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Clothes Hanger

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2009100830 20 Aug 2009

ABSTRACT

CLOTHES HANGER

A clothes hanger includes a hanger body (6) for suspending clothes, a hook (3) extending upwardly from the hanger body (6) and having a latch-side end (36) which is spaced apart from the hanger body (6) to define an access opening (321), a latch (52) movably disposed on the latch-side end (36) and having a latch end (521) movable between retracted and extended positions, and a closing lever (41) pivotally mounted on the hanger body (6) and having a catch end (411) which is turnable between a closed position, where the catch end (411) is engaged with and is retained by the latch end (521) so as to close the access opening (321), and one of first and second open positions, where the catch end (411) is angularly displaced from the latch end to open the access opening (321).

(Fig. 2)

200910083O 20 Aug 2009

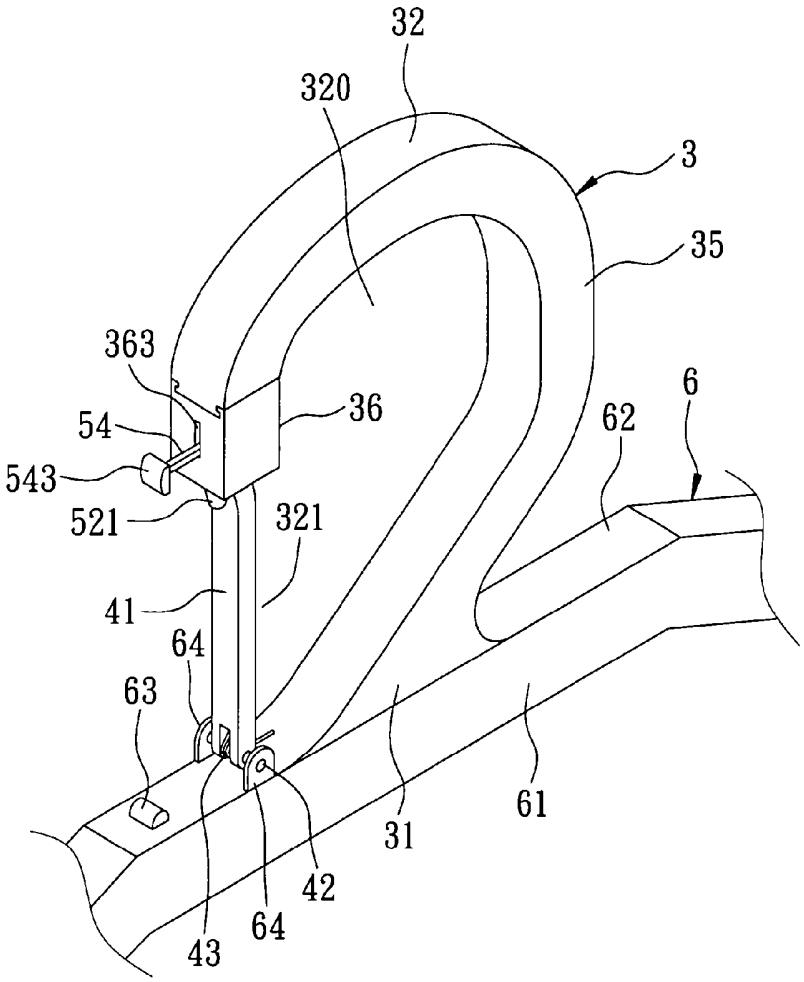

FIG. 2

2009100830 20 Aug 2009

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COMPLETE SPECIFICATION

FOR AN INNOVATION PATENT

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Invention Title: **"Clothes Hanger"**

The following statement is a full description of this invention, including the best method of performing it known to us:

2009100830 20 Aug 2009

CLOTHES HANGER

This invention relates to a clothes hanger, more particularly to a clothes hanger which has a closing lever that is turnable to open or close an access opening of a hook.

Referring to Fig. 1, a conventional clothes hanger 1 is shown to include a hanger body 11 for suspending clothes, and a hook 12 for hanging on a clothes rod 2. The hook 12 has a crook portion 121 and a closing portion 122 cooperatively defining an accommodation space 120. The closing portion 122 can be operated to open the accommodation space 120 for receiving the clothes rod 2, and can be engaged with the crook portion 122 to close the accommodation space 120 for preventing undesired removal of the hanger 1 from the clothes rod 2.

However, the accommodation space 120 defined by the crook and closing portions 121,122 has a relatively small access opening when the accommodation space 120 is opened, which makes hanging of the hook 12 on the clothes rod 2 inconvenient. In addition, the user has to grip and press the closing portion 122 to open or close the accommodation space 120, so that the hanger 1 must be hung in a place within the user's reach. Hence, the hanger 1 can be used only in a limited area.

The object of the present invention is to provide a clothes hanger which has a latch unit that can be operated conveniently to turn a closing lever to close or open an access opening of a hook so as to permit hanging of the hook

2009100830 20 Aug 2009

on a clothes rod and removal of the hook from the clothes rod in a convenient manner, and so as to permit hanging of the hanger on a clothes rod installed at a relatively high position.

According to this invention, the clothes hanger includes a hanger body which is configured to suspend clothes, and which has a top mount that has a seat surface confronting upwardly; a hook which has a lower end mounted on the seat surface, a shank segment extending upwardly from the lower end, and a crook segment that extends forwardly and downwardly from the shank segment to terminate at a latch-side end which is spaced apart from the shank segment to define an accommodation space, and which is spaced apart from the seat surface to define an access opening to the accommodation space; a latch which is disposed on the latch-side end, and which has a latch end that has a latch surface confronting the shank segment, and that is movable between a retracted position, where the latch end is remote from the seat surface, and an extended position, where the latch end is closer to the seat surface; and a closing lever having a pivoted end which is disposed forwardly of the shank segment and which is pivotably mounted on the seat surface about a pivot axis, and a catch end which is opposite to the pivoted end and which is turnable about the pivot axis among a closed position, where the catch end is engaged with and is guarded against movement out of the latch surface of the latch end in the extended position to close the access

opening, a first open position, where the catch end is angularly displaced from the latch end in a clockwise direction, and a second open position, where the catch end is angularly displaced from the latch end in a counterclockwise direction.

Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiment of the invention, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of a conventional clothes hanger;

Fig. 2 is a fragmentary perspective view of the preferred embodiment of a clothes hanger according to this invention when closed;

Fig. 3 is a fragmentary exploded perspective view of the preferred embodiment;

Fig. 4 is a fragmentary perspective view of the preferred embodiment when a catch end is in a closed position;

Fig. 5 is a fragmentary sectional view taken along lines V-V of Fig. 4;

Fig. 6 is a fragmentary sectional view taken along lines VI-VI of Fig. 4;

Fig. 7 is a partly sectioned side view illustrating the catch end of the preferred embodiment in a first open position;

Fig. 8 is a partly sectional side view illustrating the catch end of the preferred embodiment in a second open

position;

Fig. 9 is a partly sectional side view illustrating how the catch end of the preferred embodiment is turned from the first open position to the second open position;

Fig. 10 is a partly sectional side view illustrating how a latch of the preferred embodiment is operated using a Y-shaped rod;

Fig. 11 is a perspective view illustrating the preferred embodiment when used as a suit hanger; and

Fig. 12 is a perspective view illustrating the preferred embodiment when used as a clothespin assembly.

Referring to Figs. 2 to 6, the preferred embodiment of a clothes hanger according to the present invention is shown to comprise a hanger body 6, a hook 3, a latch unit 5, and a closing unit 4.

The hanger body 6 is configured to suspend clothes, and has a top mount 61 that has a seat surface 62 confronting upwardly. A pair of lugs 64 are disposed on the seat surface 62. A spacer 63 is disposed forwardly of the lugs 64, and extends uprightly from the seat surface 62.

The hook 3 has a lower end 31 mounted on the seat surface 62, a shank segment 35 extending upwardly from the lower end 31, and a crook segment 32 that extends forwardly and downwardly from the shank segment 35 to terminate at a latch-side end 36 which is spaced apart from the shank segment 35 to define an accommodation space 320, and which is spaced apart from the seat surface 62 to define an access opening

2009100830 20 Aug 2009

321 communicated with the accommodation space 320. In this embodiment, the crook segment 32 and the latch-side end 36 are separately formed. The latch-side end 36 has a surrounding wall 361 which defines a tubular chamber 360. The tubular chamber 360 is configured to extend upwardly to terminate at a ceiling surface 324 which is integrally formed with the crook segment 32. A rear wall 321 extends downwardly from and is integrally formed with the ceiling surface 324. A mortise-and-tenon mechanism is disposed between the crook segment 32 and the latch-side end 36. Specifically, the mortise-and-tenon mechanism includes a pair of first mortises 322 formed in two opposite sides of the ceiling surface 324, a pair of first tenons 364 formed on the surrounding wall 361 and fitted respectively to the first mortises 322 so as to prevent upright movement of the surrounding wall 361 relative to the ceiling surface 324, a pair of second mortises 323 formed in two sides of the rear wall 321, and a pair of second tenons 365 formed on the surrounding wall 361 and fitted respectively to the second mortises 323 so as to prevent forward and rearward movement of the surrounding wall 361 relative to the ceiling surface 324. Thus, the surrounding wall 361 can be easily coupled with and can be retained firmly relative to the crook segment 32. Moreover, the surrounding wall 361 has a guiding slot 363 extending therethrough to be communicated with the tubular chamber 360, and a through bore 362 extending therethrough along a lengthwise axis (X) that extends

uprightly.

The latch unit 5 is received in the tubular chamber 360, and includes a latch 52, a keystem 54, and a first biasing member 53. The latch 52 extends along the lengthwise axis (X) to terminate at a latch end 521. With reference to Fig. 7, the latch end 521 has a latch surface 520 confronting the shank segment 35, and a follower surface 523 confronting forwardly. The keystem 54 has an actuating end 541 which is received in the tubular chamber 360 and which is connected to the latch 52, and a stem body 542 which extends from the actuating end 541 outwardly through the guiding slot 363 to terminate at an operated end 543 to permit manual operation. Thus, the operated end 543 is operable manually to move the latch end 521 along the lengthwise axis (X) between an extended position, as shown in Fig. 7, where the latch end 521 extends downwardly of the tubular chamber 360 through the through bore 362 to be close to the seat surface 62, and a retracted position, as shown in Fig. 8, where the latch end 521 is retracted into the tubular chamber 360 to be remote from the seat surface 62. The first biasing member 53 is disposed between the ceiling surface 324 and the latch 52 to urge the latch end 521 to move along the lengthwise axis (X) and towards the extended position.

The closing unit 4 includes a closing lever 41 and a second biasing member 43. The closing lever 41 has a pivoted end 413 which is pivotably mounted on the lugs 64 by means of a pin 42 extending along a pivot axis, and a catch end

2009100830 20 Aug 2009

411 which is opposite to the pivoted end 413 and which is turnable about the pivot axis among a closed position, as indicated by solid lines in Fig. 7, where the catch end 411 is engaged with and is guarded against movement out of the latch surface 520 of the latch end 521 in the extended position so as to close the access opening 321, a first open position, as indicated by dotted lines in Fig. 7, where the catch end 411 is angularly displaced from the latch end 521 in a clockwise direction, and a second open position, as shown in Fig. 8, where the catch end 411 is angularly displaced from the latch end 521 in a counterclockwise direction. The second biasing member 43 is a torsion spring which is disposed between the pivoted end 413 and the seat surface 62 to bias the catch end 411 towards the second open position. The catch end 411 has retained and cam surfaces 412,414 confronting forwardly and rearwardly, respectively.

Referring to Figs. 4 and 7, when the latch end 521 is extended to the extended position by virtue of the biasing action of the first biasing member 53 and when the latch surface 520 is engaged with the retained surface 412 of the catch end 411 so as to retain the catch end 411 at the closed position to close the access opening 321, the user can press the closing lever 41 against a clothes rod 7 (see Fig. 7). A thrusting force is applied to the closing lever 41 to turn the catch end 411 in the clockwise direction to the first open position so as to permit entry of the clothes rod 7 into the accommodation space 320. Once the thrusting force

is removed, the catch end 411 is turned back to the closed position by the biasing action of the second biasing member 43. Thus, the clothes hanger of this embodiment can be securely attached to the clothes rod 7.

Referring to Figs. 4 and 8, when it is desired to remove the clothes hanger from the clothes rod 7, the user can move the operated end 543 upwardly to move the latch end 521 to the retracted position so as to permit disengagement of the catch end 411 from the latch end 521. Thus, the catch end 411 can be turned to the second open position by the biasing action of the second biasing member 43 to abut against the spacer 63.

Referring to Figs. 9 and 10, when the catch end 411 is in the second open position and it is desired to hang the clothes hanger on the clothes rod 7, the user can easily press the closing lever 41 against the clothes rod 7 since the catch end 411 is spaced apart from the seat surface 62 by the spacer 63. The catch end 411 is thus moved angularly by a thrusting force in the clockwise direction against the second biasing member 43. Subsequently, due to the mating between the cam and follower surfaces 414,523, the latch end 521 is forced to move to the retracted position so as to permit the catch end 411 to sweep over the latch end 521 to continue to move angularly towards the first open position for permitting entry of the clothes rod 7 into the accommodation space 320. Thus, if the user wants to hang clothes on a clothes rod 7 that is installed at a relatively

high position using the clothe hanger of this invention, the user can first operate the keystem 54 manually to move the catch end 411 to the second open position, and then utilize a Y-shaped rod 8 to lift the hanger body 6 to enable the hook 3 to engage the clothes rod 7. Moreover, as shown in Fig. 10, when the clothes hanger is retained on a clothes rod 7 that is installed at a relatively high position, the user can utilize the Y-shaped rod 8 to push the keystem 54 upwardly to retract the latch end 521 so that the catch end 411 is turned to the second open position by the biasing action of the second biasing member 43. The user can then take down the clothes hanger with the help of the Y-shaped rod 8, which is quite convenient.

