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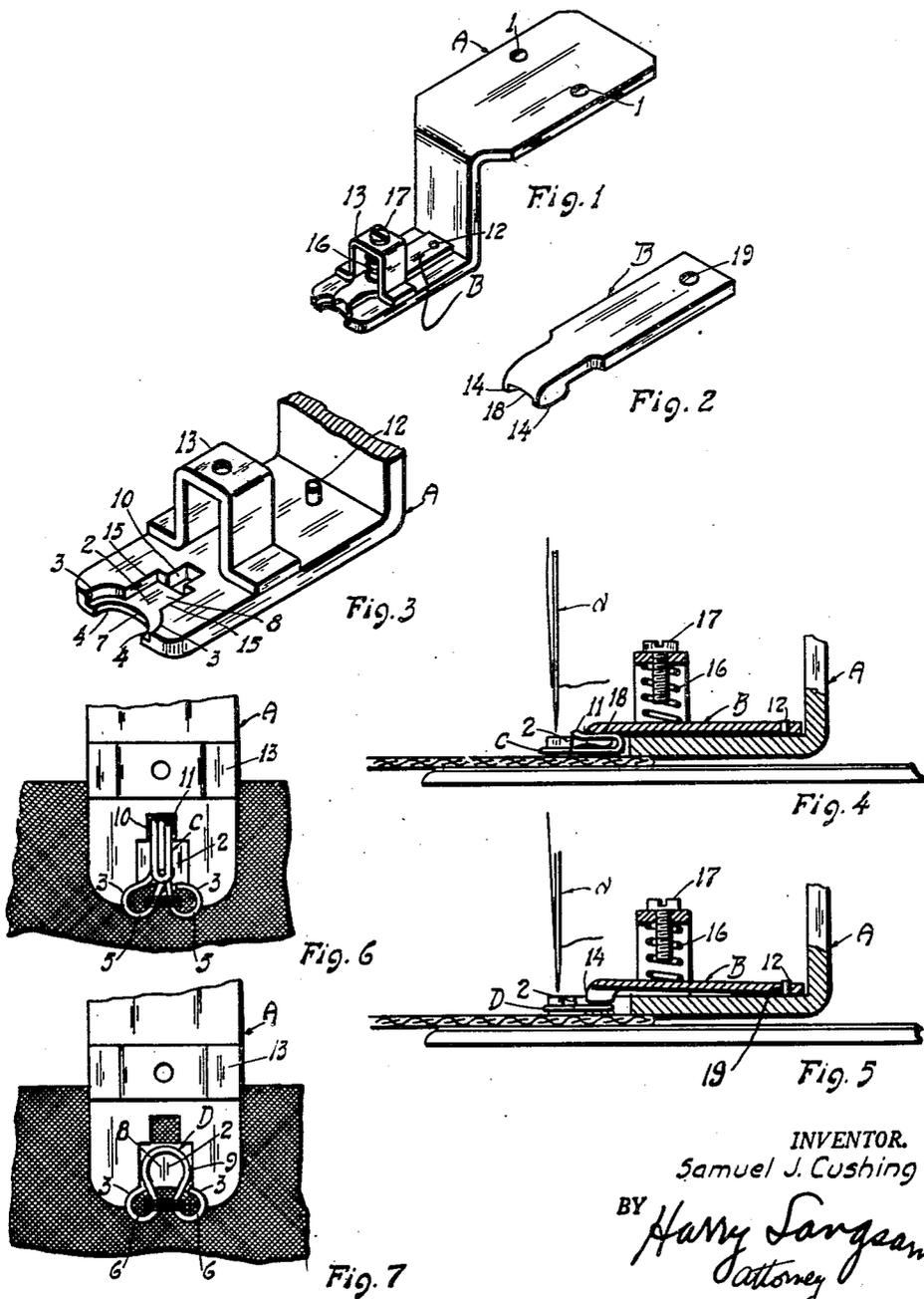
S. J. CUSHING

