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BUTTON CLAMP

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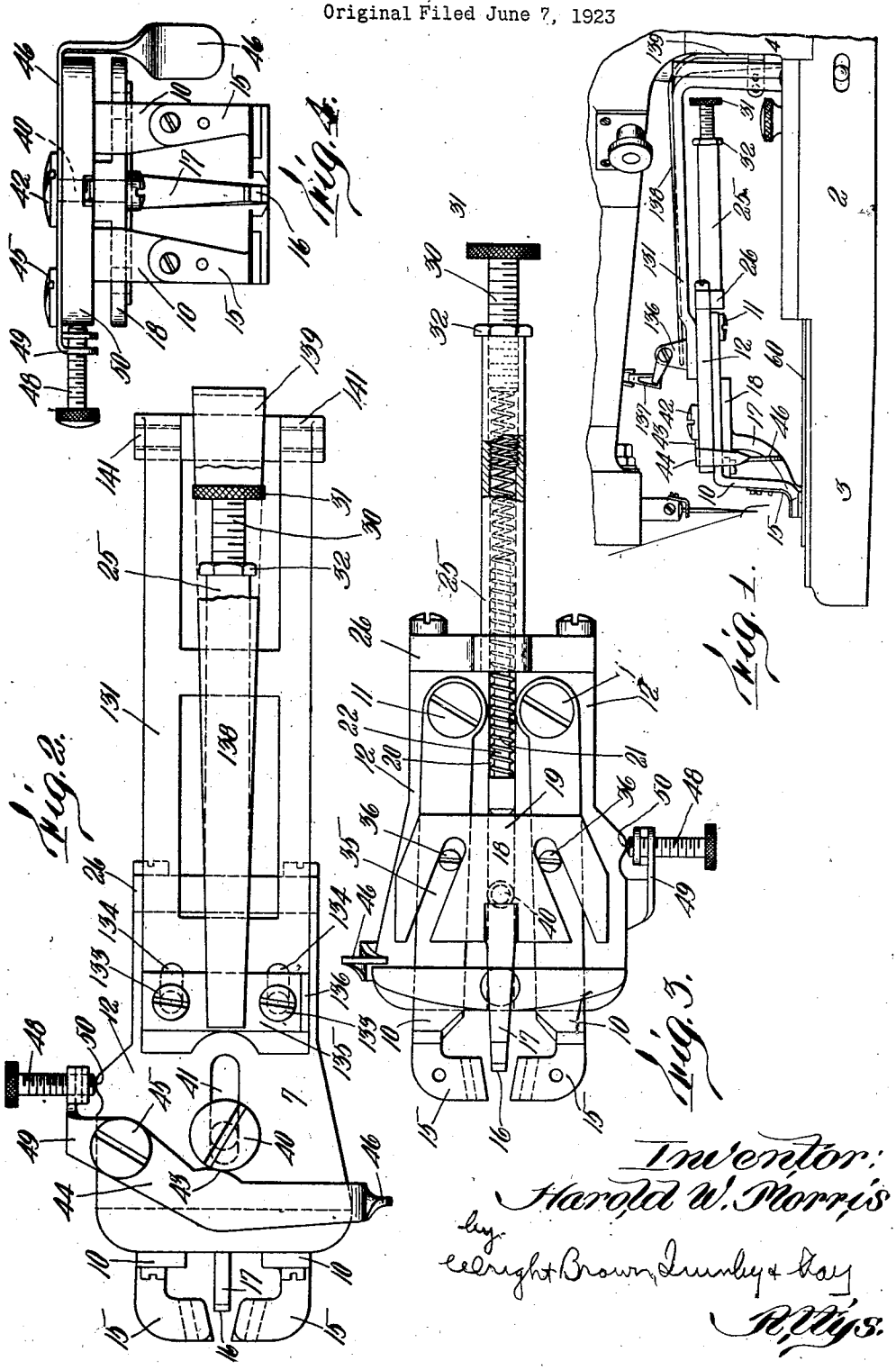


Fig. 4.

Fig. 1.

Fig. 2.

Fig. 3.

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BUTTON CLAMP.

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This application is a division of application Serial No. 643,897, filed June 7, 1923.

This invention relates to adjustable spring clamps for holding articles of various sizes with a yielding grip, the clamping pressure being adjustable.

A preferred form of my invention is found useful in the button-sewing art, the clamp in this case being adapted to hold buttons of any desired size with any desired clamping pressure in line with a sewing-machine needle for sewing buttons on to material. According to my invention, the clamp is designed to be actuable to clamp and release buttons rapidly and to be quickly adjustable to receive buttons of different sizes.

Further advantageous features and combinations may be found by reference to the drawing, in which

Figure 1 is a fragmentary elevation of a button sewing machine with my improved clamp attached thereto;

Figure 2 is a plan view of the clamp;

Figure 3 is a bottom view of the same;

Figure 4 is an end elevation of the clamp as viewed from the left in Figure 1.

