June 15, 1954

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2,680,891

FABRIC FASTENER

Filed Sept. 2, 1952

FIG 1

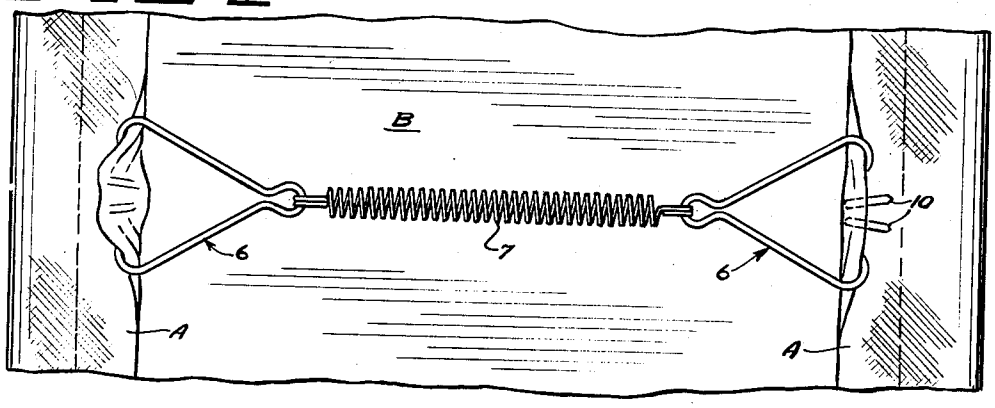


FIG 2

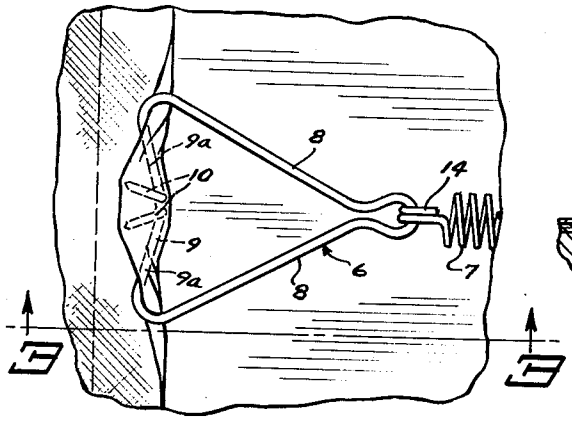


FIG 3

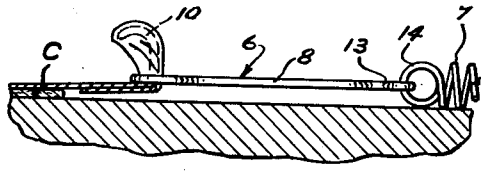


FIG 4

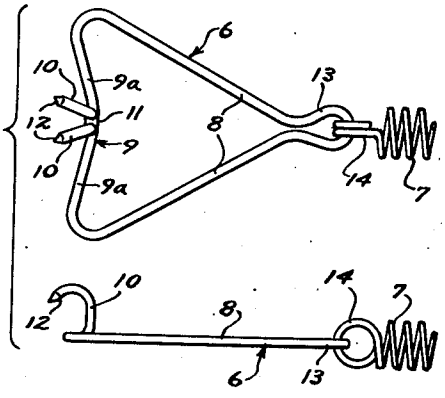
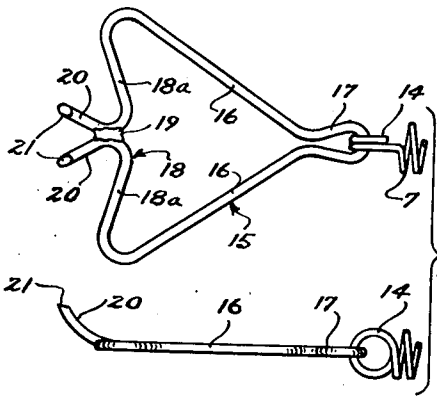


FIG 5



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FABRIC FASTENER

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6 Claims. (Cl. 24—150)

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This invention relates generally to fastening means, and more particularly to hook devices adapted to secure a fabric sheet such as an ironing board cover under tension.