2,788,756

HOOK AND EYE CLAMP FOR SEWING MACHINE

Filed May 4, 1953

2 Sheets-Sheet 1



INVENTOR.
Samuel J. Cushing
BY *Harry Sargam*
Attorney

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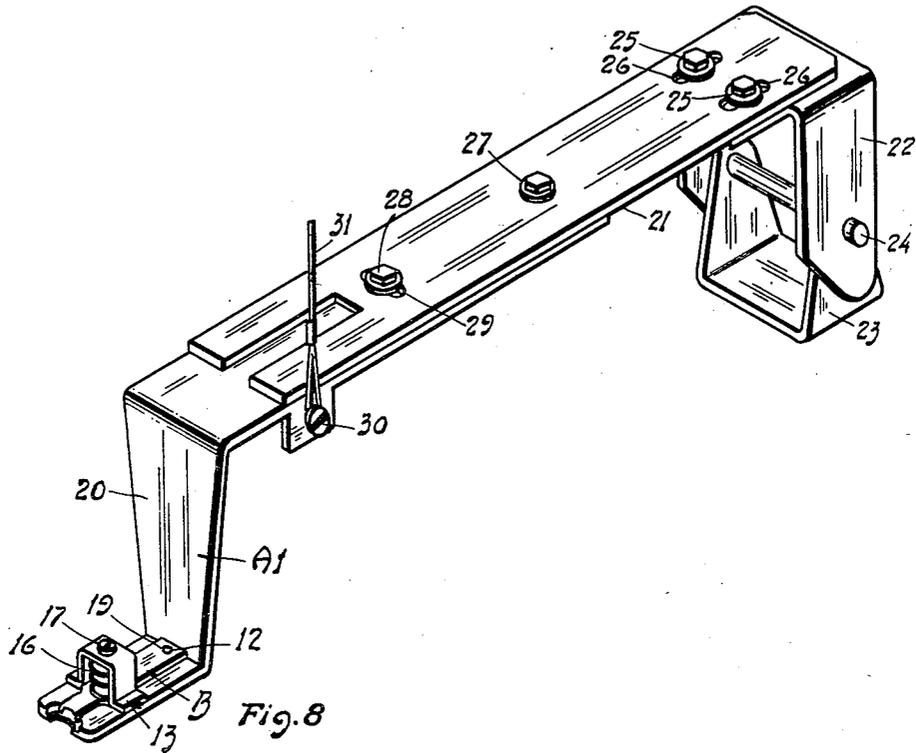
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HOOK AND EYE CLAMP FOR SEWING MACHINE

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2 Sheets-Sheet 2



INVENTOR.
Samuel J. Cushing
BY *Harry Langsam*
Attorney

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HOOK AND EYE CLAMP FOR SEWING MACHINE

Samuel J. Cushing, South River, N. J.

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3 Claims. (Cl. 112—114)

My invention relates to improvements in work holders for sewing machines, whereby a closure securing device, such as a hook and eye, may be held in definite space relationship to the stitch forming machine. The stitch forming machine used with the device, hereinafter described, is of the type generally used to secure buttons, hooks, or other fasteners to fabrics or pliable materials.

It is an object of my invention to construct a positioning and retaining device that will securely and definitely position a closure securing device in definite space relationship to the stitch forming machine.

Another object of my invention is to construct a positioning and retaining device that will securely and definitely position a closure securing device in such a way as to require no effort on the part of the operator, either by hand or hand held tools, during the application of the closure securing device.

Another object of my invention is to construct a positioning and retaining device that will readily position and secure the component members of the closure securing device without requiring any mechanical change to the positioning and securing features of the device.

Another object of my invention is to construct a closure securing and positioning device that will remain relatively free from the accumulation of oil impregnated lint or dirt which would impair the operation of the device or ultimately render the device temporarily inoperative.

Another object of my invention is to construct a closure securing, positioning and retaining holder that can be readily positioned under the needle of the stitch forming machine by the operator.

Another object of my invention is to construct a closure securing and positioning device of the character described which is easily and economically produced, which is sturdy and compact in construction, which provides the maximum protection to the operator, and whose use requires the minimum of effort on the part of the operator.

With the above and related objects in view, my invention consists in details of construction as hereinafter shall be described, the description will be more readily understood when the description is read in conjunction with the accompanying drawings in which:

Fig. 1 is an isometric view of the closure securing, positioning and retaining device embodying my invention.

Fig. 2 is an isometric view of the retaining member of the closure securing, positioning and retaining device.

Fig. 3 is an isometric view of the positioning member of the closure securing, positioning and retaining device.

Fig. 4 is a partial sectional elevational view showing the male portion of a closure securing device in position in the closure securing, positioning and retaining device.

Fig. 5 is a partial sectional elevational view showing the female portion of a closure securing device in position in the closure securing positioning and retaining device.

Fig. 6 is a plan elevational view showing the positioning member of the closure securing, positioning and retaining

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device (securing member not shown) showing the male portion of the closure securing device in position.

Fig. 7 is a plan elevational view showing the positioning member of the closure securing, positioning and retaining device (securing member not shown) showing the female portion of the closure securing device in position.

The closure securing, positioning and retaining device shown on the accompanying drawings is constructed to be secured to standard stitch forming machines. The only portion of said stitch forming machine shown on these drawings is the needle N shown in Fig. 4 and Fig. 5.

Fig. 8 is an isometric view showing a modification of the supporting and positioning members of the closure securing, positioning and retaining holder. This modification provides for lateral and transverse adjustment of the positioning member of the closure securing, positioning and retaining device.

Referring now in greater detail to the drawings, I disclose a closure securing, positioning and retaining device comprising a positioning member A; the positioning member being pierced with hole 1 that are arranged to receive securing means, not shown, so that the device can be securely attached to a standard stitch forming machine.

