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[54] **CLOTHES PEG**  
 6 Claims, 6 Drawing Figs.

[52] U.S. Cl. .... 24/137 R  
 [51] Int. Cl. .... D06f 55/00  
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 138, 139, 139.1

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**ABSTRACT:** A clothes peg moulded in one piece from thermoplastic material and comprising a handle with depending clamping arms which can be flexed apart to straddle a clothes line. Each clamping arm comprises a resiliently flexible portion adjacent the handle, an adjoining clamping portion and a terminal portion. The terminal portions together define a splayed entrance channel by which the peg is offered to the clothes line. The clamping portions define a ribbed passage in which the clothes line is received when the peg has been finally positioned. During flexure, the clamping portions are displaced from a position in which they subtend acute angles to one in which they are more nearly parallel.

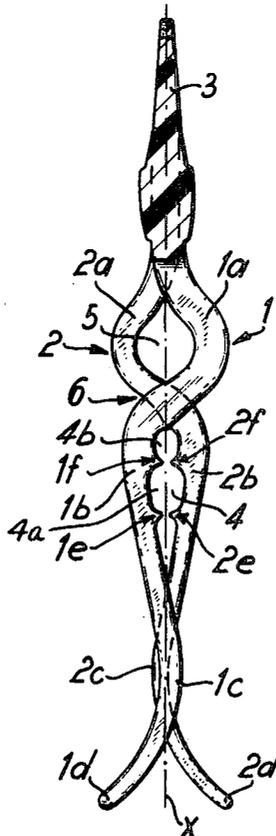


FIG. 1

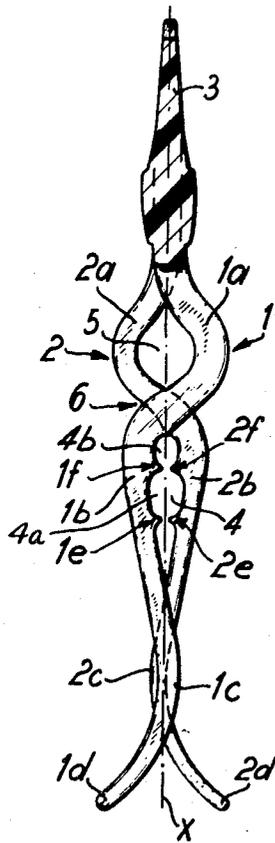


FIG. 2

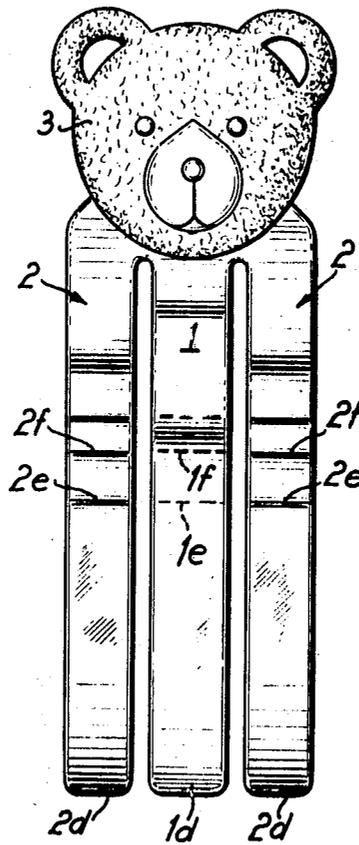


FIG. 3



FIG. 4

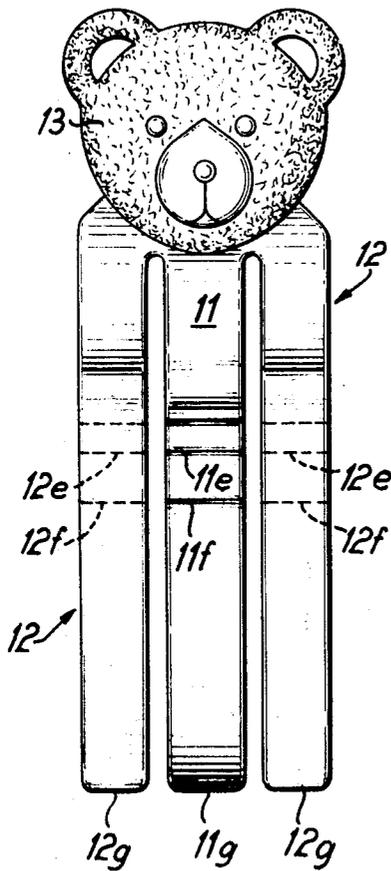


FIG. 5

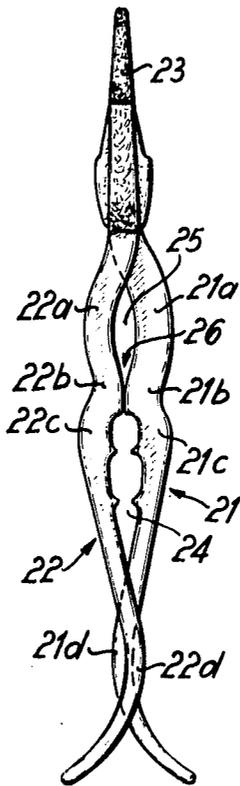
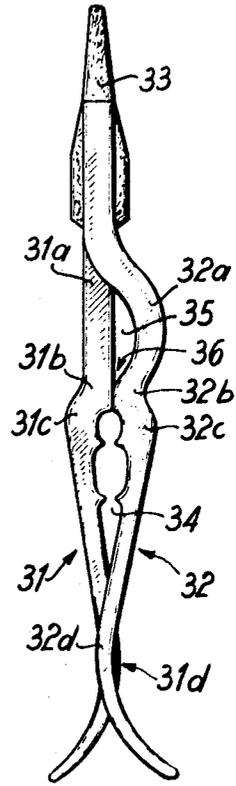


FIG. 6



## CLOTHES PEG

The invention relates to a clothes peg and has been developed with the following considerations in mind.

It is desirable that clothes pegs be of plastics material to avoid corrosion or staining; be made in one piece to simplify production and avoid displacement and falling apart which might occur with pegs that are assembled from separate components; be easy to manipulate; be designed to avoid stress concentrations and premature failure; have optimum clamping properties; be adapted for manufacture by injection moulding; be free from moulding flashes that could damage clothing; be sufficiently resilient to withstand repeated flexure in use when clamping clothing to a clothes line; have parts which rely on a clamping rather than wedging action when securing the clothing; be designed to exert roughly the same clamping force irrespective of the thickness of the clothes line and clothing; use a minimum of material to be made and be of compact dimensions.

