Jan. 17, 1950 F. V. MARTIN 2,494,824

FABRIC NICKING DEVICE

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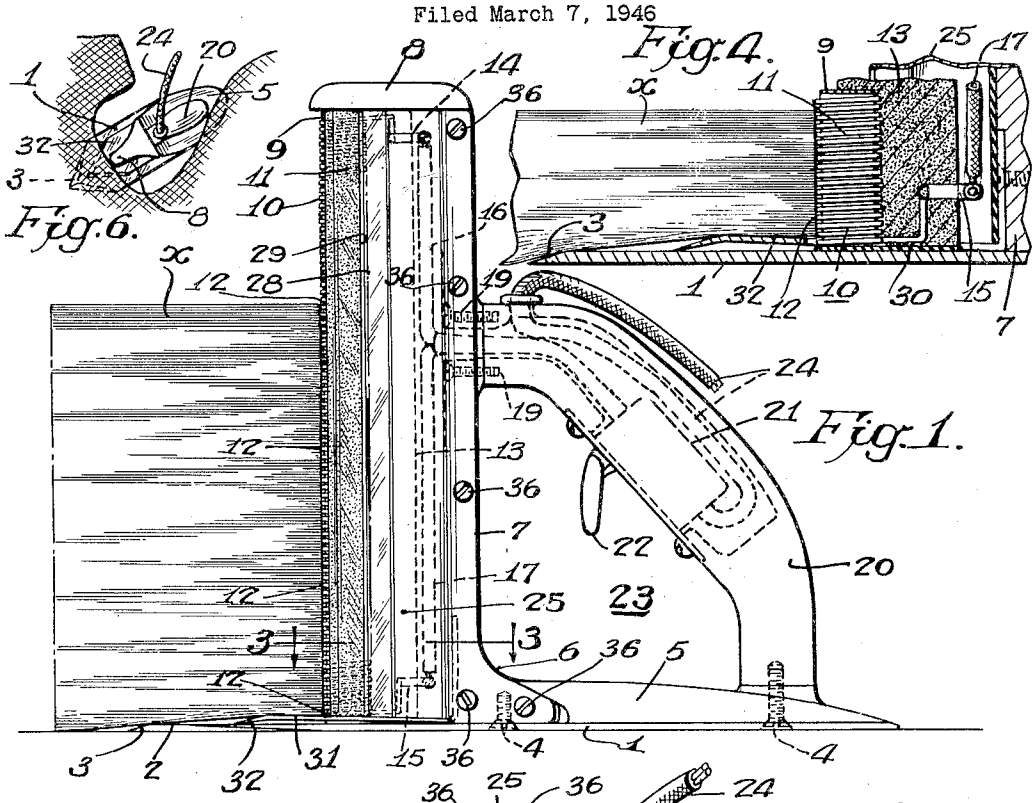


Fig. 1.

Fig. 6.

Fig. 4.

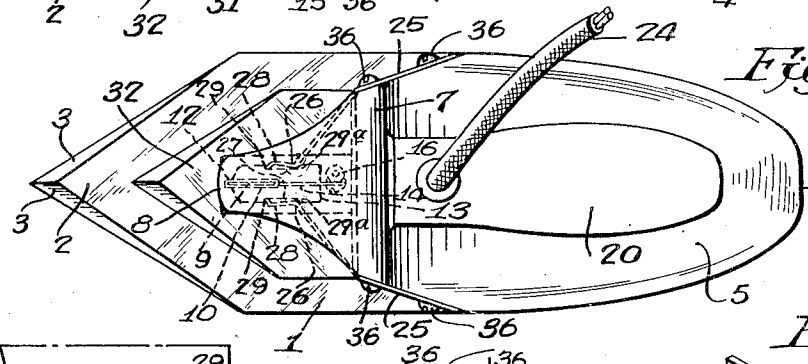


Fig. 2.

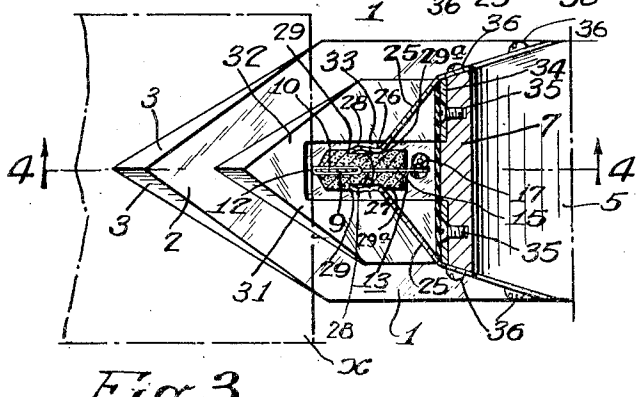


Fig. 3.

