow the second engaging block 36 could be engaged into the slot 18. With such design, after the second rod 30 and the first rod 20 are folded, the second rod 30 could be restricted from moving away, and after the cutlery head 10 is folded toward the first rod 20 and the second rod 30, the cutlery head 10 could be restricted from moving away from the second rod 30, thereby the foldable eating utensil 100 is suitable for automatic packing.

[0020] In the first embodiment, the functional portion 12 is a spoon head. In other embodiments, the functional portion 12 could be fork head. As illustrated in FIG. 10, the foldable eating utensil 100 of a second embodiment includes the cutlery head 10, the first rod 20, and the second rod 30 that are sequentially connected to each other in the first direction D1. The cutlery head 10 includes the functional portion 12A and the neck 14 extending in the first direction D1 from the functional portion 12A. In the second embodiment, the functional portion 12A is a fork head, and a top side of the functional portion 12 forms a bowl 16. The bowl 16 extends in the first direction D1 to an inner side of the neck 14 to form the groove 161 in the inner side of the neck 14. The slot 18 is disposed in a bottom of the groove 161. In the second embodiment, the structure and the function of the first rod 20 and the second rod 30 are the same as that in the first embodiment.

[0021] As illustrated in FIG. 11 and FIG. 12, a foldable eating utensil 100 of a third embodiment is almost the same as the foldable eating utensil of the first embodiment, except that the first engaging block 34 is disposed at a position that is not corresponding to the second engaging block 36, namely the first engaging block 34 could be closer to either the front end or the rear end of the foldable eating utensil 100 than the second engaging block 36. Additionally, a length of the indentation portion 24 extends in a position that allows the first engaging block 34 to be engaged with. For example, the indentation portion 24 could extends longer along the first rod 20, so that the first engaging block 34 could still be easily engaged into the indentation portion 24 as the second rod 30 is folded toward the first rod.

[0022] As illustrated in FIG. 13, a foldable eating utensil 100 of a fourth embodiment is almost the same as the foldable eating utensil of the first embodiment, except that a shape of the indentation portion 24A is changed. In the fourth embodiment, a length of the indentation portion 24A in the first direction D1 is shortened, so that the indentation portion 24A is completely located in the overlapped section A. Since a width of the indentation portion 24A is the same as that of the first embodiment, the first engaging block 34 on the second rod 30 could still be engaged into the indentation portion 24A.

[0023] As illustrated in FIG. 14 and FIG. 15, a foldable eating utensil 100 of a fourth embodiment is almost the same as the foldable eating utensil of the first embodiment, except that the indentation portion 24 on the first rod 20 is omitted and the first rod 20 includes two lateral hooks 26 that are disposed on a right edge and a left edge of the first rod 20. When the second rod 30 is folded toward the first rod 20, the second rod 30 is inserted in a space between the two lateral hooks 26, so that the second rod 30 could be restricted by the two lateral hooks 26, thereby remaining in a compacted state.

[0024] In the third embodiment, the structure used for engaging the second rod 30 and the cutlery head 10 after folded includes a second engaging block 36 and a slot 18, wherein the structure in the third embodiment could be changed.

[0025] As illustrated in FIG. 16 to FIG. 19, a foldable eating utensil 100 of a sixth embodiment is almost the same as the foldable eating utensil of the third embodiment, except that the restricting portion X of the second rod 30 includes two hook plates 38 that extending downward. In the sixth embodiment, the first rod 20 has an overlapped section A, where is covered by the neck 14 of cutlery head 10 when the cutlery head 10 is folded

toward the first rod 20. A bottom portion of the engaging block section B of the second rod 30 is disposed with two hook plates 38 at a right edge and a left edge. When the second rod 30 is folded to the first rod 20, the two hook plates 38 are located on the overlapped section A. Additionally, the neck 14 of the cutlery head 10 has two caves 141 at a right side and a left side, wherein each of the two caves 141 are located at a position that could correspond to one of the hook plates 38. When the cutlery head 10 is folded toward the second rod 30 and the first rod 20, the two hook plates 38 pass through the two caves 141 of the neck 14 to engage and lock the neck 14, so that the cutlery head 10 is restricted by the two hook plates 38, the restricting portion X, from leaving the compacted state.

Claims

1. A foldable eating utensil (100), comprising a cutlery head (10), a first rod (20), and a second rod (30), which are sequentially connected in a first direction (D1), which is defined as a direction from a front end to a rear end of the foldable eating utensil (100), wherein:

   the cutlery head (10) comprising a functional portion (12) and a neck (14), wherein the neck (14) extends in the first direction (D1) from the functional portion (12) ;
   the first rod (20), wherein a front end of the first rod (20) is foldably connected to a rear end of the neck (14);
   the second rod (30), wherein a front end of the second rod (30) is foldably connected to a rear end of the first rod (20); a bottom portion of the second rod (30) has a restricting portion (X); after the first rod (20) and the second rod (30) are folded, the cutlery head (10) is then folded to the first rod (20) and the second rod (30) that are folded, and the cutlery head (10) could be restricted by the restricting portion (X) of the second rod (30), thereby the foldable eating utensil (100) is retained in a compacted state.

2. The foldable eating utensil (100) as claimed in claim 1, wherein the neck (14) has a slot (18); the first rod (20) has an indentation portion (24), and a portion of the first rod (20) that is covered by the neck (14) when the cutlery head (10) is folded to the first rod (20) has an overlapped section (A); a top portion of the second rod (30) has a first engaging block (34), and the restricting portion (X) is a second engaging block 36 that is connected to the bottom portion of the second rod (30); when the second rod (30) and the first rod (20), the first engaging block (34) is engaged into the indentation portion (24), and the second engaging block (36) is located on the overlapped section (A); when the second rod (30), the first rod (20), and the cutlery head (10) are folded, the second engaging block (36) is engaged into the slot (18) of the cutlery head (10)

3. The foldable eating utensil (100) as claimed in claim 2, wherein a section of the second rod (30) is defined as an engaging block section (B), when the second rod (30) and the first rod (20) are folded, the engaging block section (B) is overlapped with the overlapped section (A), the second engaging block (36) is connected to a bottom portion of the engaging block section (B).

4. The foldable eating utensil (100) as claimed in claim 3, wherein the first engaging block (34) is connected to a top portion of the engaging block section (B) ; at least a portion of the indentation portion (24) is located in the overlapped section (A) to allow the first engaging block (34) to be engaged with the indentation portion (24).

5. The foldable eating utensil (100) as claimed in claim 3, wherein the first engaging block (34) is disposed at a position that is not corresponding to the second engaging block (36).

6. The foldable eating utensil (100) as claimed in claim 2, wherein the indentation portion (24) has two first side walls (241) at a right side and a left side, and the first engaging block (34) has two first side surfaces (341) at a right side and a left side; when the first engaging block (34) is engaged into the indentation portion (24), the two first side surfaces (341) urge against the two first side walls (241) to allow the first engaging block (34) to be fixed in the indentation portion (24); the slot (18) has two second side walls (181) at a right side and a left side, and the second engaging block (36) has two second side surfaces (361) at a right side and a left side; when the second engaging block (36) is engaged into the slot (18), the two second side surfaces (361) urge against the two second side walls (241) to allow the second engaging block (36) to be fixed in the slot (18).

7. The foldable eating utensil (100) as claimed in claim 6, wherein a second direction (D2) is defined to extend from the left side to the right side of the foldable eating utensil (100); a width (d1) of the first engaging block (34) in the second direction (D2) is greater than a width (d2) of the indentation portion (24) in the second direction (D2); a top edge of each of the two first side surfaces (341) has a first chamfer (343), and each of the first chamfers (343) is adapted to abut against an edge of one of the first side walls (241) of the indentation portion (24); a width (d3) of the second engaging block (36) in the second direction

is greater than a width (d4) of the slot (18) in the second direction (D2); a top edge of each of the two second side surfaces (361) has a second chamfer (363); each of the second chamfers (363) is adapted to abut against an edge of one of the two second side walls (181) of the slot (18).

8. The foldable eating utensil (100) as claimed in claim 7, wherein the first engaging block (34) has a first guiding surface (342) at a top side; the first guiding surface (342) is curved, wherein a middle portion of the first guiding surface (342) is the highest, and a height of the first guiding surface (342) is gradually reduced from the middle portion to two ends of the guiding surface (342) in the first direction (D1); the second guiding surface (362) is curved, wherein a middle portion of the second guiding surface (362) is the highest, and a height of the second guiding surface (362) is gradually reduced from the middle portion to two ends of the guiding surface (362) in the first direction (D1).

9. The foldable eating utensil (100) as claimed in one of claims 2 to 8, wherein the functional portion (12) is either spoon head or fork head.

10. The foldable eating utensil (100) as claimed in claim 9, wherein the functional portion (12) forms a bowl (16), and the bowl (16) extends in the first direction (D1) to an inner side of the neck (14) to form the groove (161) in the inner side of the neck (14); the slot (18) is disposed in a bottom of the groove (161); when the second rod (30), the first rod (20), and the cutlery head (10) are folded, an rear end of the second rod (30) is received in the groove (161).

11. The foldable eating utensil (100) as claimed in claim 10, wherein a bottom side of the neck (14) and the front end of the first rod (20) jointly form a first buckle assembly (22), and a bottom side of the rear end of the first rod (20) and the front end of the second rod (30) jointly form a second buckle assembly (32).

