

Description

FIELD OF THE INVENTION

[0001] The present invention relates to technical field of shaving, and more particularly to a magazine-type hand-held shaver.

BACKGROUND OF THE INVENTION

[0002] With improvement of the economy and the society, abounding consumables are offered to people to satisfy people's demand, thereby improving people's standard of living. While razors are one of these consumables.

[0003] Currently, the razors have two types including electric shavers and manual shavers. Regarding the manual shavers, as it has advantages of clean shave and no power source, thus the manual shaver takes up a large percentage of the market share.

[0004] The current manual shaver mainly includes a handle, a shaver head and a linking structure between the handle and the shaver head. If the shaver head becomes blunt or is damaged, the old one is required to be removed, and is replaced by a new one. Thus, for traveling users, they must back up the new ones in their baggage for replacement.

[0005] However, the current manual shavers and the replaceable shaver heads are independent parts which are required to be packaged separately for traveling users, which is inconvenient and will be easily omitted. Furthermore, the structure of the manual shaver is not compact.

[0006] Therefore, there is a need for providing an improved hand-held shaver which has compact structure and clean look and is convenient to carry, to overcome the above-mentioned drawbacks.

SUMMARY OF THE INVENTION

[0007] One objective of the present invention is to provide a magazine-type hand-held shaver which has compact structure and clean look and is convenient to carry.

[0008] To achieve the above-mentioned objective, a magazine-type hand-held shaver includes: a shaver head including a first shaver head and a second shaver head which are interchangeable; a magazine body which is a hollow structure and forms a receiving chamber with an opening located at an upper end of the magazine body, and the shaver head being received in the receiving chamber; a shaver head connection cover including a lower end which is detachably installed on the magazine body and covered on the opening, and an upper end which is provided with a connection part that is selectively assembled with the first shaver head or the second shaver head; and an elastic element, received in the receiving chamber and urging the shaver head to slide towards the opening.

[0009] Preferably, the upper end of the magazine body is provided with a connecting plug that is matched with the shaver head connection cover, the opening is formed on the connecting plug, and the shaver head connection cover is detachably covered on the connecting plug.

[0010] Preferably, the opening includes a top notch running through a top end of the connecting plug and a side notch running through a side wall of the connecting plug, through the top notch user applies a force to the shaver head to cause the shaver head to slide from the side notch.

[0011] Preferably, the side notch is run through two side walls of the connecting plug along a length direction of the first shaver head or the second shaver head.

[0012] Preferably, a sealing ring is arranged between the connecting plug and the shaver head connection cover and located beneath the side notch, and the sealing ring is sleeved on the connecting plug and contacted with the connecting plug and an inner wall of the shaver head connection cover.

[0013] Preferably, the connecting plug is provided with a ring groove for receiving the sealing ring and an engaging groove located beneath the ring groove, the inner wall of the shaver head connection cover is provided with an engaging bulge that is engaged with the engaging groove.

[0014] Preferably, the shaver further includes a pushing plate received in the receiving chamber, a lower end of the pushing plate is matched with the elastic element, an upper end of the pushing plate is contacted with the shaver head in the receiving chamber, under an action of the elastic element, the pushing plate always pushes the shaver head to slide upwards to the opening.

[0015] Preferably, a plurality of second shaver heads are provided and stacked along a vertical direction of the magazine body.

[0016] Preferably, the connecting part is located at a top surface of the shaver head connection cover, and the connecting part comprises a support arm extending from the top surface of the shaver head connection cover and a contact arm that is elastic, the support arm is selectively assembled with the first shaver head or the second shaver head, and the contact arm is pressed on the first shaver head or the second shaver head.

[0017] Preferably, the shaver further includes a protective case assembled on the shaver head connection cover and/or the magazine body to cover the shaver head connection cover and the first shaver head or the second shaver head, and a box structure is defined by the protective case and the magazine body.

[0018] To achieve the above-mentioned objective, a magazine-type hand-held shaver includes: a shaver head including a first shaver head and a second shaver head which are interchangeable, wherein at least one of the first shaver head and the second shaver head is provided with a pushing structure; a magazine body which is a hollow structure and forms a receiving chamber with an opening located at an upper end of the magazine

body, and the shaver head being received in the receiving chamber; a shaver head connection cover including a lower end which is detachably installed on the magazine body and covered on the opening, and an upper end which is provided with a connection part that is selectively assembled with the first shaver head or the second shaver head; and an elastic element received in the receiving chamber and urging the shaver head to slide towards the opening, wherein the shaver head is capable of withdrawn from the opening by pressing the pushing structure.

[0019] Preferably, the pushing structure is a rugged structure.

