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(54) **TWO-WAY INSERT**

(57) A two-way insert, comprising an insertion rod (20) and an insertion pin (30) for mounting two-way sliders (10), wherein an insertion pin side wing base (40) is provided on a cloth tape of the insertion pin (30); and an insertion pin side wing channel for the two-way sliders (10) to enter is formed between the insertion pin (30) and the insertion pin side wing base (40), and the insertion pin side wing channel is provided with a limiting portion (501) capable of transversely limiting the sliders moving in place. The problem of the cloth tape coming into an inner cavity of a slider due to a transverse shake of the slider can be solved, and rapid and precise alignment of inner cavities of the two-way sliders (10) can be easily achieved, thereby facilitating quick and accurate insertion and pull-out of the insertion rod (20).

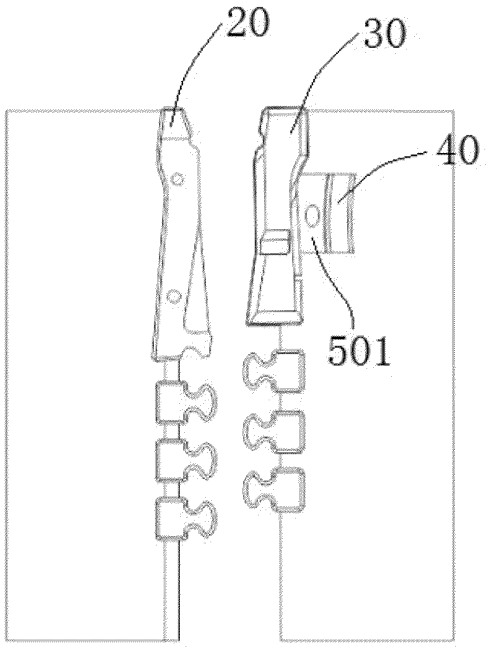

FIG. 1

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Description

[0001] The present application claims the priority to Chinese Patent Application No. 202220687761.9, titled "TWO-WAY INSERTION ASSEMBLY", filed with the China National Intellectual Property Administration on March 28, 2022, which is incorporated herein by reference in its entirety.

FIELD

[0002] The present application relates to the technical field of zippers, and in particular to a two-way insertion assembly.

BACKGROUND

[0003] In daily life, a two-way zipper is widely used. Before a slider of the two-way zipper is pulled, it generally needs two hands to align two sliders, which is not easy to operate. An inserting action can only be performed after the alignment of the two sliders is repeatedly confirmed, and then the two-way zipper can be closed. Even if the two sliders are pulled in place, they are prone to shaking, causing the sliders to bite into an edge of a tape. Therefore, the insertion pin cannot be inserted quickly at one time, which is difficult to use.

[0004] At present, a two-way insertion assembly on the market generally realizes stopping the slider by increasing the strength of the two-way insertion assembly and the tape and increasing the hardness of the tape. However, the effect by the above solution is not ideal, and it is still impossible to ensure a precise and effective alignment of the two sliders. The problems of the slider shaking laterally and biting the tape are not effectively solved, which cannot ensure the retainer to be quickly and stably inserted into the slider.

SUMMARY

[0005] In view of this, a two-way insertion assembly is provided in the present application, in which two sliders are easy to be pulled, inner cavities of a top slider and a bottom slider can be precisely and quickly aligned, the sliders are prevented from being misalignment due to the slider shaking laterally and biting the tape and a quick insertion and pulling can be achieved, thereby improving the success rate of the meshing and the user's experience.

[0006] A two-way insertion assembly is provided in the present application, including an insertion pin and a retainer for mounting two sliders, and a retainer side base is provided on a tape at a side of the retainer, a retainer side passage for an entry of the two sliders is provided between the retainer side base and the retainer, and the retainer side passage is provided with a limiter, which can laterally limit the slider that is moved in place.

[0007] In some embodiments, the retainer side passage is a passage with a bottom portion.

[0008] In some embodiments, the retainer side passage is provided with a first guide portion at an entry end of the slider, the first guide portion is configured to guide the entry of the slider, and the first guide portion is tapered in an entry direction of the slider.

