

CLAMPING MEANS

FIELD OF INVENTION

- 5 The present invention relates to a clamping means and more particularly to a durable, resilient and one-piece moulded thermoplastic clamping means.

BACKGROUND OF THE INVENTION

- 10 A clamping means is a fastener mainly used to hang up clothes, socks, pants and other textile materials to the clothes lines. Many clamping means are designed in a cost-saving way for example by creating two interlocking plastics or wooden prongs, in between, which is often wedged with a small spring. Conventionally, by a lever action, when the two prongs are pinched at the top of the peg, the prongs open up,
15 and when released, the spring draws the two prongs shut, creating the action necessary for gripping.

- The conventional clamping means normally includes the usage of springs which is not aesthetic and easily get rusty after used for a certain period of time. The present
20 one piece design of clamping means is produced by two prongs of the peg chassis having only a small distance between them. This structure allows the peg creating gripping action due to the two prongs being wedged apart and thus squeezing together in that the prongs want to return to their initial, resting state. This form of peg is often fashioned from plastic, or originally from wood.

It is desirable that clamping means made out of thermoplastic material to avoid corrosion or staining. Furthermore, the clamping means is preferably made out of one piece of thermoplastic material which is durable and non-corrosive.

5 In one of the prior arts, patent number US 3600763 discloses a clamping means moulded in one from thermoplastic material and comprising a handle with depending clamping arms which can be flexed apart to straddle a clothes line. In another example of prior art, US 5179768 discloses a clothespin made of plastic as one unit, having two opposite pin plates. However, the structures and mechanisms of the prior
10 art disclosed are said to be different from the present invention. The present invention introduces numbers of extra features over the prior art for instance the guiding slot to avoid accidental dislocation and groove grips to ease the handling and pinching of handles. Furthermore, the present invention provides further gripping action since it has male and female clamping rib.

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Therefore, there exists a need for a clamping means that is resilient, non-dislocated and having optimum clamping properties.

SUMMARY OF THE INVENTION

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The present invention relates to a clamping means and more particularly to a durable, resilient and one-piece moulded thermoplastic clamping means.

In an embodiment of the present invention, a clamping means comprising a pair of
25 clamping arms providing a clamping recess, a pair of curves connected to the

clamping arms, allowing the clamping to be splayed, a U-shaped handle directly joined with the curves, a guide moulded at inner surface of the U-shaped handle, protruding from the inner surface of the U-shaped handle, a slot moulded at the inner surface of the handle engageable with the guide to avoid dislocation of the clamping arms during use and a recess located in the interior of the U-shaped handle.

In another preferred embodiment of the present invention, the clamping means is preferably one-piece moulded from a thermoplastic material.

10 In another preferred embodiment of the present invention, the lower surface of the clamping arms further includes male clamping ribs and female clamping ribs .

In another preferred embodiment of the present invention, the outer surface of the U-shaped handle is furnished with a plurality of groove grips.

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In another preferred embodiment of the present invention, the U-shaped handle is flexible and resilient when force is exerted towards the upper surface of the U-shaped handle.

20 In another preferred embodiment of the present invention, the recess minimizes when force is exerted towards the outer surface of the U-shaped handle allowing the clamping arms to splay and widen the clamping recess.

In another preferred embodiment of the present invention, the U-shaped handle
25 further comprises a lower recess located between the interior of U-shaped handle.

In another preferred embodiment of the present invention, the lower recess provides space for clothes line or cables to enter thus locks the clamping means towards the cables.

- 5 The present invention consists of features and a combination of parts hereinafter fully described and illustrated in the accompanying drawings, it is being understood that various changes in the details may be made without departing from the scope of the invention or sacrificing any of the advantages of the present invention.

10 **BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS**

To further clarify various aspects of some embodiments of the present invention, a more particular description of the invention will be rendered by references to specific embodiments thereof, which are illustrated, in the appended drawings. It is
15 appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail through the accompanying drawings in which:

20 FIG.1 illustrates an elevated view of clamping means

FIG.2 illustrates an elevated view of splayed clamping means.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. 1(a), the figure shows an elevated view of the clamping means (100). The clamping means (100) comprises a pair of clamping arms (12) which are parallel and having the same thickness in elevated view. The clamping arms (12) are connected to curves (14) and to an aesthetically designed U- shaped handle (15). The clamping arms (12), curves (14) and the U-shaped handle (15) are machine moulded from one piece of thermoplastic material. The resilient and flexible nature of the thermoplastic material deemed suitable for the manufacturing of the clamping means (100). The clamping arms (12) of the present invention further comprise a male clamping rib (11) and a female clamping rib (10) at the front end of the clamping arm (12). These two ribs (10, 11) provide reinforced gripping action towards the clothing articles during clamping. There is provided a clamping recess (13) between the inner surface of the clamping arms (12) in close position, in order to receive clothes or other lightweight articles for the purpose of hanging said articles.

The clamping means (100) is further configured with curves (14) intermediating between both of the clamping arms (12) and the U-shaped handle (15), wherein also constituting the clamping recess (13) to receive clothes or articles thereof. The curves (14) are designed in a mirror and symmetrical shape and size, so as to allow equal gripping force towards clothes or articles when being clamped. The curves (14) are overlapping with one another in the clamping means's (100) configuration wherein slidably in contact with the opposite curve's (14) inner surfaces.