12. The foldable eating utensil (100) as claimed in claim 1, wherein the first rod (20) has an indentation portion (24) and an overlapped section (A) that is covered by the neck (14) when the cutlery head (10) is folded to the first rod (20); the restricting portion (X) of the second rod (30) comprises two hook plates (38) that extending downward form a right edge and a left edge of the second rod (30); when the second rod (30) and the first rod (20) are folded, the two hook plates (38) are located on the overlapped section (A); the neck (14) of the cutlery head (10) has two caves (141) at a right side and a left side, wherein each of the two caves (141); when the cutlery head (10) is folded toward the second rod (30) and the first rod (20), the two hook plates (38) pass through the two caves (141) to engage with the neck (14).

13. The foldable eating utensil (100) as claimed in claims 1 or 12, wherein the first rod (20) comprises two lateral hooks (26) that are disposed on a right edge and a left edge of the first rod (20); when the first rod (20) and the second rod (30) are folded, the second rod (30) is inserted and restricted in a space between the two lateral hooks (26).

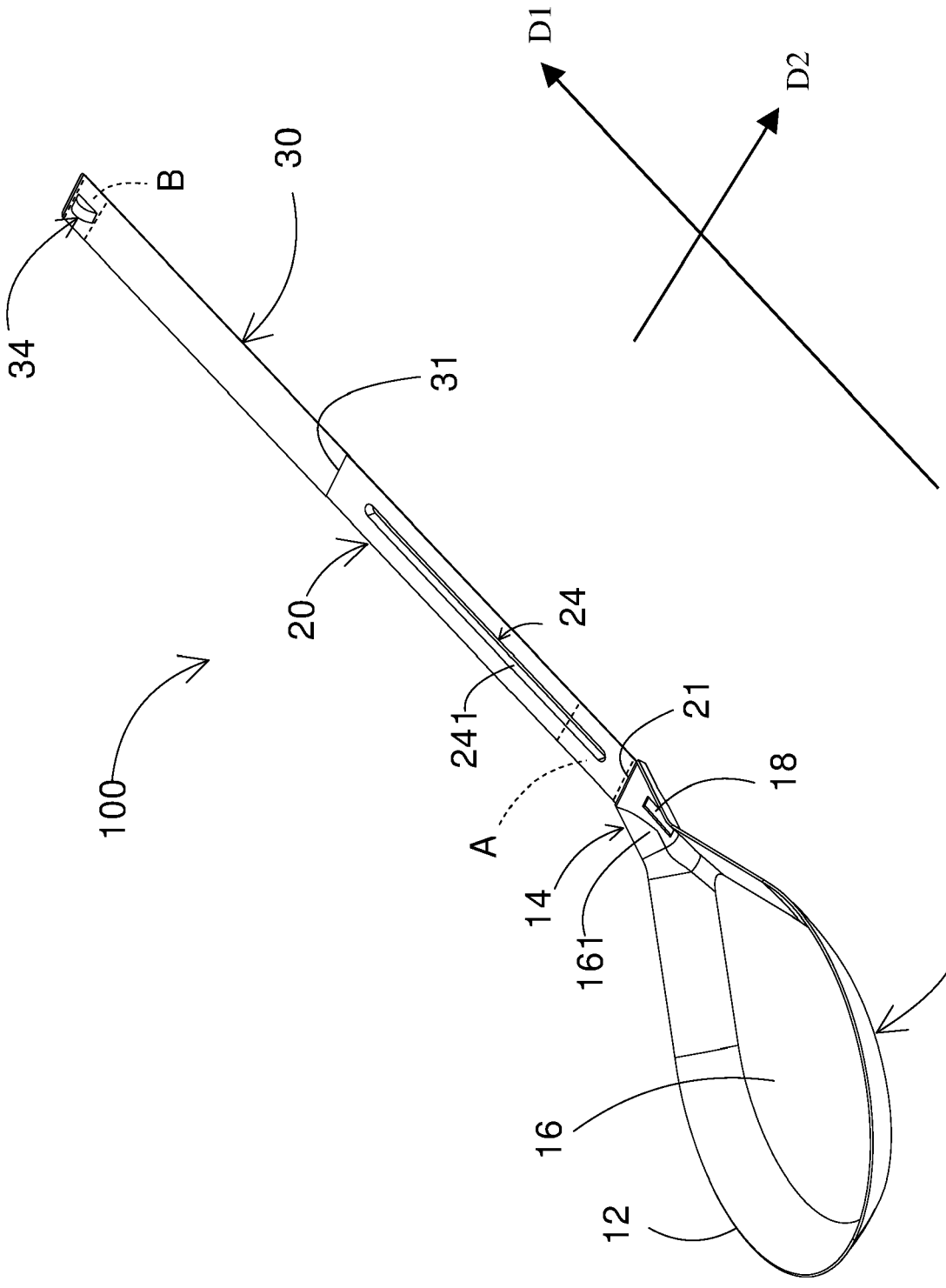


FIG.1

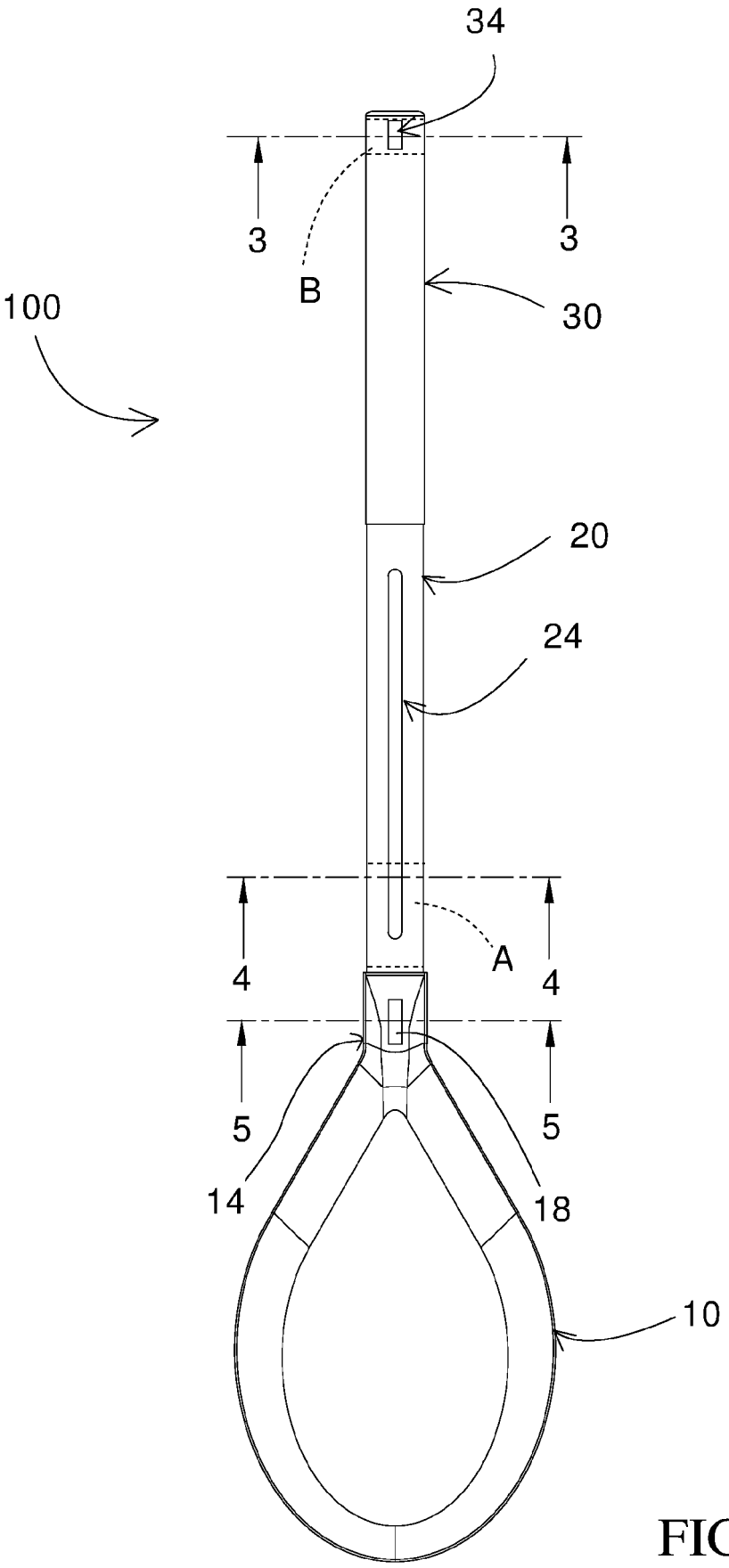


FIG.2

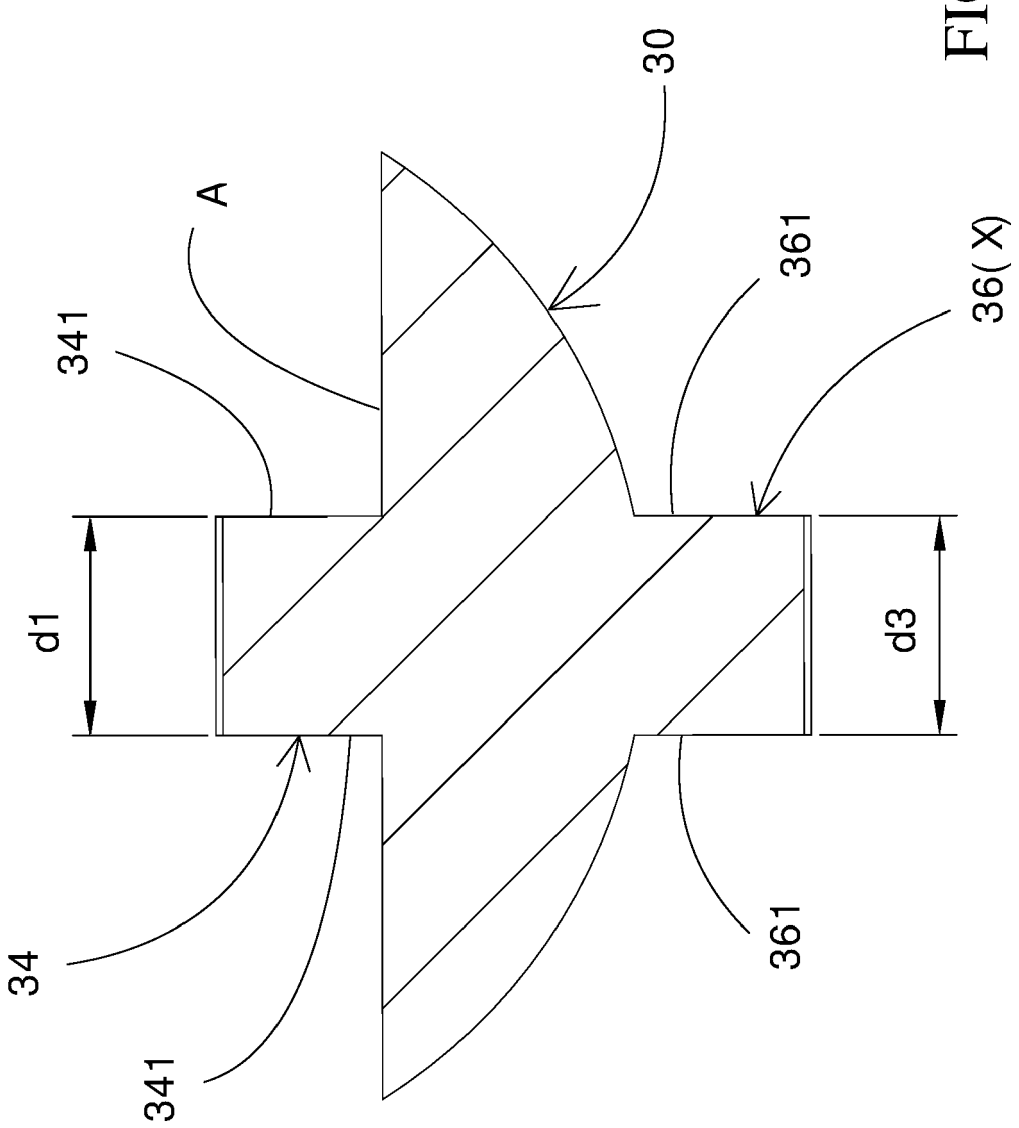


FIG.3

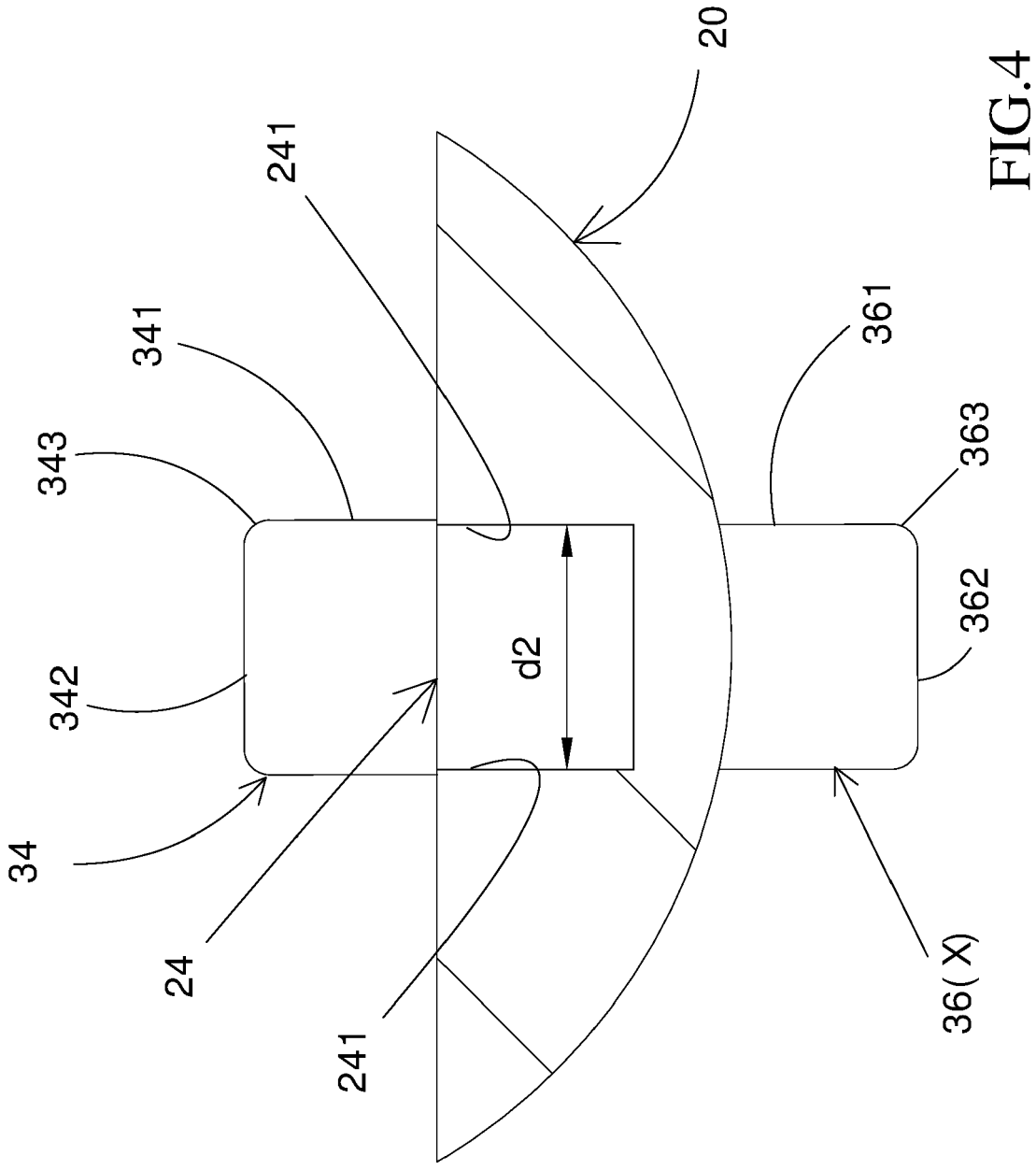


FIG.4

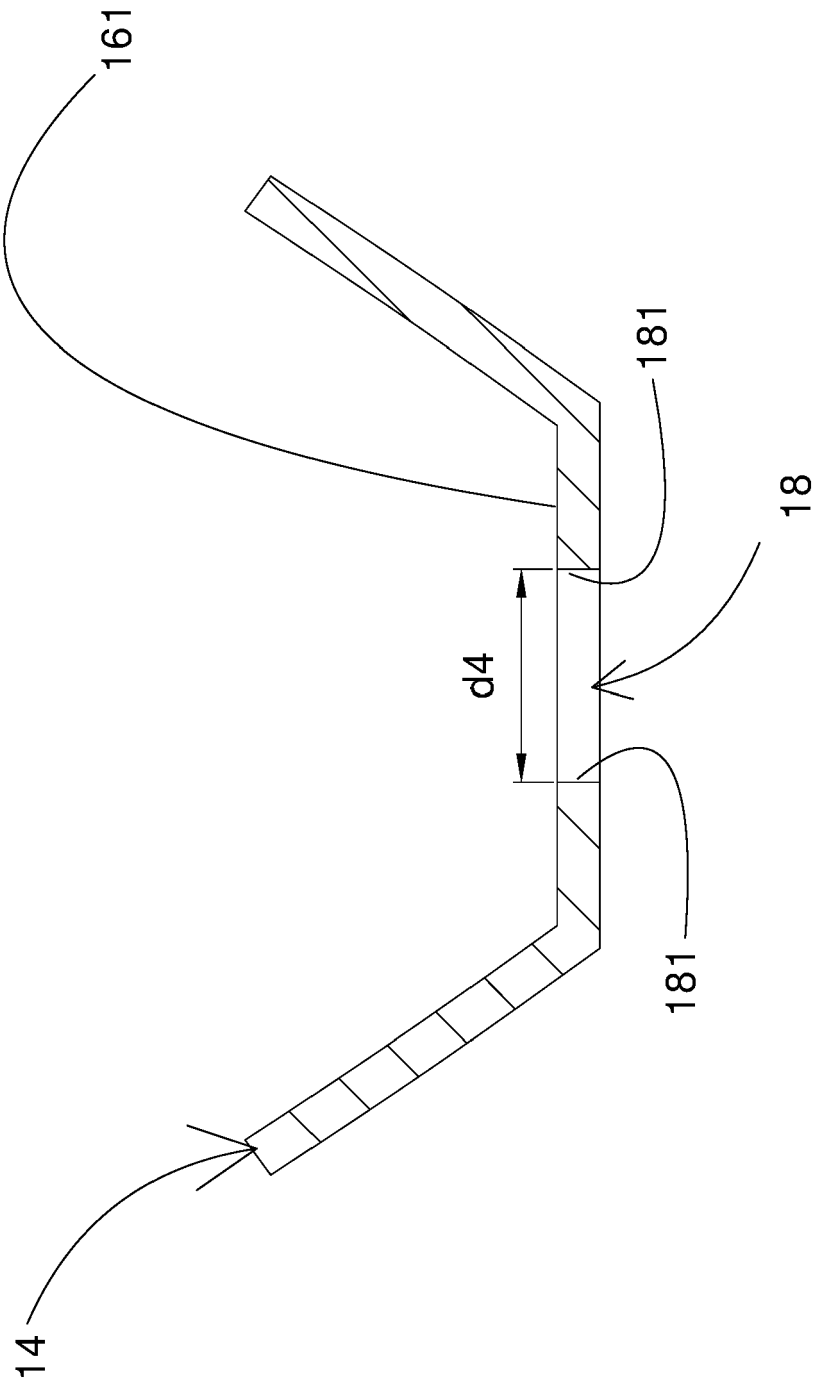


FIG.5

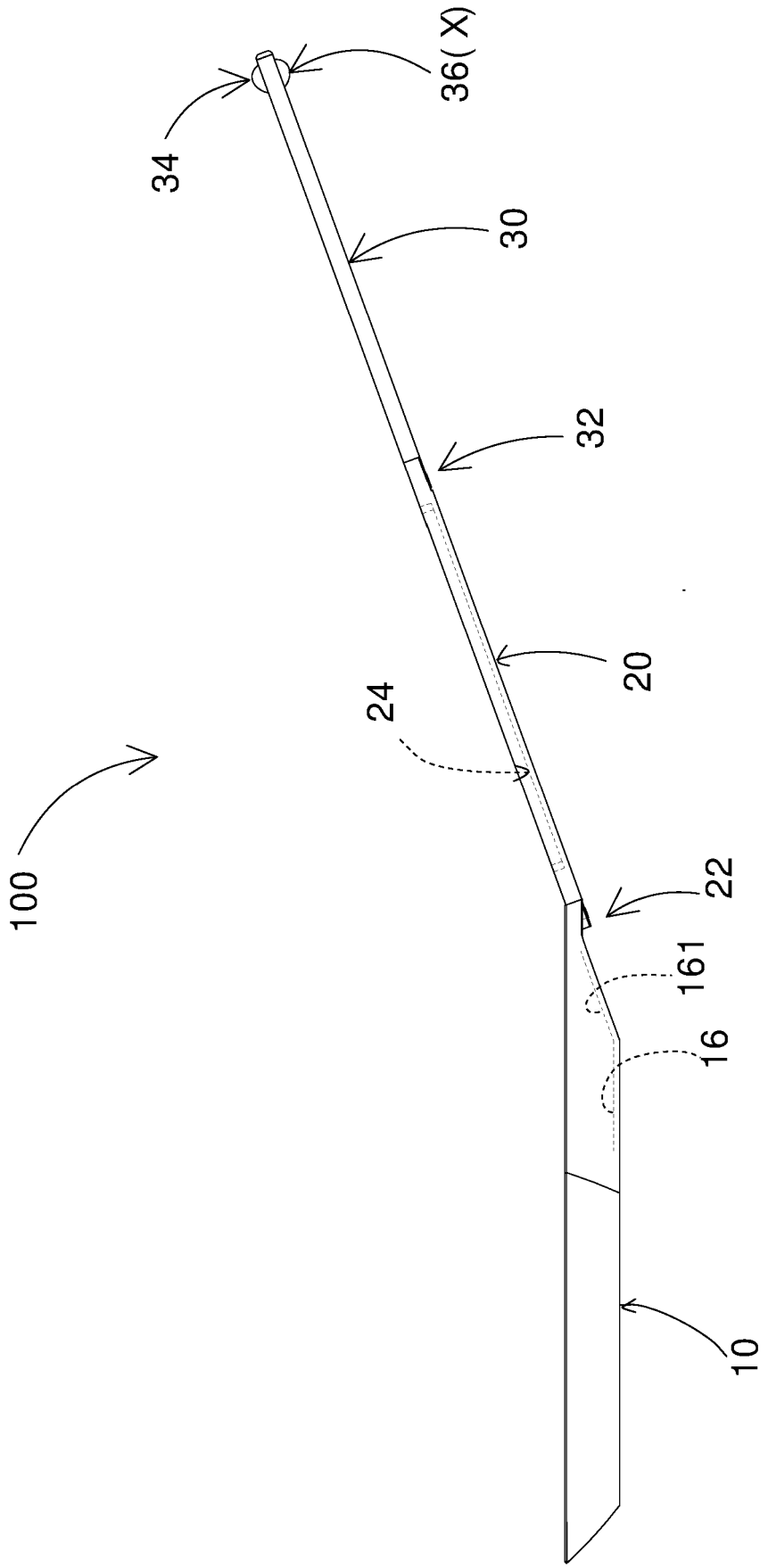


FIG.6

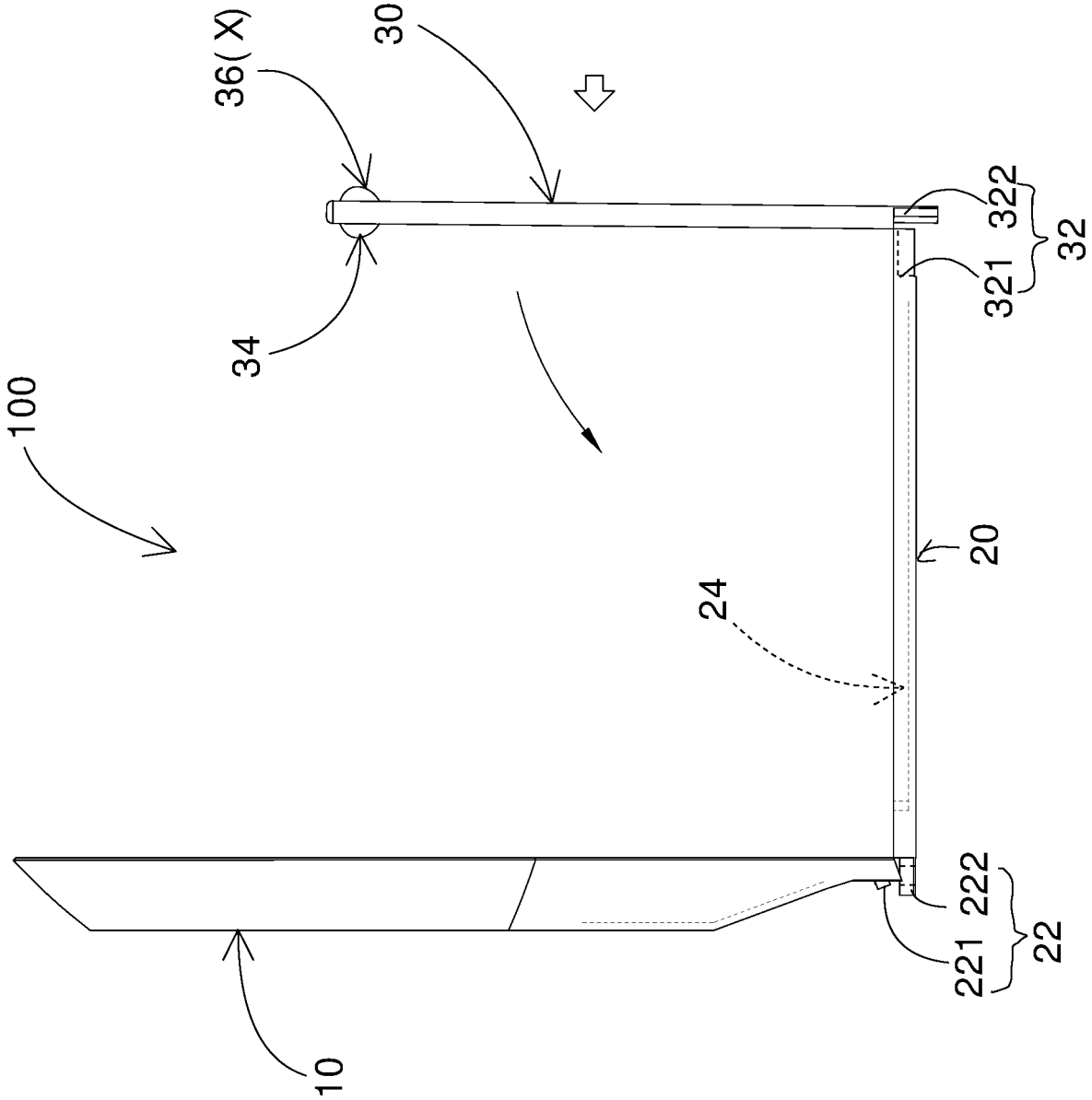


FIG.7

FIG.8

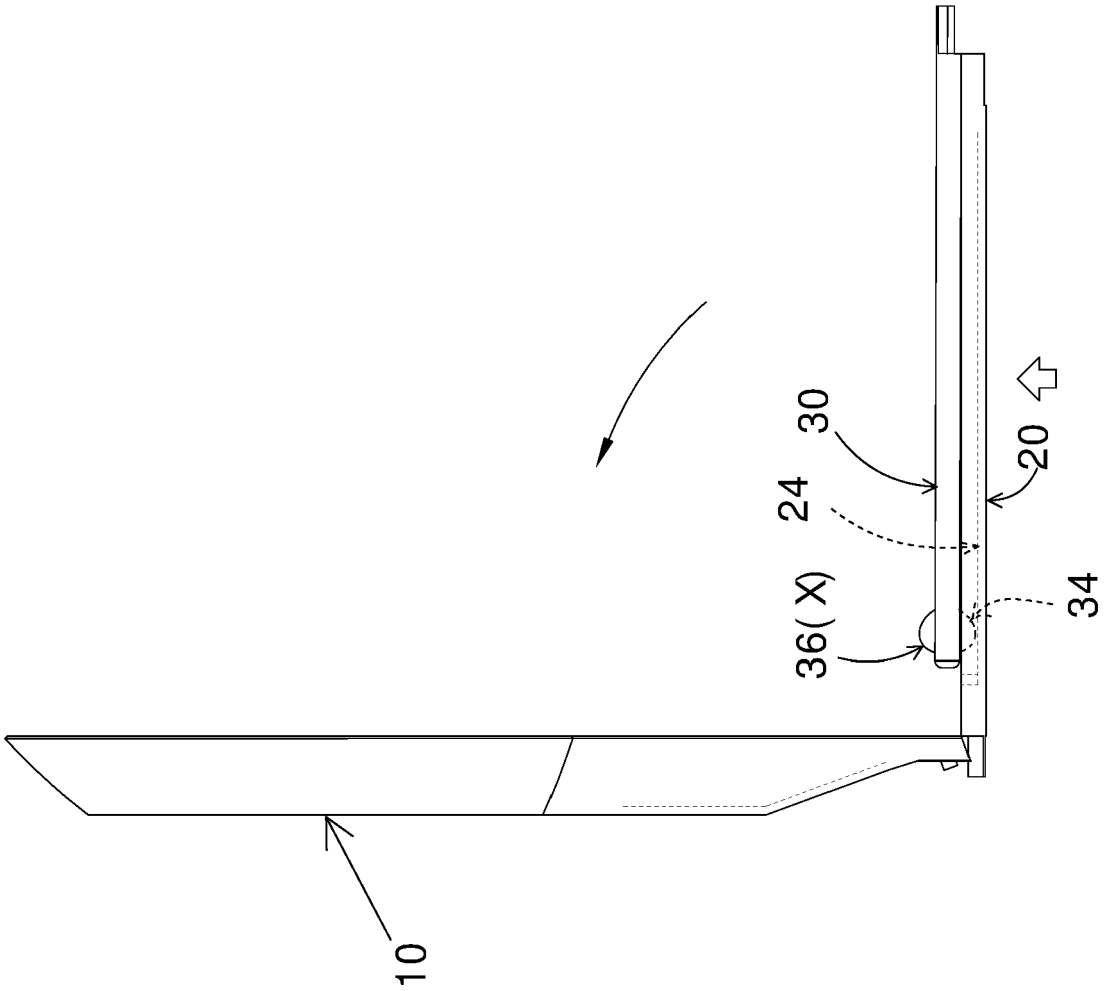
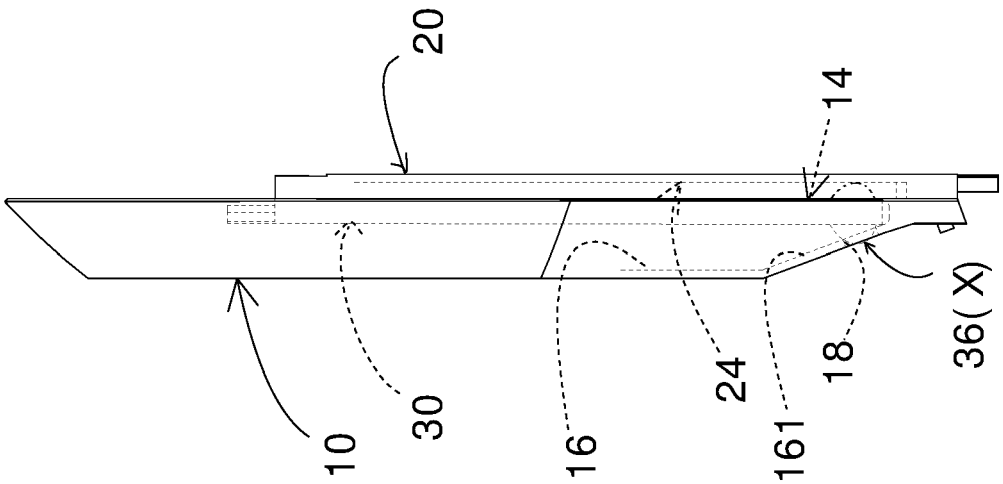