The clothes hanger according to this invention may also serve as a suit hanger as shown in Fig. 11, or a hanging dryer as shown in Fig. 12.

As illustrated, the access opening 321 can have a relatively large dimension for facilitating passage of the clothes rod 7. Moreover, since the operated end 543 extends forwardly of the latch-side end 36, operation of the operated end 543 by the user or with the use of the clothes rod 7 is facilitated. In addition, by virtue of the configuration of the latch end 411 which is movable among the first open position, the closed position, and the second open position, the clothes hanger of this invention can be conveniently hung on a clothes rod at a relatively high position or removed therefrom. Furthermore, a plurality of the clothes hangers

2009100830 20 Aug 2009

according to this invention can be hung on a clothes rod in a row, and any of the clothes hangers can be removed from the clothes rod without interfering with adjacent hangers or the clothes hung on the hangers.

For the purposes of this specification it will be clearly understood that the word "comprising" means "including but not limited to", and that the word "comprises" has a corresponding meaning.

It is to be understood that, if any prior art publication is referred to herein, such reference does not constitute an admission that the publication forms a part of the common general knowledge in the art, in Australia or any other country.

2009100830 20 Aug 2009

The Claims defining the invention are as follows:

1. A clothes hanger comprising:

a hanger body which is configured to suspend clothes, and which has a top mount that has a seat surface confronting upwardly;

a hook which has a lower end mounted on said seat surface, a shank segment extending upwardly from said lower end, and a crook segment that extends forwardly and downwardly from said shank segment to terminate at a latch-side end which is spaced apart from said shank segment to define an accommodation space, and which is spaced apart from said seat surface to define an access opening to said accommodation space;

a latch which is disposed on said latch-side end, and which has a latch end that has a latch surface confronting said shank segment, and that is movable between a retracted position, where said latch end is remote from said seat surface, and an extended position, where said latch end is closer to said seat surface; and

a closing lever having a pivoted end which is disposed forwardly of said shank segment and which is pivotably mounted on said seat surface about a pivot axis, and a catch end which is opposite to said pivoted end and which is turnable about the pivot axis among a closed position, where said catch end is engaged with and is guarded against movement out of said latch surface of said latch end in the extended position to close said access opening, a first

open position, where said catch end is angularly displaced from said latch end in a clockwise direction, and a second open position, where said catch end is angularly displaced from said latch end in a counterclockwise direction.

2. The clothes hanger according to Claim 1, wherein said latch extends along an uprightly extending lengthwise axis to terminate at said latch end, said clothes hanger further comprising a first biasing member which is disposed to urge said latch end to move along the lengthwise axis and towards the extended position.

3. The clothes hanger according to Claim 2, wherein said latch-side end has a surrounding wall which defines a tubular chamber to receive said latch and said first biasing member such that said latch end is movable between the retracted and extended positions along the lengthwise axis.

4. The clothes hanger according to Claim 3, wherein said surrounding wall has a guiding slot which extends therethrough to be communicated with said tubular chamber, said clothes hanger further comprising a keystem which has an actuating end that is received in said tubular chamber, and that is configured to move said latch end between the extended and retracted positions, and a stem body which extends from said actuating end outwardly through said guiding slot to terminate at an operated end for facilitating manual operation.

5. The clothes hanger according to Claim 1, further

2009100830 20 Aug 2009

comprising a second biasing member which is disposed between said pivoted end and said seat surface, and which biases said catch end towards the second open position.