According to the invention, there is provided a clothes peg moulded in one piece from thermoplastic material, comprising a handle and at least three clamping arms depending therefrom in juxtaposed relationship as viewed in front elevation, the arms being adapted to be flexed relatively to one another to receive a clothes line therebetween and at least one of the arms being of undulating configuration as viewed in side elevation, wherein the clamping arms comprise resiliently flexible first portions respectively adjacent to where they depend from the handle and together defining a first channel, each said first portion being substantially one third of the length of the associated arm, adjoining second portions at substantially the middle of the arms together defining a second channel and effective to cooperate in clamping the clothes line in said second channel, and terminal portions together defining a splayed entrance channel for introducing the clothes line to between the arms, the construction by cross-sectional dimensioning of the arms in said first portions or by overlapping of the arms between said first and second portions being such that the clothes line is prevented from moving from said second channel into said first channel.

By means of this construction, for a clothes peg of given length at least one of the clamping arms can be longer than hitherto and this is particularly pertinent to the first portion immediately adjacent the handle because the flexibility and resilience of this first portion is correspondingly larger and so is the clamping force if the arms are given cross sections of appropriate dimension.

The handle is preferably solid as viewed in side elevation and the resiliently flexible first portions of the clamping arms spring from the solid part of the handle. Since at least one of the clamping arms is bowed in its first portion, maximum flexure and maximum clamping force are obtained with a minimum of material without overstressing.