[0020] In comparison with the prior art, since the shaver head is received in the receiving chamber of the magazine body and urged to slide to the opening under an action of the elastic element, the opening is located at the top of the magazine body, the lower end of the shaver head connection cover is detachably assembled on the magazine body and covered on the opening, and the connection part is selectively assembled with the first shaver head or the second shaver head, thus the magazine body according to the present invention has compact structure and clean look. Further, the replaceable shaver head is received in the magazine body, thus the replaceable shaver head is not easy to be omitted and is convenient to be carried. Furthermore, the shaver head in the receiving chamber is urged to slide upwards due to the spring action of the elastic element, thus it's easy and convenient for user to expose the opening by removing the shaver head connection cover from the magazine body and then take out a replaceable shaver head from the receiving chamber. After a new shaver head is replaced, the shaver head connection cover is required to be assembled on the magazine body again.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] The accompanying drawings facilitate an understanding of the various embodiments of this invention. In such drawings:

- Fig. 1 is a perspective view of a magazine-type handheld shaver according to a first embodiment of the present invention;
- Fig. 2 is an exploded view of Fig. 1;
- Fig. 3 is a further exploded view of Fig. 2;
- Fig. 4 is a partial enlarged view of portion A in Fig. 3; and
- Fig. 5 is another exploded view of Fig. 1.

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

[0022] A distinct and full description of the technical solution of the present invention will follow by combining with the accompanying drawings.

[0023] Referring to Figs. 1-3, magazine-type hand-

held shaver 100 according to one embodiment of the present invention includes a shaver head (referring to Fig. 5), a magazine body 20, a shaver head connection cover 30 and an elastic element 40. In this embodiment, the magazine body 20 has a rectangular cross section, and the rectangle structure has smoothing corners to upgrade the magazine body 20 and benefit to steady hold the magazine body 20. In other embodiments, the magazine body 20 may have different shapes. Additionally, the magazine body 20 may use rigid material such as ABS, or elastic material such as PPU, which is not limited.

[0024] As shown in Figs. 3 and 5, the shaver head 10 includes a first shaver head 10a and a second shaver head 10b which are interchangeable, that is, once one of them is blunt or damaged, the other of them can be replaced. Optionally, the first shaver head 10a and a second shaver head 10b can be in the same type or different types. Specifically, a pushing structure 11 (see Fig. 4) is provided at the side wall of the second shaver head 10b for allowing the user to press. The pushing structure 11 is opposite to the under-mentioned opening 22, so that a thumb of user can be pressed on the pushing structure 11 when user's hand holds the magazine body 20. Once a force is applied on the pushing structure 11, the shaver head 10 inside the receiving chamber 21 will be capable of withdrawn from receiving chamber 21 along a length direction of shaver head 10 (namely the double arrow direction in Fig. 3). Preferably, the length direction of the shaver head 10 is same with the long edge direction of the magazine body 20. Preferably, the pushing structure 11 is a rugged structure to increase friction thereby benefitting the removal of the shaver head 10 from the opening 22. For example, the rugged structure includes a row of dents arranged along the length direction of the shaver head 10. Furthermore, in other embodiments, the pushing structure 11 can be configured on a front side wall of the first shaver head 10a, or at least one of front side walls of the first shaver head 10a and the second shaver head 10b, which is not limited.

[0025] As shown in Fig. 3, the magazine body 20 is a hollow structure which includes a receiving chamber 21 with an opening 22 is defined. Preferably, the receiving chamber 21 is arranged along the vertical direction of the magazine body 20, thus the opening 22 is located at the top end of the magazine body 20. The shaver head 10 including the first and the second shaver head 10a, 10b is received in the receiving chamber 21, thus the shaver head 10 can be protected and is convenient to carry. The lower end of the shaver head connection cover 30 is detachably assembled on the magazine body 20 and covered on the opening 22, so that the opening 22 is closed by the cover 30 in a normal status to prevent the shaver head 10 from being exposed. Specifically, the shaver head connection cover 30 has a connecting part 31 located at the top surface of the shaver head connection cover 30, and the connecting part 31 is selectively assembled with one of the first shaver head 10a and the second shaver head 10b. Preferably, the connection be-

tween the connecting part 31 and the shaver head is detachable, so that the shaver head can be replaceable.

[0026] As shown in Fig. 3, the elastic element 40 is received in the receiving chamber 21 and urges the shaver head 10 to slide towards the opening 22, so that user can press the pushing structure 11 to make the shaver head 10 withdraw from the opening 22. In this embodiment, the elastic element 40 is located below the shaver head 10 inside the receiving chamber 21, thus the elastic element 40 urges the shaver head 10 to slide upwards. Preferably, the removal manner of the shaver head 10 is that, firstly steady hold the magazine body 20 by a hand and press the thumb on the shaver head 10, then apply forces to the corresponding shaver head 10 along the length direction (that is the double arrow direction in Fig. 3) of the shaver head 10, in such a way, the shaver head 10 can be slid out of the opening 22.

