

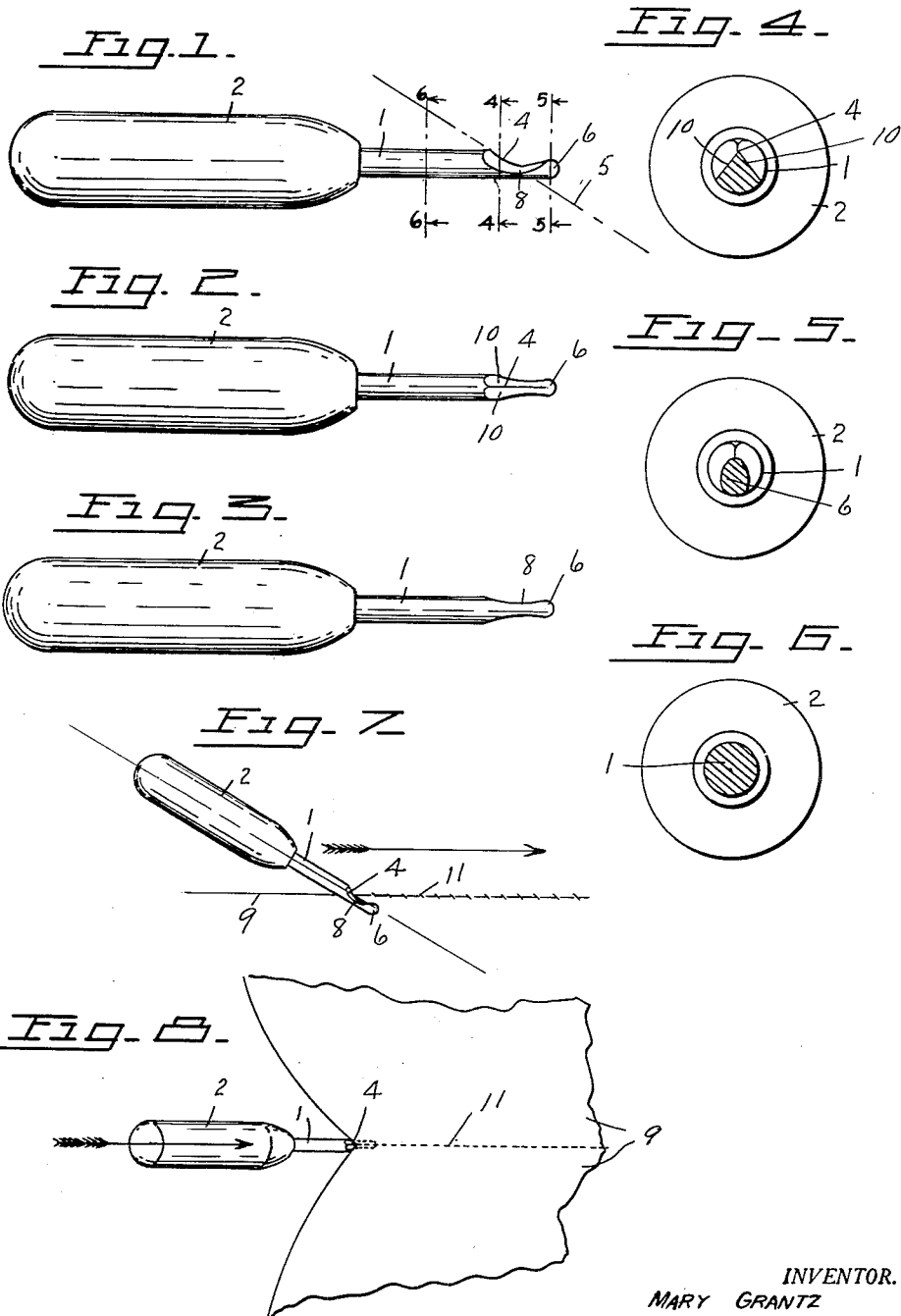
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SEAM OPENER

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2,705,833

SEAM OPENER

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2 Claims. (Cl. 30—294)

This invention is a substitute for application Serial No. 665,098, filed by me on April 26, 1946, and relates to a seam opener, and has for one of its objects a simple device adapted to readily open hand or machine made seams in cloth of any weight and material without injuring the cloth at opposite sides of the seam and without snagging on the cloth.

