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2,476,288

SEAM RIPPER

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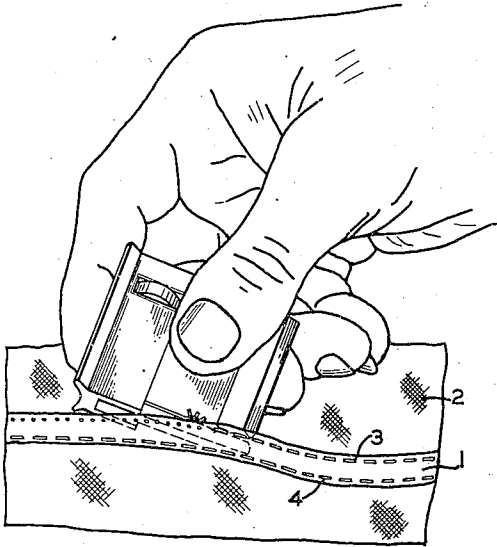


FIG. 1

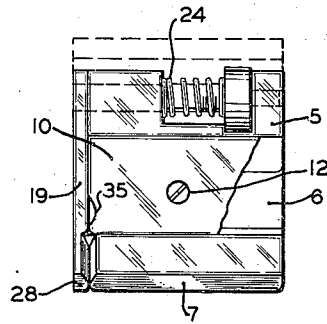


FIG. 2

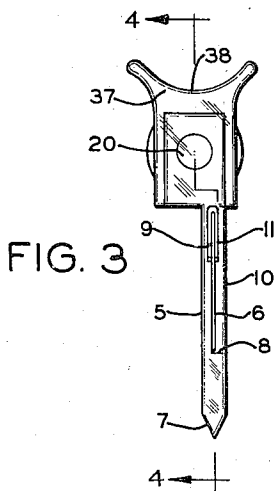


FIG. 3

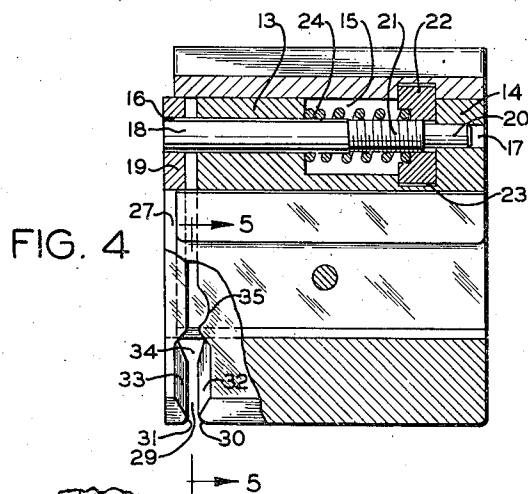


FIG. 4

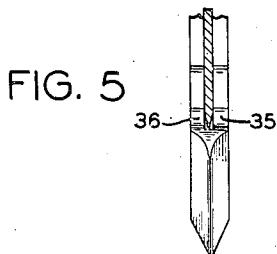


FIG. 5

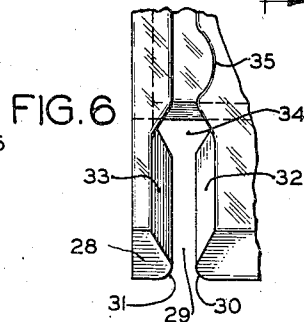


FIG. 6

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SEAM RIPPER

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My invention relates to a seam ripper. It has to do, more particularly, with a small tool which may be gripped by the fingers and be readily used to cut the stitches of a seam in cloth or similar material.

At the present time, it is the custom to employ a razor blade to cut the stitches of a seam. This method is slow and tedious. Furthermore, there is constant danger of cutting the material while attempting to cut the stitches. Also, there is constant danger of injury to the fingers of the person using the razor blade.

One of the objects of my invention is to provide a seam ripper which may be used very effectively for cutting the stitches of a seam quickly and with little effort.

Another object of my invention is to provide a seam ripper which is of such a nature that the stitches may be cut effectively without danger of injury to the material and without danger of injury to the person using the seam ripper.

Another object of my invention is to provide a seam ripper of the type indicated which can be manufactured easily and cheaply and which can, therefore, be sold at a low price.

The preferred embodiment of my invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view showing how my seam ripper is used.

Fig. 2 is a front elevational view, partly broken away, of my seam ripper.

Fig. 3 is an end elevational view of the seam ripper.

Fig. 4 is a view, mainly in vertical section, taken substantially along line 4-4 of Fig. 3.

Fig. 5 is a vertical sectional view taken along line 5-5 of Fig. 4.

Fig. 6 is an enlarged detail of the throat arrangement provided for guiding the thread to the cutting edge.