[0027] For improving a pushing effect of the elastic element 40, a pushing plate 60 is arranged in the receiving chamber 21 and has an adaptive size with the inner wall of the receiving chamber 21, so that the pushing plate 60 can be slid more smoothly. Specifically, the lower end of the pushing plate 60 is matched with the elastic element 40, preferably is elastically contacted with the elastic element 40; the upper end of the pushing plate 60 is contacted with the shaver head 10 received in the receiving chamber 21. Under the spring action of the elastic element 40, the pushing plate 60 maintains to push that shaver head 10 received in the receiving chamber 21 upwards. By means of the pushing plate 60, the pushing action of the elastic element 40 is more reliable, and the shaver heads 10 in the chamber 21 can be stacked reliably. Preferably, the elastic element 30 is a telescopic spring.

[0028] More specifically, referring to Figs. 2, 3 and 5, the connecting part 31 includes a support arm 311 extending from the top surface of the shaver head connection cover 30 and a contact arm 312 that is elastic. The support arm 311 is selectively and detachably assembled with the first shaver head 10a or the second shaver head 10b; and the contact arm 312 is elastically pressed on the first shaver head 10a or the second shaver head 10b, thus the contact between the shaver head 10a or 10b and the skin is more reliable, due to the elastic pushing force. Preferably, two curved support arms 311 are provided in this embodiment, and the contact arm 312 is located between the two support arms 311, so that the shaver head 10a or 10b can be assembled on the support arms 311 reliably, and the contact force on the shaver head 10a or 10b is even and reliable.

[0029] Referring to Figs. 3 and 5, multiple second shaver heads 10b are arranged and stacked in the vertical direction. Specifically, in this embodiment, the amount of the second shaver heads 10b is four, but other amounts can be arranged, according to the actual demands and actual design. Specifically, each pushing structure for each the second shaver head 10b is arranged upwards.

[0030] Referring to Figs. 3-5, the upper end of the mag-

azine body 20 is provided with a connecting plug 23 that is matched with the shaver head connection cover 30, the opening 22 is formed on the connecting plug 23, and the shaver head connection cover 30 is detachably covered on the connecting plug 23, so that the assembly between the magazine body 20 and the shaver head connection cover 30 is convenient and quick. In this embodiment, the opening 22 includes a top notch 221 running through the top end of the connecting plug 23 and a side notch 222 running through a side wall of the connecting plug 23. Preferably, two side notches 222 run through the two side walls of the connecting plug 23, for example, the left and the right side walls in Fig. 3, that is, the forming direction of the side notches 222 is along the length direction of the shaver head 10a or 10b. Thus, when user applies force on the shaver head 10 in the chamber 21, the shaver head 10 may be slid from the side notched 222, along the length direction of the shaver head 10. Preferably, the top notch 221 and the side notches 222 are communicated with each other, so that the shaver head 10 can be slid from the left side of the right side when the pushing structure 11 is pressed. For making the shaver 100 waterproof, a sealing ring (not shown) is arranged between the connecting plug 23 and the shaver head connection cover 30 and located beneath the side notches 221, and the sealing ring is sleeved on the connecting plug 23 and contacted with the connecting plug 23 and the inner wall of and the shaver head connection cover 30. For ensuring the reliability between the sealing ring and the connecting plug 23 with the shaver head connection cover 30, the connecting plug 23 is provided with a ring groove 231 for receiving the sealing ring and an engaging groove 232 located beneath the ring groove 231, the inner wall of the shaver head connection cover 30 is provided with an engaging bulge 32 that is engaged with the engaging groove 232.

[0031] As shown in Figs. 1-3 and Fig. 5, the shaver 100 further includes a protective case 70 assembled on the shaver head connection cover 30 and/or the magazine body 20. In this embodiment, the protective case 70 is assembled on the shaver head connection cover 30, but can be assembled on the magazine body 20, or on the both of them, which is not limited. Preferably, the protective case 70 is detachably assembled on the shaver head connection cover 30, so as to cover the shaver head connection cover 30 and the shaver head 10a or 10b. Specifically, a box structure is defined by the protective case 70 and the magazine body 20, more preferably, the box structure is a rectangular structure including two curved short edges and two straight long edges. Due to the protective case 70, the first shaver head 10a or the second shaver 10b connected to the connecting part 32 is unnecessary to be received in the receiving chamber 21, instead is received in the protective case 70, thus more replaceable shaver heads 10 can be received in the receiving chamber 21.

[0032] Referring to Figs. 1-3 and 5 again, the magazine body 20 of the shaver 100 includes a main body 20a and

a bottom part 20b that are integrated in unity. Preferably, the bottom part 20b is connected with the main body 20a by laser welding. Before the welding, the shaver head 10, the pushing plate 60 and the elastic element 40 are installed in the receiving chamber 21 in turns, and then the bottom part 20b is covered on the main body 20a to perform the welding. By this token, the assembly of the shaver 100 is convenient.