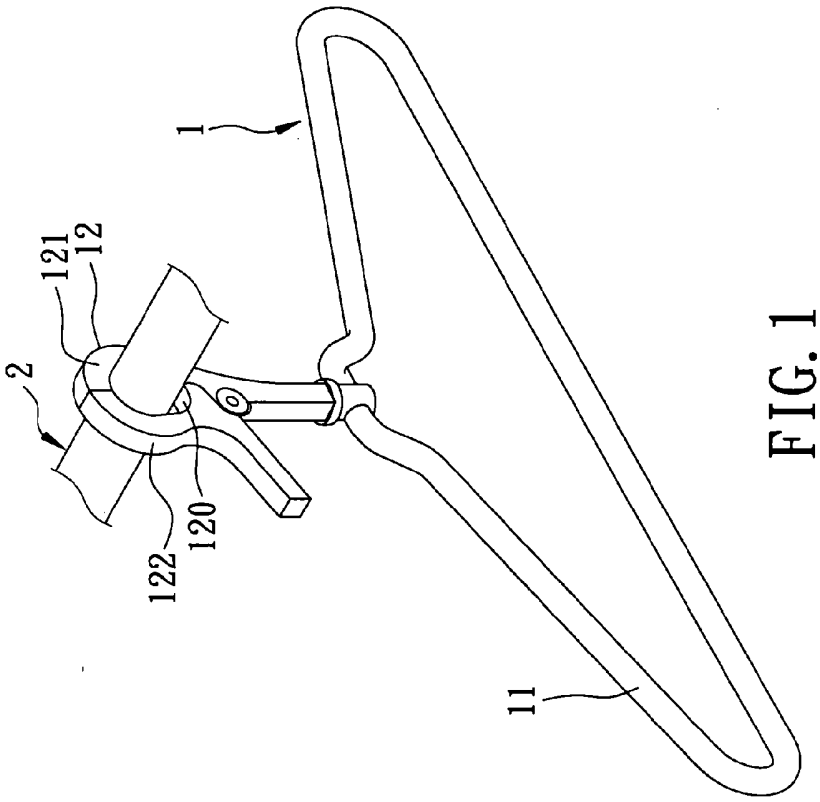

FIG. 1

200910083O 20 Aug 2009

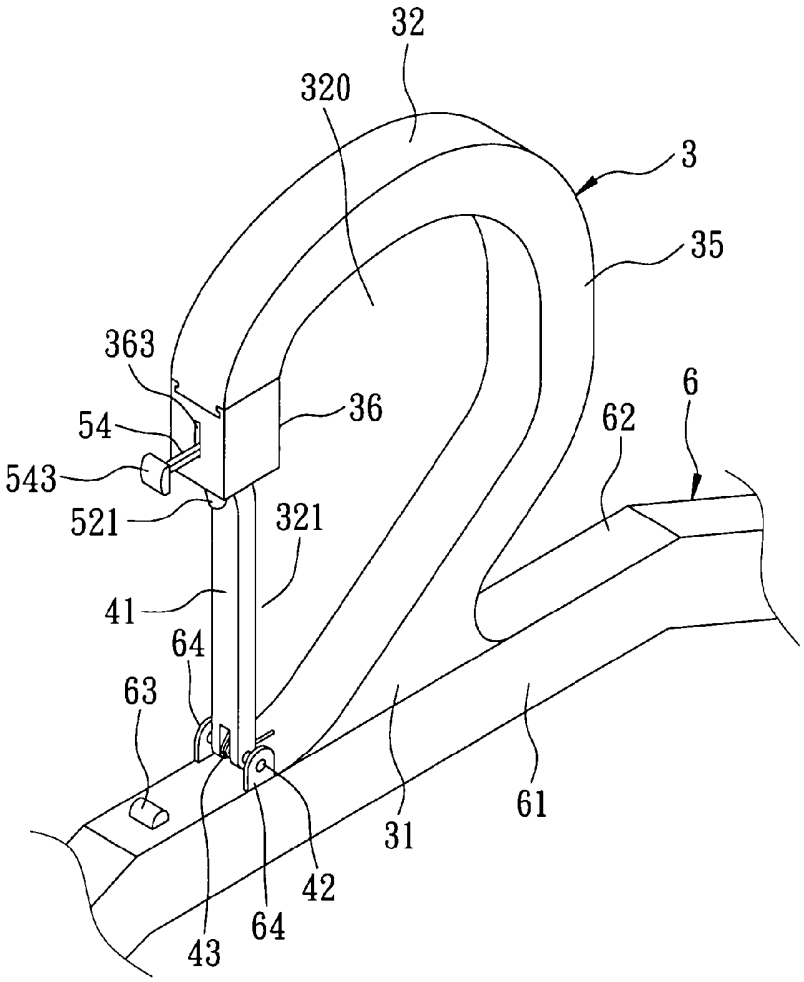

FIG. 2

200910083O 20 Aug 2009

