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(54) **HANGER WITH INTERLOCKING CAM CLIP**

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Related U.S. Application Data

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Publication Classification

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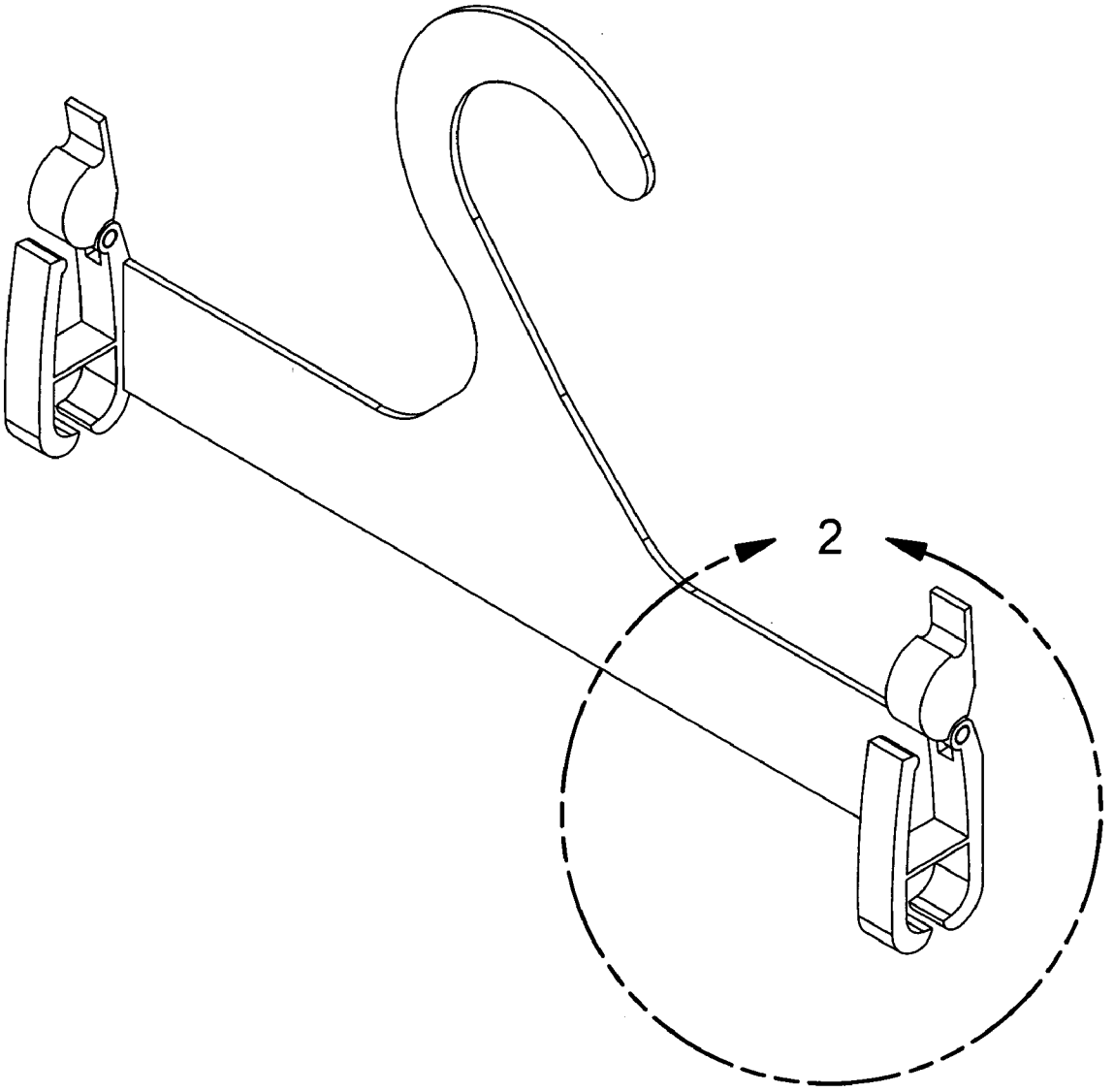
A41D 27/22 (2006.01)

(52) **U.S. Cl.** **223/96**; 223/85

(57) **ABSTRACT**

A hanger with some interlocking cam clips that grip some garments together with the hanger. The clip has a pair of arms hinged together at about their middles by a resilient bar and an interlocking cam joined to one arm's end by cylindrical axles. By pushing the cam into the gap of the arms, the jaws, on the other ends of the arms, close with a clamping force.



