US 20040065702A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2004/0065702 A1**

Yang (43) **Pub. Date: Apr. 8, 2004**

(54) **GARMENT HANGER**

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(21) Appl. No.: **10/265,992**

(22) Filed: **Oct. 7, 2002**

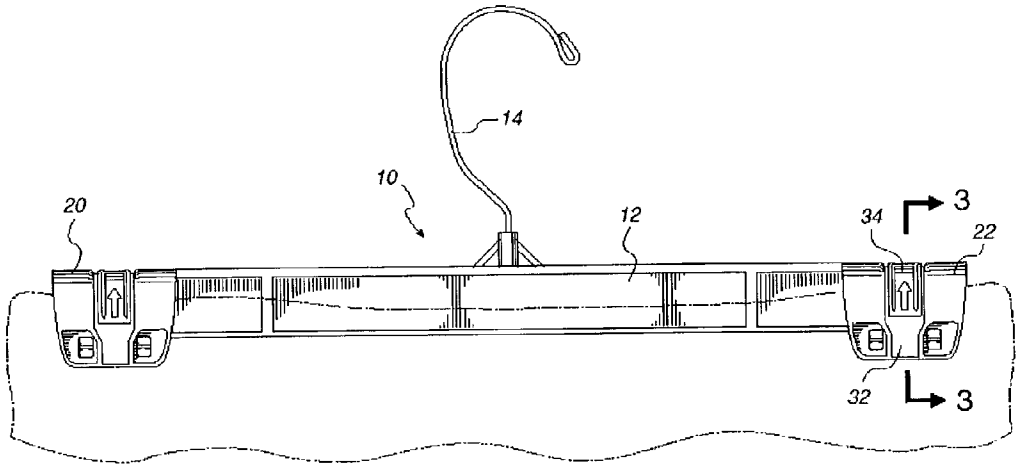
Publication Classification

(51) **Int. Cl.**[7] **A41D 27/22**

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

(57) **ABSTRACT**

A garment hanger including an elongated body with at least one clamp for securely holding a garment is provided. The clamp includes front and rear clamping members pivotally connected to the elongated body, and a suspending member extending upwardly from the body for securing the hanger to a point of suspension. The clamping members have oppositely facing inner surfaces, and each surface has at least one receptacle cavity, with a protrusion therein, for receiving therein a gripping pad in an enhanced pressure-fit interlock. The gripping pad has a first side for contact with the garment and a second side for coupling with the receptacle cavity, in which at least one leg with an aperture is situated and configured for mating with the receptacle cavity and the projection situated therein. Finally, a biasing member is used to bias the clamping members towards one another to hold the garment.