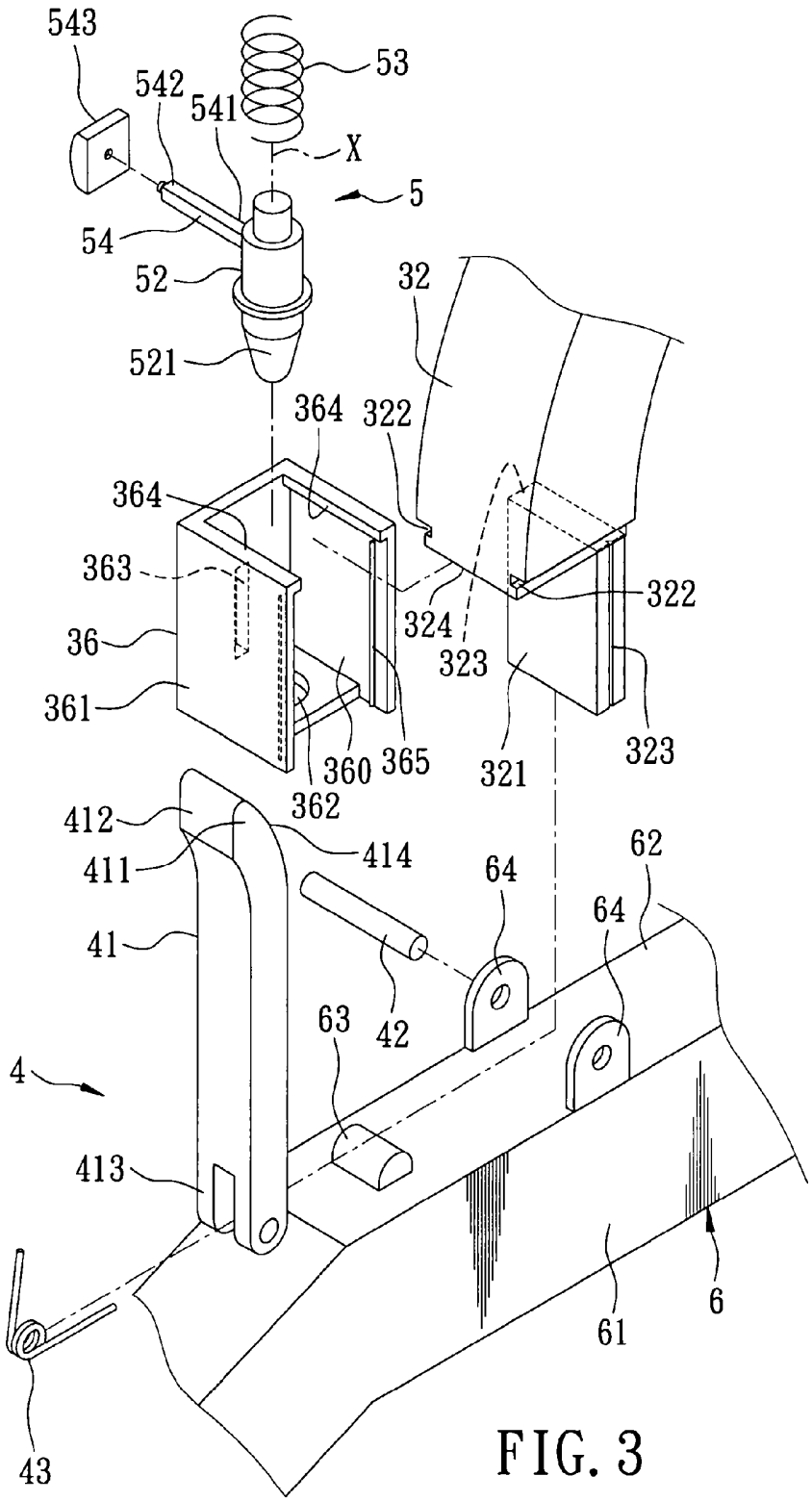

FIG. 3

200910083O 20 Aug 2009

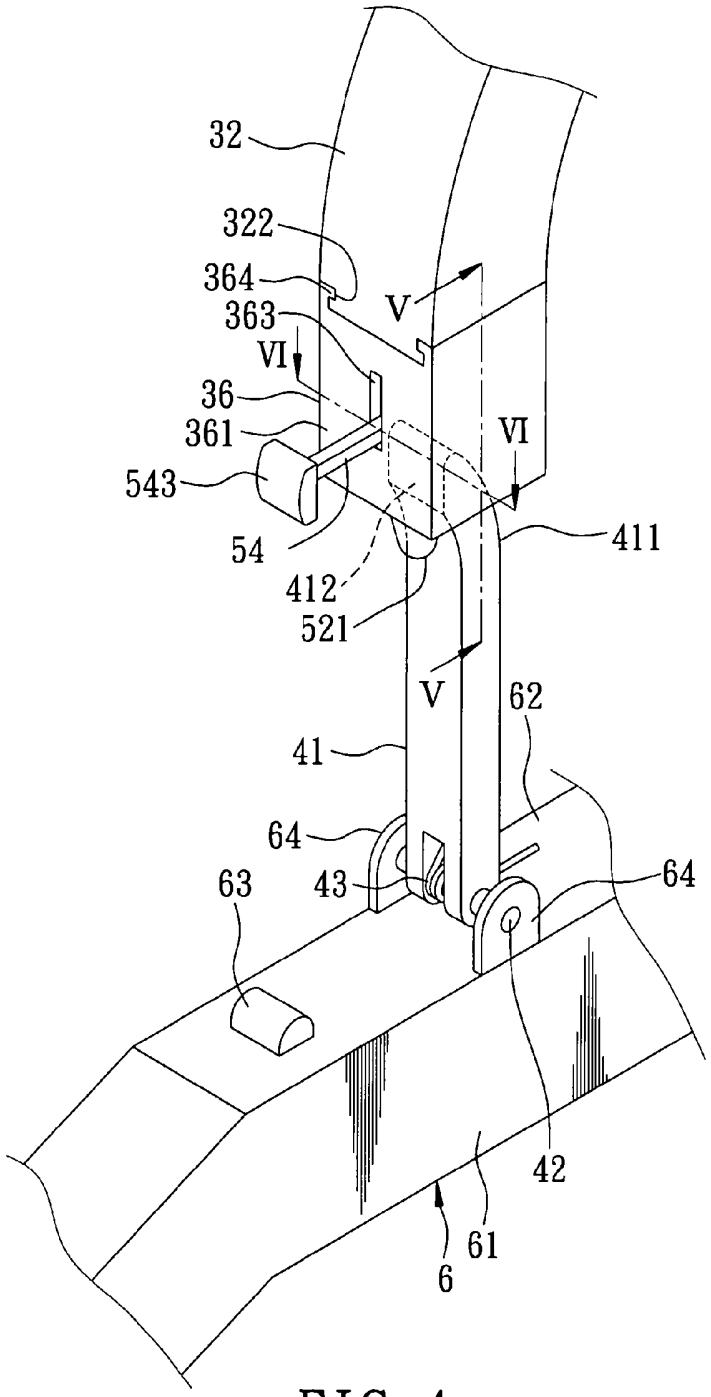

FIG. 4

200910083O 20 Aug 2009

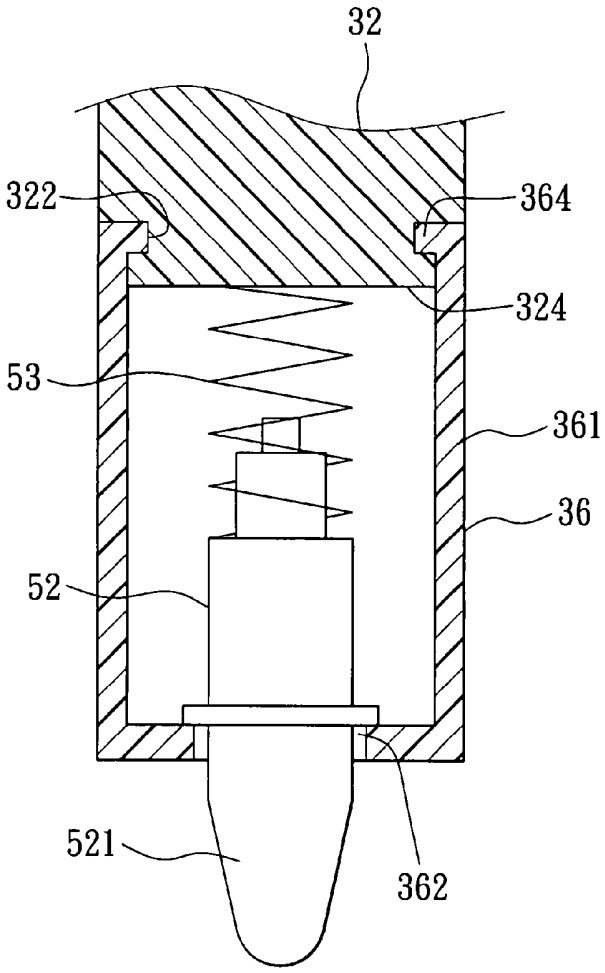