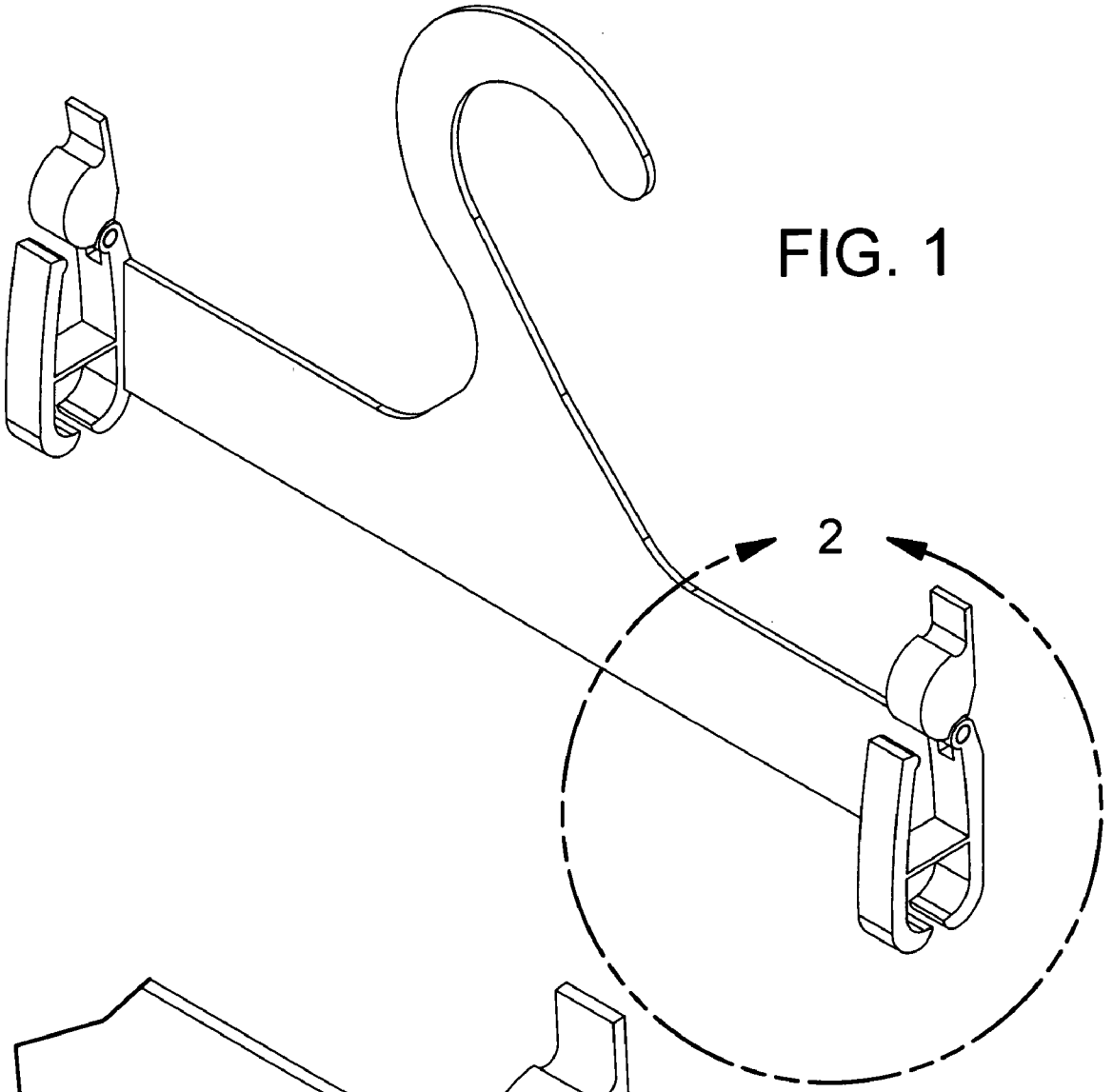


FIG. 1

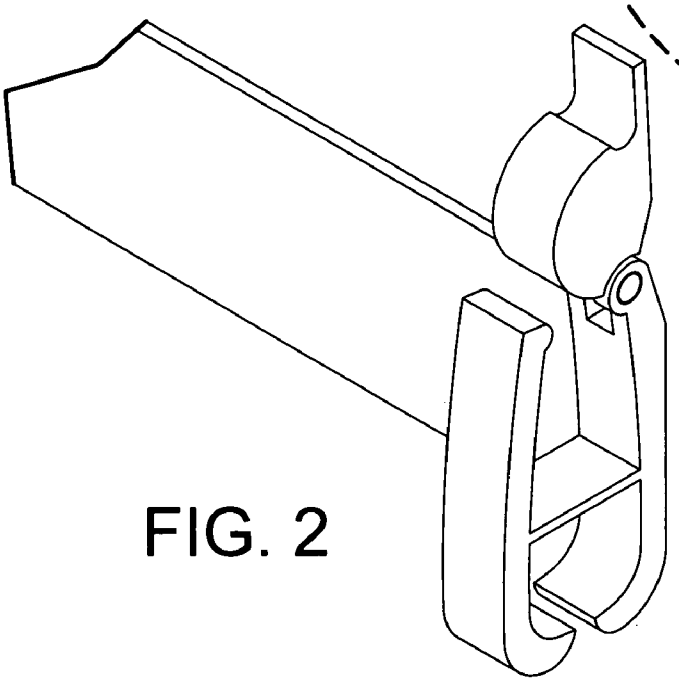