[0009] In some embodiments, the retainer side passage is provided with a second guide portion at a movement terminal end of the slider to guide the entry of the slider, the second guide portion is gradually flared in the entry direction of the slider, and the limiter is formed between the first guide portion and the second guide portion.

[0010] In some embodiments, a leading end of the retainer and a leading end of the second guide extend forward respectively to form a guide slot for guiding the entry of the slider.

[0011] In some embodiments, the guide slot is a U-shaped slot, which matches with an arc angle of a leading end of the slider.

[0012] In some embodiments, a pin side base is provided on the tape at a side of the insertion pin, and a pin side passage is formed between the pin side base and the insertion pin.

[0013] In some embodiments, the pin side passage is an inverted U-shaped passage.

[0014] In some embodiments, the pin side base and the retainer side base are symmetrically arranged.

[0015] In some embodiments, the retainer side base, the bottom portion, and the retainer are integrated.

[0016] In the two-way insertion assembly provided in the present application, the entry of the two-way separating zipper can be guided through the retainer side passage, the limiter of the retainer side passage can laterally limit the slider that is moved in place to ensure a precise and quick alignment of inner cavities of the two sliders, and thus the two sliders are not prone to shaking laterally and biting the tape. When the two-way insertion assembly is located at the collar, the two sliders can be firmly positioned on the two-way insertion assembly without loosening or falling off. In the present application, the structure is simple, the cost is low, the zipping operation of the two sliders is smooth and fast, and the alignment is precise.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] In order to clearly illustrate the technical solutions in the embodiments of the present application or prior arts, a brief introduction will be made to the accompanying drawings in the embodiments or the description to the prior arts. Obviously, the accompanying drawings in the following description are only embodiments of the present application. For those skilled in the art, other accompanying drawings can be obtained based on these drawings without pay a creative work.

FIG. 1 is a schematic view of a two-way insertion

assembly according to a first embodiment of the present application;

FIG. 2 is a schematic view of a two-way insertion assembly according to a second embodiment of the present application;

FIG. 3 is a schematic structural view of a two-way insertion assembly according to a third embodiment of the present application;

FIG. 4 is a schematic structural view of an insertion pin, a retainer, and two sliders in FIG. 3 in meshing state;

FIG. 5 is a schematic structural view of a two-way insertion assembly according to a fourth embodiment of the present application; and

FIG. 6 is a schematic structural view of a two-way insertion assembly according to a fifth embodiment of the present application.

[0018] In the accompany drawings:
10 two sliders, 20 insertion pin, 30 retainer, 40 retainer side base, 60 pin side base, 501 limiter, 502 first guide portion, 503 second guide portion, 504 guide slot.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0019] The following will provide a clear and complete description of the technical solution in the embodiments of the present application in conjunction with the accompanying drawings. Obviously, the described embodiments are only a part of the embodiments of the present application, not all of them. Based on the embodiments in the present application, all other embodiments obtained by those skilled in the art without paying a creative work will fall within the scope of the present application.

[0020] In order to enable those skilled in the art to better understand the present application, a further detailed explanation of the present application will be provided below in conjunction with the accompanying drawings and embodiments.

[0021] A two-way insertion assembly is provided in the present application, which includes an insertion pin 20 and a retainer 30. Two sliders 10 are mounted on the retainer 30. When the two sliders 10 are moved in place, the insertion pin 20 is inserted into inner cavities of the two sliders 10. A retainer side base 40 is provided on the tape at a side of the retainer 30. The retainer side base 40 is located outside the retainer 30, and a retainer side passage is formed there between. A guide passage for inserting the insertion pin 20 is provided by the retainer side passage, so that the insertion pin 20 can be accurately inserted into the guide passage. The retainer side passage is provided with a limiter 501, which can laterally limit the slider that is moved in place so as to prevent the slider from shaking laterally.

[0022] The two sliders 10, i.e., a top slider and a bottom slider, are located on the retainer 30 and the retainer side base through the retainer side passage. Two sliders on a conventional retainer may shake along with the swing of the clothing, which causes a positional deviation and results in a misalignment of the inner cavities of two sliders, thus, it is difficult to quickly and effectively insert the insertion pin 20 into the inner cavities of the two sliders.