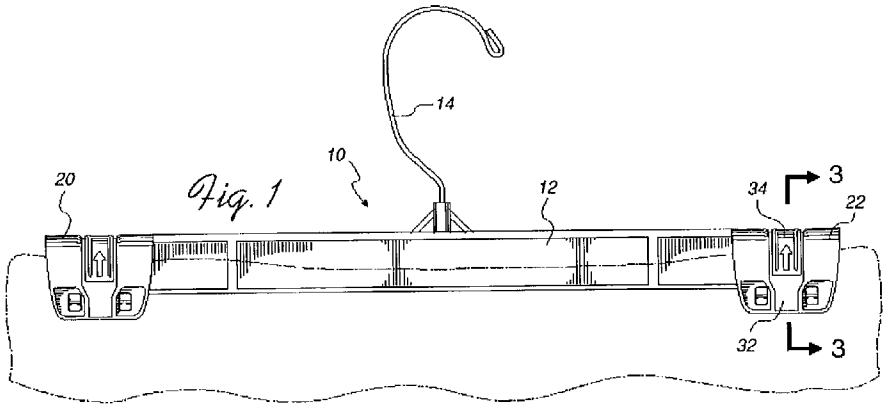


Fig. 1

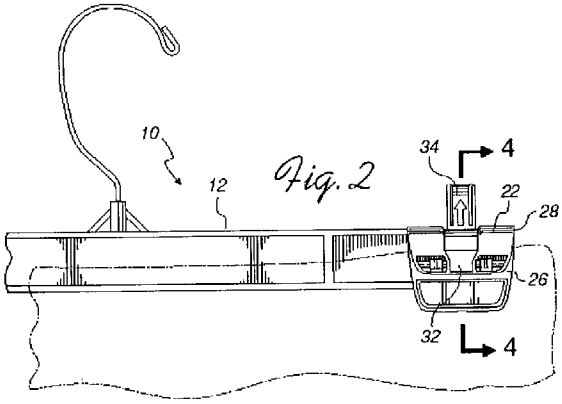


Fig. 2

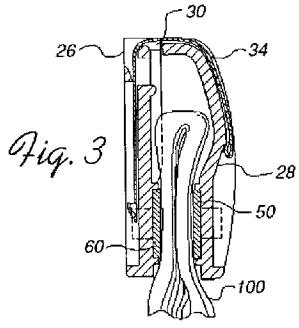


Fig. 3

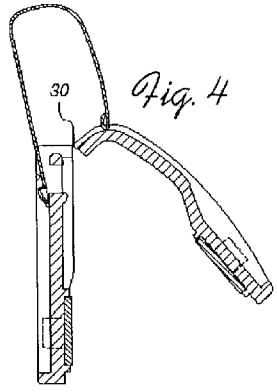


Fig. 4

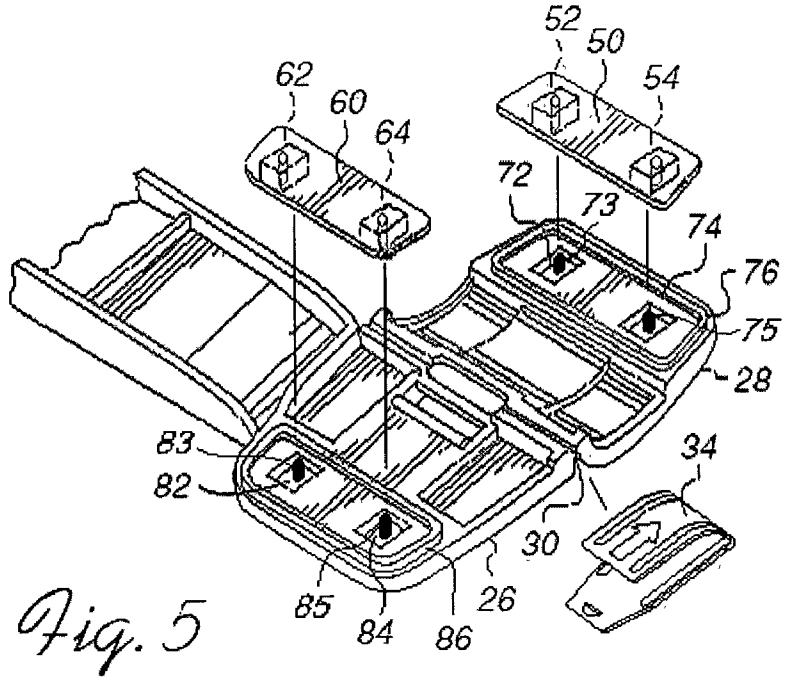


Fig. 5

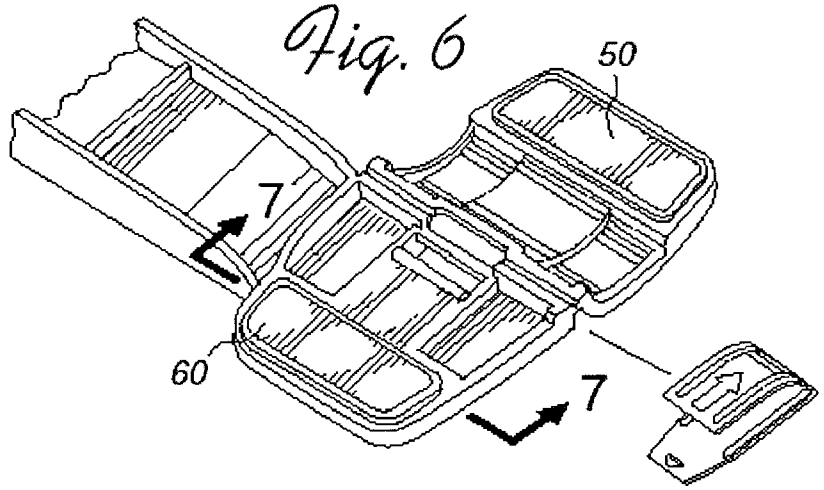


Fig. 6

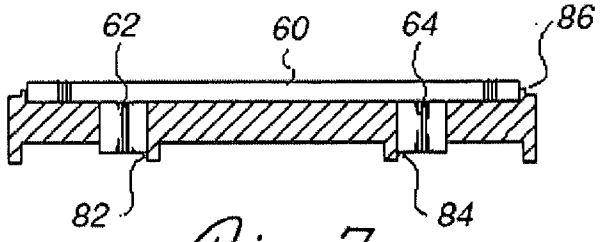


Fig. 7

Fig. 8

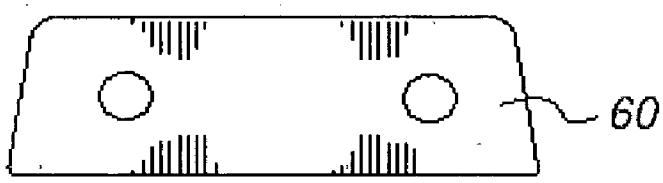


Fig. 9

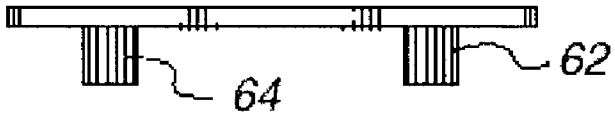
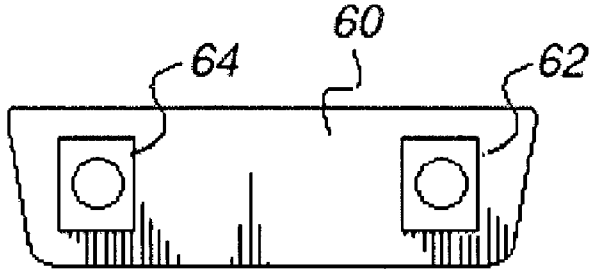


Fig. 10



GARMENT HANGER

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a garment hanger and, more particularly, an improved garment hanger having a pair of gripping pads made of molded synthetic rubber.

[0003] 2. Description of the Related Art

[0004] Garment clamping hangers have been used for many years. Such hangers have been used for the suspension or hanging of a wide variety of clothing articles, such as skirts and pants. Some garment hangers use gripping pads wherein an article of clothing is placed between two gripping pads.

[0005] An example of one such structure adapted to increase the clamping force may be found in commonly owned U.S. Pat. No. 3,767,092, entitled GARMENT CLAMPING HANGER WITH SLIDABLE LOCKING CLIP, issued on Oct. 23, 1973 in the names of Judd F. Garrison and John H. Batts. Garrison, et. al. teaches a pair of integrally hinged clamp members biased together and locked by a generally U-shaped spring clip. The opposed, facing, inner surfaces of the clamping members are also provided, in one embodiment, with a plurality of conical projections or pointed tooth-like members which embed themselves into the article suspended to increase the holding capability of the clamp. In another embodiment, Garrison et. al. teaches that each of the gripping members includes parallel projections which extend laterally almost the entire width of lower portion of the clamp members.

[0006] To improve the garment gripping capabilities of garment clamping hangers, it is known to provide the jaws of the clamps with a coating or pads of particles of high friction material, such as rubber. One of the major problems has been that of detachment of the pad from the hanger. Such problem becomes acute when the hanger is used for heavy garments and even more so when the hanger is intended for repeated reuse or for transportation where it has to sustain the additional strain of repeated, abrupt, vertical movements often experienced in transit.

