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(71) Applicant: **Ningbo Jialilai Machinery Manufacture Co., Ltd.**
Pingtang Village, Dongwu Town, Yinzhou District Ningbo City (CN)

(72) Inventor: **Huajun, Jin**
Dongwu Town
Yinzhou District, Ningbo City,
315113 Zhejiang Province (CN)

(74) Representative: **Dorna, Peter et al**
Algemeen Octrooi- en Merkenbureau
P.O. Box 645
5600 AP Eindhoven (NL)

(54) **Corkscrew**

(57) A corkscrew, comprising a handle (1), supports (2), a screw (3) that is pivotally associated to the handle (1); the supports (2) include an inner support (2.2) and an outer support (2.1); the inner support is flexibly fitted inside the outer support; one end of the inner support (2.2) is pivotally associated to the handle (1); the concave, ladder-type first positioning step (2.2.1) and the second positioning step (2.2.2) are set in turn from top to bottom on the inner support (2.2); convex limit step is set at the terminal of the inner support; the first limit end

(2.2.1) which matches the first positioning step or the second positioning step and takes the effect of limitation, the second limit end (2.1.2) that matches the limit step and takes the effect of limitation, as well as the supporting operation port that matches the mouth of bottle are set on the outer support (2.1); a flat spring (4) fixedly connected on the inner wall of the outer support (2.1), wherein the free end of the flat spring (4) is pressed tightly and slide-fitted on the outer wall of the inner support. The corkscrew has the advantages of timesaving, least resistance and convenience for operation.

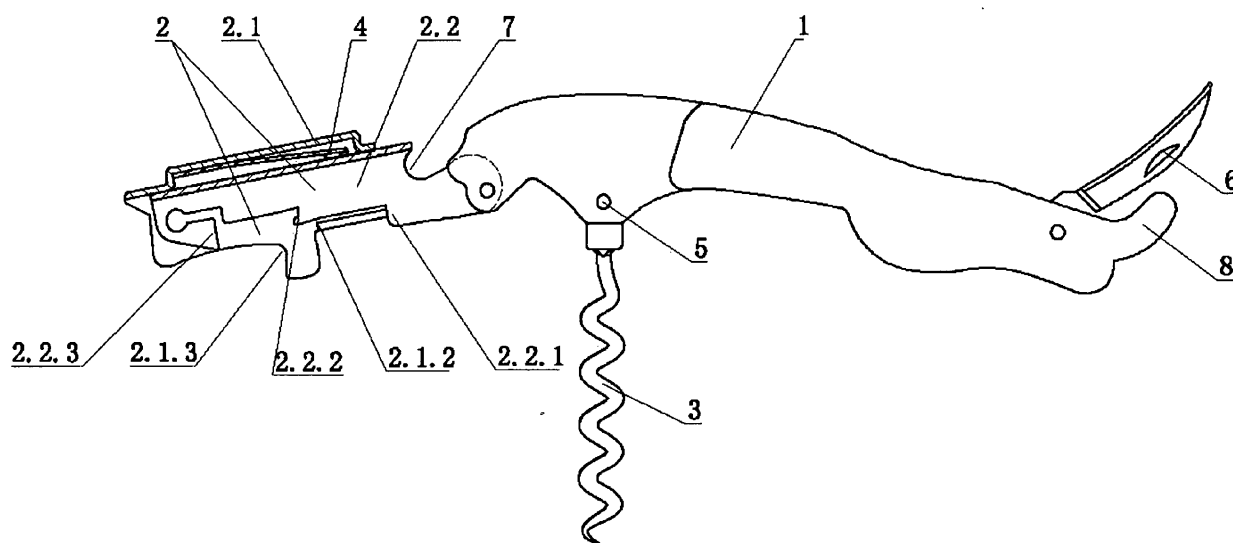


Fig. 1

Description

Technical Field

[0001] The present invention refers to a daily tool, more particularly, to a corkscrew used for removing corks from bottles.