[0023] For this, when the top slider in the present application passes through the side base, the retainer side passage guides the movement of the slider, making it easier for the insertion pin 20 to be inserted into the inner cavities of the two sliders. The limiter 501 blocks the lateral movement of the sliders, assists and secures the two sliders, ensuring the two sliders not to shake laterally or deviate on the insertion pin 20.

[0024] In the two-way insertion assembly provided in the present application, the two sliders are stably connected, which are not prone to deviation, and thus it is easy to operate without an additional manually positioning, and it only needs to pull the two sliders to the bottom. Therefore, the manufacturing process is simple with minimum changes to the entire production process.

[0025] The retainer side passage is a passage with a bottom portion. The bottom portion is formed on the tape by stamping with a stamping die. The retainer side base 40 and the retainer 30 are connected through the bottom portion, that is, a passage is formed between the retainer side base 40, the retainer 30, and the bottom portion, thus the passage with the bottom portion is formed.

[0026] The bottom portion of the passage has a certain thickness to fill a biting space between a tape gap of the two sliders and the retainer side passage, increase the friction resistance of the slider, increase a forward friction force of the two sliders 10, and prevent the slider that is in place from shifting fore and aft, which further ensures the movement stability of the slider.

[0027] Referring to FIG. 1, FIG. 1 is a schematic view of a two-way insertion assembly according to a first embodiment of the present application. In the figure, the retainer side passage is substantially located in the middle of the retainer side base 40 and is provided with the limiter 501. The limiter 501 is in a flared opening shape, which implements a guiding function to the movement and a lateral position-limit function when the slider being in place and thus can effectively limit the slider in combination with the frictional force between the bottom portion of the passage and the slider.

[0028] FIG. 2 is a schematic view of a two-way insertion assembly according to a second embodiment of the present application. In the figure, the retainer side passage is provided with a first guide portion 502 at an entry end of the slider. The first guide portion 502 is tapered along the entry direction of the slider and smoothly transitioned to the limiter 501 next to the first guide portion 502. The first guide portion 502 facilitates the entry of the

slider, and the limiter 501 limits the slider 10 that is in place, making the zipping action of the slider smoother and more efficient and convenient.

[0029] Referring to FIG. 3 and FIG. 4. FIG. 3 is a schematic structural view of a two-way insertion assembly according to a third embodiment of the present application, and FIG. 4 is a schematic structural view of the insertion pin, the retainer, and the two sliders in FIG. 3 in state of meshing.

[0030] In FIG. 3 and FIG. 4, the retainer side passage is provided with a second guide portion 503 at a movement terminal end of the slider in order to guide the entry of the slider. Along the zipping direction, the second guide portion 503 is located at a leading end of the first guide portion 502, and the second guide portion 503 is gradually flared along the entry direction of the slider. The limiter 501 is formed between the first guide portion 502 and the second guide portion 503, forming a flared opening shape, and the limiter 501, the first guide portion 502 and the second guide portion 503 are transitioned smoothly. The two sliders that are in place are shown in FIG. 4.

[0031] In this embodiment, the second guide 503 is further provided based on the first guide 502, which facilitates guiding the slider to entre and exit. The second guide 503 has a width greater than that of the limiter 501 in the middle. The first guide 502 and the second guide 503 implement a function of guiding, which facilitates the entry of the two sliders. The limiter 501 blocks the lateral movement and shaking of the slider, which implements a function of limiting so as to prevent the slider from collision with the retainer side base 40. In addition, the limiter 501 limits the two sliders 10 that is in place to prevent the slider from shaking.

[0032] Referring to FIG. 5, FIG. 5 is a schematic structural view of a two-way insertion assembly according to a fourth embodiment of the present application.

[0033] In the figure, the retainer side base 40 is sequentially provided with a first guide 502, a limiter 501, and a second guide 503 along an insertion direction of the slider. The leading end of the retainer 30 and the leading end of the second guide 503 are extended forward, respectively, to form a guide slot 504, which can guide a quick entry of the slider and form a barrier at the terminal end to prevent the slider from falling off due to excessive force.

[0034] To ensure the use safety, extension portions of the retainer 30 and the second guide 503 are an arc structure without edges and corners in order to avoid scratching the user.