Referring more particularly to the drawing, 2 represents a sewing machine head formed with a forwardly extending table portion 3 on which the work is supported, and a frame post 4. The button to be sewed on the work is carried by a button clamp 7 which is provided with arms 10 pivoted at 11 to a supporting plate 12, these arms having button engaging elements 15 with relatively inclined button-engaging faces at their adjacent ends. Cooperating with these faces is a face 16 of a third button clamp element 17 carried by a slide 18 which has a portion 19 engaging within a slot 20 in the plate 12 between the elements 10. This element 17 is normally urged toward the elements 15 by means of a spring 21 surrounding a rod 22 projecting rearwardly from the portion 19, this spring and the end of the rod being housed within a sleeve 25, projecting rearwardly from an end plate 26 bolted to the rear end of the plate 12. The tension of this spring may be adjusted and for this purpose a screw 30 having a knurled head 31 is threaded in the outer end of the sleeve 25 and preferably carries a check nut 32 by which it may be fixed in adjusted position. Simultaneously with the movement of the element 17 toward the button the elements 15 of the arms 10 are brought toward each other. To this end the slide 18 is provided with a pair of relatively inclined slots 35 in which ride pins or screws 36 made fast to the arms 10. The portions 15 and 16 may be retracted to permit the insertion of a button therebetween by means, which, as shown, comprise a screw 40 slidable in a slot 41 in the plate 12 and threaded in the slide 18, this screw having a head 42 overlying the plate 12 and adapted to be engaged by the intermediate portion 43 of a finger lever 44 pivoted on a screw 45 to the plate 12. This finger lever has a downturned finger piece 46 which may be pressed rearwardly by the operator so as to retract the screw 40, thus retracting the slide 18 which carries back the element 17 and separates the button-engaging faces of the clamping elements 10. The limit of closing motion of these elements may be determined by means of an adjustable stop screw 48 threaded through a portion 49 of the lever 44 extending on the opposite side of the pivot 45 from the finger piece 46, this screw engaging a curved face 50 on one edge of the plate 12. By this means it is seen that the pressure of the clamping elements against the button may be adjusted as desired, so that they more readily suit conditions arising from the use of different sizes and styles of buttons.

The button clamp is designed to support the button and hold it against the upper face of the work which is carried by a cloth plate 60. This cloth plate may, if desired, be slidable lengthwise and be moved automatically, as well understood in the art, to present different portions of the work in position to receive the stitches, and if desired, by causing the button clamp to move therewith, to present different pairs of holes in the button successively to the sewing instrumentalities. This mechanism forms no part of the present invention, however, and hence is not shown at length, it being sufficient to state that the button clamp is fixed to an arm 131, the rear end of which is pivoted as at 141 on a horizontal axis either to a fixed part of the machine, or movable with the cloth plate so that the button clamp may rest on the work or may be raised therefrom. As shown, the button clamp is fixed adjustably to the arm 131 by screws 133 engaging slots 134 in the arm 131 and threaded in the plate 12. These screws 133 also serve to attach to the button clamp a

plate 135 having at one end an upwardly extending ear 136 to which a chain 137 may be attached, by which the button clamp may be raised from the cloth plate. The button clamp is normally urged downwardly toward the cloth plate in order to clamp work against the cloth plate, as by means of a leaf spring 138 fixed at its rear downwardly turned end 139 to the forward portion of the frame post 4, its forward end engaging the upper face of the plate 135.

Having thus described an embodiment of this invention, it should be evident to those skilled in the art that many changes and modifications may be made therein without departing from its spirit or scope as defined by the appended claims.

I claim:

1. A button clamp comprising a support, a pair of clamping elements each pivoted to said support at one end, and having oppositely disposed button-engaging faces at their opposite ends, a member slidable on said support between said clamping elements and having a button-engaging face cooperating with the button-engaging faces of said elements, pins on said elements riding in inclined slots in said member to cause a simultaneous approach and recession of said button-engaging faces, a spring for urging said member in a direction to cause said faces to approach each other, a member actuable to move said slidable member against the action of said spring, and means for adjusting the pressure exerted on said slidable member by said spring.

2. A button clamp comprising a support, a jaw slidable lengthwise of said support, a pair of jaws pivotally mounted on said support to swing transversely thereof, an adjustable spring pressing against said slidable jaw, and a member actuated by the motion of said slidable jaw to swing said pivoted jaws.

3. A button clamp comprising a support, a plurality of clamping elements including a sliding jaw carried by said support, a sleeve carried by said support, a spring in said sleeve pressing against said sliding jaw and tending to close said elements together, and a screw plug in one end of said sleeve and bearing on said spring and by the turning of which the closing pressure of said spring on said elements may be adjusted.

In testimony whereof I have affixed my signature.

HAROLD W. MORRIS.