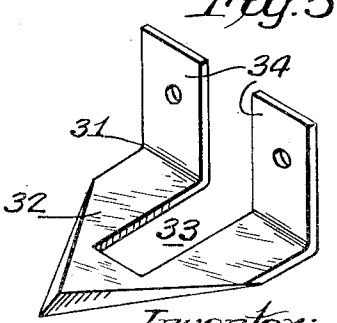


Fig. 5.

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FABRIC NICKING DEVICE

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5 Claims. (Cl. 219—29)

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This invention relates to a device for simultaneously notching or nicking the edges of a stack of fabric pieces which have been cut to a predetermined shape according to a given pattern, such as component parts of garments.

It is common practice to nick or notch the edges of shaped pieces of fabric which make up a garment, to function as a guide for stitching adjacent pieces together. This notching is usually effected by a device employing a longitudinally reciprocating knife operating against the edges of the stack. For various reasons, such knife notching has not been satisfactory and has resulted in the notches being too deep or not deep enough, and in some instances, the knife skips some of the pieces in the stack entirely, due, for example to frequent sharpening of the blade which is effected manually by a hand stone and which wears the blade away non-uniformly from its original straight line cutting edge.

One object of the present invention is to provide an electrical device for searing notches or nicks into the edges of the pieces of fabric in a stack simultaneously.

Electrical notching devices have been used before but without success, due to the fact that a straight searing wire held under tension between two spaced points has been used. The wire, when cold is taut, but when it heats up and expands it becomes loose between its points of support, and thus this type of device is no more dependable than the knife nicking method.

To overcome the above-noted difficulty, one end of the straight wire has been anchored while the opposite end has been attached to a slack take-up spring. Here again the device is inaccurate because the wire, when pressed against a stack of pieces, bends intermediate its points of support. Thus the pieces at the top and bottom of the stack are nicked too deeply while those at the center of the stack are not nicked deeply enough.

In the present case, a searing element in the form of a thin narrow metallic ribbon is wound flatly and spirally about a rigid flat central core element, in closely adjacent convolutions, and this assemblage is molded in a rigid ceramic case element with one end portion of each convolution projecting beyond the ceramic case. Thus, the closely adjacent exposed ends of the convolutions collectively form a substantially continuous non-yielding searing surface which is pressed against the edge of the fabric stack and, due to the fact that the searing edge thus presented is held against flexing or distortion in all directions by the rigid ceramic case, the fabric pieces of the entire stack are all accurately nicked.

Another advantage accruing to the structure of the present invention is that a heating ribbon of sufficient length and resistance to withstand

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ordinary 110 or 220 volt A. C. or D. C. current is provided and no transformer or other voltage reducer is required to be used with the device such as is the case when the short single searing wire is used.

In the accompanying drawing:

Fig. 1 is a side elevation of the device of the present invention;

Fig. 2 is a plan view;

Fig. 3 is a fragmentary sectional plan view as taken on the line 3—3, Fig. 2;

Fig. 4 is a fragmentary sectional elevation as taken on the line 4—4, Fig. 3;

Fig. 5 is a detached perspective view of a stack elevating element forming part of the device; and

Fig. 6 is a small plan view showing the device as being used on an edge of an internal recess of a piece of fabric such as the arm hole of a garment.

As shown in the drawing, the device comprises a thin metal base plate 1 which is provided with a relatively sharply pointed nose 2 having downwardly beveled edges 3, 3 to allow the base plate to be readily slid under the bottom of a stack of fabric pieces *x*.

Secured to the base plate 1, as by countersunk screws 4, 4 is the base portion 5 of the main body 6 of the device, which also includes an upright bracket portion 7.

The upper end of the bracket 7 is provided with a horizontal head portion 8 which extends laterally beyond one side of the bracket 7 and overhangs the base plate 1 in vertically spaced relation with respect thereto.

Extending vertically between the base plate 1 and the overhanging head 8, at right angles to the plane of said base plate, is a thin flat dielectric core element 9 about which is wound the thin narrow flat metallic ribbon 10, in closely adjacent convolutions 11, which constitutes a searing element.

As clearly shown in Fig. 3, the entire searing element 10, with the exception of the turn 12 at one end of each convolution 11 is molded within a ceramic casing bar 13.

Adjacent the upper and lower ends of the ceramic casing bar 13, the terminal ends 14 and 15 of the searing coil composed of the convolutions 11, 11 of the electric resistance element 10 project, to be electrically connected to current supply wires 16 and 17 respectively.

The feed wires 16 and 17 extend through an opening in the bracket 7 and into the cavity of a hollow handle 20, one end of which is secured to the base plate 1 by one of the aforesaid countersunk screws 4, while the opposite end of said handle 20 is secured to the bracket 7 by screws 19, 19.

Within the hollow handle 20 is a switch enclosed in a box 21 and which has a trigger type

control lever 22 projecting into the finger space 23 formed by and between the handle 20, base plate 1 and bracket 7. The switch in the box 21 is fed by a flexible cable 24 which enters the handle 20 through an opening 18 formed in the upper part of the handle 20.