The invention is an improvement over the device disclosed in my copending application Serial No. 265,237, filed January 7, 1952. I have found that while the fastening anchor or clip shown in that application will quite satisfactorily carry out the objectives stated therein, it has at least one fault which I have now eliminated by modifying the clip design. It may be noted that the earlier clip has a tapered material receiving throat formed by a pair of converging wire arms the ends of which are sharply pointed to engage the overlapping material and retain it against pulling out of the throat. It is found that as the material is pulled into the throat it bunches therein and of necessity the marginal material at both sides of the clip is pulled inwardly or longitudinally of the board. With the marginal material so bunched, in the longitudinally spaced anchors or clips, it produces wrinkles in the cover and it is not secured as smoothly and tightly as desired.

Being now cognizant of this defect, I have designed a new clip which retains all of the advantages of the one described in the aforementioned application and yet which allows the cover to be tightly, uniformly, and smoothly fastened to the board.

The principal object of my invention is to provide a fastening clip for cloth or other flexible sheet material adapted to securely hold the marginal edge portion of the material under tension with a minimum of longitudinal pull on or bunching of said material portion.

Another object of the invention is to provide a clip for holding cloth or the like under tension and having cloth engaging hooks or prongs arranged in an improved manner so as to eliminate any tearing or ripping of the cloth normally caused by such tension.

Still another object of my invention is to provide a clip for fastening flexible sheet material, which clip is highly efficient and durable and yet which can be manufactured very simply and at an extremely nominal cost.

With these objectives in mind my invention broadly comprises a clip formed of a single piece of wire bent in a generally triangular configuration with the terminal portions of the wire meeting centrally on one side of the triangle and then angling out of the plane of and away from the center of the triangle in the form of two diverging cloth engaging hook elements, the two remaining sides of the triangle being equal in length and having clip attachment means formed at a point proximal their common angle.

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The above mentioned and still additional objects of the invention will be brought to light during the course of the following specification, reference being had to the accompanying drawing, in which—

Fig. 1 is a plan view of the preferred form of my improved fastening device shown at the underside of the intermediate section of an ironing board and in use with another thereof and an interconnecting spring to secure the opposing marginal edge portions of a cover stretched across the top surface of the board.

Fig. 2 is an enlarged plan view of the fastening device or clip taken from Fig. 1 and showing the fabric catching hooks in broken lines.

Fig. 3 is a side elevation of the device taken from the line 3—3 in Fig. 2.

Fig. 4 shows top and side views of the preferred form of the invention removed from the fabric.

Fig. 5 is similar to Fig. 4 but shows a modified form of the invention.

Referring now more particularly to the drawing and using reference characters to denote like parts in the different figures, I have shown my invention used to secure a sheet of cloth material A in covering relation across the top surface of a conventional ironing board B. The letter C denotes a suitable pad member such as is generally disposed between the cover and board.

In Fig. 1 I have shown two of my improved fabric holding clips or buckles, designated generally at 6, interconnected by a tension spring 7 in such a manner that the clips exert pulling forces on the opposing lateral edge portions of an ironing board covering sheet so as to bind the sheet tightly to the board. It will, however, be obvious that the clip is readily adapted to other uses where it is desirable to securely fasten flexible sheet material. I have particularly in mind the securing of truck and trailer tarpaulins, furniture slip covers, bed sheets, and analogous fabric coverings. The showing and description of my invention in connection with an ironing table cover is, accordingly, exemplary only and is not intended to in any way limit its application thereto.

