Oct. 28, 1941. H. C. THOMPSON ET AL 2,261,005

SNAP-ON CLOTHESPIN

Filed Jan. 24, 1940

Fig. 1.

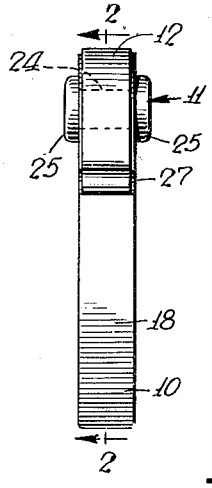


Fig. 2.

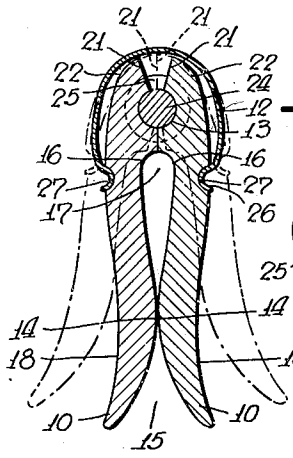


Fig. 3.

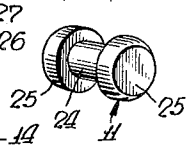


Fig. 4.

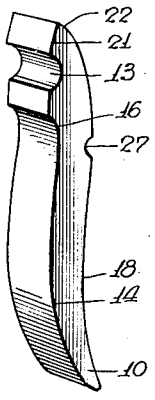


Fig. 5.

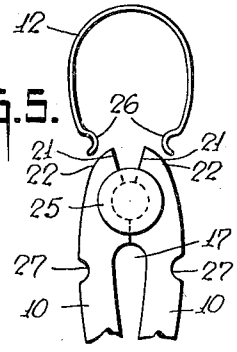


Fig. 6.

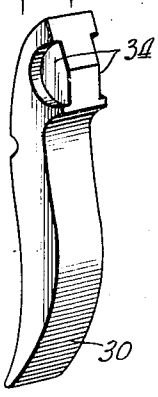


Fig. 7.

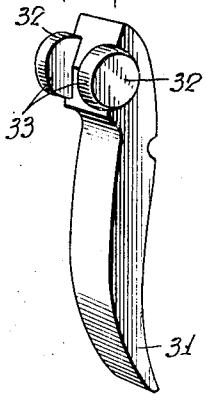


Fig. 8.

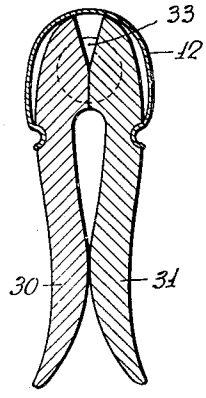


Fig. 9.

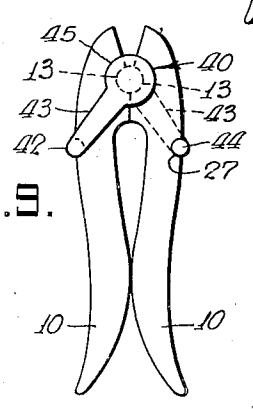
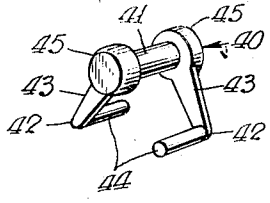


Fig. 10.



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SNAP-ON CLOTHESPIN

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Application January 24, 1940, Serial No. 315,442

2 Claims. (Cl. 24—252)

The present invention relates to improvements in clothespins, especially of the type comprising a pair of spring pressed separable clamping jaws, interconnected for relative pivotal movement.

One object of the present invention is to provide a new and improved clothespin, which can be easily assembled or disassembled with a minimum amount of effort, without liability of pinching or otherwise injuring the hands.

Another object is to provide a new and improved clothespin, which can be easily applied into line clamping position, or easily removed therefrom, and which affords finger holding conformations permitting convenient manipulation of said clothespin, without liability of pinching or otherwise injuring the manipulating hand.

Another object is to provide a new and improved clothespin, in which the jaws are keyed against relative tilting and relative movement axially of their pivotal connection, while permitting the use of an easily mountable and easily removable jaw pressing spring clip of maximum strength.

Another object is to provide a new and improved clothespin, which has a minimum number of parts, which is light but nevertheless durable and rugged enough to withstand rough and heavy usage, which lends itself easy to mass production, and which can be manufactured at low cost.

Various other objects and advantages of the invention will be apparent from the following particular description, and from an inspection of the accompanying drawing, in which:

Fig. 1 is a side elevation of one form of clothespin embodying the present invention,

Fig. 2 is a longitudinal section taken on line 2—2 of Fig. 1, and showing the closed position of the clothespin in full lines, and the open position in dot and dash lines,

Fig. 3 is a perspective of the pivot pin used in conjunction with the jaws shown in Figs. 1 and 2,

Fig. 4 is a perspective of one of the jaws shown in Figs. 1 and 2,

Fig. 5 is a fragmentary front elevation, showing a spring clip on the verge of being secured to the rear sections of the jaws,

Fig. 6 is a perspective of a jaw of another form of clothespin embodying the present invention,

Fig. 7 is a perspective of the other jaw adapted to mate with the jaw shown in Fig. 6,

Fig. 8 is a longitudinal section of the clothespin with the jaws of Figs. 6 and 7 in assembled position,

Fig. 9 is a front elevation of another form of clothespin embodying the present invention, and

Fig. 10 is a perspective of the spring clip used in conjunction with the form of clothespin shown in Fig. 9.