[0007] Another factor which has materially restricted use of pads is cost. Making the hanger in two separate operations, that is, first assembling or molding the hanger body and later bonding the garment gripping pads to the body is expensive. Another factor has been the problem of developing a hanger with a replaceable pad. Past experience indicates that rubber pads, either natural or synthetic, which have the required frictional grip, lose their resiliency and elasticity with long term use. This loss of resiliency and elasticity contributes to a reduction in the gripping force between the clothing articles and the surface of the gripping pads. It further results in the loosening of the gripping pads from the hanger.

SUMMARY OF THE INVENTION

[0008] Accordingly, the present invention is directed to a garment hanger with improved gripping clamps that substantially obviates one or more of the problems due to limitations and disadvantages of the related art.

[0009] Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

[0010] To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, a garment hanger comprises an elongated body with at least one clamp for securely holding a garment to the garment hanger. The clamp includes front and rear clamping members pivotally connected to the elongated body, and a suspending member extending upwardly from the body for securing the hanger to a point of suspension. The front and rear clamping members each have oppositely facing inner surfaces, with each surface having at least one receptacle cavity for receiving therein a gripping pad in a pressure-fit interlock. A projection is situated within the receptacle cavity to enhance the pressure-fit interlock. The gripping pad has a first side for contact with the garment and a second side for coupling with the receptacle cavity of the clamping member. The second side of the gripping pad has at least one leg configured for mating with the receptacle cavity and the projection situated therein. The leg may comprise an aperture for receiving the projection situated within the receptacle cavity and have substantially the same diameter as each corresponding receptacle of a clamping member. Also, the aperture in each leg of a gripping pad may have substantially the same diameter as the projection situated in each corresponding receptacle of a clamping member.