Description of Related Art

[0002] In order to maintain the flavor of wine, especially the unique flavor of red wine, usually a cork is used for plugging the mouth of bottle. This kind of cork cannot be directly pulled out by hand or conventional tools for drinking; and it's necessary to use specialized corkscrews to pull out the corks. Currently, there are a variety of corkscrews on the market for sale, including the pull-type corkscrews that pull out corks by pulling force, the rotary corkscrews that pull out corks by mesh rotation of gears, the cork-pops that squeeze corks out of bottles, etc. The type most commonly seen is the pulling-force corkscrew, which generally comprises a support that matches the mouth of bottle, a handle that is pivotally associated to the support, a screw that is pivotally associated to the handle. In order to not only enable the smooth opening of corks but also reduce the length of the support, the support is usually designed as a pair of supports respectively assembled on the upper and lower end fixedly, i.e. the upper support and lower support. 2 support operation ports which both match the mouth of bottle are respectively set on the upper and lower support.

[0003] The corkscrew that adopts the abovementioned structure contains the following deficits: since the upper and lower support are both fixedly assembled, in order to make the support operation port of the lower support to stand on the mouth of bottle, it's necessary to press the lower support with great force to move it closer towards the direction of the mouth of bottle to put it standing on the mouth of bottle for supporting, which requires great effort; during the process of using, when the lower support is put at the mouth of bottle for supporting for the first time, since the length of the lower support is limited, it's impossible to pull out the cork at once; it is yet necessary to replace the lower support with the upper support to be bracing at the mouth of bottle to pull out the cork. This entire process involves many procedures and costs a large amount of time, with the necessity of quite troublesome operation.

BRIEF SUMMARY OF THE INVENTION

[0004] It is an object of the present invention to provide a more convenient, timesaving and resistant corkscrew which overcomes these technical problems.

[0005] To overcome the aforesaid disadvantages, the present invention takes a corkscrew like this: it comprises a handle, supports, a screw that is pivotally associated to the handle; the supports include an inner support and

an outer support; the inner support is flexibly fitted inside the outer support; one end of the inner support is pivotally associated to the handle; the concave, ladder-type first positioning step and the second positioning step are set in turn from top to bottom on the side of the inner support that is closer to the screw; convex limit step is set at the terminal of the inner support; the first limit end which matches the first positioning step or the second positioning step and takes the effect of limitation, the second limit end that matches the limit step and takes the effect of limitation, as well as the supporting operation port that matches the mouth of bottle are set in turn from top to bottom on the side of the outer support that is closer to the screw; a flat spring is fixedly connected on the inner wall of the outer support that is farther to the screw; the free end of the flat spring is pressed tightly and slide-fitted on the outer wall of the inner support that is farther to the screw.

[0006] After adopting the abovementioned structure, compared with the existing technology, the present invention has the following favorable effects: with the installation of outer and inner supports as well as the slide fitting of inner support inside the outer support, the supporting operation port of the outer support can be easily put on the mouth of bottle for bracing, with the necessity of less effort to be made; after the supporting operation port of the outer support is put on the mouth of bottle for support, when the first positioning step limit of the inner support is limited on the first limit end of the outer support, under the circumstances that the cork cannot be pulled out at once, it's only required to press the handle gently to make the second positioning step to be limited at the first limit end of the outer support instead of the first positioning step and lift up the handle to pull out the cork, and the entire process only requires putting the supporting operation port of the moving outer support on the mouth of bottle to do the job, and the whole process is convenient and time-saving.

[0007] As improvement, quilting rivets are installed on both side walls of the handle. When the corkscrew is in the close state, the support and the handle can be tightly drawn together with no possibility of being loosened; while the screw is hinged with the handle by quilting rivets. The dual-use of the quilting rivets makes the structure simpler.

[0008] As further improvement, the tail of the handle comprises a knife for the removal of a film wrapped around the neck of a bottle and cutting seal on the mouth of bottle. The seal can be simply cut off with the knife without any necessity to find other tools while using, thereby implementing the integration of multi-purpose functionality in a tool.

[0009] As further improvement, the tail of the handle is equipped with an end that is tip-tiled and easy to grasp. While using the knife to cut off seal, the forefinger is just pressing against the end, which makes it easier to impose force.

[0010] As further improvement, a groove used for

opening bottle caps is installed on the inner support and is very convenient for opening bottle caps, thereby implementing the integration of multi-purpose functionality in a tool.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

FIG. 1 is the schematic view of the structure of the corkscrew in the open state for the present invention. FIG. 2 is the schematic view of the structure of the corkscrew in the first working state for the present invention.