Another object of the invention is the provision of a seam opener that is cheap to make, easy to operate, efficient, and that has a practically indestructible cutting edge that is so arranged as to eliminate injury to the cloth.

Heretofore the opening of seams in clothing has been an extremely tedious and delicate operation that has generally involved the use of a razor blade or other sharp knife. Finer fabrics are very easily injured by the slightest deviation of the cutting edge off the line of the seam, and the same hazard exists when opening the seams in heavier fabrics.

With the present invention, the seams, whether heavy or light, and irrespective of whether closely or loosely stitched, may be as readily opened as the operation of ripping a cloth, only without injury to the cloth.

Other objects and advantages will appear in the drawings and in the description.

In the drawings,

Fig. 1 is a greatly enlarged side elevational view of a seam holder that is illustrative of the invention.

Fig. 2 is a top plan view of the opener shown in Fig. 1.

Fig. 3 is a bottom plan view of the opener of Fig. 1.

Fig. 4 is a sectional view taken along line 4—4 of Fig. 1.

Fig. 5 is a sectional view taken along line 5—5 of Fig. 1.

Fig. 6 is a sectional view taken along line 6—6 of Fig. 1.

Fig. 7 is a side elevational view showing the usual position of the seam opener in seam opening position, the cloth and seam being more or less diagrammatically illustrated.

Fig. 8 is a top plan view of the opener as shown in Fig. 7 showing the cloth and also the seam that is being opened.

The seam opener as seen in Figs. 7, 8 is about actual size.

In detail, the seam opener illustrated comprises a straight, cylindrical pin 1 that is preferably of tempered steel, such as the stock of sewing needles. A diameter of about $\frac{3}{32}$ to $\frac{1}{8}$ inch has been found to be quite satisfactory.

The pin 1 is secured at one end in a handle 2 that is elongated and coaxial with the pin. This handle is of a convenient size, say about $\frac{3}{8}$ inch in diameter, to be conveniently grasped between the thumb and forefinger of the hand of an operator for using the opener. The pin 1 may project approximately $\frac{3}{4}$ inch from the handle.

The pin 1 is of uniform diameter from the handle to the outer end portion, and said outer end portion is cut away from opposite sides adjacent the extreme end of the pin to form a cutting edge 4 that is inclined relative to the longitudinal axis of the pin so as to face generally forwardly of the pin. By "forwardly" is meant in a direction away from the handle 2. This degree of inclination of said cutting edge is preferably between about

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30° and 45° relative to said axis of the pin, as indicated by the dot-dash line 5 in Fig. 1.

The surfaces 10 (Fig. 4) that extend away from said cutting edge are flat and preferably extend at an angle of between about 45° and 90° relative to each other for a purpose later to be described.

The cutting edge 4 terminates at its outer or forward end at a somewhat bulbous or rounded portion 6, the outer rounded side of which, relative to the handle 2, is the terminating end of the pin. This end portion 6 is preferably of lesser thickness or diameter than the diameter of the main body of pin 1 that extends between the inner end of said cutting edge 4 and said handle (Figs. 5, 6).

The said inner end of said cutting edge terminates at the side of pin 1 adjacent the outer end of the latter, hence the section of said pin that includes said cutting edge and end portion 6 is a relatively small part of the entire length of the pin.

Cutting edge 4 is within the axially projected confines of the cross-sectional contour of the main body of the pin, and may be slightly concavely curved longitudinally thereof, as indicated (Fig. 1), or it may be straight.