[0033] In comparison with the prior art, since the shaver head 10 is received in the receiving chamber 21 of the magazine body 20 and urged to slide to the opening 22 under an action of the elastic element 40, the opening 22 is located at the top of the magazine body 20, the lower end of the shaver head connection cover 30 is detachably assembled on the magazine body 20 and covered on the opening 22, and the connection part 31 is selectively assembled with the first shaver head 10a or the second shaver head 10b, thus the magazine body 20 according to the present invention has compact structure and clean look. Further, the replaceable shaver head 10 is received in the magazine body 20, thus the replaceable shaver head 10 is not easy to be omitted and is convenient to be carried. Furthermore, the shaver head 10 in the receiving chamber 21 is urged to slide upwards due to the spring action of the elastic element 40, thus it's easy and convenient for user to expose the opening 22 by removing the shaver head connection cover 30 from the magazine body 20 and then take out a replaceable shaver head 10 from the receiving chamber 21. After a new shaver head is replaced, the shaver head connection cover 30 is required to be assembled on the magazine body 20 again.

[0034] While the invention has been described in connection with what are presently considered to be the most practical and preferred embodiments, it is to be understood that the invention is not to be limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the invention.

Claims

1. A magazine-type hand-held shaver (100), comprising:

a shaver head (10), comprising a first shaver head (10a) and a second shaver head (10b) which are interchangeable;

a magazine body (20), which is a hollow structure and forms a receiving chamber (21) with an opening (22) located at an upper end of the magazine body (20), and the shaver head (10) being received in the receiving chamber (21);

a shaver head connection cover (30), comprising a lower end which is detachably installed on the magazine body (20) and covered on the opening (22), and an upper end which is provided

ed with a connection part (31) that is selectively assembled with the first shaver head (10a) or the second shaver head (10b); and
an elastic element (40), received in the receiving chamber (21) and urging the shaver head (10) to slide towards the opening (22).

2. The magazine-type hand-held shaver (100) according to claim 1, wherein the upper end of the magazine body (20) is provided with a connecting plug (23) that is matched with the shaver head connection cover (30), the opening (22) is formed on the connecting plug, and the shaver head connection cover (30) is detachably covered on the connecting plug (23).

3. The magazine-type hand-held shaver (100) according to claim 2, wherein the opening (22) comprises an top notch (221) running through a top end of the connecting plug (23) and a side notch (222) running through a side wall of the connecting plug (23), through the top notch (221) user applies a force to the shaver head inside the receiving chamber (21) to cause the shaver head to slide from the side notch (222).

4. The magazine-type hand-held shaver (100) according to claim 3, wherein the side notch is run through two side walls of the connecting plug (23) along a length direction of the first shaver head (10a) or the second shaver head (10b).

5. The magazine-type hand-held shaver (100) according to claim 3, wherein a sealing ring is arranged between the connecting plug (23) and the shaver head connection cover (30) and located beneath the side notch (222), and the sealing ring is sleeved on the connecting plug (23) and contacted with the connecting plug (23) and an inner wall of the shaver head connection cover (30).

6. The magazine-type hand-held shaver (100) according to claim 5, wherein the connecting plug (23) is provided with a ring groove (231) for receiving the sealing ring and an engaging groove (232) located beneath the ring groove (231), the inner wall of the shaver head connection cover (30) is provided with an engaging bulge (32) that is engaged with the engaging groove (232).

7. The magazine-type hand-held shaver (100) according to claim 1, further comprising a pushing plate (60) received in the receiving chamber (21), a lower end of the pushing plate (60) is matched with the elastic element (40), an upper end of the pushing plate is contacted with the shaver head in the receiving chamber (21), under an action of the elastic element (40), the pushing plate (60) always pushes the shaver head in the receiving chamber (21) to slide up-

wards to the opening (22).

8. The magazine-type hand-held shaver (100) according to claim 1, wherein a plurality of second shaver heads (10b) are provided and stacked along a vertical direction of the magazine body (20). 5

9. The magazine-type hand-held shaver (100) according to claim 1, wherein the connecting part is located at a top surface of the shaver head connection cover (30), and the connecting part comprises a support arm (311) extending from the top surface of the shaver head connection cover (30) and a contact arm (312) that is elastic, the support arm (311) is selectively assembled with the first shaver head (10a) or the second shaver head (10b), and the contact arm (312) is pressed on the first shaver head (10a) or the second shaver head (10b). 10
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10. The magazine-type hand-held shaver (100) according to claim 1, further comprising a protective case (70) assembled on the shaver head connection cover (30) and/or the magazine body (20) to cover the shaver head connection cover (30) and the first shaver head (10a) or the second shaver head (10b), and a box structure is defined by the protective case and the magazine body (20). 20
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11. A magazine-type hand-held shaver (100), comprising: 30
 - a shaver head (10), comprising a first shaver head (10a) and a second shaver head (10b) which are interchangeable, at least one of the first shaver head (10a) and the second shaver head (10b) being provided with a pushing structure (11); 35
 - a magazine body (20), which is a hollow structure and forms a receiving chamber (21) with an opening (22) located at an upper end of the magazine body (20), and the shaver head (10) being received in the receiving chamber (21); 40
 - a shaver head connection cover (30), comprising a lower end which is detachably installed on the magazine body (20) and covered on the opening (22), and an upper end which is provided with a connection part (31) that is selectively assembled with the first shaver head (10a) or the second shaver head (10b); and 45
 - an elastic element (40), received in the receiving chamber (21) and urging the shaver head (10) to slide towards the opening (22), and the shaver head being capable of withdrawn from the opening (22) by pressing the pushing structure (11). 50
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12. The magazine-type hand-held shaver (100) according to claim 11, wherein the pushing structure (11) is a rugged structure.