[0035] In addition, in order to ensure a good match between the guide slot 504 and the arc angle outside the leading end of the slider, the guide slot 504 is a U-shaped slot, which is compatible with the arc angle of the leading end of the slider, and the U-shaped slot matches with the arc angle of the leading end of the slider, which can accommodate the slider and implement a position limit to the slider. It should be noted that the guide slot 504 is not limited to a U-shaped structure. The specific structure of the guide slot 504 should be configured according to actual needs, which is not limit herein.

[0036] Exemplarily, the retainer side base 40, the bottom portion, and the retainer 30 are integrated for easy processing and ensuring strength.

[0037] Referring to FIG. 6, FIG. 6 is a schematic structural view of a two-way insertion assembly according to a fifth embodiment of the present application.

[0038] Based on any previous embodiments, a pin side base 60 may be provided on the tape at the side of the insertion pin 20. A pin side passage is formed between the pin side base 60 and the insertion pin 20. The limiter 501 is provided on the pin side passage, and the first guide 502 and/or the second guide 503 may be further provided on the pin side passage. The principle of the pin side passage is the same as that of the retainer side passage. The pin side passage is provided to implement a synchronous guiding and position limiting to both sides of the two sliders 10, thereby improving the smoothness of the two sliders 10.

[0039] In an embodiment, the pin side base 60 and the retainer side base 40 are symmetrically arranged, thereby ensuring synchronous guiding and limiting to the two sides of the two sliders 10, which further improves the pulling smoothness of the two sliders 10 and prevents a motion blockage.

[0040] It should be noted that in the present application, the relational terms such as first and second are only used to distinguish one entity from several other entities, and do not necessarily require or imply any actual relationship or order among these entities.

[0041] The above provides a detailed introduction to the dual port plugin provided in the present application. This article applies specific examples to explain the principles and implementation methods of the present application. The above examples are only used to help understand the methods and core ideas of the present application. It should be pointed out that for ordinary technical personnel in this field, several improvements and modifications can be made to the present application without departing from the principles of the present application, and these improvements and modifications also fall within the scope of protection of the claims in the present application.

Claims

1. A two-way insertion assembly, comprising:

   an insertion pin (20); and
   a retainer (30) for mounting two sliders (10), wherein
   a retainer side base (40) is provided on a tape at a side of the retainer (30), a retainer side passage for an entry of the two sliders (10) is provided between the retainer side base (40) and

the retainer (30), and the retainer side passage is provided with a limiter (501), which is configured to laterally limit one of the two sliders (10) that is moved in place.

2. The two-way insertion assembly according to claim 1, wherein the retainer side passage is a passage with a bottom portion.

3. The two-way insertion assembly according to claim 2, wherein the retainer side passage is provided with a first guide portion (502) at an entry end of the slider, the first guide portion (502) is configured to guide the entry of the slider, and the first guide portion (502) is tapered in an entry direction of the slider.

4. The two-way insertion assembly according to claim 3, wherein the retainer side passage is provided with a second guide portion (503) at a movement terminal end of the slider to guide the entry of the slider, the second guide portion (503) is gradually flared in the entry direction of the slider, and the limiter (501) is formed between the first guide portion (502) and the second guide portion (503).

5. The two-way insertion assembly according to claim 4, wherein a leading end of the retainer (30) and a leading end of the second guide (503) extend forward respectively to form a guide slot (504) for guiding the entry of the slider.

6. The two-way insertion assembly according to claim 5, wherein the guide slot (504) is a U-shaped slot, which matches with an arc angle of a leading end of the slider.

7. The two-way insertion assembly according to any one of claims 1 to 6, wherein a pin side base (60) is provided on a tape at a side of the insertion pin (20), and a pin side passage is formed between the pin side base (60) and the pin (20).

8. The two-way insertion assembly according to claim 7, wherein the pin side passage is an inverted U-shaped passage.

9. The two-way insertion assembly according to claim 7, wherein the pin side base (60) and the retainer side base (40) are symmetrically arranged.

10. The two-way insertion assembly according to claim 2, wherein the retainer side base (40), the retainer (30), and the bottom portion are integrated.