[0011] According to one aspect of the present invention, a biasing member is used for biasing the front and the rear clamping members toward one another to hold the garment when the clamp is in a closed position.

[0012] According to another aspect of the present invention, the front and the rear gripping pads are made of flexible material to be secured to the front and rear clamping members via pressure fit, respectively.

[0013] According to another aspect of the present invention, each of the front and the rear clamping member further includes a raised guide substantially surrounding the receptacle to allow the front and the rear gripping pads, respectively, to be placed therein.

[0014] In another embodiment of the present invention, a gripping mechanism for suspending clothing articles comprises at least one jaw, which includes a first member pivotally attached to a second member about a swivel axis. Each of the first and second members has outer and inner surfaces. The inner surface of the first member is positioned opposite, approximately parallel to and facing the inner surface of the second member in a closed position. Thus, the inner surface of the first member can move away from the inner surface of the second member when the first member rotates about the point of swivel in first direction.

[0015] According to one aspect of this embodiment, at least one receptacle cavity is situated in the inner surface of the first or second member for tightly receiving a protruding leg of a gripping pad. A protrusion is situated within the at

least one receptacle cavity to engage a corresponding aperture in the protruding leg of the gripping pad. Also, a circumferentially raised collar protrudes from the inner surface of the first or second member for tightly fitting around the outer perimeter of the gripping pad for snuggly engaging a portion of a clothing item.

[0016] According to another aspect of this embodiment, a raised area is situated on the inner surface of the first or second member. At least one receptacle cavity is situated in the inner surface of the first or second member for tightly receiving a protruding leg of a gripping pad. A protrusion is situated within the at least one receptacle cavity to engage a corresponding perforation in the protruding leg of the gripping pad. In addition, a raised collar protrudes from the inner surface of the gripping pad for circumferentially engaging the outer perimeter of the raised area of the inner surface of the first or second member.

[0017] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide a further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention. In the drawings:

[0019] **FIG. 1** is a top planar view of a garment hanger with clamping members in a closed position, according to one or more embodiments of the present invention;

[0020] **FIG. 2** illustrates a partial top planar view of the garment hanger of **FIG. 1**, illustrating one of the clamping members in an open position;

[0021] **FIG. 3** is a cross-sectional side view of the garment hanger of **FIG. 1** along cross-section **3-3**, illustrating a clamping member in a closed position;

[0022] **FIG. 4** is a cross-sectional side view of the garment hanger of **FIG. 2** along cross-section **4-4**, illustrating a clamping member in a open position;

[0023] **FIG. 5** is an exploded perspective view of a clamping member with a pair of gripping pads, according to one or more embodiments of the present invention;

[0024] **FIG. 6** is a perspective view of a clamping member with a pair of gripping pads, according to one or more embodiments of the present invention;

[0025] **FIG. 7** is a cross-sectional frontal view of the clamping member of **FIG. 6** along cross-section **7-7**, illustrating a clamping member in a open position;

[0026] **FIG. 8** illustrates a top planar view of a gripping pad, according to one or more embodiments of the present invention;

[0027] **FIG. 9** illustrates a side elevational view of the gripping pad of **FIG. 8**, according to one or more embodiments of the present invention; and

[0028] **FIG. 10** illustrates a bottom planar view of the gripping pad of **FIG. 8**, according to one or more embodiments of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0029] Referring to **FIGS. 1 and 2**, the garment hanger **10** has an elongated body **12** supported at the center by one or more suspending members, such as an integral hook **14**. The elongated body **12**, preferably in the form of a cross bar, comprises at each end garment clamps **20** and **22**, each comprising a pair of clamping members. Each of the clamps **20** and **22** includes a rear clamping member **26** molded integrally with the elongated body **12** and a front clamping member **28** which is integrally joined to the rear clamping member **26** by a hinge or integrally molded hinges, for example. Preferably, the front and rear clamping members **26** and **28** are integrally joined by a thin section forming a pivoting hinge **30** (see **FIGS. 3, 4**).