100

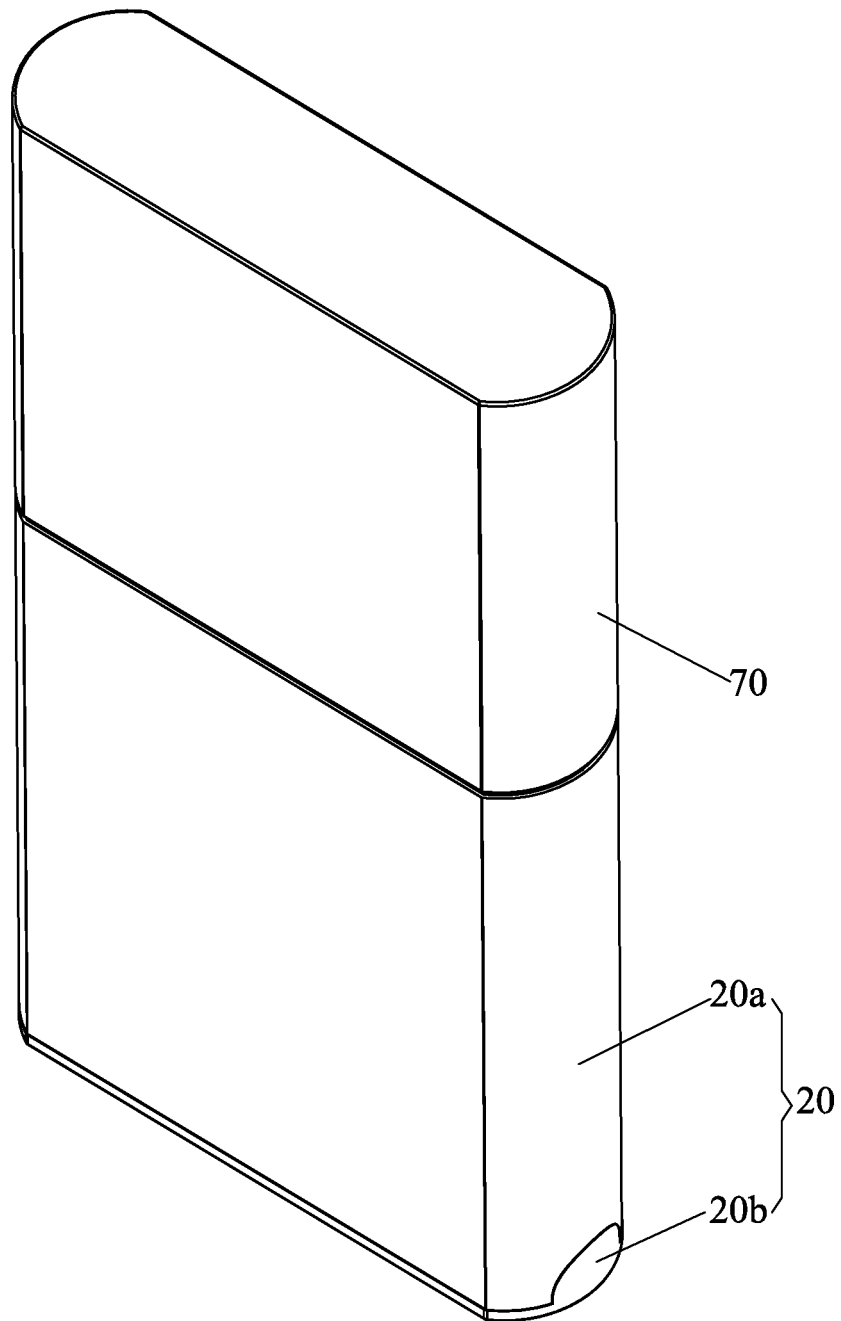


Fig. 1

100

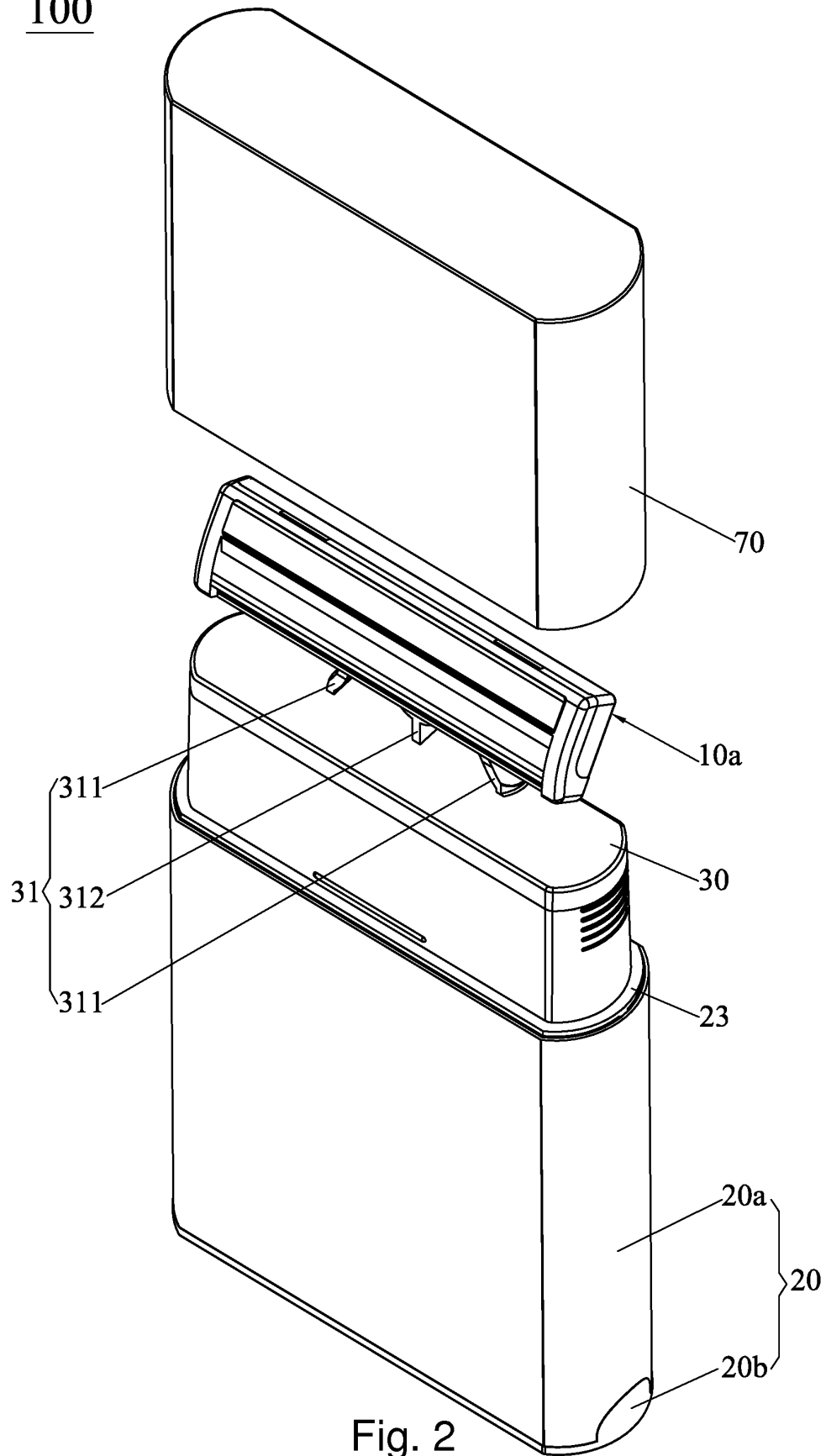


Fig. 2

100

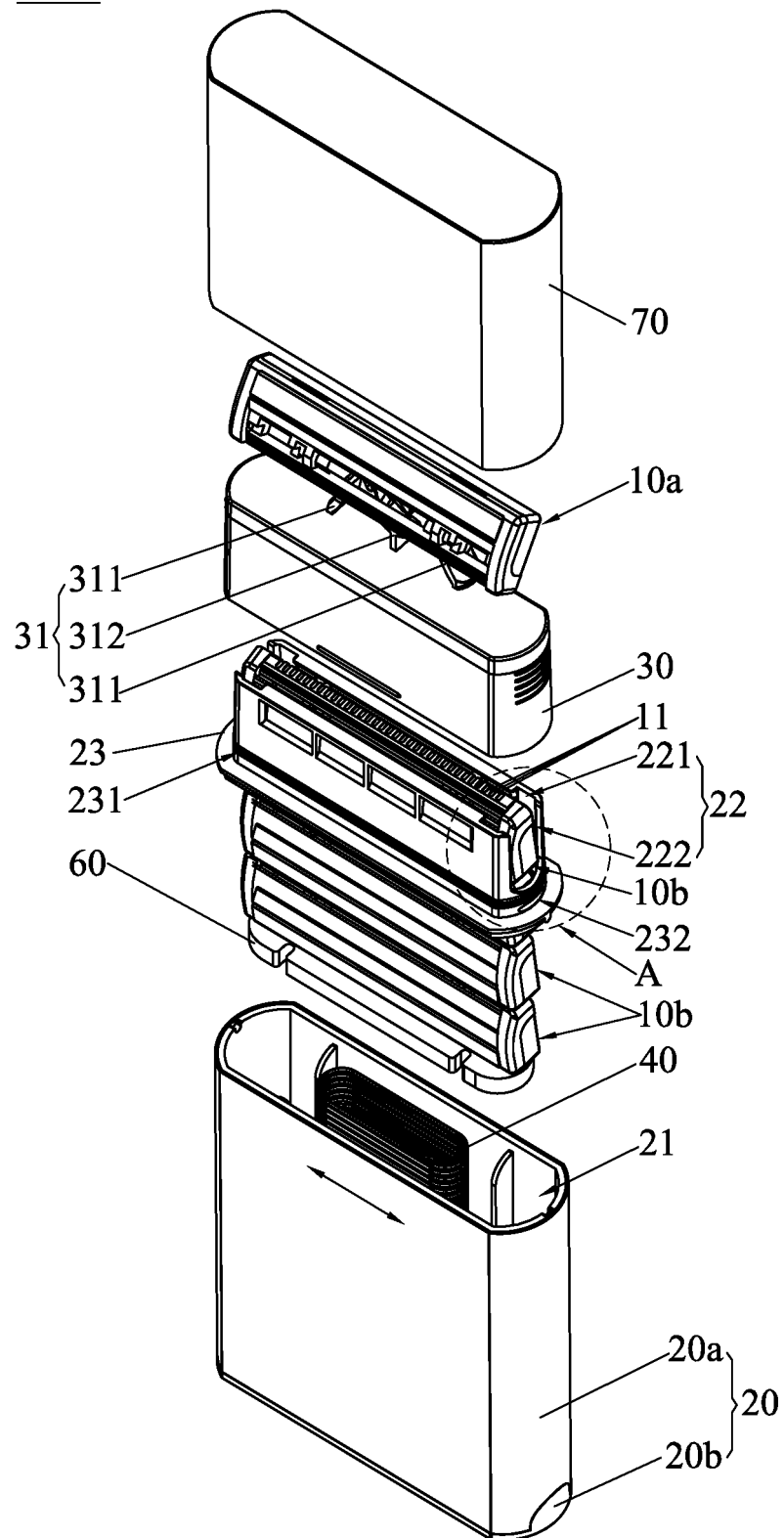


Fig. 3

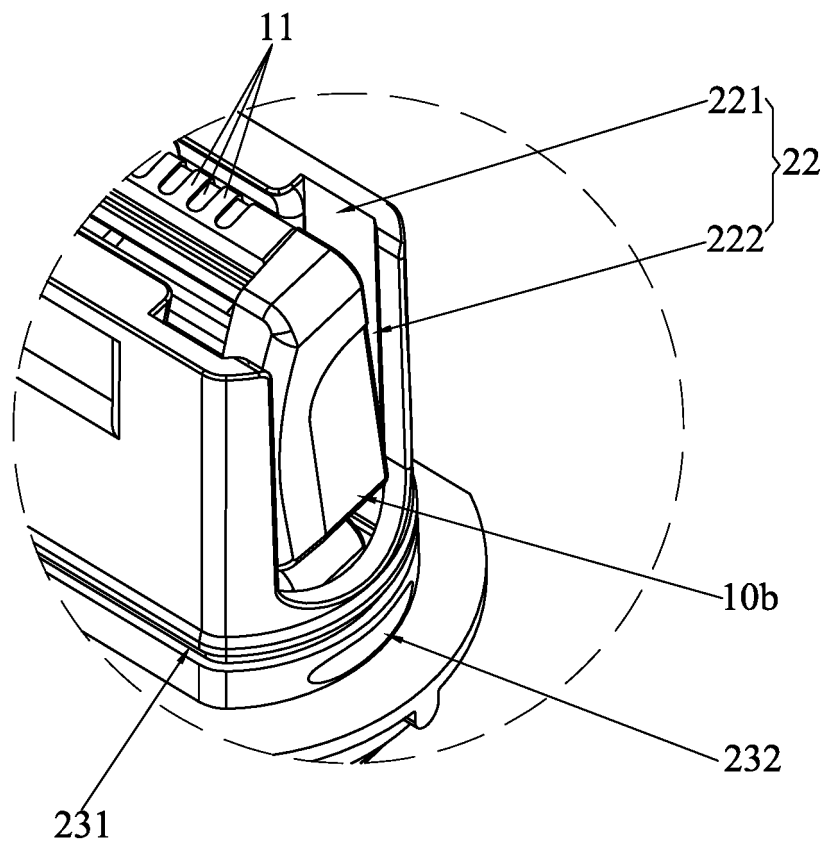


Fig. 4

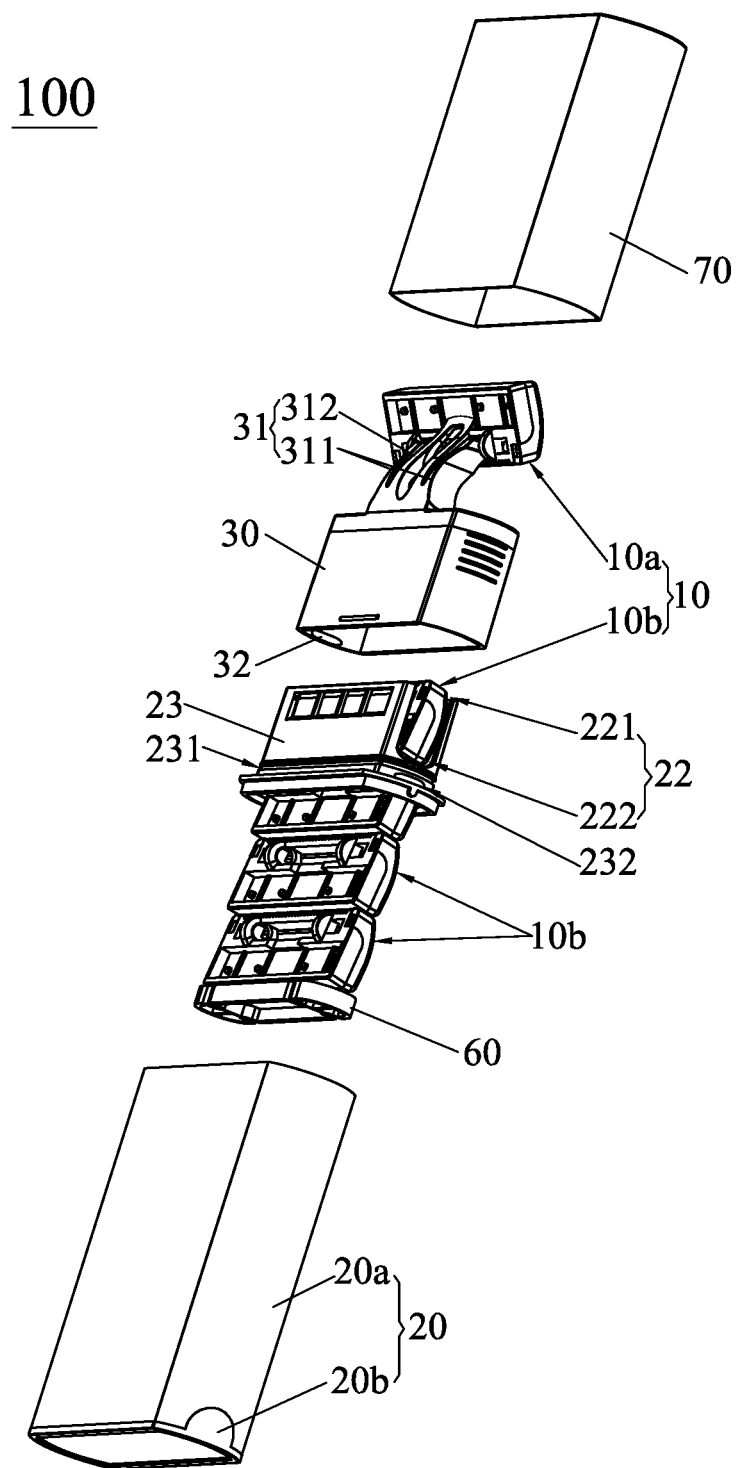


Fig. 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2016/080131

A. CLASSIFICATION OF SUBJECT MATTER

B26B 21/52 (2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B26B 21/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNPAT; CNKI; WPI; EPODOC; jin