FIG.9



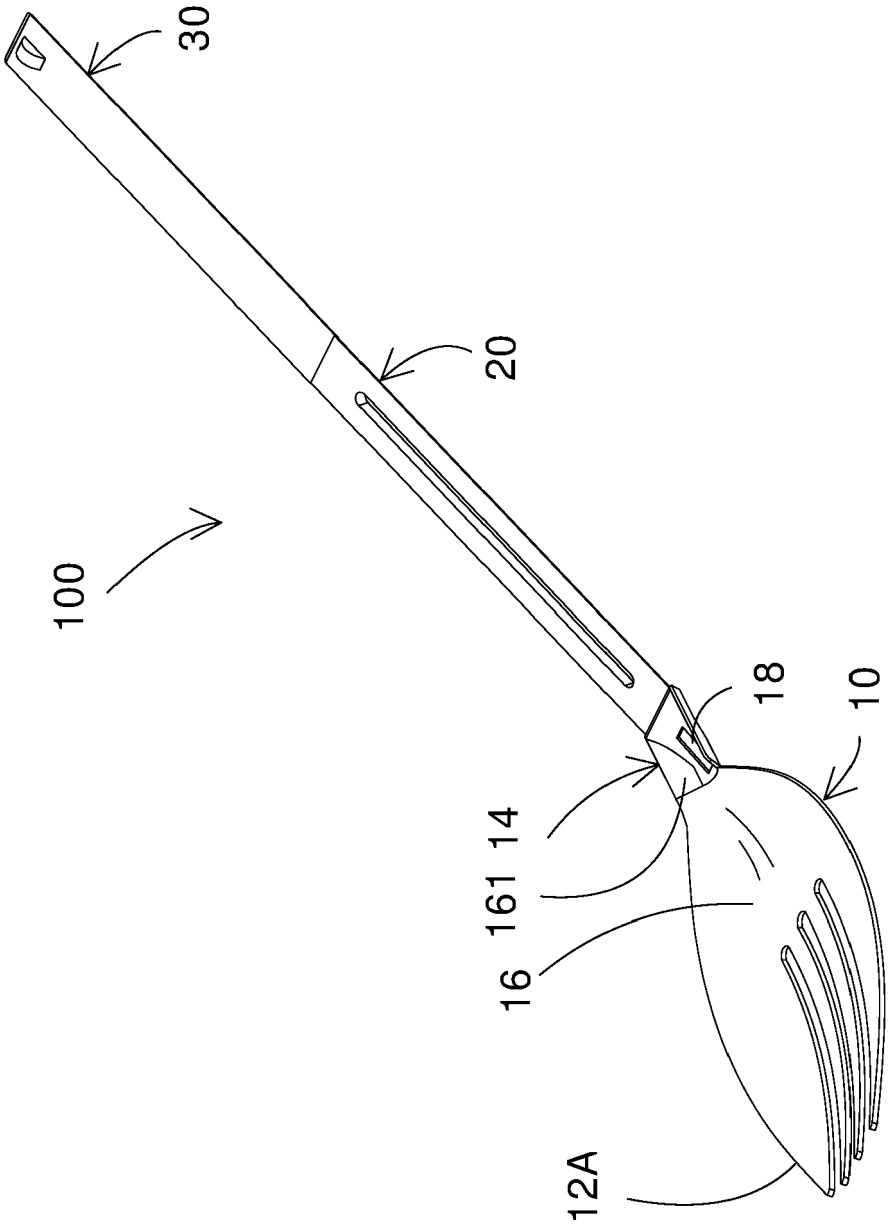


FIG.10

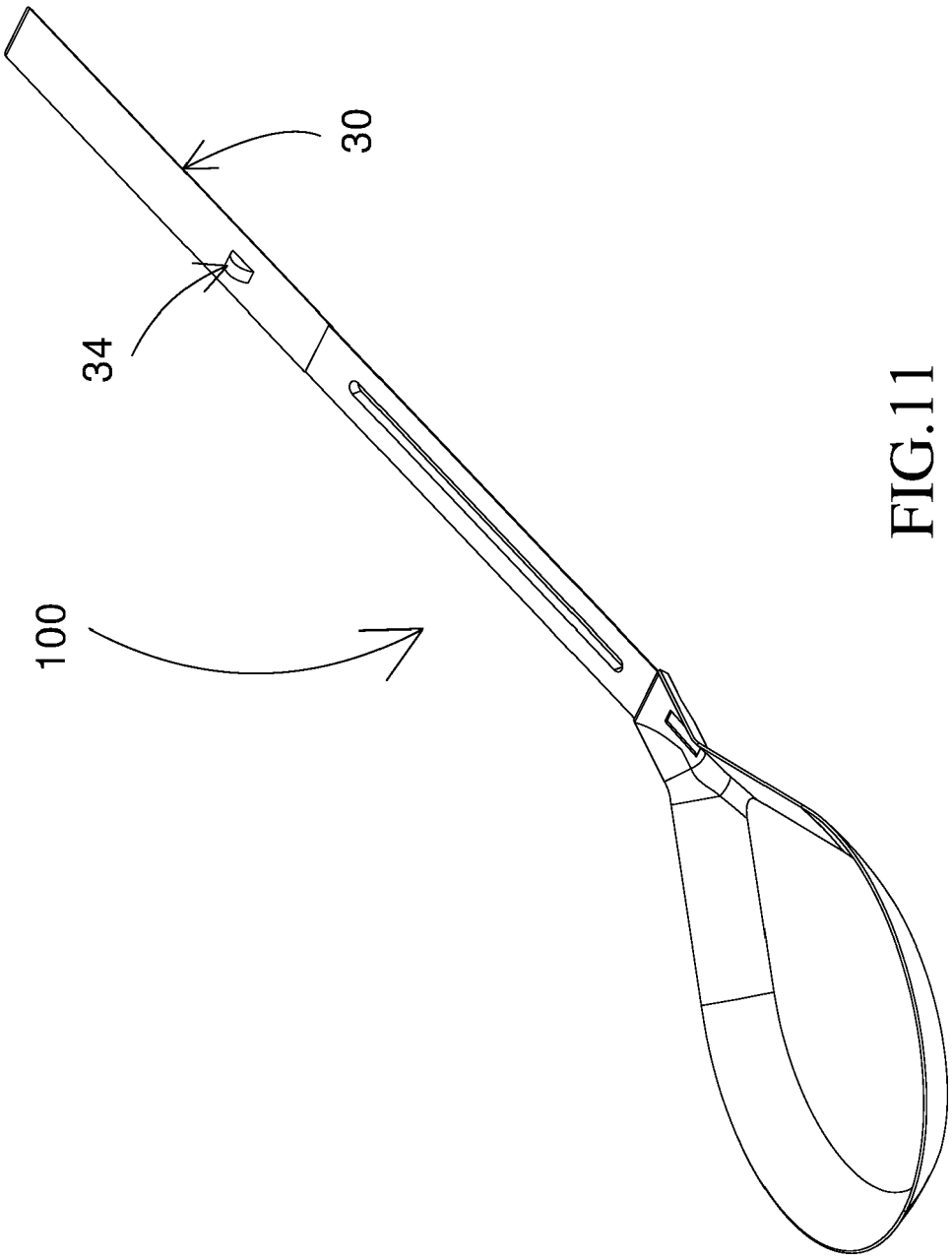


FIG.11

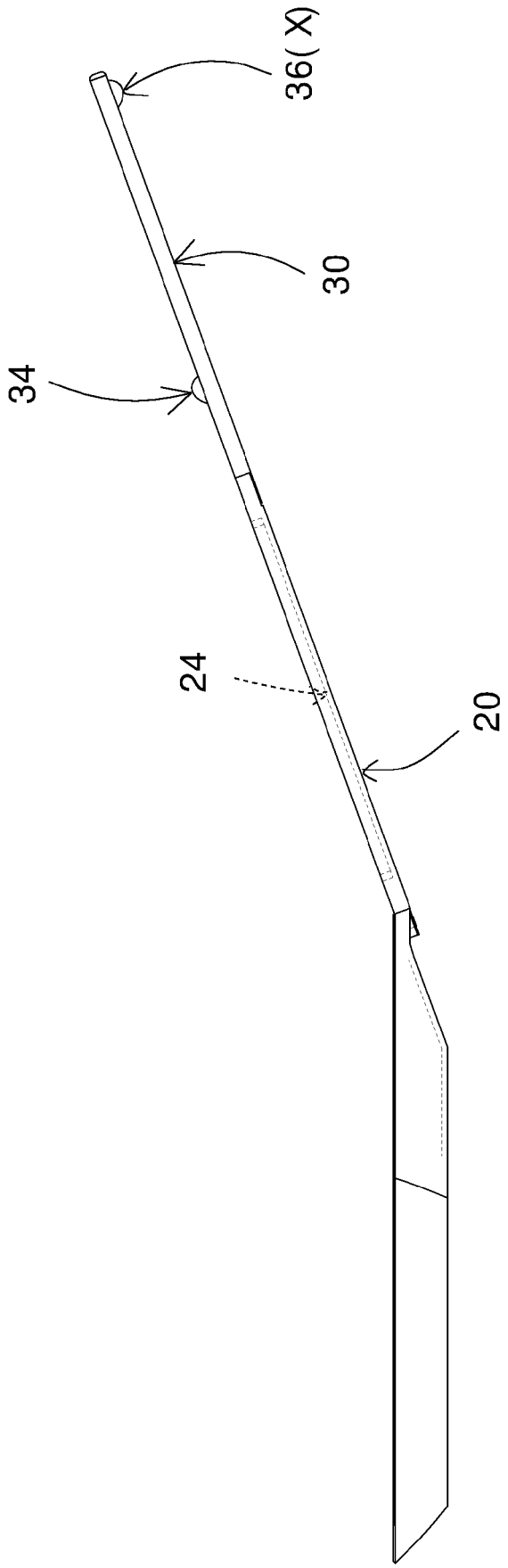


FIG.12

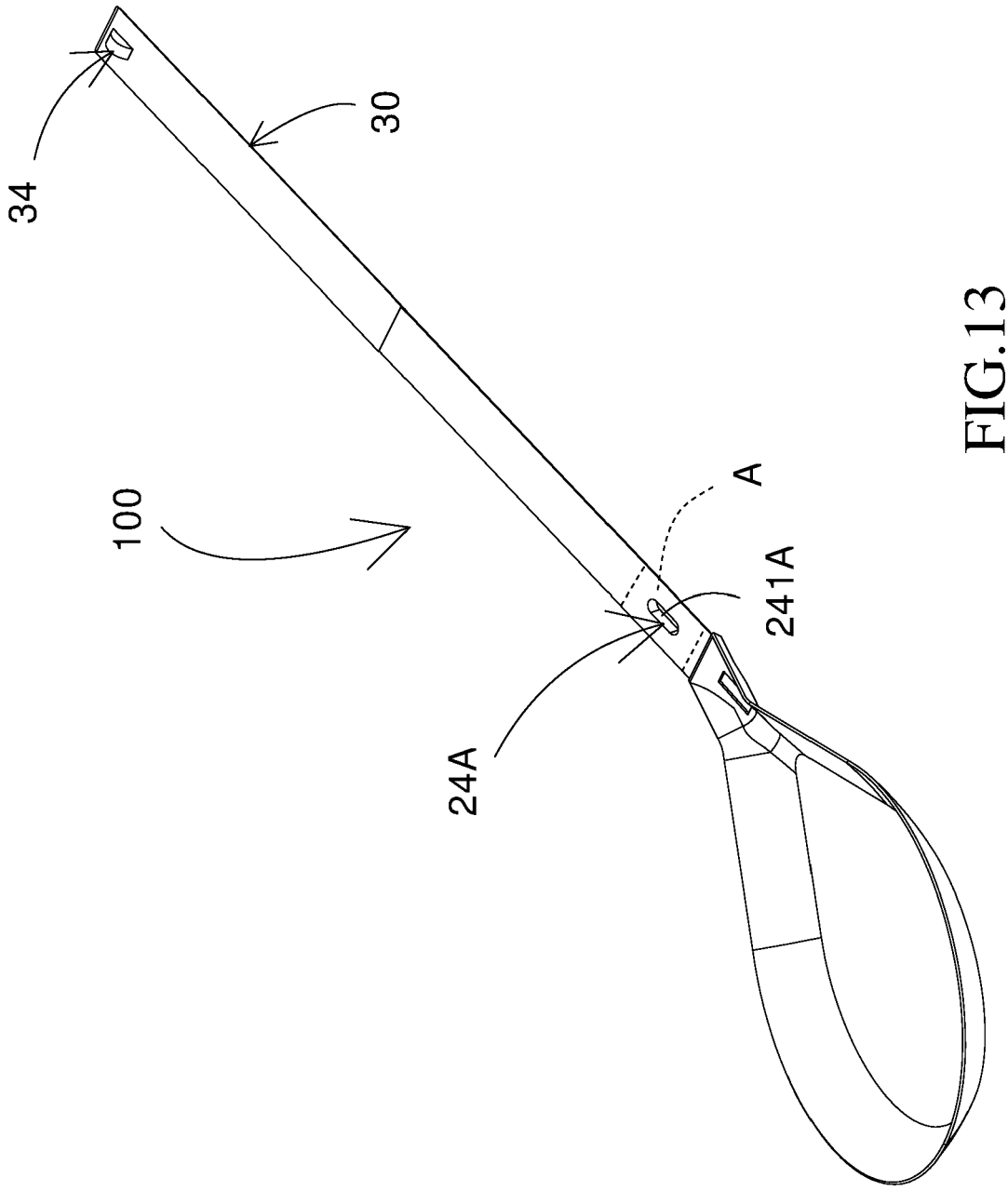


FIG.13

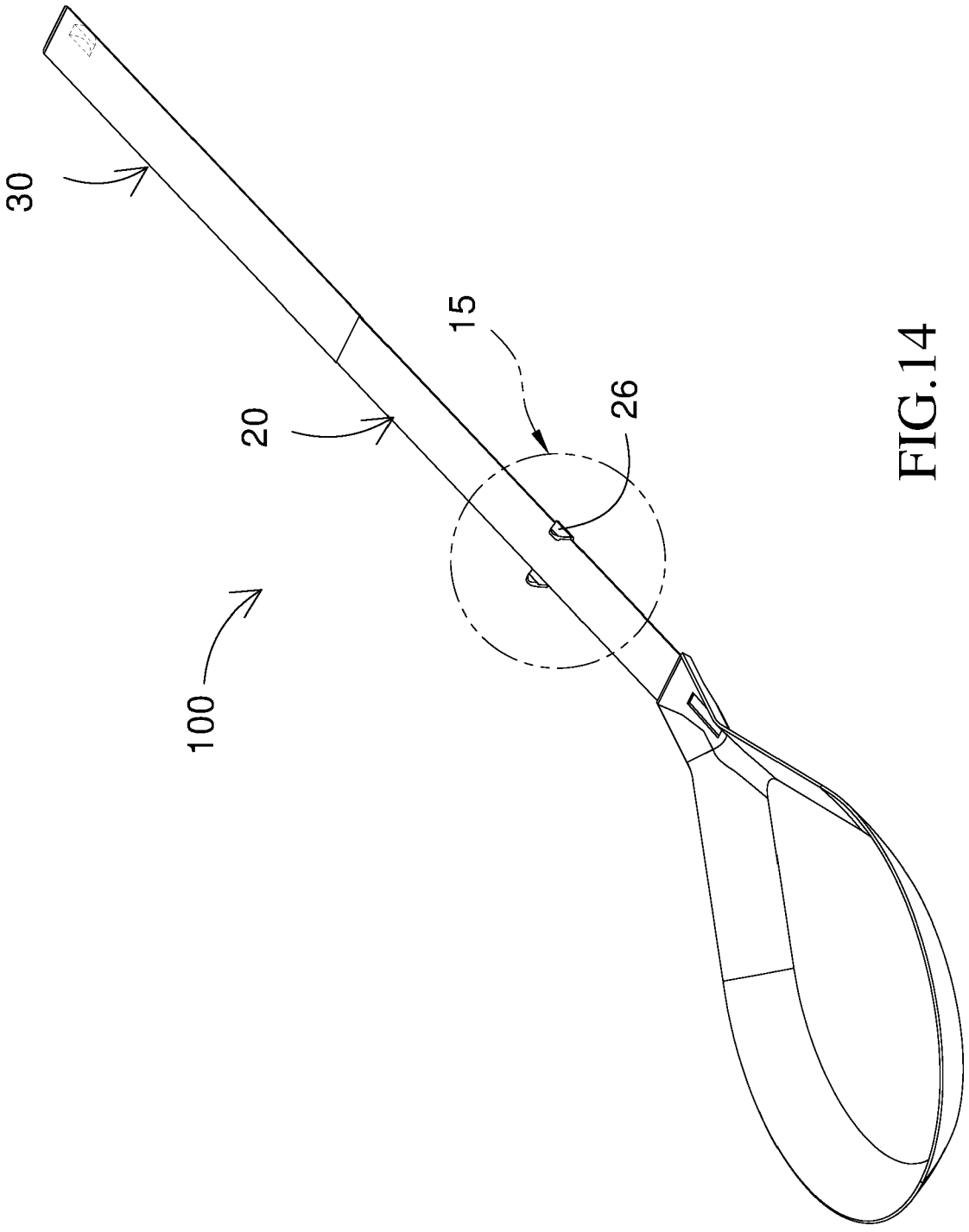


FIG.14

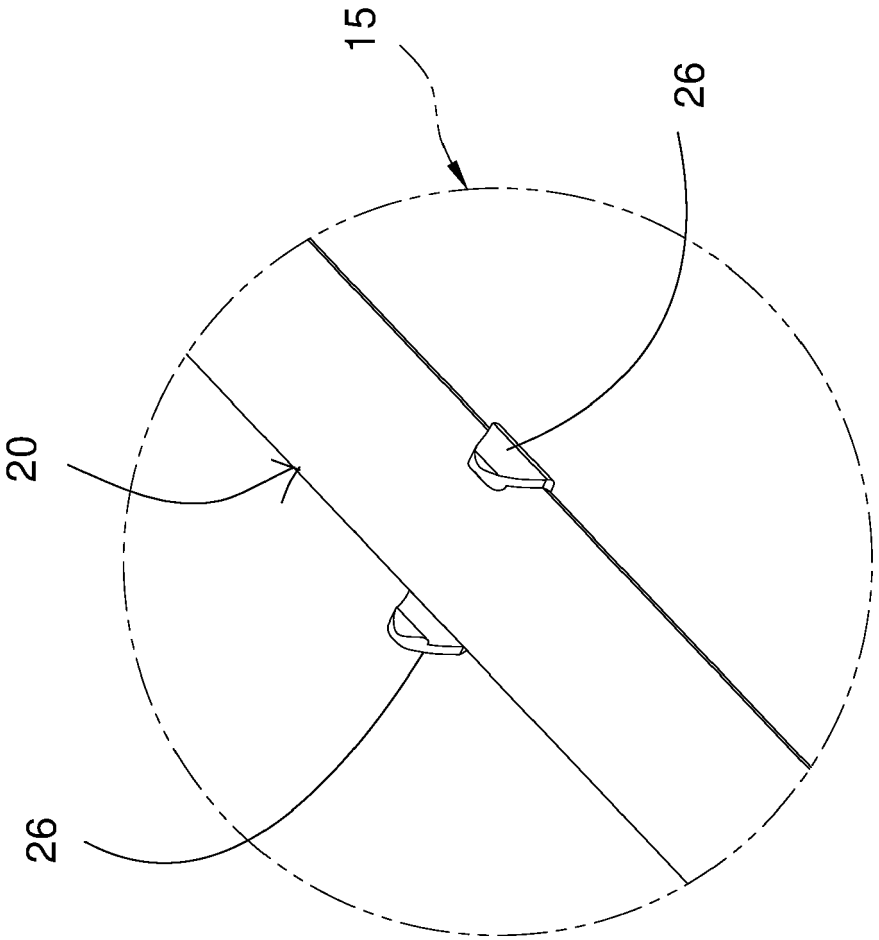


FIG.15

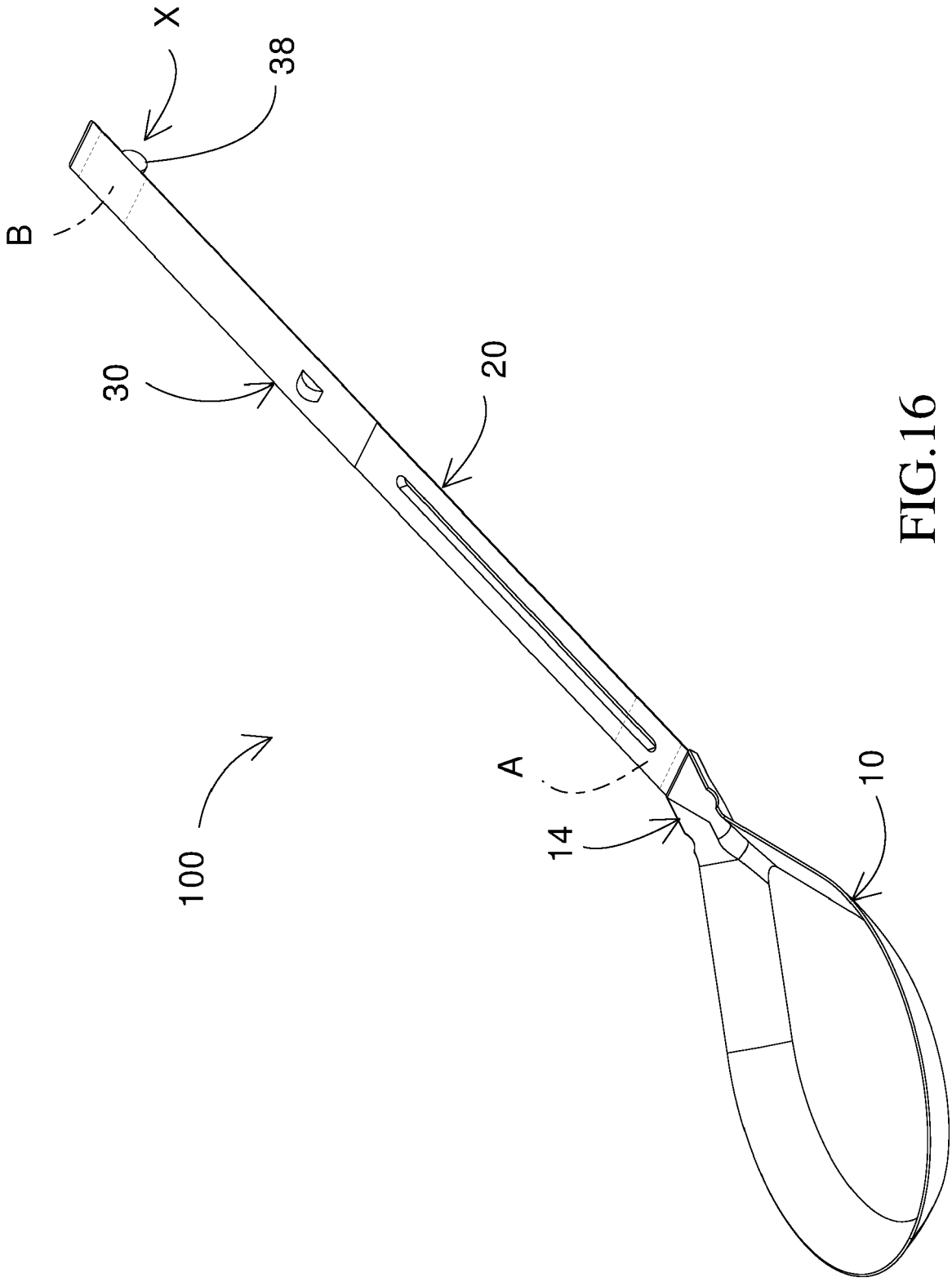


FIG.16

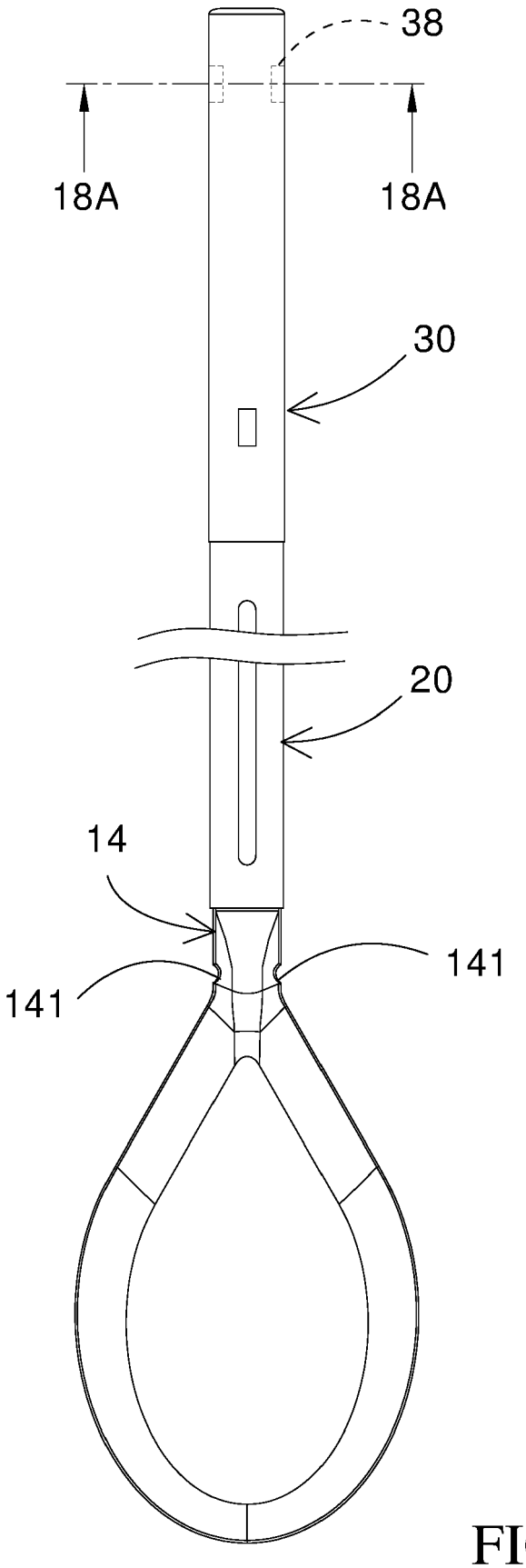


FIG.17

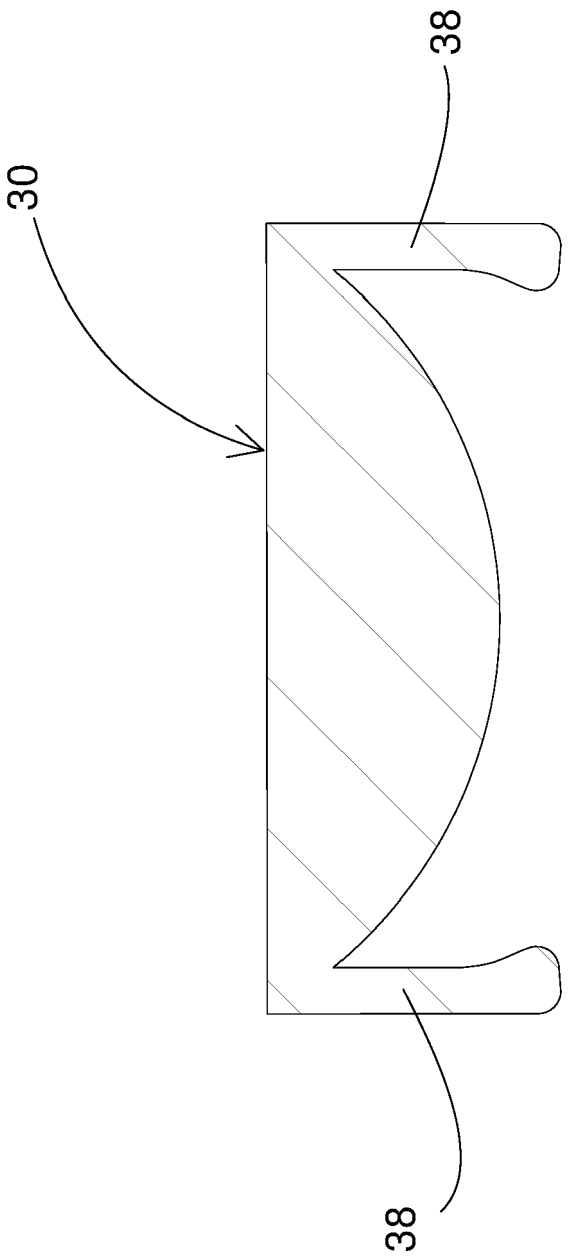