FIG. 5

2009100830 20 Aug 2009

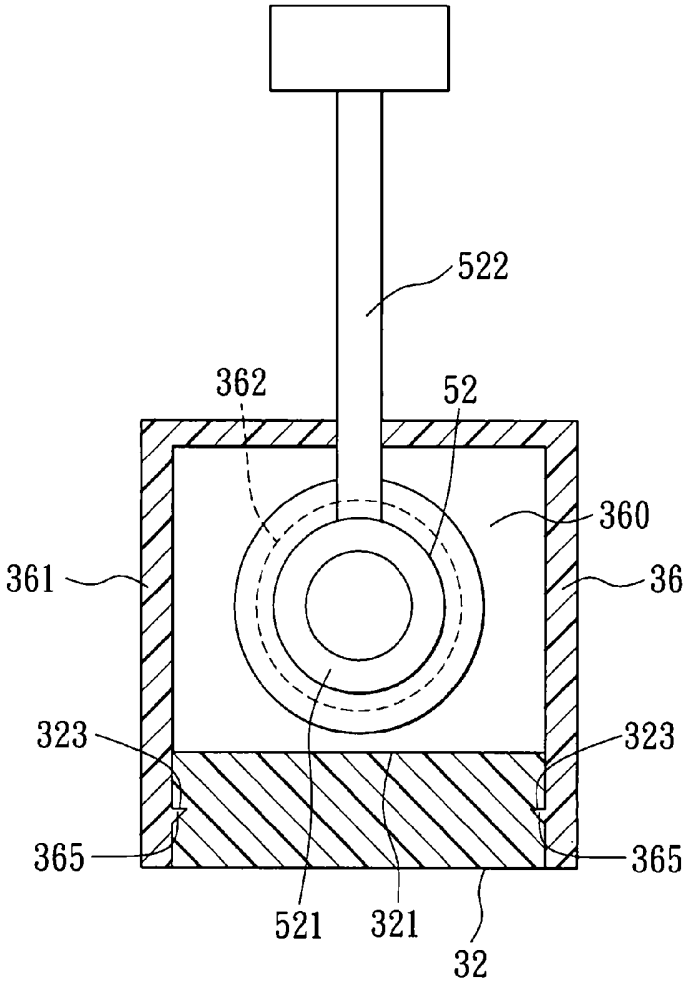

FIG. 6

200910083O 20 Aug 2009

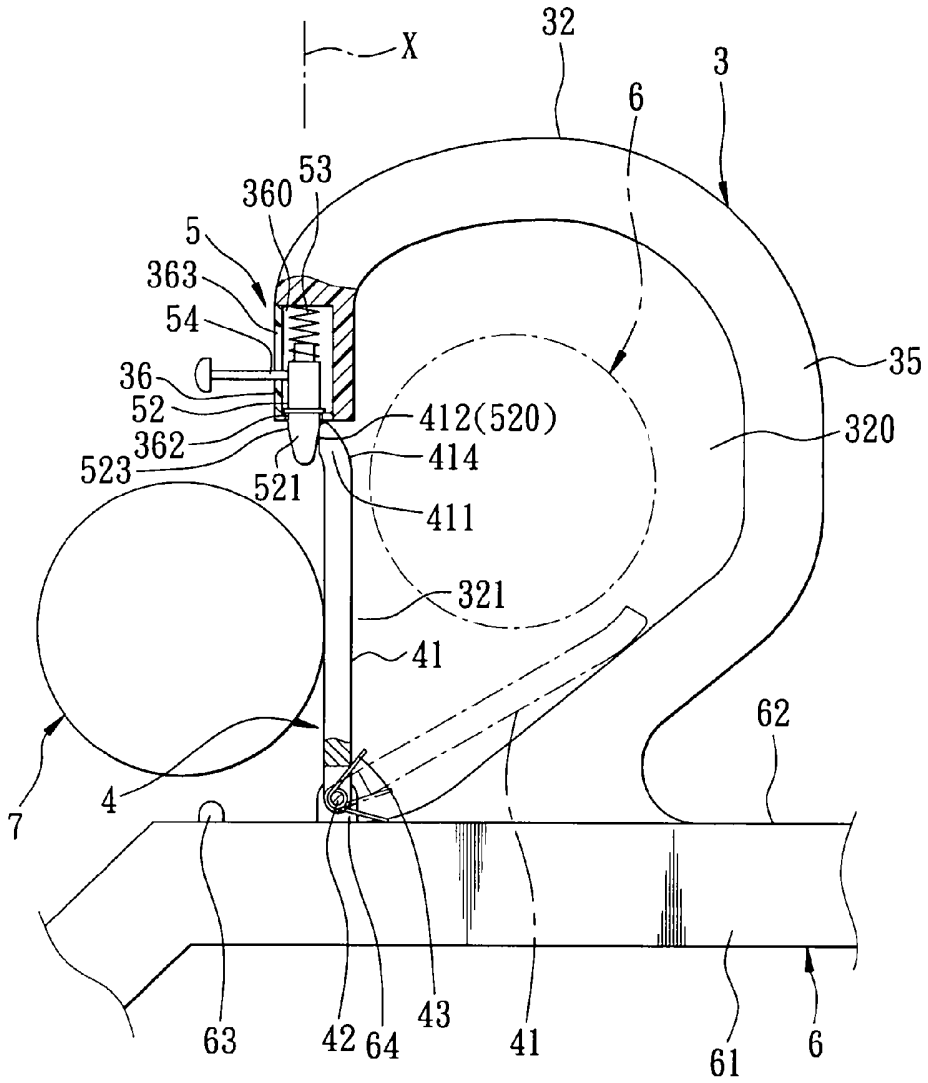

FIG. 7