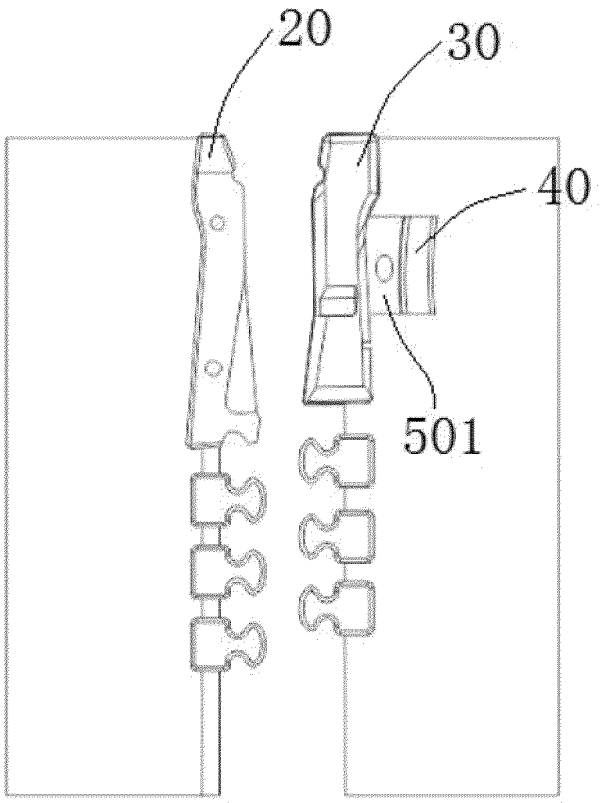

FIG. 1

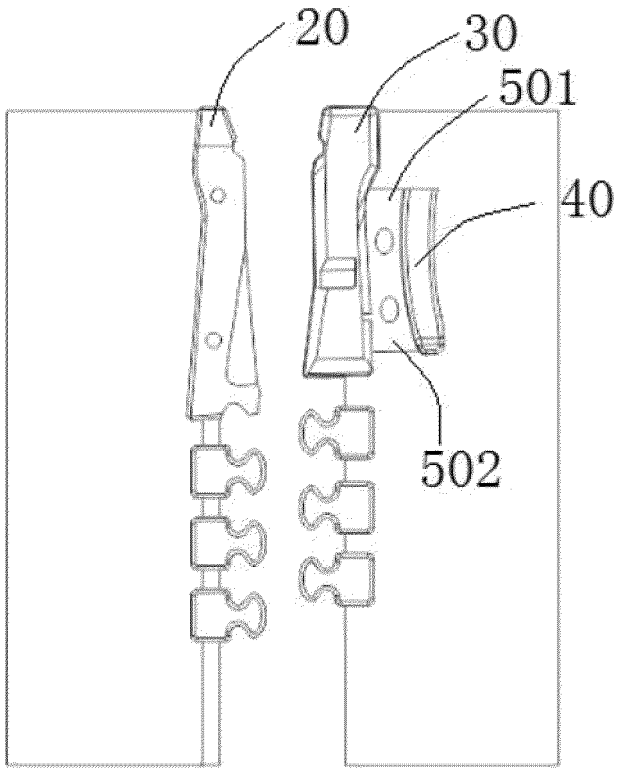

FIG. 2

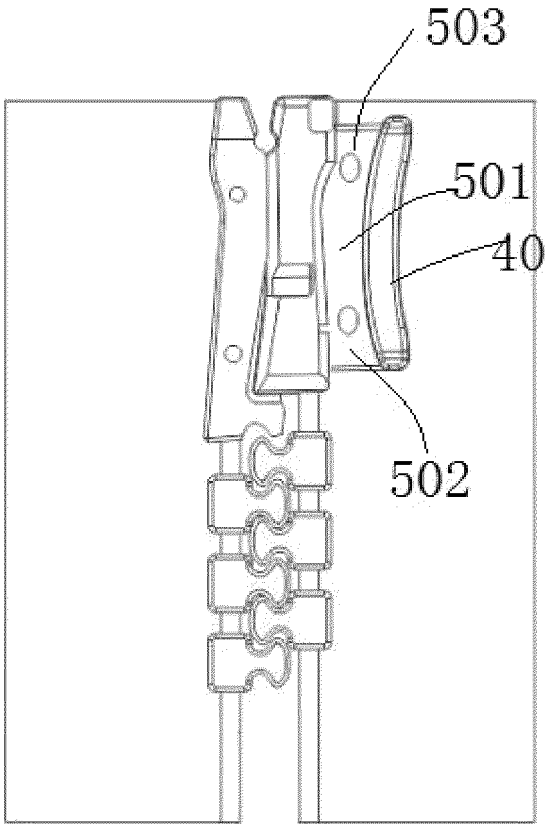

FIG. 3

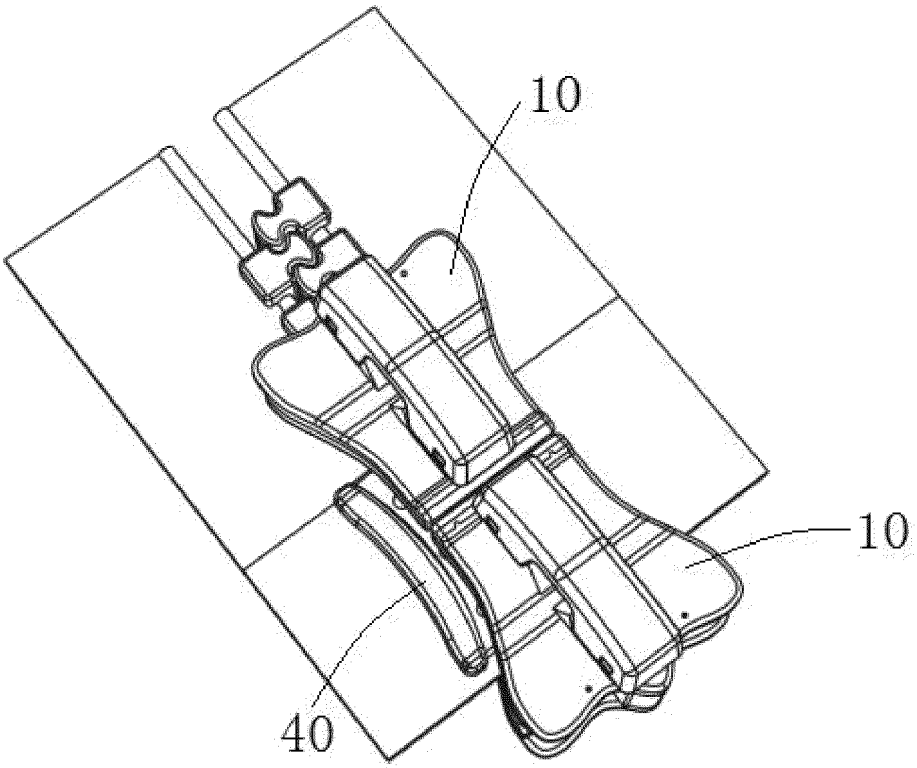

FIG. 4

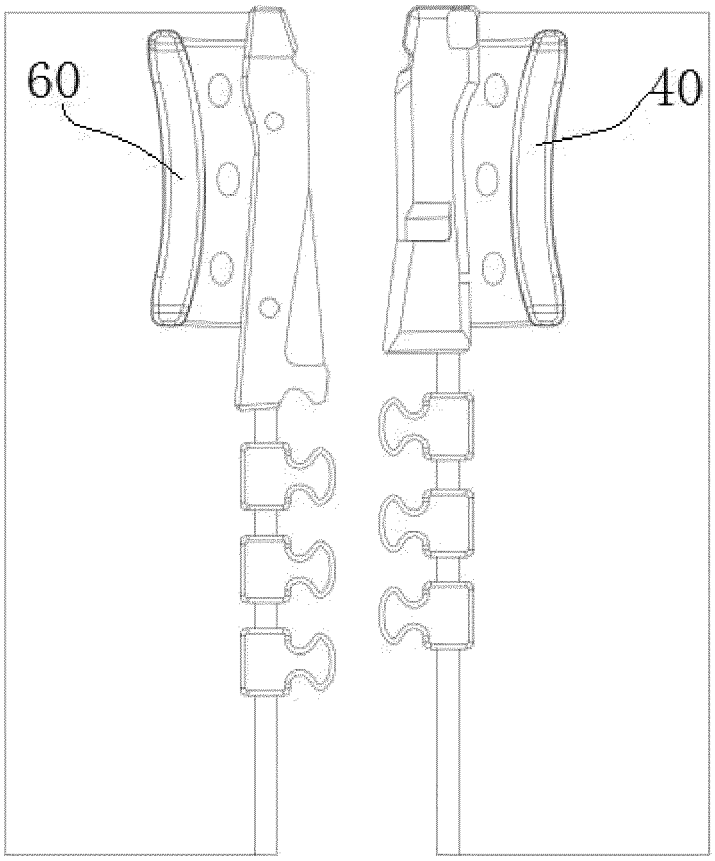

FIG. 5

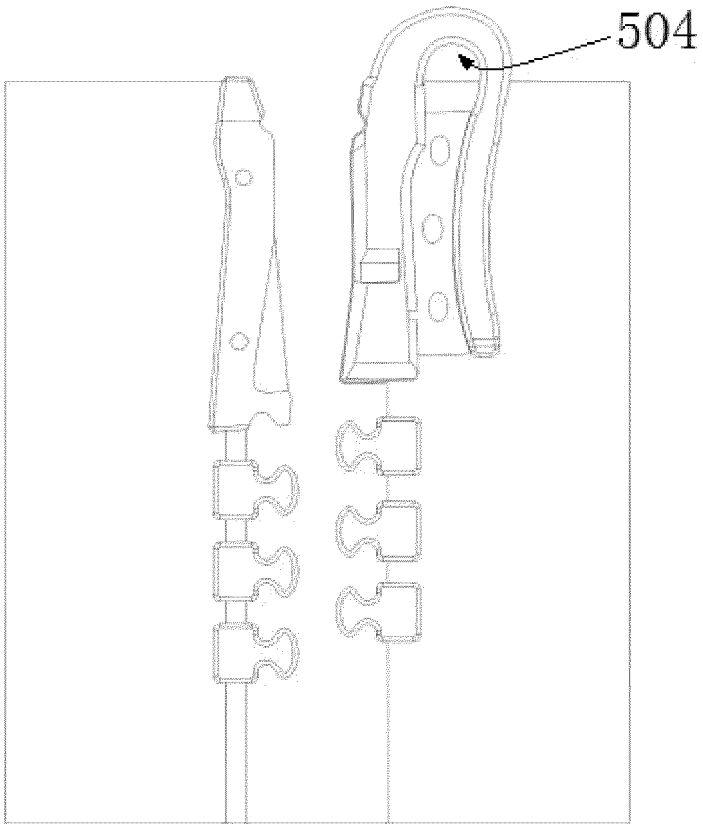

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2022/121632

A. CLASSIFICATION OF SUBJECT MATTER

A44B 19/24(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)

A44B19

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)

CNTXT, ENTXTC, ENTXT, VEN: 双开, 通道, 引导, 限位, 2nd, second, slider, passway, channel, guid+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 216907058 U (ZHEJIANG WEIXING INDUSTRIAL DEVELOPMENT CO., LTD.) 08 July 2022 (2022-07-08) claims 1-10	1-10
X	CN 112826182 A (YKK CORP.) 25 May 2021 (2021-05-25) description, paragraphs 0071-0147, and figures 1-11	1-10
X	CN 102655779 A (YKK CORP. et al.) 05 September 2012 (2012-09-05) description, paragraphs 0088-0179, and figures 1-11	1-10
X	CN 105266285 A (YKK CORP.) 27 January 2016 (2016-01-27) description, paragraphs 0037-0070, and figures 1-11	1-10
X	CN 211354117 U (ZHEJIANG WEIXING INDUSTRIAL DEVELOPMENT CO., LTD.) 28 August 2020 (2020-08-28) description, paragraphs 0040-0063, and figures 1-4	1-5, 10

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

* Special categories of cited documents:
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"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
"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
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 October 2022	**27 October 2022**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China** Facsimile No. **(86-10)62019451**	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2022/121632

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Form PCT/ISA/210 (patent family annex) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202220687761 **[0001]**