

ADJUSTABLE SHOE RACK STRUCTURE

FIELD OF THE INVENTION

The present invention relates to an adjustment shoes frame, and more particularly, to an adjustment shoes frame with a top part pivotably connected to a bottom part, the angular distance between the two parts can be set.

BACKGROUND OF THE INVENTION

A conventional way to store shoes in stores generally includes an I-shaped frame with only one shoe supported on the frame and the other one is stored in the back of the store. When the customers need to try these shoes, the clerk has to find the correct one to match the one on the I-shaped frame and this wastes a lot of time for waiting. When the shoes are stored in homes, the shoes are stored in the boxes which are stacked in the cabinet. It takes time to remove the boxes and get the desired box to pick the shoes out. If the shoes are stored on a long frame, it needs a significant space to install the large frame. The conventional ways for storage of shoes do not meet the requirements of people in the urban area.

The present invention intends to provide a shoes frame which occupies limited space and can be adjusted for the shoes of different sizes.

SUMMARY OF THE INVENTION

The present invention relates to an adjustment shoes frame and comprises a top part having a first surface and a first pivotal portion. A stop plate extends from the first surface. The first pivotal portion has a hole defined therethrough. A bottom part has

a second surface and a second pivotal portion which has a protrusion for being pivotably engaged with the hole of the first pivotal portion. An adjustment device is connected between the top and bottom parts.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded view to show the first embodiment of the shoes frame of the present invention;

Fig. 2 is an exploded view to show the second embodiment of the shoes frame of the present invention;

Fig. 3 is an exploded view to show the third embodiment of the shoes frame of the present invention;

Fig. 4 is an exploded view to show the fourth embodiment of the shoes frame of the present invention;

Fig. 5 is an exploded view to show the sixth embodiment of the shoes frame of the present invention;

Fig. 6 is an exploded view to show the seventh embodiment of the shoes frame of the present invention, and

Fig. 7 is an exploded view to show the eighth embodiment of the shoes frame of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Fig. 1, the adjustment shoes frame of the present invention comprises a top part 1 having a first surface 11 and a first pivotal portion 13, and a stop plate 12 extends perpendicularly from an underside of the first surface 11 so that when a shoe is put on the first surface 11, the stop plate 12 stops the shoe from slipping off the first surface 11 when the first part 1 is orientated at an angle. The first pivotal portion 13 has a hole 131 defined therethrough which is pivotably connected with a second part 2. The top part 1 includes a recess 14 defined in a side thereof and a stud 141 extends from the recess 14 so as to be connected with an adjustment rod 3 to set the position of the first part 1.

The bottom part 2 has a second surface 21 for a shoe to be put thereon and a second pivotal portion 22 extends perpendicularly from an underside of the second surface 21. The second pivotal portion 22 has a protrusion 221 which is pivotably engaged with the hole 131 of the first pivotal portion 13. The side of the second surface 21 of the second part 2 is in alignment with the second pivotal portion 22, and a lug 23 extends from the second surface 21. The lug 23 has an aperture 231 and the adjustment rod 3 is connected to the aperture 231.

An adjustment device includes the adjustment rod 3 which is a curved rod and is connected between the top and bottom parts 1, 2. The adjustment rod 3 includes a

positioning portion 31 which includes a guide groove 311 and multiple notches 312. The stud 141 on the first part 1 is movable in the guide groove 311 and engaged with one of the notches 312 to set the desired angular distance between the top and bottom parts 1, 2. A pivot 32 extends from the adjustment rod 3 and is pivotably engaged with the aperture 231 of the lug 23 of the second part 2. The pivot 32 includes an enlarged head 321 so that when the pivot 32 is engaged with the aperture 231, the pivot 32 is not separated from the lug 23 of the second part 2.

The first and second surfaces 11, 21 are located on different planes so that the two shoes can be put on the first and second surfaces 11, 21 respectively. This saves the space in horizontal direction. The top part 1 is pivotable relative to the second part 2, and the adjustment rod 3 sets the angular distance between the top and bottom parts 1, 2 so that the different types of shoes can be put on the top and bottom parts 1, 2. The stud 141 is slidable within the guide groove 311 of the adjustment rod 3 and engaged with one of the notches 312 so that the user can easily adjust the relative positions of the top and bottom parts 1, 2.

The hole 131 of the top part 1 and the protrusion 221 of the bottom part 2 can be switched to each other, which means that the first pivotal portion 13 of the top part 1 is a protrusion and the second pivotal portion 22 of the bottom part 2 is a hole. Similarly, the pivot 32 of the adjustment rod 3 and the lug 23 of the bottom part 2 can also be switched to each other.

The second embodiment in Fig. 2 is made based on the first embodiment. The main change is that multiple positioning holes 132 are located around the hole 131, and multiple bosses 222 are located around the protrusion 221. The protrusion 221 is pivotably engaged with the hole 131 and the bosses 222 are engaged with the positioning holes 132. Again, the positioning holes 132 and the bosses 222 can be switched to each other.

The third embodiment in Fig. 3 is made based on the first and second embodiments. The main change is that the second pivotal portion 22 having a hole 223 and a circular flange 2231 extends from a periphery of the hole 223. The circular flange 2231 has threads 2232 defined in an outer periphery thereto. An inner cap 224 has a tubular portion with a passage 2241 defined therethrough and ridges 2242 are formed on an outer periphery of the tubular portion. The inner cap 224 is threadedly connected to the threads 2232 of the circular flange 2231. An outer cap 225 has a recessed portion 2251 and multiple reception grooves 2252 are defined in an inner periphery thereof. The tubular portion of the inner cap 224 is engaged with the recessed portion 2251 and the ridges 2242 are engaged with the reception grooves 2252. A spring 226 is located between the passage 2241 and the recessed portion 2251. The outer cap 225 maintains the top part 1 when the first and second pivotal portions 13, 22 are engaged with each other. When adjusting, the user pushes the outer cap 225 on the bottom part 2 to pivot the top part 1 to a desired position and the outer cap 225 is released to set the relative positions of the top and bottom parts 1, 2.