FIG.18

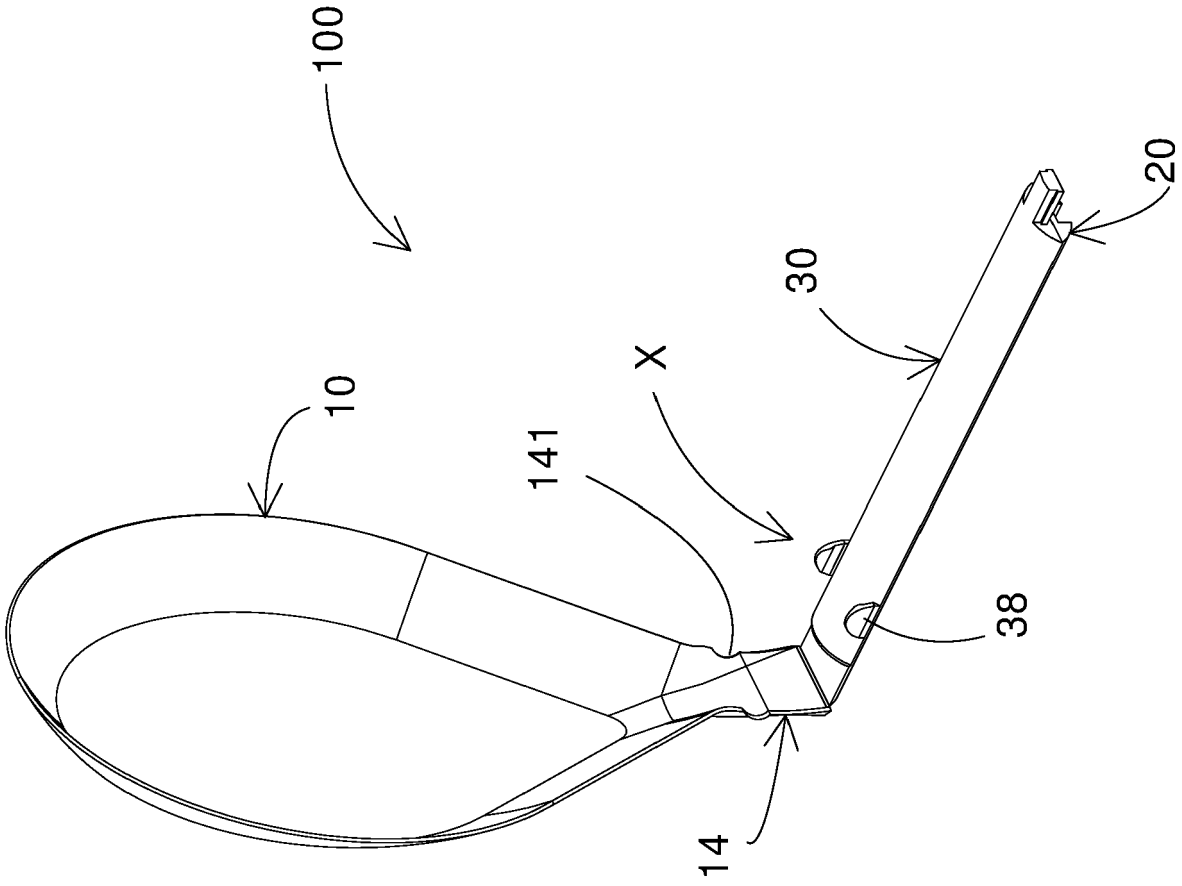


FIG.19

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EUROPEAN SEARCH REPORT

Application Number
EP 23 18 7915

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	CN 204 192 236 U (JIAMEI PLASTIC PRODUCT ZHUHAI CO LTD) 11 March 2015 (2015-03-11) * the whole document *	1-13	INV. A47G21/02 A47G21/00
A	US 6 751 873 B2 (ROBERTS POLYPRO INC [US]) 22 June 2004 (2004-06-22) * column 2, line 14 - line 63; figures *	1-13	
A	EP 0 338 146 A1 (MITSUBISHI CORP [JP]; SATOH SHOSAN LTD [JP]) 25 October 1989 (1989-10-25) * column 3, line 45 - column 9, line 51; figures *	1-13	

TECHNICAL FIELDS SEARCHED (IPC)

A47G
B65D
A47J

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	11 July 2024	Vistisen, Lars

CATEGORY OF CITED DOCUMENTS

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11-07-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 204192236 U	11-03-2015	NONE	
US 6751873 B2	22-06-2004	NONE	
EP 0338146 A1	25-10-1989	EP 0338146 A1	25-10-1989
		US 4826033 A	02-05-1989

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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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Patent documents cited in the description

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