200910083O 20 Aug 2009

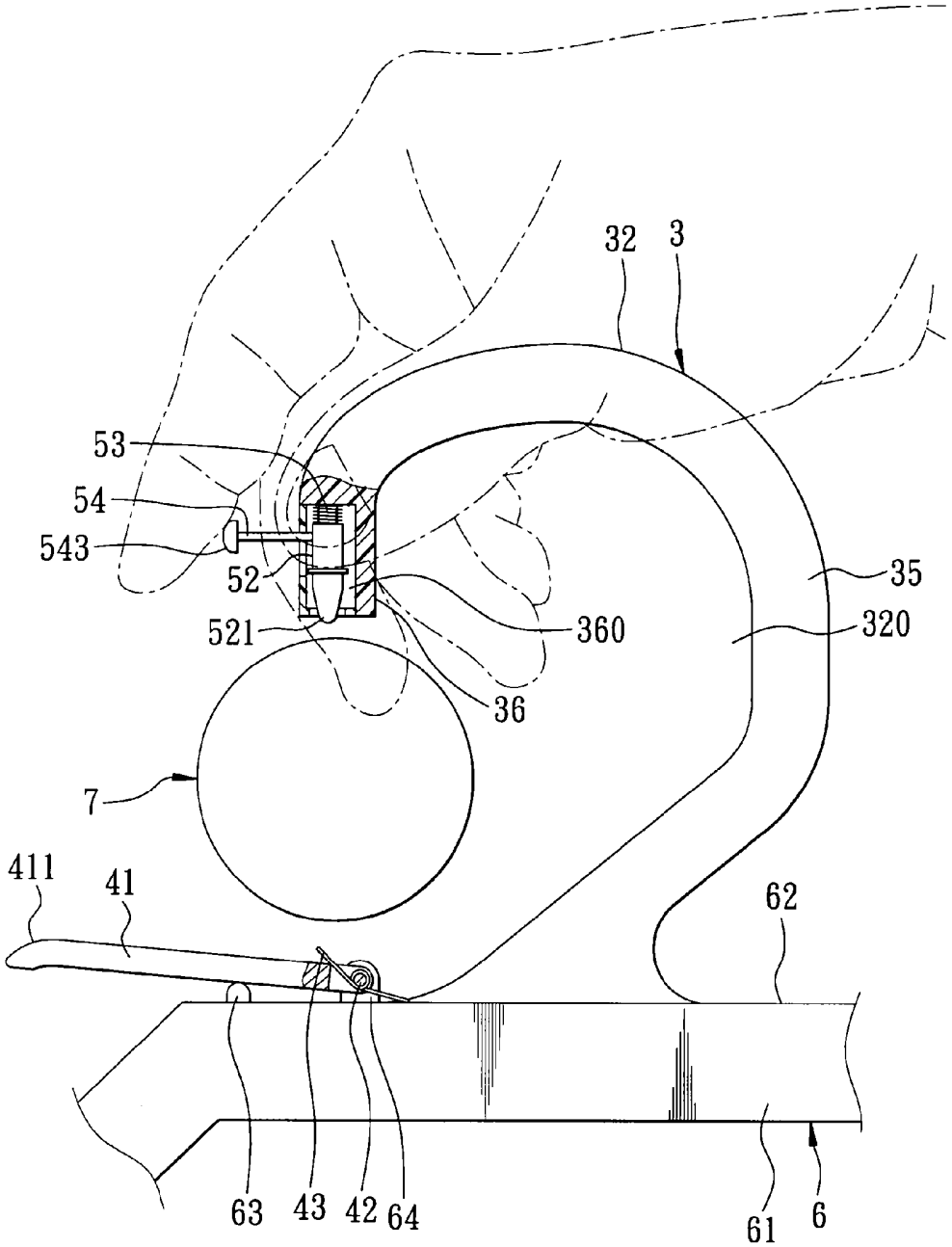

FIG. 8

2009100830 20 Aug 2009

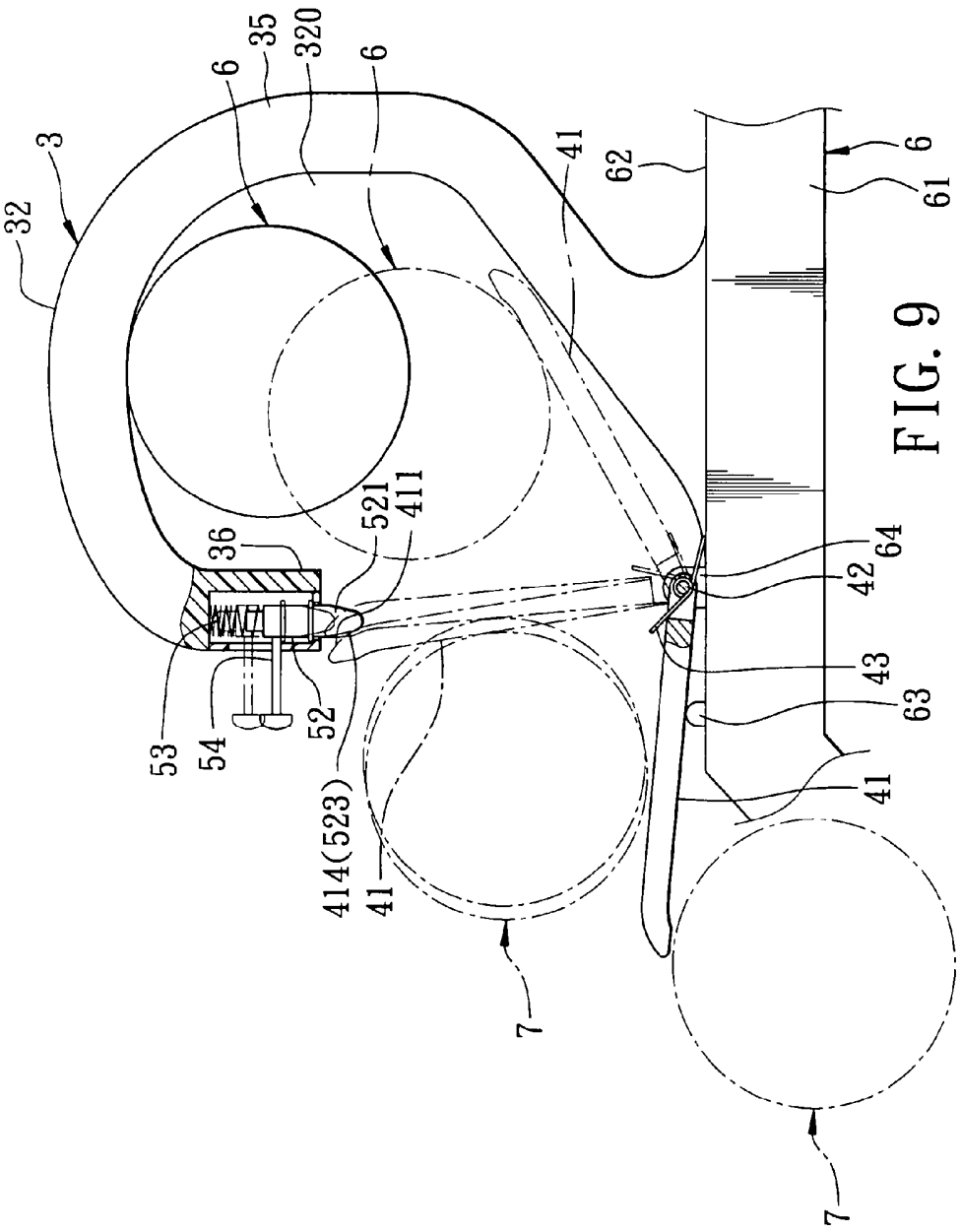

FIG. 9

2009100830 20 Aug 2009