FIG. 2

FIG. 3

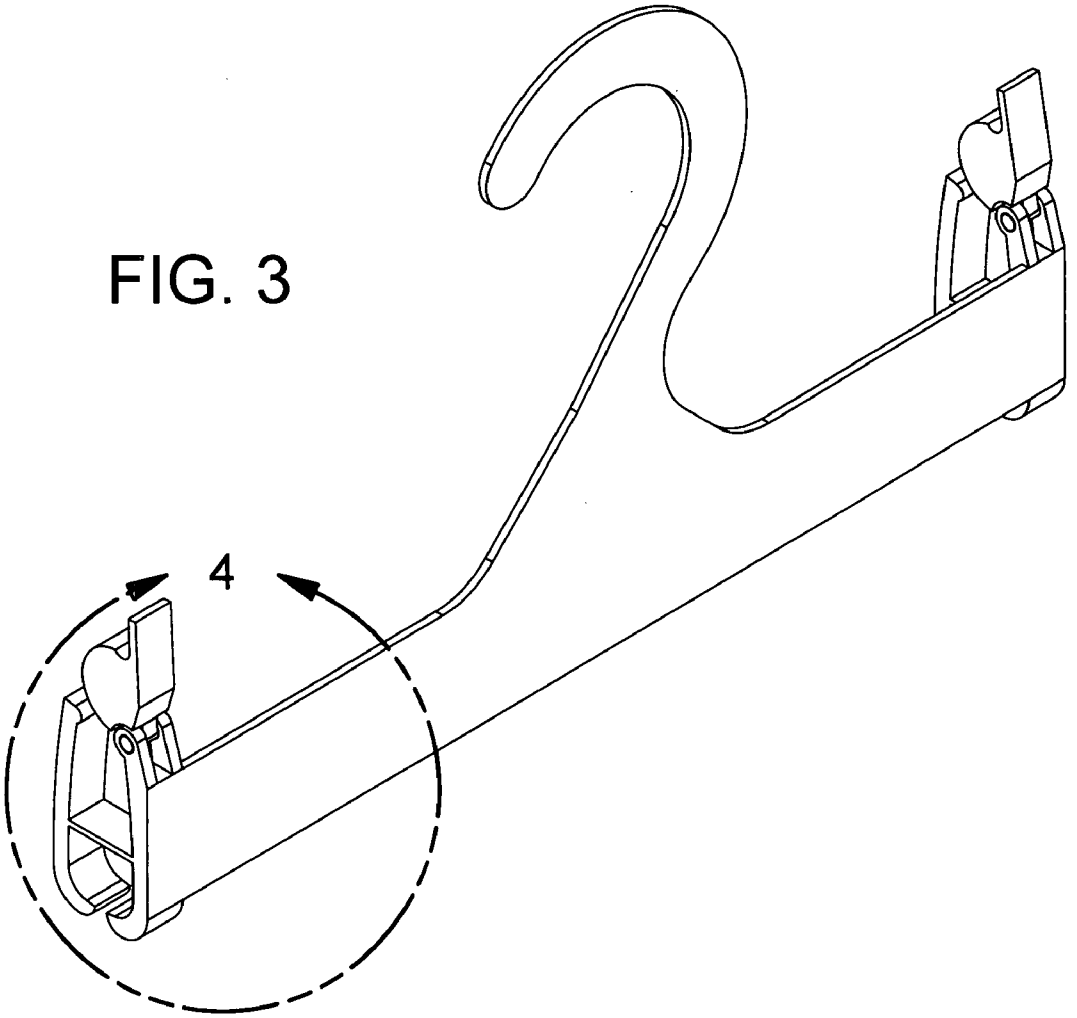
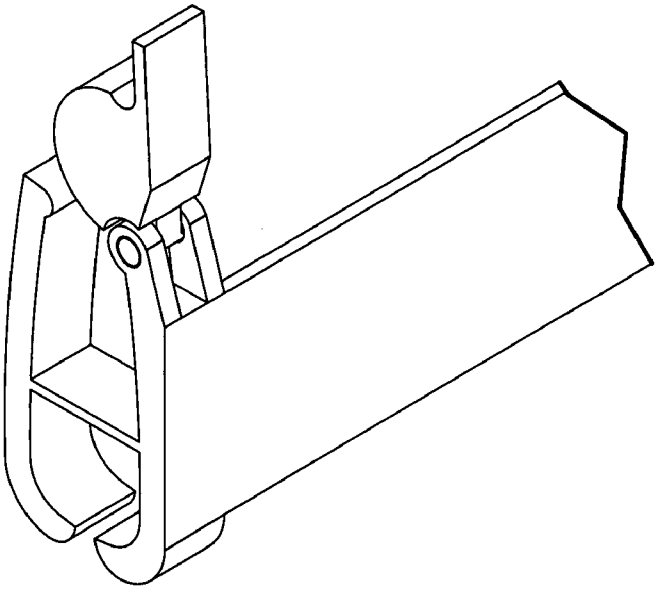