FIG. 3 is the schematic view of the structure of the corkscrew in the second working state for the present invention.

FIG. 4 is the schematic view of the structure of the corkscrew in the closed state for the present invention.

FIG. 5 is the sectional view of the outer support of the corkscrew for the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0012] The present invention is further detailed in combination with the drawings and embodiments.

[0013] As shown in FIG. 1, the present invention comprises a handle 1, supports 2, a screw 3 that is pivotally associated to the handle 1 in the vicinity of the head of the handle 1; different with the existing technology, the supports 2 include a inner support 2.2 and a outer support 2.1; the inner support 2.2 is flexibly fitted inside the outer support 2.1; the upper end of the inner support 2.2 is pivotally associated to the head of the handle 1 (see FIG. 2); a groove 7 used for opening bottle caps is installed on the side of the top inner support 2.2 farther to screw 3, the concave, ladder-type first positioning step 2.2.1 and the second positioning step 2.2.2 are set in turn from top to bottom on the side of the inner support 2.2 that is closer to the screw 3 (see FIG. 2); convex limit step 2.2.3 is set at the terminal of the inner support 2.2; the first limit end 2.1.1 which matches the first positioning step 2.2.1 or the second positioning step 2.2.2 and takes the effect of limitation, the second limit end 2.1.2 that matches the limit step 2.2.3 and takes the effect of limitation, as well as the supporting operation port 2.1.3 that matches the mouth of bottle are set in turn from top to bottom on the side of the outer support 2.1 that is closer to the screw 3 (see FIG. 2); a flat spring 4 is welded on the inner wall of the outer support 2.1 that is farther to the screw 3; the free end of the flat spring 4 is pressed tightly and slide-fitted on the outer wall of the inner support 2.2 that is farther to the screw 3, quilting rivets 5 are installed on the both side walls of the handle 1, the screw 3 is hinged with the handle 1 by quilting rivets 5, the tail of the handle 1 is hinged with a knife 6 used for cutting the seal on the mouth of bottle, the tail of handle 1 is equipped with an

end 8 that is tip-tiled and easy to grasp.

[0014] When it's necessary to use the corkscrew to open a cork, while the corkscrew is in the close state as shown in FIG. 4, hold the corkscrew by hand with the forefinger pressing against the End 8, use the Knife 6 to cut off the seal at the mouth of bottle, and then open the corkscrew wide as the state shown in FIG. 1, with the left hand holding the Support 2 and right hand holding the Handle 1, screw the pointy end of the Screw 3 into the center of the cork and fix it; after fixation, press the Support 2 downward to make the Supporting operation port 2.1.3 to brace the mouth of bottle, then lift up the Handle 1 to pull up the piston; as shown in FIG. 2, the corkscrew is in the first working state and the First positioning step 2.2.1 of the Inner support 2.2 is always located at the First limit end 2.1.1 of the Outer support 2.1, the piston will stop rising when it is lifted up to the peak of the first working state, now it's necessary to press down Handle 1, and the Inner support 2.2 is forced to be lifted up; now the First positioning step 2.2.1 of the Inner support 2.2 is detached from the First limit end 2.1.1 of the Outer support 2.1, at the instant when the Inner support 2.2 is lifted up higher to its Second positioning step 2.2.2 and reach the First limit end 2.1.1 of the Outer support 2.1, the Flat spring 4 is switched from the former compression state to the open state; with the effect of the spring force, the Inner support 2.2 is pulled toward the First limit end 2.1.1 of the Outer support 2.1, and finally the Second positioning step 2.2.2 of the Inner support 2.2 is located promptly at the First limit end 2.1.1 of the Outer support 2.1, as shown in FIG. 3, now the corkscrew is in the Second working state, since the end of the Inner support 2.2 is equipped with the limit step 2.2.3, the Inner support 2.2 will be limited at the Second limit end 2.1.2 of the Outer support 2.1 and will not be detached from the Outer support 2.1 even if the Handle 1 is pushed down with more effort; lift the Handle 1 again to continue lifting the piston and finally pull it out.