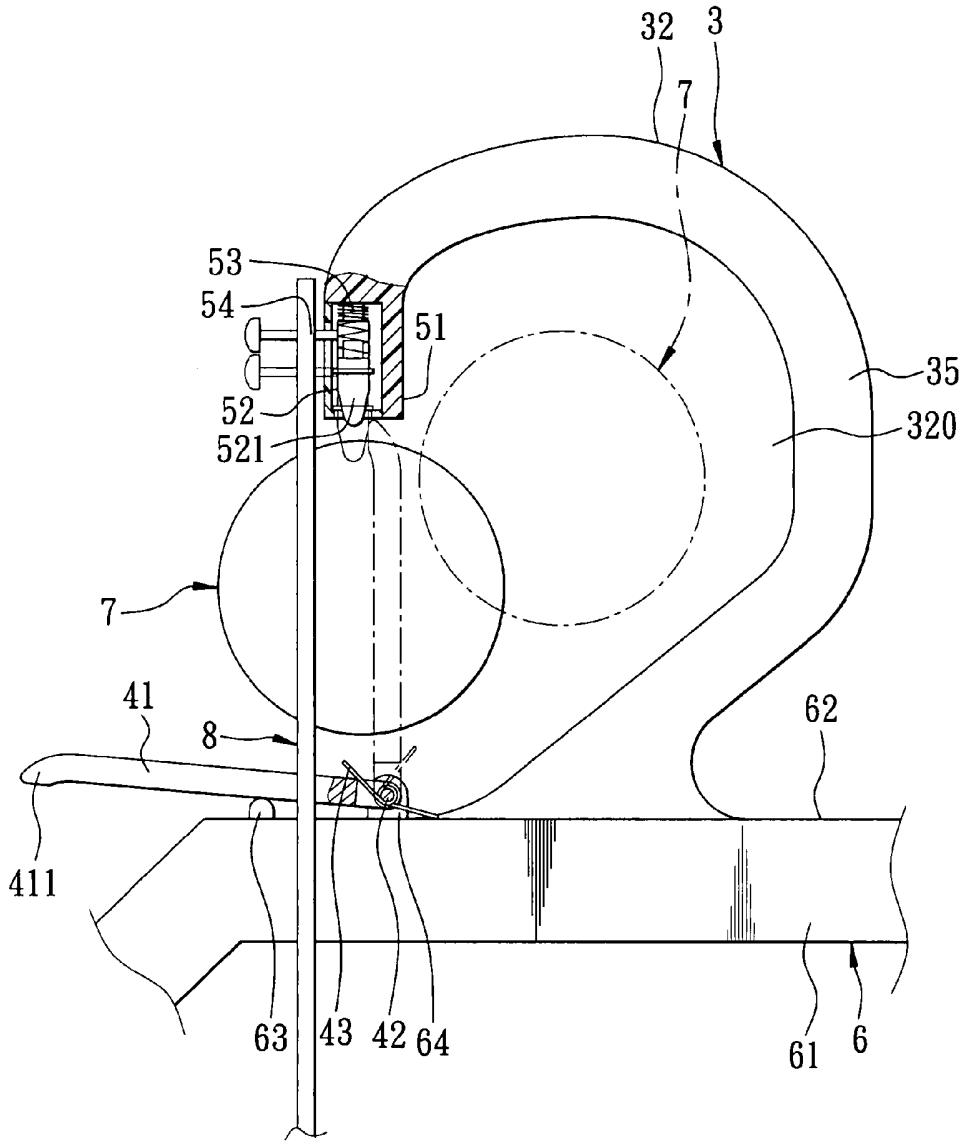

FIG. 10

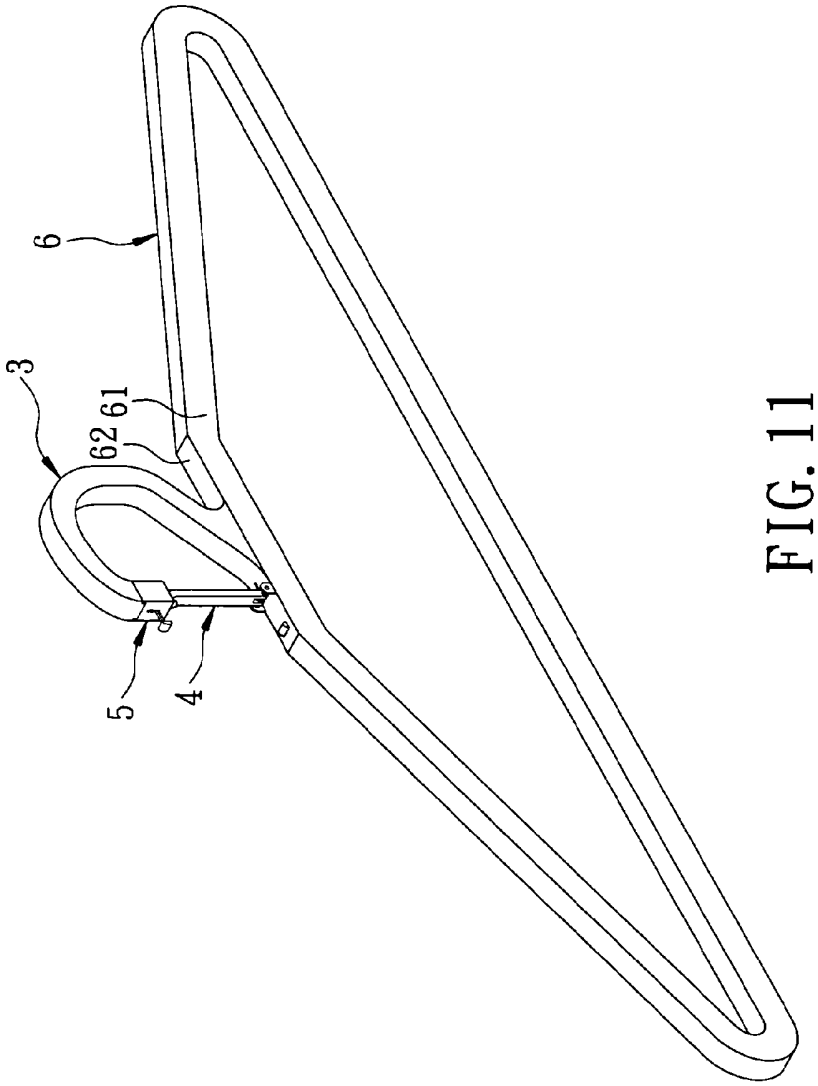

FIG. 11

2009100830 20 Aug 2009

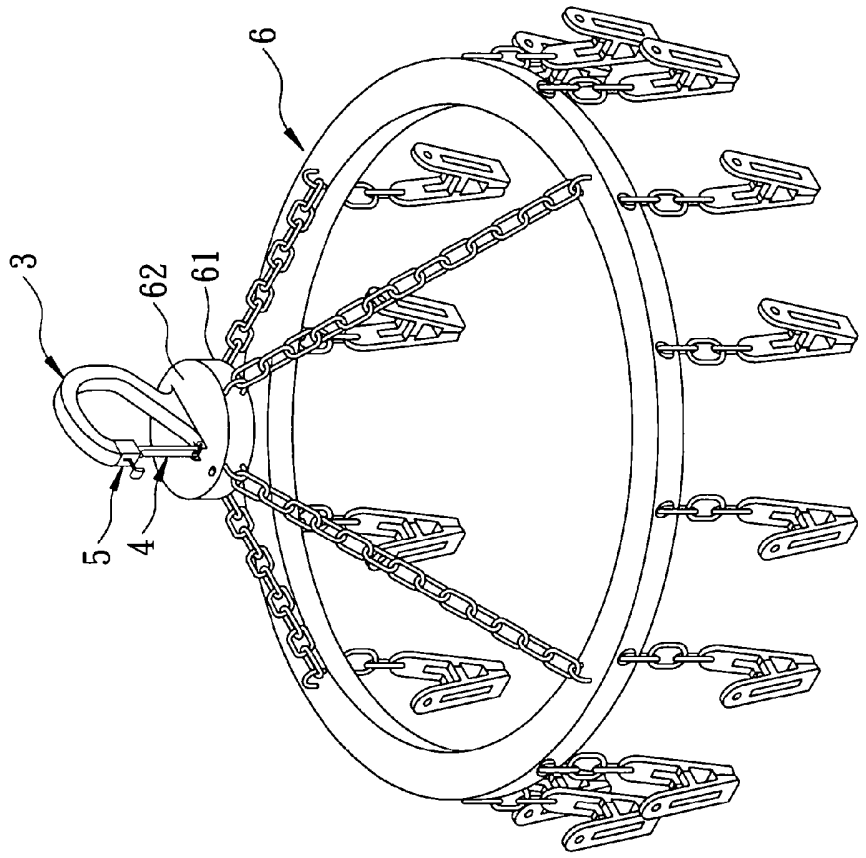

FIG. 12