The clamping arms are preferably a mirror image of one another although it is possible for at least one of the clamping arms to be substantially straight from end to end or at least up to a curved terminal portion but it is better if this clamping arm is substantially straight throughout its first portion and then a mirror image of the other arm or arms.

The first and second channels can be effectively separated in an arrangement where the clamping arms intersect or overlap between their first and second portions.

If there are only three clamping arms, the two outer arms may be identical whilst the center arm has a larger cross section so as to ensure that, if the clamping arms are flexed by equal amounts, the clamping force exerted by the center arm is equal to the sum of the clamping forces of the two outer arms. The material of the peg will be put to the best use if the cross section of the clamping arms tapers substantially progressively from at least the end of the first portion to a minimum at the end of the terminal portion.

The above-mentioned second channel may comprise a comparatively small upper clamping recess and a comparatively

large lower clamping recess, constrictions being provided at the lower end of the larger recess and at the transition from the larger to the smaller recess. Such constrictions can be formed by riblike projections moulded onto the clamping arms. This constructional feature is independent from the other features of the present invention and is of general importance to all clothes pegs that are made in one piece.

Tests have shown that the effect of the clamping recesses can be enhanced if they are longer than they are broad.

It is of course possible to join the terminal portions of two of the clamping arms that exert clamping force in the same direction. They may be joined by a crossbar to form a closed elongated loop.

The handle may have various configurations. By profiling the handle the clothes peg is less likely to slip out of the hand but at the same time a decorative effect can be provided if the handle depicts the head of an animal or human being, a flower or some technical item such as a model vehicle. In this way, the clothes peg can have the additional function of serving as a toy. If the clamping arms of the clothes peg are of equal length and all terminate in diverging curved portions, then these clamping arms represent an imaginary body for a handle in the form of an animal head. Such a peg can be stood up and of course a plurality of such pegs with differently shaped handles can represent a toy zoo.

Examples of the invention are illustrated in the accompanying drawings wherein:

FIG. 1 is a sectional side elevation of a clothes peg that is provided with three clamping arms, the section being taken through the head so as to show the central arm and one of the outer arms in full side elevation;

FIG. 2 is a front elevation of the FIG. 1 peg;

FIG. 3 is a central longitudinal section of another form of clothes peg having three clamping arms;

FIG. 4 is a front elevation of the FIG. 3 peg, and

FIGS. 5 and 6 are side elevations of two further forms of clothes peg.

Referring to FIGS. 1 and 2, the clothes peg comprises clamping arms 1 and 2 which are parallel when viewed in front elevation, the upper ends of the arms being integral and merging with a decoratively shaped handle 3. The outer arms 2 have an undulating configuration consisting of curves 2a, 2b and 2c while the central clamping arm 1 is a mirror image of the outer arms and consists of the curves 1a, 1b and 1c. The curves 1a, 2a constitute resiliently flexible portions bounding a channel 5. The curves 1b, 2b constitute second or clamping portions bounding a channel 4. The curves 1c, 2c constitute terminal portions defining a splayed entrance channel for introducing a clothes line to between the arms 2, 2 on the one hand and the arm 1 on the other hand. At the position indicated by the reference numeral 6, that is to say between the channels 5 and 4, the central clamping arm 1 intersects the two outer arms 2. In the vicinity of the lower curves 1c, 2c, the central clamping arm 1 slightly overlaps the outer arms 2. While the channel 5 is approximately circular, the channel 4 is elongated, being pointed at the bottom. The channel 4 comprises a large clamping recess 4a and a smaller upper clamping recess 4b. At the lower end of the larger clamping recess 4a and at the transition between the recesses 4a and 4b there are constrictions formed by riblike projections 1e, 1f, 2e, 2f moulded to the opposed surfaces of the clamping arms 1, 2, respectively.