[0015] The content mentioned above is only the description of the best solution of the embodiment for the present utility, but cannot be regarded as the restrictions of the claims. For instance, the abovementioned Flat spring 4 can be connected in other ways such as being connected with rivets etc., besides being welded on the inner wall of the Outer support 2.1 that is farther to Screw 3. The present utility is not limited to the embodiments above, and the specific structure allows a variety of deformation. All the deformation specified in these claims shall be regarded to be within the protection scope of the present utility.

Claims

1. A corkscrew, comprising a handle (1), supports (2), a screw (3) that is pivotally associated to said handle (1), **characterized in that** the supports (2) include a inner support (2.2) and a outer support (2.1); the

inner support (2.2) is flexibly fitted inside the outer support (2.1); one end of the inner support (2.2) is pivotally associated to the handle (1); the concave, ladder-type first positioning step (2.2.1) and the second positioning step (2.2.2) are set in turn from top to bottom on the side of the inner support (2.2) that is closer to the screw (3); convex limit step (2.2.3) is set at the terminal of the inner support (2.2); the first limit end (2.1.1) which matches the first positioning step (2.2.1) or the second positioning step (2.2.2) and takes the effect of limitation, the second limit end (2.1.2) that matches the limit step (2.2.3) and takes the effect of limitation, as well as the supporting operation port (2.1.3) that matches the mouth of bottle are set in turn from top to bottom on the side of the outer support (2.1) that is closer to the screw (3); a flat spring (4) is fixedly connected on the inner wall of the outer support (2.1) that is farther to the screw (3); the free end of the flat spring (4) is pressed tightly and slide-fitted on the outer wall of the inner support (2.2) that is farther to the screw (3).

2. Corkscrew according to claim 1, wherein a pin (5) is installed on both side walls of the handle (1), the screw (3) is pivotally associated to the handle (1) by means of pin (5).
3. Corkscrew according to claim 1, wherein tail of the handle (1) comprises a knife (6) for the removal of a film wrapped around the neck of a bottle and cutting seal on the mouth of bottle.
4. Corkscrew according to claim 1, wherein tail of the handle (1) is equipped with a tip-tiled end (8).
5. Corkscrew according to claim 1, wherein a groove (7) used for opening bottle caps is installed on the side of the top inner support (2.2) is farther to the screw (3).