Referring now primarily to Figs. 2 and 3 the design of the preferred form of the invention will be described in detail. The clip 6 is formed

of a single piece of elongated material such as a strand of wire bent in the general configuration of an isosceles triangle with the equal sides 8 connected by the base or end bar denoted generally at 9. Bar 9 arches slightly inwardly toward the center of the triangle and is formed by the terminal portions 9a of the wire meeting medially between the spread ends of the legs 8. The wire terminals then extend upwardly and outwardly (Fig. 3) in hooks 10. These hooks are joined at their shank portions, as at 11, and diverge in their outward extension to their pointed tips 12 which are adapted to bite into and grip the fabric to be fastened. It will accordingly be understood that the portions 9a joined at their hooked ends, as at 11, form a continuous slightly curved end bar 9 over which the material may be folded in a manner to be shortly described. An attachment loop 13 is formed at the vertex of the triangle opposing the bar 9 and adapted for connection to a pulling or anchored element, such as spring 7, as through means of its terminal loop 14. It will be understood that with the legs 8 being equal in length, any loosely connected pulling force on the loop 14 will pull the end bar sidewise as it lays at right angles to the direction of pull.

The operation of the device will now be described. Prior to attaching the clip to the cloth the marginal edge of the cloth to be fastened is preferably doubled back upon itself, as denoted by the broken lines in Fig. 1, so as to reinforce the edge and present a double thickness in the cloth at the point of attachment. The clip is then laid over the edge portion with its flat side against the material at the point to be secured with the loop 14 extending away from the cloth and bar 9 overlying the cloth and extending substantially parallel to the edge thereof. The portion of the material lying between the legs 8 is then pulled through the triangle, around bar 9, and over the hooks 10 to be engaged and held by the points 12 thereof. It is found that with this form of the hook it is not always essential that the hooks penetrate the material, it generally being sufficient if they merely catch in the weave thereof. This is due to the fact that the points 12 serve primarily to hold the fabric around the end bar 9 and the hook shanks which elements bear the brunt of the tension. There is, accordingly, little chance of the material tearing at the points of engagement by the hooks. Even where the hooks actually extend through the material, as shown in the right hand clip of Fig. 1, the pull is not directly upon the hooks and damage to the material is very unlikely. Tension on either the fabric or clip precludes release of the material from the hooks.

It will now be understood that with use of the relatively long end bar 9 over which the material is folded there will be no bunching of the marginal material which would cause pulling thereof longitudinally of the board. Furthermore, the inwardly arched contour of the bar 9 makes it necessary that more material be drawn from that portion in alignment with the center or gripping portion of the bar and less from that adjacent the ends of the bar. This insures a straight edge on the cover without the looseness and wrinkles such as occur in connection with my earlier device. It is found that a fastener which gathers the cloth or causes a substantial deflection in the straight line of the cloth margin by requiring the material to be pulled through and down a substantial distance over a holding member is impractical where there is a limitation on the available material. This is due to the fact that after the first and possibly the second fastener has been applied, the material margin is so tight from yielding material to the applied fasteners that the remaining fasteners cannot be applied. By curving the bar 9 as shown there is little or no deflection in the material margin minimizing marginal tightening to allow a continuous succession of closely spaced fasteners to be placed along the margin to accomplish the purpose for which they are employed.

In Fig. 5 is shown a slightly modified form of my invention. Here the clip is designated generally at 15 and is again substantially triangular having outwardly diverging legs 15, joined at one end by an attachment loop 17, with wire portions 18a jointly forming an opposing end bar 18. Portions 18a are joined as at 19 outside the bar 18 and extend outwardly from and at an angle to the plane of the triangular portion of the clip in the form of diverging prongs 20 having sharpened points 21.

Attachment of clip 15 to the material is accomplished with the same steps as used with clip 6. However, it will be noted that unlike the hooks 10, prongs 20 are straight and that unlike the points 12, points 21 point upwardly or away from the triangle plane. This construction facilitates placing the material, pulled through the clip, over the points for engagement thereby. However, here penetration of the material is found to be necessary for secure fastening. Otherwise the clip 15 functions with the same efficiency as the preferred form of the invention, there being no bunching or pulling of the material in a direction longitudinal of the fastened edge.