The ceramic casing bar 13 is supported in the device by and between a pair of vertical side plates 25, 25 which preferably include heel portions 26, 26 adapted to bear against the flat sides 27, 27 of the bar 13, substantially from end to end thereof and forwardly extending toe portions 28, 28 which bear against said flat surfaces and lay behind and engage a pair of vertical shoulders 29, 29 formed on the opposite flat side faces 27, 27 of the bar 13.

The heels 26, 26 lay in front of a similar pair of vertical shoulders 29*a*, 29*a*. The shoulders 29, 29 resist rearward movement of the ceramic case 13 while the shoulders 29*a*, 29*a* prevent forward movement thereof. Thus, the bar 13 and the searing element 10 are firmly maintained in a predetermined position within the device at substantially true right angles to the plane of the base plate 1.

As shown in the present drawing, the retaining plates 25, 25 are formed of resilient spring material and any slight warping of the bar 13 which may take place is thereby compensated for, i. e. by the four line contacts between said plates and said bar as afforded by the heels 26, 26 and toes 28, 28 of the stiff spring-supporting plates 25, 25. In this manner, breakage of the bar 13 as a result of expansion or warping thereof is substantially eliminated, and at the same time the effective front edge of the coiled searing element 10, afforded by the closely adjacent exposed ends 12, 12 of the convolutions 11, 11 of the element 10, is maintained in a substantially continuous straight line substantially perpendicular to the plane of the base plate 1.

The spring plates 25, 25 are secured in place on the bracket 7 by screws 36, 36 as clearly shown in Figs. 1 and 2.

The lower end of the coiled element 10 is preferably insulated from electrical contact with the base plate 1 by a sheet of mica or equivalent dielectric material 30, as shown clearly in Fig. 4.

In order to insure that the lowermost of the pieces of fabric of the stack *x* will come into contact with the searing element 10, an elevator plate 31, shown clearly in Figs. 3, 4 and 5 is provided on top of the base plate 1. This elevator plate 31 is provided with an arrow-shaped beveled edged foot portion 32 which is recessed at 33 to extend around the lower end of the bar 13 and the searing element 10 carried thereby. The elevator plate 31 is provided with lugs 34, 34 by which this plate may be secured to the lower part of the bracket 7 by screws 35, 35 as shown in Fig. 5.

The lower pieces of fabric of the stack *x* will be elevated to the extent of the thickness of the plate 31, when the front pointed end 2 of the base plate 1 is inserted under the stack *x*. The lower pieces of the stack will ride up and over the pointed end 32 of the plate 31 and make contact with the searing element 10 above the extreme bottom end thereof.

Obviously, the details of construction are subject to change without departing from the spirit of the invention.

I claim:

1. A fabric edge nicking device comprising a base plate, and a fabric searing element providing a substantially straight searing edge substantially perpendicular to the plane of said base plate, said edge being formed by closely adjacent edge portions of a series of flat convolutions of a thin ribbon-like resistor of which said element is formed, and a dielectric support on which said convolutions are wound.

2. A fabric edge nicking device comprising a base plate, a fabric searing element providing a substantially straight searing line substantially perpendicular to the plane of said base plate, said line being formed by closely adjacent edge portions of a flat coil composed of convolutions of a thin flat resistance element of which said coil is formed, a thin flat dielectric core for said coil, and a ceramic casing formed around said coil and said core with said end portions of said convolutions exposed.

3. A fabric edge nicking device comprising a base plate, a fabric searing element providing a substantially straight searing line substantially perpendicular to the plane of said base plate, said line being formed by closely adjacent edge portions of a flat coil composed of convolutions of a thin ribbon-like resistor of which said element is formed, a thin flat dielectric standard for said coil, a ceramic casing formed around said coil and said standard with said edge portions of said convolutions exposed, an upright bracket secured to said base plate, and means carried by said bracket and engaging opposite sides respectively of said casing for supporting said casing in said device.

4. A fabric edge nicking device comprising a base plate, a fabric searing element providing a substantially straight searing line substantially perpendicular to the plane of said base plate, said line being formed by closely adjacent edge portions of a flat coil composed of convolutions of a thin flat resistor of which said element is formed, a thin flat dielectric core for said coil, a ceramic casing formed around said coil and said core with said edge portions of said convolutions exposed, a bracket secured to said base plate and including an upright portion provided with a lateral extension between which and said base plate said casing stands erect, and a pair of side plates carried by said bracket and engaging opposite sides respectively of said casing for supporting said casing in said device.

5. A searing unit for fabric notching devices and the like, comprising a thin flat elongated dielectric core element, a thin flat and narrow ribbon-like electrical resistance element wound in a coil on said core element in flat closely adjacent convolutions, the flattened edges of the element being in alignment and forming a knife-like straight searing edge, and a dielectric element encasing said core and said coil with the flattened edges of said convolutions along one edge of said core element exposed beyond said encasing element.

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