The clothespin shown in Figs. 1 to 5 comprises a duplicate pair of clamping jaws 10, pivotally mounted into opposed forked relationship by means of a pivot pin 11, and spring pressed together into line clamping relationship by means of a spring clip 12. The jaws 10 are desirably made of wood, although they may be also made of any other suitable non-rusting material such as acetate plastics, glass and the like, and are respectively provided on their inner facing sides near their rear ends with opposed circular transverse grooves or recesses 13, serving as bearings for the pivot pin 11. The inner facing surfaces of the jaws 10 forwardly beyond the pivot pin 11 are convexly curved at opposed intermediate sections 14, to afford cam conformations for the purpose to be described, and to form a flaring recess or mouth 15 between said jaws near the forward ends thereof, and are concavely curved at opposed facing sections 16 below the pivot pin 11 to form a line clamping recess 17 between said jaws. The outer surfaces 18 of the jaws 10 are desirably shaped to follow substantially the curvature of the respective inner surfaces as shown, and taper outwardly towards said inner surfaces at their forward ends to ornamentally streamline said jaws and render them as light as possible without sacrificing structural strength and rigidity necessary for heavy duty.

At the rear end, the inner facing surfaces 21 of the jaws 10 are bevelled to permit said jaws to spread angularly in open position sufficiently to receive the clothesline, and to form interengageable stop conformations by which the open position of said jaws is limited as shown in dot and dash lines in Fig. 2.

The outer surfaces 22 of the jaws 10 at their rear end are convexly curved, and taper with respect to the inner bevelled surfaces 21 towards the rear end to permit free reception of the outer end sections of said jaws in the spring clip 12, and to afford cam conformations by which said clip can be latched onto the jaws in position shown in Fig. 2 as will be hereinafter made apparent.

The pivot pin 11 is separable from the jaws 10, and is desirably made from material similar to that of the jaws. This pin 11 comprises a cylindrical section 24 of a radius conforming to that of the bearing recesses 13, and has a flange 25 at each end engaging the outer axially facing sides of the jaws as shown in Fig. 1. These flanges 25

serve as a means for keying the two jaws 10 against relative tilting and relative movement axially of the pin 11, and as finger pieces by which the clothespin can be safely held without danger of accidentally catching the manipulating fingers between said jaws.

The spring clip 12, made of non-rusting spring spring metal such as stainless steel or a copper alloy, has a width substantially the same as that of the jaws 10, and is curved into a substantially circular loop-shaped yoke, so that there are no sharp corners in the main body of said clip tending to weaken it. The ends of the clip 12 are looped inwardly to form latch beads 26, and the outer sides of the jaws 10 forwardly beyond the axis of the pivoted pin 11 are provided with transverse circular grooves or recesses 27 for latch reception of said beads.

In untensioned condition of the spring 12, the space between the beaded ends thereof is greater than the distance between the outer sides of the jaws 10 at their rear ends, to permit easy entry of said rear ends into the open side of said clip in the assembling of the clothespin as shown in Fig. 5, without having so manually spread the opposed arms of said clip apart. To mount the spring clip 12 in position, the untensioned clip is seated over the rear end of the jaws, and pushed towards their other end with application of light finger pressure to straddle said clip over said rear end. During this operation, the beaded ends 26 of the clip 12, riding over the outer surfaces 22 of the jaws are cammed apart against the inherent resiliency of said clip until they are latched into the recesses 27. The beaded or catch ends 26 of the spring clip present convex surfaces on their inner sides, so that they ride smoothly over the outer surfaces 22 of the jaws during the straddling operation described, without scratching or in any way marring said surfaces.

The two jaws 10 being exact duplicates, the operations necessary to manufacture the clothespins are reduced to a minimum, and the replacement of either one when broken can be effected by a single spare.

The spring clip 12 can be easily removed by simply sliding said clip axially through the open ends of the latch grooves 27. When this is done, the two jaws 10 and the pivot pin 11 can be separated and washed if desired.

This feature of easy assemblage or disassemblage of the clothespin without the possibility of accident to the fingers is a boon, especially to those women not inclined towards mechanical manipulations.

In closed inoperative position shown in full lines in Fig. 2, the jaws will be spring pressed together with their convex surfaces 14 substantially in interengagement. In applying the clothespin to a clothesline, said clothespin is held conveniently between two fingers either at opposite sides of the spring clip 12 or at the flanges 25, so that these holding fingers are sufficiently removed from those jaw sections apt to pinch said fingers. The clothespin so held is straddled over the clothesline, and pressed downwardly until said line cams the two jaws angularly apart against the spring action of the clip, and sufficiently to permit entry of said line into the clamping recess 17. The clothespin can be removed just as easily by a mere pulling action.