yanqiu, casket, spring, replace, cover, razor, hold+, shav+, cavity, antrum, spring, hole, hollow,
support+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5608972 A (TSAE-CHYN, CHERN) 11 March 1997 (11.03.1997) description, embodiments, and figures 1-5	1-12
A	CN 2758040 Y (ZHOU, Guoxin) 15 February 2006 (15.02.2006) the whole document	1-12
A	CN 202507311 U (LIU, Yanli) 31 October 2012 (31.10.2012) the whole document	1-12
A	CN 204109013 U (HU, Zhihao et al.) 21 January 2015 (21.01.2015) the whole document	1-12
A	CN 203156799 U (GUANGZHOU HAITIAN PLASTIC CO., LTD.) 28 August 2013 (28.08.2013) the whole document	1-12
A	CN 104128939 A (JIANG, Caiying) 05 November 2014 (05.11.2014) the whole document	1-12

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search 04 January 2017	Date of mailing of the international search report 16 January 2017
Name and mailing address of the ISA State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10) 62019451	Authorized officer WANG, Haiji Telephone No. (86-10) 62413993

INTERNATIONAL SEARCH REPORT
Information on patent family membersInternational application No.
PCT/CN2016/080131

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US 5608972 A	11 March 1997	None	
CN 2758040 Y	15 February 2006	None	
CN 202507311 U	31 October 2012	None	
CN 204109013 U	21 January 2015	None	
CN 203156799 U	28 August 2013	None	
CN 104128939 A	05 November 2014	None	