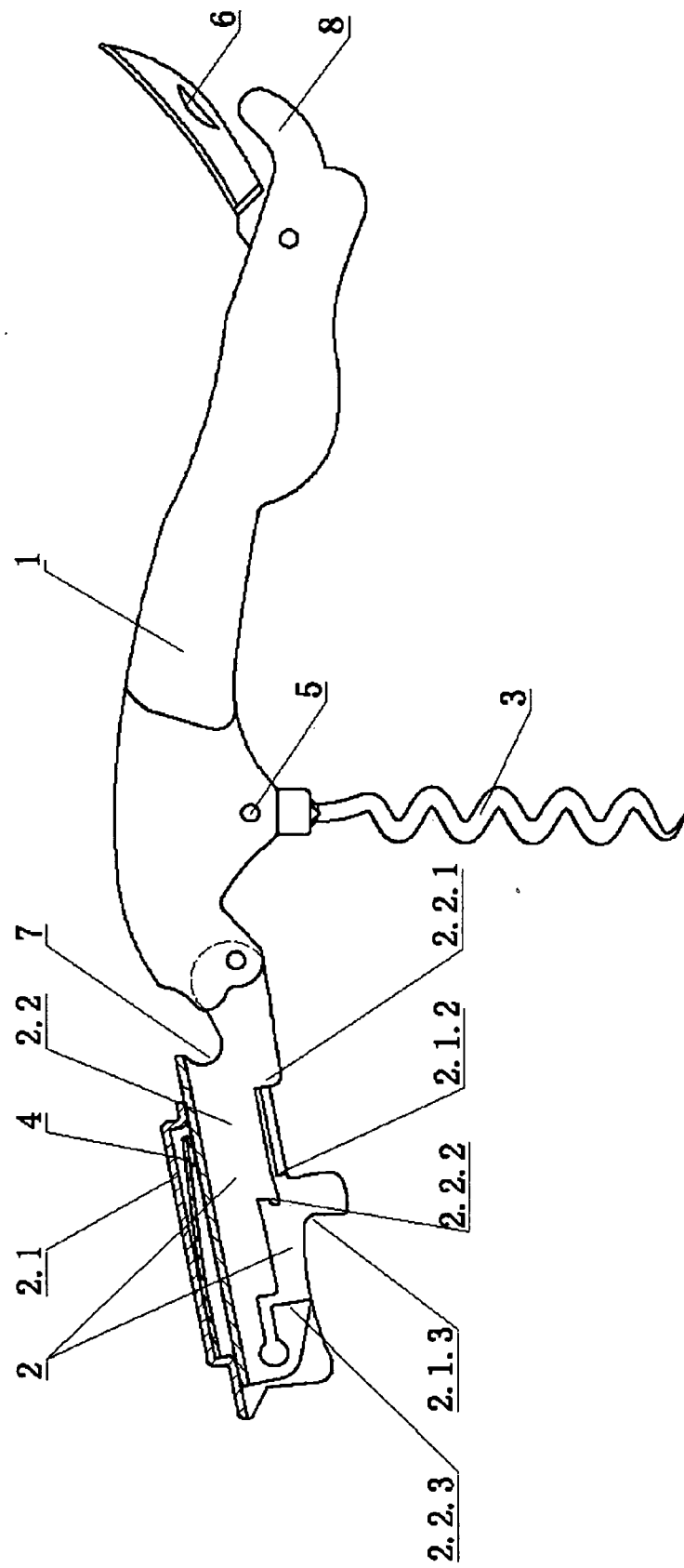


Fig. 1

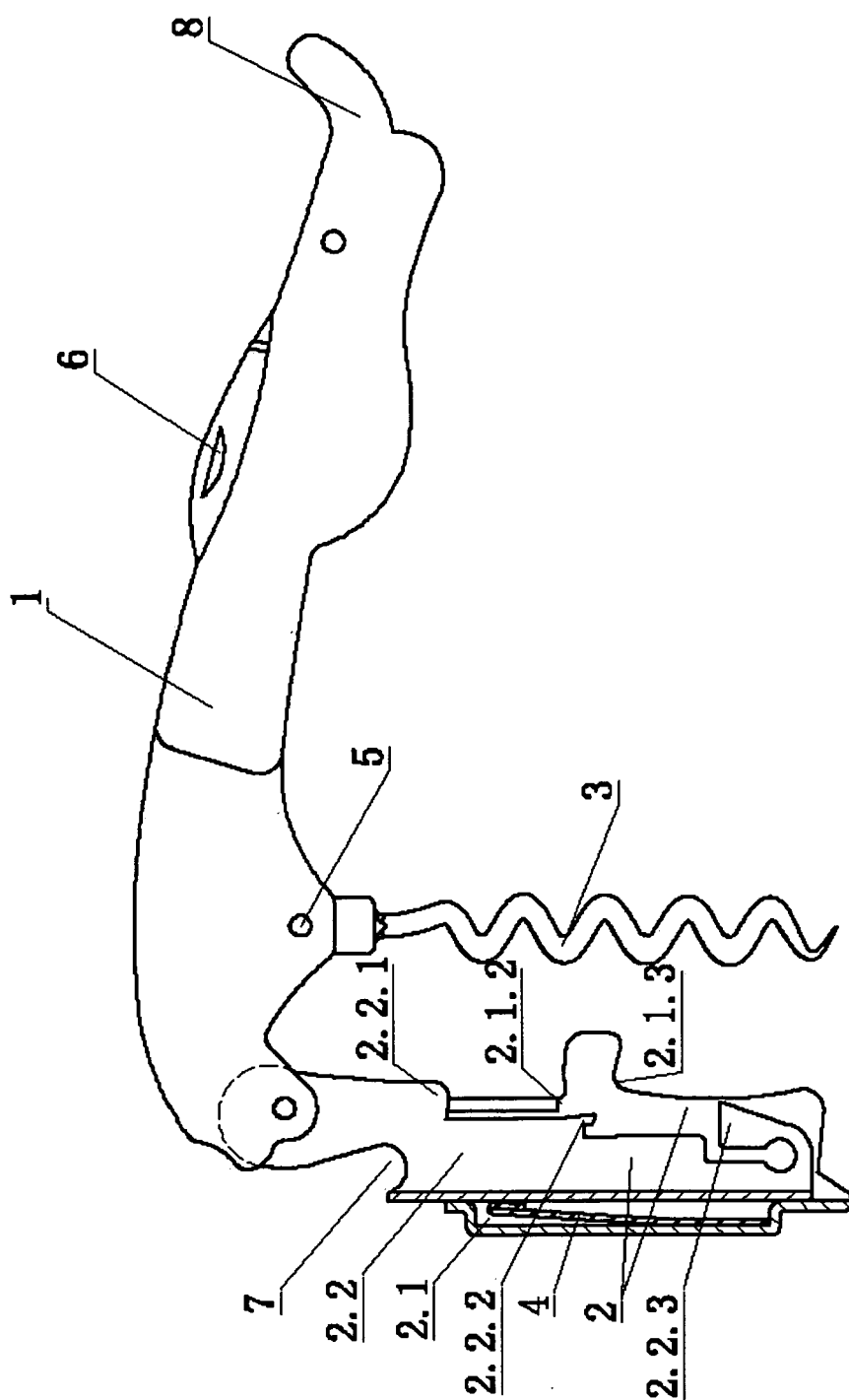


Fig. 2

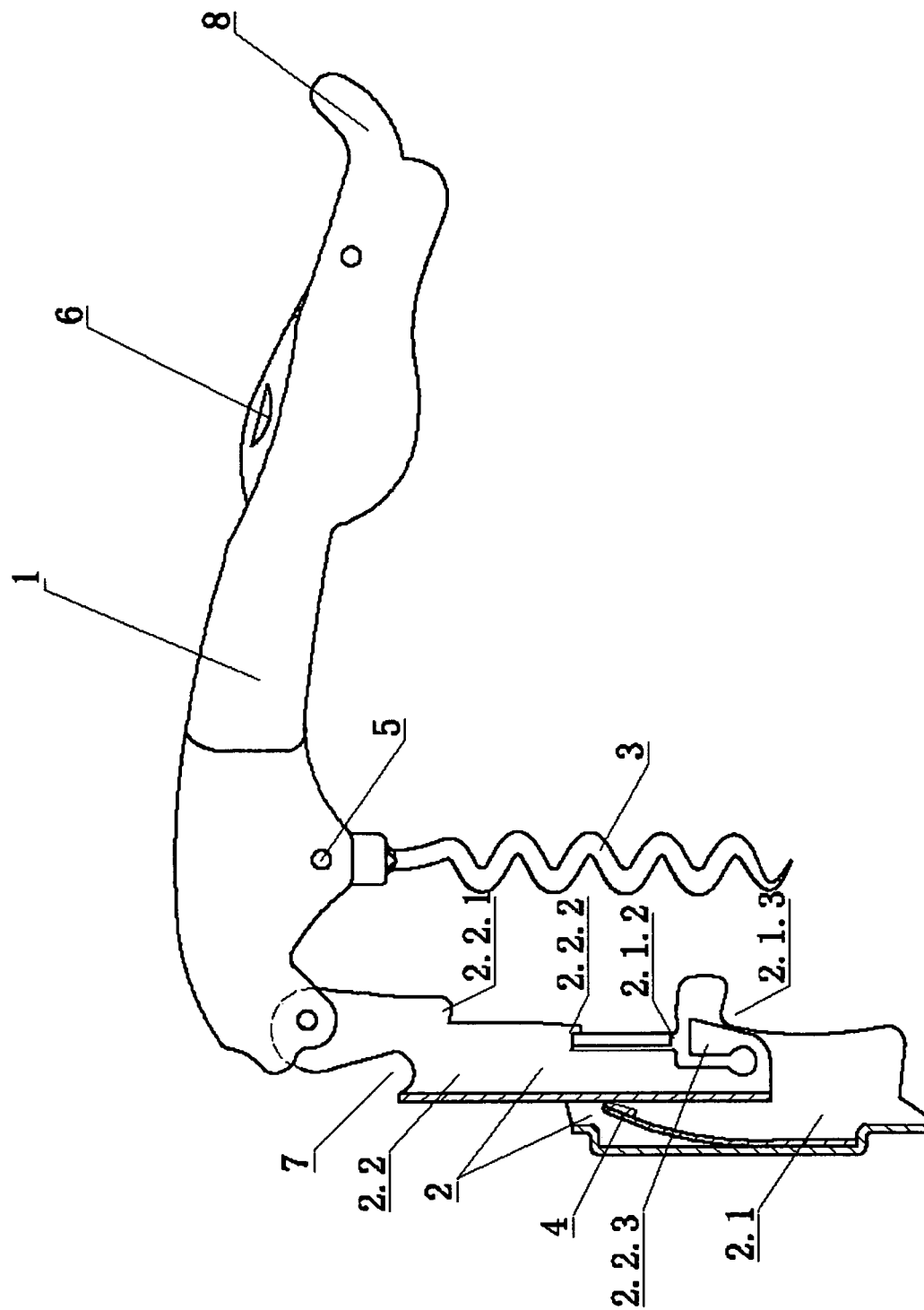


Fig. 3