There is provided a U-shaped handle (15) at the lower part of the clamping means (100). The U-shaped handle (14) is resiliently flexible portions wherein capable of returning to an original position after the U-shaped handle (15) is introduced with physical compression. The outer surface of the U-shaped handle (15) is furnished
5 with plurality of groove grips (17) providing gripping means. The plurality of groove grips (17) allows the user to easily compress the U-shaped handle (15) when in use and avoids from slipping particularly when the user's hand is wet. Between the inner surfaces of the U-shaped handle (15), there is provided a recess (16) to allow
10 splaying the clamping arms (12) when force is exerted towards the outer surface U-shaped handle (15). The action of exerting force towards the outside surface of the U-shaped handle (15) substantially splays the curves (14), and the clamping arms (12). This action subsequently minimizes the recess (16) area and widens the clamping recess (13) for receiving cloth or other articles.

15 In one embodiment of the invention, the interior surface of the U-shaped handle (15) is configured with a slot (19) and a guide (18) which is engageable with each other during use. The guide (18) is a protruding member from the inner surface of the U-shaped handle (15) and is engageable with said slot (19). The slot is (19) designed to have a ditch in the middle area allowing the guide (18) to enter into the slot (19) at
20 ease. These guide (18) and slot (19) avoid accidental dislocation of the clamping arms (12) when the outer surface of the U-shaped handle (15) is being compressed.

The clamping means (100) is preferably machine moulded from a thermoplastic material which is resilient and durable. The clamping means (100) may also be

utilized in other applications for example in clamping papers, sheets, or other articles which is lightweight.

According to FIG. 1 (b), the figure shows the clamping means (100) being exerted
5 with compression force towards the outer surface of the U-shaped handle (15). The
clamping arms (12) splayed and thus widen the clamping recess (13) of the clamping
means (100) in order to receive articles thereof. Wider clamping recess (13) allows
thicker clothes or articles to be introduced into the clamping recess (13). The U-
shaped handle (15) interior surface closes and minimizes when physical
10 compression is applied towards the outer surface of the U-shaped handle (15). The
guide (18) of the clamping means (100) slidably engages with the ditch of the slot
(19) during the compression. The slot (19) and the guide (18) engage with each
other and avoid any accidental dislocation. In another embodiment, a lower recess
(20) between the interior of the U-shaped handle (15) provides an area to securely
15 hang the clamping means on to the clothes lines or cables allowing the clamping
means to be hanged.

It will be an evident that, in use, the configuration and shape of the clamping means
(100) provides extra features and advantages over the prior arts. The clamping
20 means (100) is a one-piece moulded device from thermoplastic material where no
means of steel or rust-able materials are used in this invention. Therefore, the
durability and reliability of the clamping means (100) will be more improved.
Furthermore, no rust stain will appear at the clothes or articles.

In another embodiment of the present invention, the clamping means (100) alternatively moulded from different shape and sizes depending on its application. The aesthetic design of the clamping means (100) may alternatively improved by adding accessories for instance attaching beads and glittery materials onto it.

5 Furthermore, the clamping means may also be moulded from a thermoplastic material which would able to glow in the dark.

In the foregoing specification, specific embodiments of the present invention have been described. However, one of ordinary skill in the art will appreciate that various
10 modifications and changes can be made without departing from the scope of the present invention as set forth in the various embodiments discussed above and the claims that follow. Accordingly, the specification and figures are to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included within the scope of present invention. The benefits, advantages,
15 solutions to problems, and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential features or elements as described herein.

CLAIMS

1. A clamping means (100) comprising:

a pair of clamping arms (12) providing a clamping recess (13);

5 a pair of curves (14) connected to the clamping arms (12), allowing the clamping arms (12) to be splayed;

a U-shaped handle (15) directly joined with the curves (14);

a guide (18) moulded at inner surface of the U-shaped handle (15), protruding from the inner surface of the U-shaped handle (15);

10 a slot (19) moulded at the inner surface of the handle engageable with the guide (18) to avoid dislocation of the clamping arms (12) during use; and

a recess (16) located in the interior of the U-shaped handle (15).

2. The clamping means (100) according to claim 1 wherein the clamping means

15 (100) is preferably one-piece moulded from a thermoplastic material.

3. The clamping means (100) according to claim 1 wherein the lower surface of the clamping arms further includes male clamping ribs (11) and female clamping ribs (10).

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4. The clamping means (100) according to claim 1 wherein the outer surface of the U-shaped handle (15) is furnished with a plurality of groove grips (17).

5. The clamping means (100) according to claim 1 wherein the U-shaped handle (15) is flexible and resilient when force is exerted towards the upper surface of the U-shaped handle (15).

5 6. The clamping means (100) according to claim 1 wherein the recess (16) minimizes when force is exerted towards the outer surface of the U-shaped handle (15) allowing the clamping arms (12) to splay and widen the clamping recess (13).

7. The clamping means (100) according to claim 1 wherein the U-shaped handle (15)
10 further comprises a lower recess (20) located between the interior of U-shaped handle (15).

8. The clamping means (100) according to claim 7 wherein the lower recess (20) provides space for clothes line or cables to enter thus locks the clamping means (10)
15 towards the cables.