It will be evident that, in use, the clothes peg is offered to a clothes line so that the free ends 1d, 2d of the clamping arms straddle the clothes line and any article of clothing that has been placed thereon, that is to say the clothes line is introduced into the splayed entrance channel defined by the terminal portions of the clamping arms. If the peg is now pushed onto the line, the clamping arms will be flexed apart, most of such flexure taking place in the portions 1a and 2a of the arms. This enables the clothes line to enter the channel 4 and the resilience of the clamping arms will cause the latter to move together again and exert a clamping force on the clothes line.

Of course the clamping force exerted by the central arm 1 is opposite to the clamping forces exerted by the two outer arms 2.

It will be seen from FIG. 1 that the central clamping arm 1 is thicker than the two outer arms 2. This is to ensure that, if all the arms are displaced by an equal amount from the central axis X of the clothes peg, the clamping force exerted by the central arm is approximately equal to the sum of the clamping forces exerted by the two outer arms. In addition, all the clamping arms are tapered continuously from the handle 3 to a minimum cross section at their free ends 1d, 2d in conformity with the progressively decreasing stresses that are set up in the clamping arms in use. In this way, the best possible clamping force and resilience are obtained with the least possible material.

If the diameter of the clothes line plus the article of clothing thereon is more than about 4 mm., then, in the clamping position of the peg, the clothes line will be located in the lower clamping recess 4a. The constrictions formed by the ribs 1e, 2e enhance the clamping effect to provide additional safeguard against accidental dislocation of the clothes peg or the article of clothing. If the thickness of the clothes line and the article of clothing is less than about 4 mm., the clothes line will be received in the upper clamping recess 4b. In this position, the ribs 1f, 2f enhance the clamping effect.

The configuration and dimensioning of the illustrated clothes peg provide decided advantages that have been proved in practice. The upper curves or bows 1a, 2a considerably increase the spacing between the handle and the clamping portions of the arms without resulting in an unduly long clothes peg; they also bring about increased flexibility and larger clamping forces. The curves 1b, 2b ensure, inter alia, that a large area of the opposed faces of the clamping portions of the clamping arms is in contact with the clamped clothing, even if the clothing and clothes line are fairly thick. This is because the clamping portions of the arms do not exert a wedging action by opening up in a V-formation as is the case with many hitherto known unitary clothes pegs; instead, the clamping portions of the arms initially subtend an acute angle to one another and this angle decreases as the arms are flexed apart. With a maximum thickness of clothes line plus clothing, the clamping portions of the arms are parallel to one another.

The configuration of the handle 3 is in the form of a bear's head in front and rear elevation. Naturally, other configurations can be chosen, either abstract or to depict some other animal or in fact any other object. Such configuration permits the user to obtain a better grip on the handle in all directions.

The clothes peg of FIGS 3 and 4 also comprises three clamping arms 11, 12 depending from a handle 13. The central arm 11 is a mirror image of the two outer arms 12. The outer arms are of undulating configuration comprising four successive curves or bows 12a, 12b, 12c, 12d. The central arm is bowed in the opposite direction as indicated by the curves 11a, 11b, 11c and 11d. The upper curves 11a, 12a constitute the bulging flexible first portions of the clamping arms and bound the channel 15. The curves 11c, 12c constitute the bulging second or clamping portions bounding the channel 14. This channel again comprises a larger lower clamping recess 14a and a smaller upper clamping recess 14b. The lower end of the recess 14a and the transition between the two recesses are again defined by constrictions formed by riblike projections 11e, 11f, 12e, 12f. At the top, the channel 14 is separated from the channel 15 insofar as the clamping arms overlap at the position 16, i.e. in the region of their curves 11b, 12b.

The central arm 11 is thicker than the two outer arms 12. Also, all the arms are tapered to have a minimum cross section at the free ends 11g, 12g.

The most important difference between the clothes peg of FIGS. 3 and 4 compared with that of FIGS. 1 and 2 is that the oppositely acting clamping arms no longer intersect between the channels 14 and 15; instead, they only overlap. This is why each clamping arm has four curves instead of only three. Although the function of the clothes peg of FIGS. 3 and 4

remains the same, there may be certain tooling advantages in the constructional differences.