The thinnest part or neck 8, of the end portion of said pin is at a point where the inclined cutting edge commences to extend outwardly to the side of the pin. At this point the maximum diameter of the pin may be slightly less than half the diameter of the main body of said pin.

The handle 2 may be made of any suitable material, according to the desires of the user. Some prefer weighted handles, in which solid metal is used, while others prefer plastic composition material or wood.

In operation the rounded, relatively blunt point or outer end of the needle is first thrust across the juncture between cloth at a seam, as seen in Fig. 7. As the neck 8 between the said end 6 and the main body of the pin is of restricted thickness, the operator instantly knows when the end portion 6 has passed across the seam since the force required to push the end portion 6 past the seam is suddenly released and another resistance (cutting edge) is encountered.

In the position seen in Fig. 7 the axis of the pin 1 and handle 2 is between about 30° and 45° relative to the direction of travel of the opener, as is indicated by the arrow. Thus the cutting edge 4 of the cutter will be almost normal to the said direction of travel, although it is preferably slightly slanted to give a slight shear action against the seam thread.

Upon moving the opener in the direction of the arrow (Figs. 7, 8) the cloth 9 (Fig. 8) at opposite sides of the cutting edge 4 will be spread by the divergently disposed surfaces 10 (Fig. 4) at opposite sides of the cutting edge 4, thus placing the seam 11 (Fig. 8) under tension so that a slight force of the cutting edge 4 against the thread of the seam will sever it. This action will occur even through the edge 4 is not particularly sharp. The angle between surfaces 10 is so great that the edge 4 is not particularly keen in any event, and in actual practice it appears that the edge 4 is practically indestructible for its intended purpose if the pin is of reasonably good tempered steel.

After the pin is in the position seen in Figs. 7, 8, a seam may be ripped out in substantially a single rapid stroke with less effort than is required for ripping a piece of cloth, but with equal rapidity. The blunted end 6 will not snag on the cloth or become entangled in surplus cloth. The cutting edge 4 is automatically centered along the seam due to the convergent surfaces 10, and it is virtually impossible to accidentally cut the cloth at either side of the seam.

I claim:

1. A seam opener comprising: a straight, cylindrical pin having a handle secured to one end for manual grasping and the opposite axially directed end of said pin terminating in a blunt and rounded end portion, said pin being formed with a cutting edge commencing substantially on the longitudinal axis of said pin at said blunt and rounded end portion and extending generally toward said handle and transversely of said axis at an

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angle of from about 30 degrees to about 45 degrees relative to said axis for cutting the threads of a seam upon moving said edge longitudinally of said seam after insertion of said blunt and rounded end portion past and across said seam, said blunt and rounded end portion being of substantially smaller diameter than the diameter of the portion of said pin between said cutting edge and said handle to facilitate insertion of said blunt and rounded end portion through the seam for cutting of the threads by said cutting edge.

2. A seam opener comprising: a straight, cylindrical pin having a handle secured to one end for manual grasping and the opposite axially directed end of said pin terminating in a blunt and rounded end portion, said pin being formed with a cutting edge commencing substantially on the longitudinal axis of said pin at said blunt and rounded end portion and extending generally toward said handle and transversely of said axis at an angle of from about 30 degrees to about 45 degrees relative to said axis for cutting the threads of a seam upon moving said edge longitudinally of said seam after

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insertion of said blunt and rounded end portion past and across said seam, said blunt and rounded end portion being of substantially smaller diameter than the diameter of the portion of said pin between said cutting edge and said handle to facilitate insertion of said blunt and rounded end portion through the seam for cutting of the threads by said cutting edge, the side of said pin opposite said cutting edge being straight to said blunt and rounded end portion and parallel with said axis, the said portion of said pin between said cutting edge and said handle being of uniform diameter and the sides of the pin along opposite sides of said cutting edge extending at an angle of about 45 degrees to each other.

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