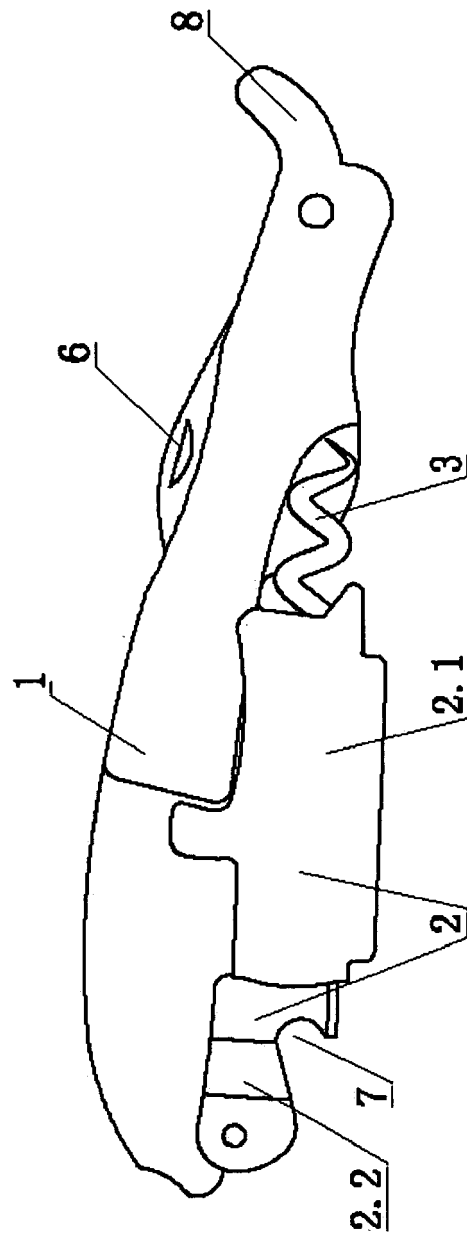


Fig. 4

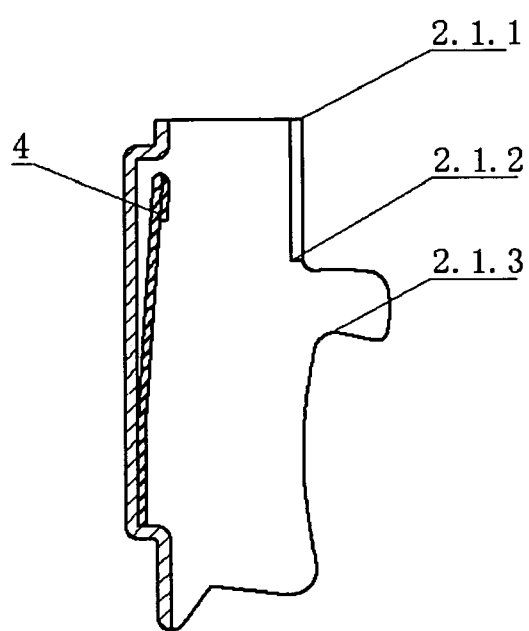


Fig. 5



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Application Number
EP 09 01 4984

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The present search report has been drawn up for all claims			
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