FIG. 4



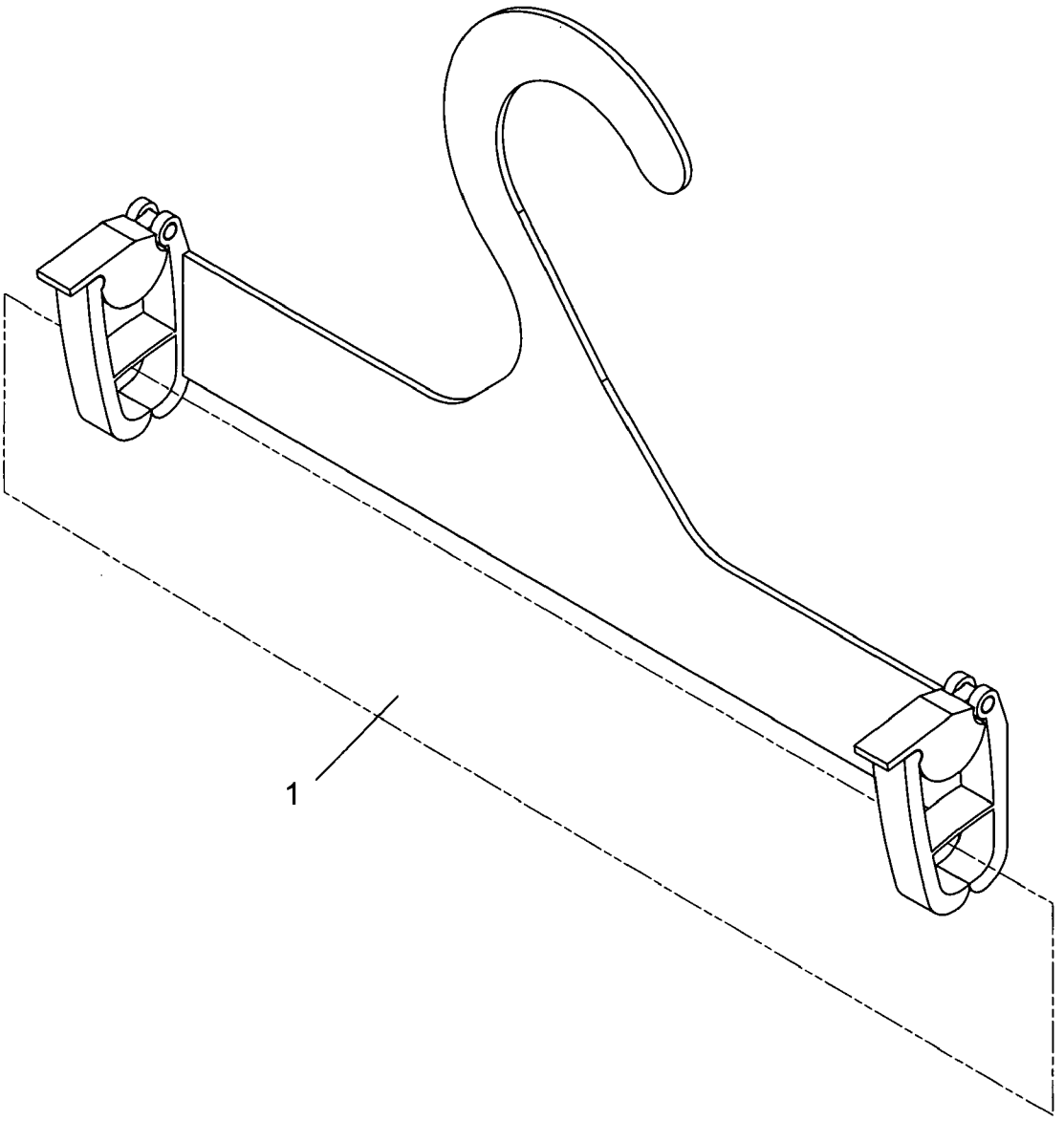


FIG. 5

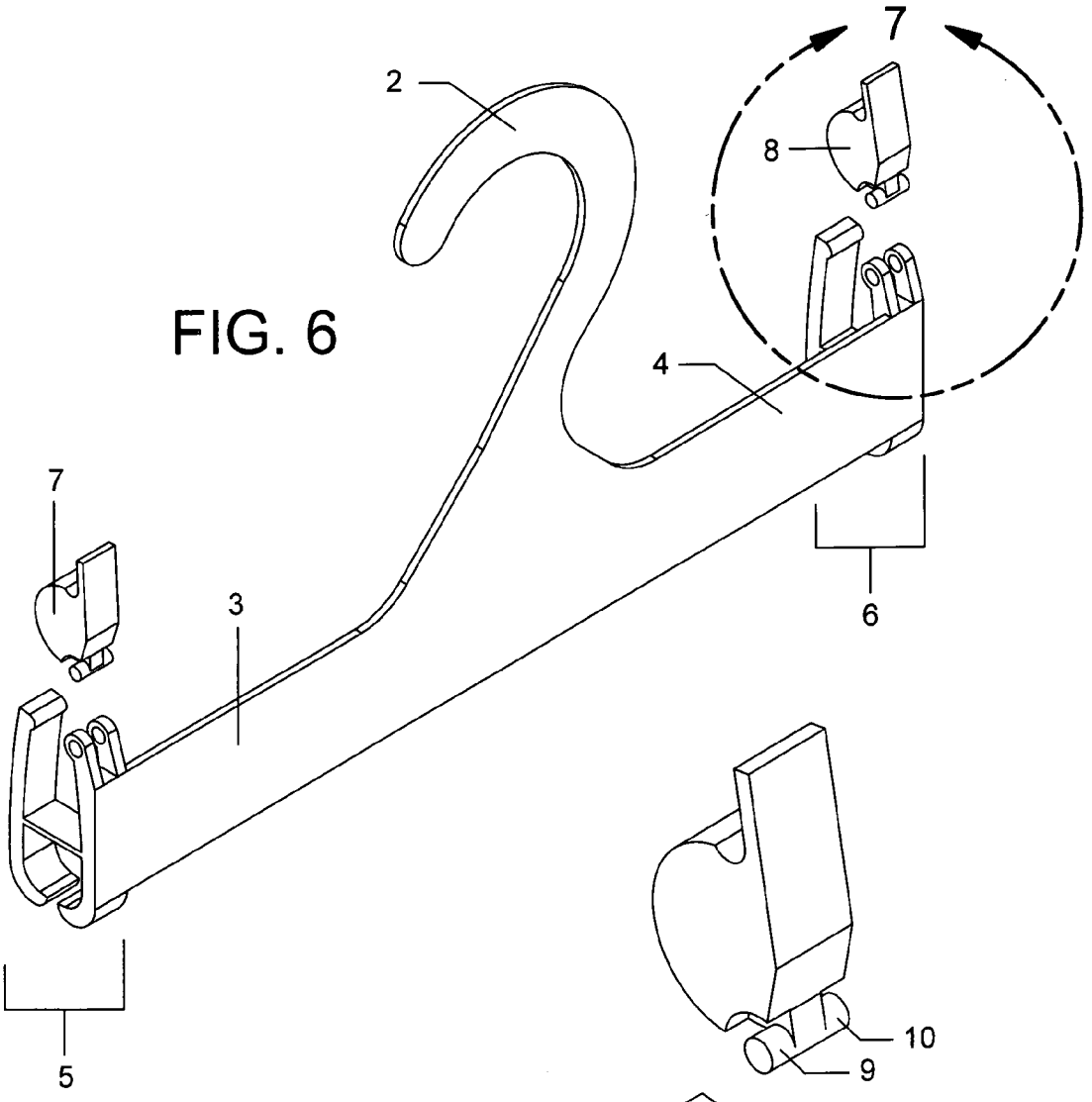


FIG. 6