[0030] Referring to **FIG. 2**, in order to open the clamping members, a user need only place a finger in the cupped area **32** and slide a biasing mechanism, such as a locking clip **34**, for example, upward. The front clamping members **28** may then be pivoted about the hinges **30** (clearly shown in **FIG. 3**) away from the rear clamping members **26** to permit removal or placement of an article between the oppositely facing inner surfaces of the clamps **20**, **22**.

[0031] Referring to **FIGS. 3 and 4**, when the clamps are closed using a locking clip **34**, a clothing article **100** can be secured between the opposing inner surfaces of the rear clamping member **26** and the front clamping member **28**, such that the clothing article **100** is tightly held between a pair of opposite facing gripping pads **50** and **60**. The front gripping pad **50** is connected to the inner surface of the front clamping member **28** at a lower proximity thereof. Similarly, the rear gripping pad **60** is connected to the inner surface of the rear clamping member **26** at a lower proximity thereof.

[0032] Referring to FIGS. **5-10**, interlocking features of gripping pads **50** and **60** as they correspond to those of clamping member **28** and **26** are respectively discussed below. Referring to **FIG. 5**, the rear clamping member **26** includes, for example, two rectangular or square receptacle cavities **82** and **84** for receiving the protruding legs **62** and **64** of the rear gripping pad **60**. As it would be clear to one skilled in the art the shape of the cavities may be different due to design (e.g., circular or rectangular). In certain embodiments, nipple-like projections **83** and **85** are centrally situated within the receptacle cavities **82** and **84**, respectively. In some embodiments, the projections **83** and **85** are molded integrally to the rear clamping member **26**. Alternatively, the projections **83** and **85** may be in the form of nails piercing through rear clamping member **26**.

[0033] The rear clamping member **26**, in one embodiment, also includes a raised guide **86** for circumferentially engaging the rear gripping pad **60**. Raised guide **86** enhances the pressure-fit interlock between the protruding legs **62** and **64** and receptacle cavities **82** and **84**, such that a tight interlock fit is provided as the protruding legs **62** and **64** are received by the receptacle cavities **82** and **84**.

[0034] Referring to FIGS. **8-10**, in certain embodiments, protruding legs **62** and **64** each contain an aperture for respectively receiving the corresponding nipple-like projection **83** or **85** situated in the receptacle cavities **82** and **84** for even further enhancement of the pressure-fit interlock between each protruding leg and the respective receptacle

cavity. The position and the separation distance of the protruding legs **62** and **64** are the same as that of the receptacles **82** and **84** and are aligned with each other for a proper pressure-fit interlock, in accordance with one aspect of the invention.

[**0035**] The front clamping member **28** comprises a gripping pad **50** in the same manner as described with respect to the rear clamping member **26**. According to an embodiment of the present invention, each of the front and rear gripping pads **50** and **60** is of a trapezoidal shape, for example, to match the similarly shaped guide portions **76** and **86** of the front and rear clamping members **28** and **26**, respectively. The gripping pads may be designed in other shapes as appreciated by one of ordinary skill in the art.

[**0036**] Referring to **FIG. 7**, each protruding leg **62** and **64** of the gripping pad **60** is, for example, of a diameter approximately equal to that of the corresponding receptacle cavity **82** and **84** so that when inserted into the corresponding receptacle cavities **82**, **84**, the gripping pad is tightly secured to the rear clamping member **26**. Similarly, the projections **83** and **85** are, for example, of diameters approximately equal to that of the apertures located within each protruding leg **62** and **64** to provide further means of securing the gripping pad to the rear clamping member. Due to this feature, the gripping pads **50** and **60** are securely coupled to the corresponding clamping members **28** and **26** without the use of adhesives. However, adhesive may also be used. Due to the tight pressure-fit that results from the interlocking features of the gripping pads and the inner surfaces of the clamping members, the gripping pads remain attached to the clamping members firmly even in spite of long term use.

[**0037**] According to one aspect of the present invention, the body **12** of the garment hanger **10** is preferably made by way of injection molding using plastic or other suitable materials known to one of ordinary skill in the art, such as styrene-butadiene-styrene plastic or polypropylene. The gripping pads **50** and **60** are preferably made of synthetic or natural rubber or any other suitable materials, for example. When the gripping pads **50** and **60** wear out due to long term use, the pads **50** and **60** may simply be detached from the corresponding clamping members and new pads may be placed in lieu thereof. Similarly, when assembling the garment hangers according to the present invention, the assembly process is substantially simplified and made inexpensive due to the interlocking features illustrated in FIGS. **8-10**.