In Figs. 6, 7 and 8 is shown a form of clothespin having a pair of jaws 30 and 31, desirably made from suitable moldable material such as acetate plastics, glass and the like. One of these jaws, such as jaw 31, is provided on its opposite axially facing sides with integral bosses 32 of cylindrical contour, a section of each boss forming a flange 33 extending outwardly beyond the inner face of said jaw and transversely of the pivotal axis thereof. These flange extensions 33 serve as pivot means and as abutment or key means for holding the two jaws 30 and 31 against relative tilting and relative axial movement as will be described hereinafter.

The jaw 30 has on its opposite axially facing sides circular segmental recesses 34, having a radius slightly larger than that of the bosses 32 to rotatably receive the respective flange sections 33 of said bosses, and serving as bearings for said sections in the pivotal movement of the jaws. In all other respects, the two jaws 30 and 31 are similar to those shown in Figs. 1 to 5, and are similarly pressed together by the spring clip 12.

In assembled position, the flange sections 33 of the jaw 31 extend into the corresponding bearing recesses 34 of the other jaw 30, the width between the flat bases of the two recesses being slightly smaller than the distance between the inner facing sides of said flange sections, to permit easy entry of said sections into said recesses when the two jaws are drawn together. The bosses 32 extend axially beyond the corresponding axially facing faces of the jaws, so that when the two jaws 30 and 31 are assembled as described, these bosses serve as finger pieces by which the clothespin may be safely held in a manner similar to that already described with reference to the flanges 25 in the construction of Figs. 1 to 5, and the entire clothespin will have an appearance similar to that of said construction.

The flange sections 33 serve not only as finger pieces or pivot members for the two jaws 30 and 31, but also confine the jaw 30 therebetween against axial and tilting movement with respect to the other jaw.

In Figs. 9 and 10 is shown a form of clothespin, in which the jaws 10 are exact duplicates, and are similar to those shown in Figs. 1 to 5, but are held together by a somewhat different spring clip 40. This spring clip has a cylindrical pivot pin section 41, extending in the bearing recesses 13 of the two jaws, and a pair of crank sections 42 in reversed relationship at opposite ends of said pivot pin section. Each of these crank sections 42 comprises an arm 43 connected at one end to one end of the pivot pin section 41, and an arm 44 connected to the other outer end of said arm 43, the two arms 43 extending angularly with respect to each other, while the two arms 44 are substantially parallel. The ends of the pivot pin section 41 are desirably provided with cylindrical bosses 45, serving as finger pieces, and in conjunction with the arms 43 as abutment members for the jaws in a manner similar to that already described with reference to the constructions of Figs. 1 to 8.

The spring clip 40 may be made of one piece of non-rusting spring metal, or the two crank sections 42 may be separate from but secured to the ends of the pivot pin section 41 by any suitable means. For instance, the ends of the pivot pin section 41 may be of rectangular cross-section, and the bosses 45 of the crank arms 43 with corresponding recesses may be press-fitted onto said ends.

In assembled position, the pivot pin section 41

extends in the bearing recesses 13 of the jaws, the crank arms 43 flank opposite axially facing sides of the jaws, and the crank arms 44 extend in respective latch recesses 27 on the outer sides of said jaws.

The distance between the two crank arms 44 in untensioned position of the spring clip is greater than the distance between the outer sides of the jaws at their rear ends, but is less than the distance between the bases of the latch recesses 27 in closed position of the jaws. The outer surfaces of the jaws at their rear ends are curved and flared towards the recesses 27 as in the construction of Figs. 1 to 5, to cam the two crank arms 44 apart as the spring clip 40 is straddled over the jaws in assembling operation.

In assembling the clothespin of Figs. 9 and 10, the jaws 10 are placed side by side, and the spring clip 40 slipped over the rear end of the clothespin, with the pivot pin section between said jaws and the two crank arms 44 straddling said jaws and pushed downwardly, until the pivot pin section 41 snaps into the bearing recesses 13, and said crank arms 44 are latched into the recesses 27.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and hot in a limiting sense.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A clothespin comprising a pair of jaws, one of which is provided with circular segmental bearing recesses on opposite sides thereof, the other jaw having integral therewith a pair of spaced bosses on opposite sides thereof, having circular sections extending into said recesses respectively to afford a pivot mounting between said jaws, and spring means operatively associated with said jaw for urging said jaws together.

2. A clothespin comprising a pair of jaws, one of which is provided with circular segmental bearing recesses on opposite sides thereof, the other jaw having integral therewith a pair of spaced bosses on opposite sides thereof, having circular sections extending into said recesses respectively to afford a pivotal mounting between said jaws, said bosses extending axially of said mounting outwardly beyond the sides of said jaws to form finger pieces for the clothespin, and spring means operatively associated with said jaws for urging said jaws together.

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