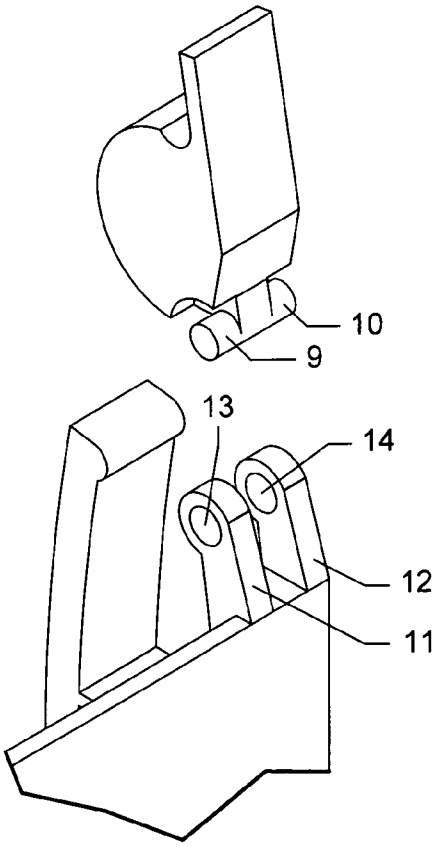


FIG. 7

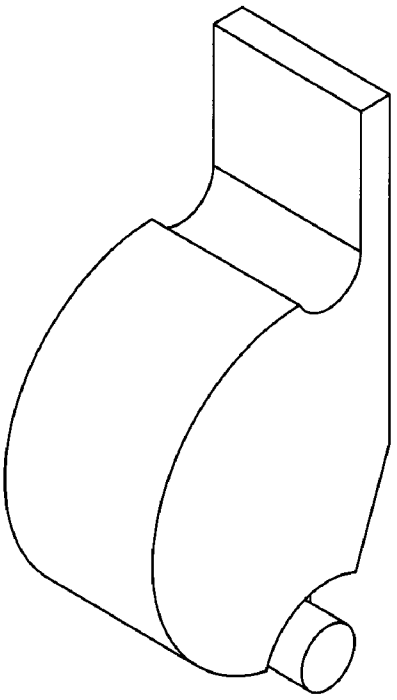


FIG. 8