The side elevation of FIG. 5 represents a clothes peg having three clamping arms. The front elevation of this peg may be the same as in FIG. 2. The three clamping arms 21, 22 merge with the handle 23. Each clamping arm is undulated to comprise four curves 21a, 21b, 21c, 21d and 22a, 22b, 22c, 22d, respectively. The curves of the central arm 21 are mirror images of the curves in the two outer arms 22 to define the channels 24 and 25. The channel 24 is here separated from the channel 25 by a constriction 26 formed by the curves 21b, 22b to prevent a clothes line in the channel 24 from reaching the channel 25. In other words, at the boundary of the channels 24 and 25 the clamping arms no longer intersect or overlap as in the previous examples. However, in this construction the thickness of the clamping arms in their resiliently flexible first portions must be so great that, in normal use, the arms are not excessively flexed apart at the position 26.

The construction of FIG. 6 indicates that the clothes peg according to the invention need not necessarily be symmetrical as viewed in side elevation, i.e. the opposed clamping arms need not be mirror images of one another. The two outer arms 32 and the central arm 31 depend from a handle 33. The two outer arms 32 are undulated to form four successive curves 32a, 32b, 32c and 32d. In contrast, the central clamping arm 31 has a resiliently flexible first portion 31a which is straight. Below the channel 35, which has the shape of a sector of a circle, the clamping arm 31 is a mirror image of the arms 32 in that it comprises the curves 31b, 31c, 31d. The curves 31c and 32c define the channel 34 which is separated from the channel 35 by the constriction 36. This constriction is brought about particularly by the inwardly directed curves 32b and prevents the clothes line from entering the channel 35. As in the case of the FIG. 5 embodiment, the portions 31a and 32a of the clamping arms must be fairly thick.

It will be evident that the clamping arm 31 of FIG. 6 could be straight up to the lower curve 32d. Further, instead of the central clamping arm being straight or partially straight, the two outer arms could have this configuration while the central arm is undulated and comprises four curves. Still further, to form the splayed entrance channel for introducing the clothes line, it may be sufficient for only the central clamping arm or only the two outer clamping arms to be provided with curved terminal portions. Finally, any of the illustrated clothes pegs may comprise four clamping arms, in which case one pair of arms would have a clamping action opposite to that of the other pair of arms.

I claim:

1. A clothes peg of thermoplastic material, comprising a solid handle and at least three resilient clamping arms depending therefrom in juxtaposed relationship as viewed in front elevation, said clamping arms being adapted to be flexed relatively to one another to receive a clothes line therebetween, at least one of said arms being of undulating configuration as viewed in side elevation, said clamping arms comprising resiliently flexible first portions adjacent said handle and together defining a first channel, each said first portion being substantially one third of the length of the associated arm, adjoining second portions at substantially the middle of the arms together defining a second channel effective to cooperate in clamping the clothes line in said second channel, said second channel being provided with at least one clamping recess defined by a projected rib formed on at least one of said arms, and terminal portions together defining a splayed entrance channel for introducing the clothes line to between the arms, and means for preventing the clothes line from moving from said second channel into said first channel.

2. A clothes peg according to claim 1, wherein said second channel is an elongated aperture which is blunt at the end thereof adjacent said first channel and pointed at the end thereof adjacent said entrance channel.

3. A clothes peg according to claim 1, comprising only three juxtaposed clamping arms, wherein the two outer arms are

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equally thick and the central arm is thicker than the outer arms so that, if the outer arms and the central arm are flexed apart by equal amounts, the clamping force of the central arm is substantially equal to the sum of the clamping forces exerted by the outer arms.

4. A clothes peg according to claim 1, wherein said clamping recess is defined by a projected rib formed on each of said arms.

5. A clothes peg according to claim 1, wherein said second

channel comprises a relatively small upper clamping recess and a relatively large lower clamping recess, the relatively larger clamping recess in the vicinity of the boundary between the larger and smaller recesses being defined by projecting ribs formed on said arms.

6. A clothes peg according to claim 5, wherein the clamping recesses are longer than they are wide.

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