The outer or work end of the positioning member A has a definitely shaped cavity 2 therein, said cavity having two opposed curved surfaces 3 with inwardly projecting flanges 4 arranged to receive the loop portions 5 and 6, of the male C and female D closure securing devices; said flanges 4 have a circular inner edge 7 arranged so that it is clear of the needle of and the stitches formed by the stitch forming machine.

An eye receiving receptacle 8, part of cavity 2, square in form, is arranged to receive the eye 9 of the female closure securing device D, a hook receiving receptacle 10, an extension of and part of the cavity 2, is arranged to receive the hook 11 of the male closure securing device; said hook receiving receptacle 10 extends completely through the positioning member and serves as a discharge outlet for lint or dirt that may accumulate in the cavity 2.

The features of the cavity 2 in the support and positioning member A, as above described, are arranged for definitely positioning both the male C and female D closure securing devices in the work end of the closure securing positioning and retaining device.

The closure securing devices C and D are held in position in the closure securing positioning and retaining device by the retaining member B; said retaining member is definitely positioned and the positioning member A by the pin 12, which interfits with the hole 19 in the retaining member B, the yoke 13, and the downwardly extending ribs 14 at the work end of the retaining member, said ribs interfitting with the sides 15 of the eye receiving receptacle 8 of the cavity 2 in the positioning member A. A spring 16, retained by the yoke 13 and a positioning screw 17, maintains pressure on the retaining member B.

The work end of the closure securing retaining member B also has two downwardly extending ribs 14, said ribs interfit with the eye receiving receptacle 8 of the cavity 2 and are of such a length in the downward direction that they engage the eye of the female closure device D when the female closure device is in position in the positioning member A, the retaining member B is forced upward by this engagement of the ribs 14 and the eye 9 of the female closure securing device D, this arrangement provides the tension necessary to retain the closure securing device D in position in the positioning member A.

In Fig. 8 I have illustrated a modification to the support and positioning means of my closure securing positioning and retaining device. In the modification illustrated, the positioning member A1 is arranged to coop-

erate with a lateral and transverse adjustment member 21, said positioning member A1 is rotatably attached to said adjustment member 21 by the bolt 27, transverse adjustment is made possible by movement of the securing bolt 28 in the elongated hole 29 in the adjustment member 21. The adjustment member is attached to the bracket member 22 by the bolts 25; however, lateral movement of the adjustment member is provided by the elongation of the bolt holes 26 in the adjustment member 21. The bracket member 22 is rotatably mounted on a shaft 23, said shaft being supported and positioned by a base member 23. The base member in the application of the closure securing, positioning and retaining holder to a stitch forming machine would be securely attached to the bed plate of the machine (not shown). The cooperation of the bracket member 22, shaft 24 and base member 23 provides for vertical raising and lowering of the closure securing, positioning and retaining holder. A cord or chain 31 attached to the positioning member by a securing screw 30 is provided as a means for raising the entire holder. Tension is exerted on the cord for raising and lowering the holder by a foot operated pedal actuating a lever (not shown).

The arrangement as above described provides for both lateral and transverse adjustment of the closure securing positioning and retaining holder so that the positioning member of the holder may be adjusted to a position for satisfactory cooperation of the positioning member and the needle of the stitch forming machine. The foot actuated closure securing, positioning and retaining holder lifting means (not shown) is arranged to place or release tension on the cord 31 raising or lowering the holder by the operator when it is necessary to place fabric under the positioning member of the holder for application of the closure securing device, and for removal of the fabric after the application has been made.

It is to be observed that in the embodiment of my invention, as illustrated and described, that an operator on machines for the application of closure securing devices can attach either male or female closure securing devices to fabrics without making any physical change in the positioning and securing device described.

Although my invention has been described in consider-

able detail, such description is intended as illustrative rather than limiting, as the invention may be variously embodied and the scope is to be determined as claimed.

I claim as my invention:

1. A closure securing, positioning and retaining device for a sewing machine comprising a horizontally extending hook and eye positioning member which has a cavity in its front end, said cavity defined by two arcuate spaced walls which are adapted to receive opposed curved surfaces of either a hook or an eye, a first pair of spaced sides, each side terminating in one of said curved surfaces, the said cavity having an extension defined by a second pair of spaced walls forming part of said cavity to receive the eye receiving portion of a hook member of a hook and eye and offset from said first named spaced walls, said second pair of walls being closer to one another than are the sides terminating in said curved surfaces, said first named sides being adapted to receive the eye portion of an eye member of the hook and eye, and a spring pressed retaining member adapted to overlie said cavity, said retaining member having two spaced end ribs, the surface between said ribs forming a cavity, said ribs interfitting with the first named sides of the eye receiving portion of the cavity and being adapted to engage said eye, and said retaining member cavity being adapted to receive the hook end of the hook member.

2. The invention of claim 1 wherein said retaining member is mounted upon a vertically extending pivot which is mounted adjacent said positioning member.

3. The invention of claim 2 including a fixed horizontally extending shaft, means whereby said positioning member may be adjusted laterally or transversely with respect to said fixed shaft.

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