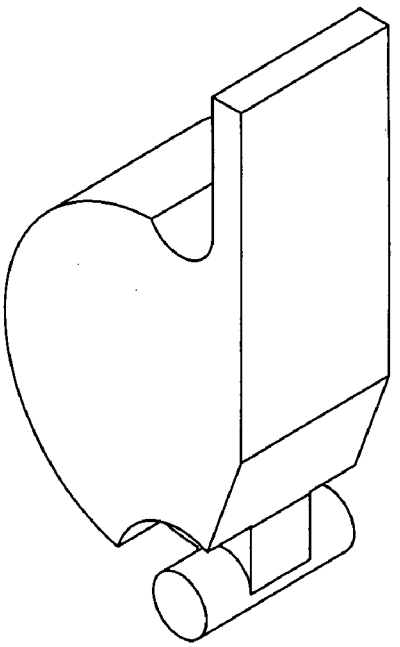


FIG. 9

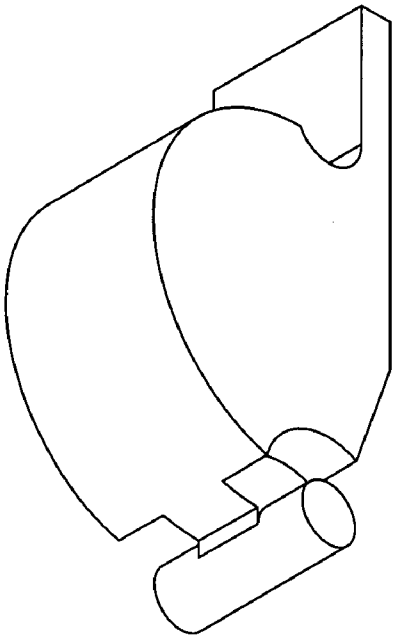


FIG. 10

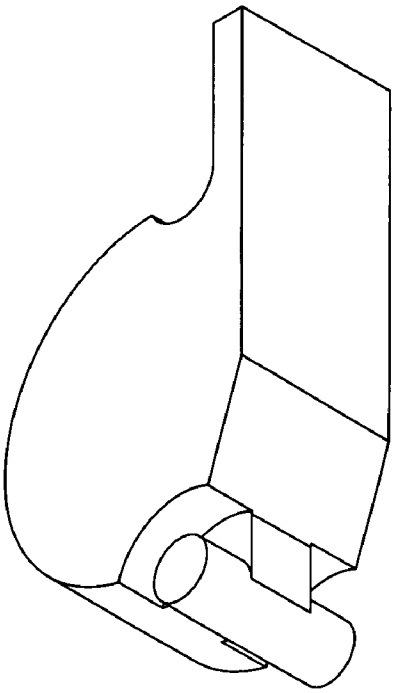