The fourth embodiment in Fig. 4 is made based on the first, second and third embodiments. The main change is that the second pivotal portion 22 has a recess 223 and multiple engaging grooves 2233 are defined in an inner periphery of the recess 223. The inner cap 224 has multiple engaging ribs 2243 defined in an outer periphery thereof and the engaging ribs 2243 are engaged with the engaging grooves 2233. The outer cap 225 has a recessed portion 2251 and multiple reception grooves 2252 are defined in an inner periphery thereof.

The ridges 2242 of the inner cap 224 and the reception grooves 2252 of the outer cap 225 as shown in Figs. 3 and 4 can be switched to each other. This means that the inner cap 224 can have reception grooves and the outer cap 225 has engaging ribs which are engaged with the reception grooves. The inner periphery of the recess 223 of the bottom part 2 in Fig. 4 and the outer periphery of the inner cap 224 can switch to each other so as to be engaged with each other.

The sixth to eighth embodiments are shown in Figs. 5 to 7, wherein the main change is that the stud 141 and the adjustment rod 3 are removed, and the top part is strong enough to support the weight of the shoe, then the stud 141 and the adjustment rod 3 are not necessary.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

WHAT IS CLAIMED IS:

1. An adjustment shoes frame comprising:

a top part having a first surface and a first pivotal portion, a stop plate extending from the first surface, the first pivotal portion having a hole defined therethrough, and

a bottom part having a second surface and a second pivotal portion, the second pivotal portion having a protrusion which is pivotably engaged with the hole of the first pivotal portion.

2. The frame as claimed in claim 1, wherein an adjustment device is connected between the top and bottom parts.

3. The frame as claimed in claim 2, wherein adjustment device includes an adjustment rod.

4. The frame as claimed in claim 2, wherein the top part 1 includes a recess defined in a side thereof and a stud extends from the recess, the bottom part has a lug on a side thereof, the lug has an aperture and the adjustment rod is connected to the aperture.

5. An adjustment shoes frame comprising:

a top part having a first surface and a first pivotal portion, a stop plate extending from the first surface, the first pivotal portion having a hole defined therethrough and multiple positioning holes located around the hole, and

a bottom part having a second surface and a second pivotal portion, the second pivotal portion having a protrusion and multiple bosses located around the protrusion, the protrusion is pivotably engaged with the hole and the bosses are engaged with the positioning holes.

6. The frame as claimed in claim 5, wherein an adjustment device is connected between the top and bottom parts.

7. The frame as claimed in claim 6, wherein adjustment device includes an adjustment rod.

8. The frame as claimed in claim 6, wherein the top part includes a recess defined in a side thereof and a stud extends from the recess, the bottom part has a lug on a side thereof, the lug has an aperture and the adjustment rod is connected to the aperture.

9. An adjustment shoes frame comprising:

a top part having a first surface and a first pivotal portion, a stop plate extending from the first surface, the first pivotal portion having a hole defined therethrough and multiple positioning holes located around the hole, and

a bottom part having a second surface and a second pivotal portion, the second pivotal portion having a hole and a circular flange extending from a periphery of the hole, the circular flange having threads defined in an outer periphery thereto;

an inner cap having a tubular portion with a passage defined therethrough and ridges formed on an outer periphery of the tubular portion;

an outer cap having a recessed portion and multiple reception grooves defined in an inner periphery thereof, the tubular portion of the inner cap engaged with the recessed portion and the ridges engaged with the reception grooves, and

a spring located between the passage and the recessed portion.

10. The frame as claimed in claim 9, wherein an adjustment device is connected between the top and bottom parts.

11. The frame as claimed in claim 9, wherein adjustment device includes an adjustment rod.

12. The frame as claimed in claim 11, wherein the top part includes a recess defined in a side thereof and a stud extends from the recess, the bottom part has a lug on a side thereof, the lug has an aperture and the adjustment rod is connected to the aperture.

13. The frame as claimed in claim 11, wherein the top part includes a recess defined in a side thereof and a stud extends from the recess, the bottom part has a lug on a side thereof, the lug has an aperture and the adjustment rod is connected to the aperture.

14. An adjustment shoes frame comprising:

a top part having a first surface and a first pivotal portion, a stop plate extending from the first surface, the first pivotal portion having a hole defined therethrough and multiple positioning holes located around the hole, and

a bottom part having a second surface and a second pivotal portion, the second pivotal portion having a recess and multiple engaging grooves defined in an inner periphery of the recess;

an inner cap having multiple engaging ribs defined in an outer periphery thereof and a tubular portion located at a center of the inner cap, a passage defined in the tubular portion and ridges formed on an outer periphery of the tubular portion;

an outer cap having a recessed portion and multiple reception grooves defined in an inner periphery thereof, the tubular portion of the inner cap engaged with the recessed portion and the ridges engaged with the reception grooves, and

a spring located between the passage and the recessed portion.

15. The frame as claimed in claim 14, wherein the passage is replaced by reception grooves and the recessed portion includes ridges.

16. The frame as claimed in claim 14, wherein an adjustment device is connected between the top and bottom parts.

17. The frame as claimed in claim 16, wherein adjustment device includes an adjustment rod.

18. The frame as claimed in claim 16, wherein the top part includes a recess defined in a side thereof and a stud extends from the recess, the bottom part has a lug on a side thereof, the lug has an aperture and the adjustment rod is connected to the aperture.