[**0038**] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of the invention. For example, the interlocking features of the gripping pad are interchangeable with the interlocking features of the first or second clamping member. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A garment hanger comprising:

an elongated body comprising at least one clamp for securely holding a garment to the garment hanger, wherein each clamp comprises front and rear clamping members pivotally connected to the elongated body, and a suspending member extending upwardly from the body for securing the hanger to a point of suspension;

the front and rear clamping members having oppositely facing inner surface, each having at least one receptacle cavity for receiving therein a gripping pad in a pressure-fit interlock, wherein a projection is situated within the receptacle cavity to enhance the pressure fit lock; and

each gripping pad having a first side for contact with the garment and a second side for coupling with the receptacle cavity of the clamping member, wherein the second side of the gripping pad has at least one leg configured for mating with the receptacle cavity and the projection situated therein.

2. The garment hanger of claim 1, wherein the at least one leg of each gripping pad comprises an aperture to receive the projection situated within the receptacle cavity.

3. The garment hanger of claim 2, wherein the aperture has a diameter substantially the same as the projection situated within the receptacle cavity.

4. The garment hanger of claim 1, wherein the at least one leg of each gripping pad has a diameter substantially the same as the receptacle cavity.

5. The garment hanger of claim 1, further comprising a biasing member for biasing the front and the rear clamping members toward one another to hold the garment.

6. The garment hanger of claim 1, wherein the elongated body is in the form of a cross bar.

7. The garment hanger of claim 1, wherein the elongated body further comprises two terminally opposite ends and two clamps situated approximately at the end of each terminal end.

8. The garment hanger of claim 1, wherein the projection is a nipple like projection centrally situated within the receptacle cavity.

9. The garment hanger of claim 1, wherein the at least one leg of the gripping pad is made of flexible material for securely interlocking with the receptacle cavity and the projection therein.

10. The garment hanger of claim 9, wherein the inner surface of each clamping member further comprises a raised collar substantially surrounding the at least one receptacle cavity for providing an additional pressure-fit interlock for receiving the gripping pad.

11. An improved clamp comprising:

a front clamping member pivotally connected to a rear clamping member, wherein each clamping member comprises an inner surface;

at least one receptacle cavity situated on the inner surface;

a nipple-like projection centrally situated within the receptacle cavity; and

a gripping pad having a front surface presented for contact with a garment and a back surface presented for coupling with the inner surface of the clamping member, wherein at least one leg is situated on the back surface of the gripping pad configured for mating with the receptacle cavity and the at least one leg comprises an aperture to receive the projection; and

a biasing member for biasing the front and rear clamping members towards one another to hold the garment.

12. The clamp of claim 11, wherein the aperture has a diameter substantially the same as the nipple-like projection.

13. The clamp of claim 11, wherein the at least one leg of the gripping pad has a diameter substantially the same as the at least one receptacle cavity.

14. The clamp of claim 11, wherein the at least one leg of the gripping pad is made of flexible material for securely interlocking with the at least one receptacle cavity and the projection therein.

15. The clamp of claim 11, wherein the inner surface of each clamping member further comprises a circumferentially raised collar protruding from the inner surface and substantially surrounding the at least one receptacle cavity for tightly fitting around the outer perimeter of the gripping pad when the gripping pad's protruding leg is received in the receptacle cavity.

16. The clamp of claim 11, wherein each clamping member comprises two receptacle cavities for receiving two legs situated on the back surface of the gripping pad.

17. A gripping mechanism for suspending clothing articles, the gripping mechanism comprising:

at least one jaw comprising a first member pivotally attached to a second member about a swivel axis, each of the first and second members having outer and inner surfaces, the inner surface of the first member positioned opposite, approximately parallel to and facing the inner surface of the second member in a closed position, such that the inner surface of the first member can move away from the inner surface of the second member when the first member rotates about the point of swivel in first direction, wherein the inner surfaces of the first and second members each comprise one or more pressure-fit interlocking features in operation with one or more complementary pressure-fit interlocking features on a first side of a gripping pad, in which a second side opposite the first side is configured for snuggly engaging a portion of a clothing item.

18. The gripping mechanism of claim 17, further comprising a biasing mechanism for keeping said jaw in a closed position so that the clothing article can be snuggly engaged in between first and second gripping pads respectively attached to the inner surfaces of the first and second members.

19. The gripping mechanism of claim 17, further comprising means for suspending the gripping mechanism from a point of suspension.

20. The gripping mechanism of claim 17, wherein the outer surface of the first and second members is smooth and free from protrusions or perforations.

* * * * *