FIG. 11

FIG. 12

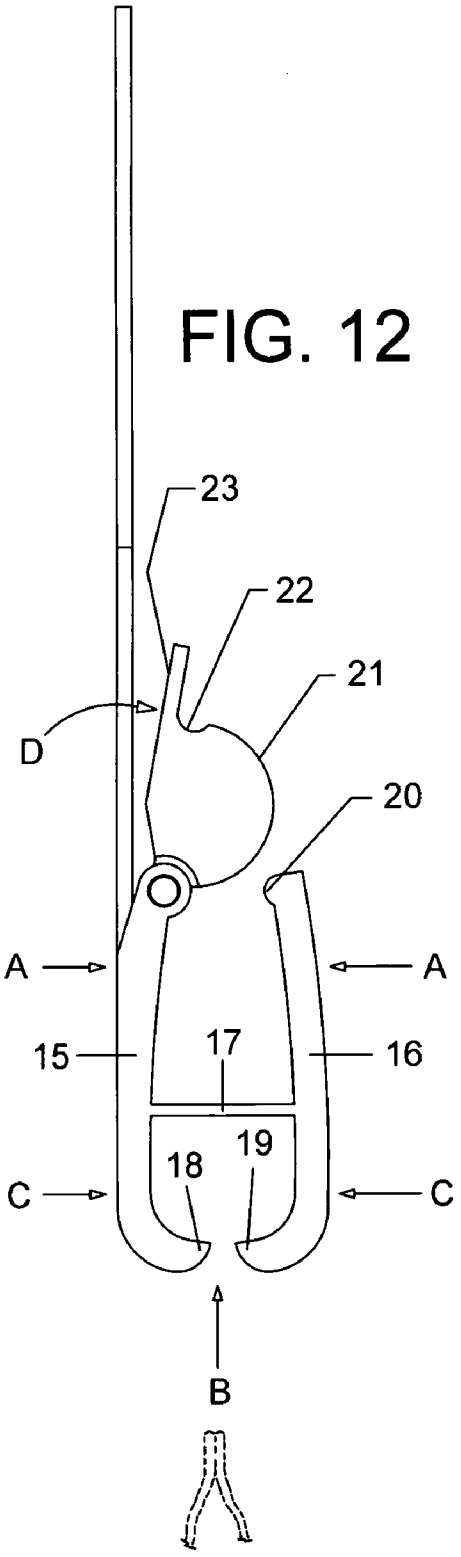
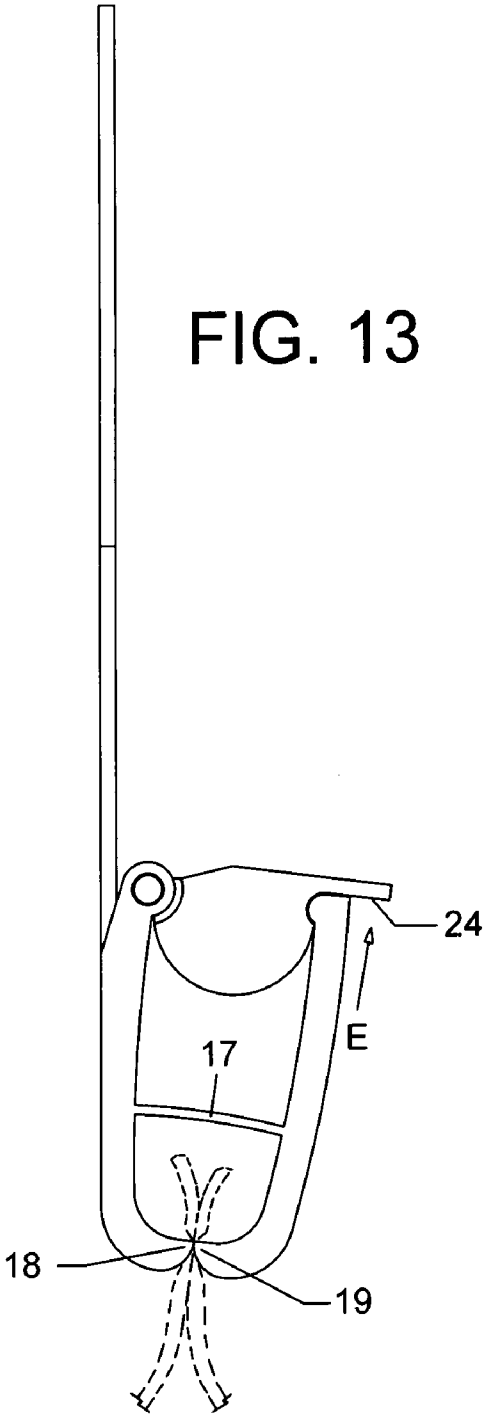