By relatively spreading the respective hooking elements 10 and 20 the cloth is caught at spaced points so as to distribute any pull on the material. Furthermore, the diverging hooks or prongs provide a small throat in which the small portion of material between the points caught may wedge so as to further assure a firm grip on the material without tearing.

In detaching the clip the tension thereon is relieved momentarily, as by stretching the spring toward the clip, and the material pulled off the hook elements and allowed to slip back through the loop.

It will thus be readily realized that both forms of my invention effectively carry out the objectives mentioned earlier in this application as well as embody the advantages set forth in my prior application respecting anchoring flexible sheet material without tearing or slipping of the same.

It is understood that suitable modifications may be made in the structure as disclosed, provided that such modifications come within the spirit and scope of the appended claims. Having now therefore fully illustrated and described my invention, what I claim to be new and desire to protect by Letters Patent is:

1. In a fastening device for an ironing table cloth or the like a buckle means for gripping an edge portion of the cloth, said means comprising a closed loop having an elongated rigid bar portion, pointed catch means centrally located on the bar portion for penetrating and holding cloth folded thereover, said bar portion being bowed inwardly toward the opposing side of the loop for location of the center of the bar portion inwardly of its ends, and said catch means extending from the bar portion a distance

less than the bar portion length from its center to its ends.

2. In a fastening device for securing a sheet of flexible material, a clip for gripping the material which comprises a single strand of wire formed in the general configuration of an isosceles triangle, an attachment element on the clip at the junction of the two equal sides, equal wire portions adjacent the strand terminals jointly forming the third side and meeting at the center thereof, said terminals forming a pair of equal hook elements extending outwardly from the triangle and relatively diverging in their extension, and said equal elements being shorter in length than said equal wire portions.

3. In a fastening device for securing a sheet of flexible material, a clip for gripping the material which comprises a generally triangular loop having two equal sides and a base, an attachment loop at the angle between said equal sides, a material catching pointed element extending outwardly from the center of the base, and said base being bowed inwardly for disposal of the center of the base inwardly of the ends of the base.

4. In a fastening device for securing the marginal edge of a sheet of flexible material, a clip for gripping the material, said clip comprising a length of wire formed in a closed uniplanar generally triangular loop, the portions adjacent terminal portions of the wire being rigidly connected and jointly forming an end bar, terminal portions of the wire extending from the center of said bar outwardly from the loop and out of the plane thereof and relatively diverging in their extension, and the ends of the terminal portions being sharply pointed and pointing generally away from the loop to serve as catch elements for material pulled through the loop and folded over the bar.

5. A fabric holding clip comprising a single strand of wire formed in the general configuration of a triangle having two equal sides with the end extremities of the wire extending from the center of the third side and lying outside the triangle, a loop formed in the wire at the junction of the two equal sides, said third side being

bowed inwardly whereby the center thereof lies inwardly of a line extending between the points of junction of said third side with the two equal sides and said end extremities extending upwardly generally perpendicular to the plane of the triangle and then outwardly in a direction away from said loop, said portions diverging in their outward extension and having their extended ends sharply pointed.

6. A fabric holding clip having the general configuration of a uniplanar triangular loop having two equal sides and a third side connecting said two equal sides, an attachment element formed at the junction of the two equal sides, the third side being bowed inwardly whereby the central portion thereof lies inwardly of a line extending between the points of junction of said third side with the two equal sides, a pair of catch prongs on the central portion of said third side and extending from different points along said third side outwardly in a direction generally away from the attachment element, said prongs being of equal length and being relatively rigidly disposed with respect to said third side and each other, the extended ends of said prongs being spaced apart at least as far as their points of extension from the third side, and said extended ends being pointed and lying on a common plane parallel to the plane of the loop.

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