FIG. 13



HANGER WITH INTERLOCKING CAM CLIP

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Prior application Ser. No.: 11/892,826
[0002] Filing date: Aug. 28, 2007
[0003] Art Unit: 3731

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0004] Not Applicable

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISC APPENDIX

[0005] Not Applicable

BACKGROUND OF THE INVENTION

[0006] 1. Field of the Invention
[0007] The present invention relates to a resilient plastic hanger with some incorporated interlocking cam clips having a strong gripping force.
[0008] 2. Description of the Prior Art
[0009] U.S. Pat. No. 5,400,932 issued to Joseph C. Hollis on Mar. 28, 1995 disclosed a hanger with gripping clips. The user of this hanger has to apply a bigger force than the clamping force to open the clip.
[0010] U.S. Pat. No. 6,389,657 issued to William Joseph Hunt on Aug. 19, 1997 disclosed a clip with a locking mechanism. The user of this clip has to apply a bigger force than the clamping force to close the jaws, because the area for pressing force is between the jaws and the pivot.
[0011] U.S. Pat. No. 5,890,634 issued to Andrew M. Zuckerman on Apr. 6, 1999 disclosed a hanger with two end latching means. This hanger has many parts to be assembled.

BRIEF SUMMARY OF THE INVENTION

[0012] The present invention discloses a resilient plastic hanger using some incorporated interlocking cam clips to grip some garments. Pushing the cam through the gap between one ends of the clip's arms, generates a clamping force to the other ends of the clip's arms, because the clip's arms are hinged together at about their middles. The generated clamping force is strong enough to keep heavy garments from falling during transportation.
[0013] Because the clip using a cam to generate the clamping force, the user of this clip can open and close the latches with a lesser force than the clamping force.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

[0014] FIG. **1** is a perspective front view of the present invention at free state.
[0015] FIG. **2** is an enlarged view of a clip on FIG. **1**.
[0016] FIG. **3** is a perspective back view of the hanger at free state.
[0017] FIG. **4** is an enlarged view of a clip on FIG. **3**.
[0018] FIG. **5** is a perspective front view of the hanger at clamping state.
[0019] An imaginary garment **1** shows the relative position of the garment to the hanger.
[0020] FIG. **6** is an exploded view of the hanger.
[0021] FIG. **7** is an enlarged view of a clip on FIG. **6**.
[0022] FIG. **8**, FIG. **9**, FIG. **10**, FIG. **11** are some perspective views of the cam.
[0023] FIG. **12** is a side view of the clip at free state.
[0024] FIG. **13** is a side view of the clip at clamping state.

DETAILED DESCRIPTION OF THE INVENTION

[0025] In FIG. **6**, the hanger has a hanging hook **2**, two extentions **3** and **4**, two clips **5** and **6**, two cams **7** and **8**.
[0026] In FIG. **7**, the cam has two concentric cylindrical axles **9** and **10**. One arm of the clip has two cantilevers **11** and **12** with two concentric holes **13** and **14**. By inserting respectively, the axles **9**, **10** into the holes **13**, **14**, the cam can only rotate around the center line of the holes **13**, **14**.
[0027] In FIG. **12** the clip has two arms **15** and **16**, a hinge bar **17**, two jaws **18** and **19**, a latch **20**. The cam has a pushing surface **21**, a latch receptacle **22**, a closing surface **23**.
[0028] In FIG. **13**, the cam has an opening surface **24**.
[0029] in FIG. **12**, by pressing the clip at direction A-A, the gap between the two jaws **18** and **19** is more wide. The insertion of garment into the gap at direction B is easier. Once the garment is between the two jaws **18** and **19**, by pressing the clip at direction C-C, the space between the latch **20** and the cam's axles is opened more. A torque applied in direction D on the closing surface **23** of the cam, rotates the cam around its axles. Under the torque, the surface **21** pushes the latch **20** away from the cam's axles, the cam continues to rotate until the latch **20** goes into the latch receptacle **22**. Now the cam is locked by the latch **20** and the latch receptacle **22**.
[0030] In FIG. **12**, when the pushing surface **21** of the cam pushes away the latch **20**, and with the hinge **17**, the cam generates a strong clamping force onto the jaws **18** and **19**.
[0031] In FIG. **13**, a force applied in direction E onto the cam at opening surface **24**, releases the latch **20** from the latch receptacle **22**. The jaws **18** and **19** are opened by the resilient hinge **17**, to the initial free state. The garment can be moved away from the hanger.

I claim:

1. A hanger with interlocking cam clips, comprising:

a cam connected to one arm of the clip by rotating axles.

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