With reference to the drawing, I have illustrated a seam ripper made in accordance with my invention. In Fig. 1, I have illustrated the seam ripper being employed for ripping a double seam 1 formed of overlapping layers of the cloth 2. This seam includes a row of stitches 3 and a parallel row of stitches 4 in the overlapping layers of the cloth. Each row of stitches is successively cut by my device. However, it is to be understood that my device is not limited to use

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with this particular type of seam. Also, although my device is particularly useful with the heavy type materials, it is not necessarily limited thereto.

My device comprises a blade holder 5. This holder is adapted to receive a blade 6 which is of the single edge safety razor type. However, the holder can be modified to receive other types of blades. The holder 5 is flared and has a wedge-shaped lower edge 7 extending its full length. At a point spaced above the edge 7, the thickness of the holder 5 is reduced to form in one face thereof a recess or socket 8 for receiving the blade 6. This socket or recess 8 extends the full length of the holder. The socket 8 is further recessed, as at 9, to receive the heavy blunt upper portion of this type of safety razor blade. For retaining the blade in position, a retaining plate 10 is placed over the blade in the recess 8. This plate just fills the recess so that its surface will be flush with the surface of the lower part of the holder 5. The inner face of plate 10 is provided with a recess 11 extending the full length thereof and adapted to receive the heavy upper portion of the blade. The plate 10 is retained in position by a screw 12 which extends through an opening in the plate and through the vertical slot which is usually provided in this type of blade, and which threads into the holder 5.

The top edge of the holder 5 is enlarged to form the heavy lugs 13 and 14 at the opposite ends thereof with a socket 15 disposed therebetween. The lug 13 is provided with an opening 16 extending therethrough and the lug 14 is provided with a similar opening 17 extending therethrough. The opening 17 is in alignment with opening 16 but is of slightly smaller diameter. The openings 16 and 17 are adapted to receive the pin 18 which carries a finger 19. This finger 19 is located at one end of the holder 5 and is of the same cross-sectional shape as the holder so that its forward and rear surfaces will be flush with the corresponding surfaces of the holder and the plate 10 carried thereby. The finger 19 is fixed immovably to the end of pin 18.

The pin 18 is provided with a reduced inner end 20 which slidably extends into the opening 17. The main or larger part of the pin slidably fits in the opening 16. The pin also has an intermediate threaded section 21 upon which is threaded a knurled nut 22. This nut 22 is dis-

posed in an enlarged socket 23 formed at one end of the socket 15. Consequently, the nut cannot move longitudinally of the holder 5. The nut abuts the lug 14 and projects radially beyond the top surface thereof so that it can be readily rotated. A spring 24 is disposed within the socket 15 around the pin and has one end disposed in a circular socket in the nut 22 and the other end bearing against the lug 13. This spring serves as a brake for preventing the nut 22 from rotating too freely. Thus, it will be apparent that if the nut 22 is rotated, the pin 18 will be moved axially, thereby moving the finger 19 laterally towards and away from the end of the holder 5.

It will be noted that the holder 5 is of such a length that the blade will project beyond the end thereof where the finger 19 is located. This projecting end of the blade will fit into a recess 27 which corresponds in cross-sectional outline to that of the recess formed by the combined recesses 8 and 9 in the holder 5. The finger 9 is never moved away from the end of the holder sufficiently to withdraw the end of the blade completely from the recess 27.

The lower end of the finger is wedge-shaped, as indicated at 28, to correspond with the shape of the lower edge 7 of the holder.

The lower end of the finger 19 and the adjacent portion of the lower edge of the holder 5 serve to provide a guiding throat 29 for receiving the stitches and guiding them to the cutting edge of the blade. The entrance end of this throat is provided with outwardly flared surfaces 30 and 31 formed by rounding the adjacent corners of members 5 and 19. A straight part of the throat is formed by the adjacent bevelled or feathered edges 32 and 33 formed on the members 5 and 19. Adjacent the cutting edge of the blade the throat is enlarged, as at 34, to form a cutting chamber and expose a relatively long cutting edge of the blade. Directly above the cutting chamber 34, a notch 35 is provided in the plate 10 and a correspondingly located notch 36 is provided on the opposite side of the plate in the holder 5.

A handle member 37 is provided and is of substantially inverted U cross-section. The member 37 will slip over the lugs 13 and 14 and will be retained thereon by friction. It is provided with vertical slots in its opposite sides, which have their lower ends open, through which the nut 22 projects radially. The member 37 is further provided with a concave recess in its upper surface, extending its full length, for receiving the finger when the device is gripped in the manner indicated in Fig. 1.

In using this device, one or two threads of the seam should be cut to permit insertion of the lower end of finger 19 within the seam, as shown in Fig. 1. Then it is merely necessary to draw the device along the seam. Due to the wedge shape of the lower end of the ripper, the overlapping parts of the material will be spread apart as it is moved along. Simultaneously with this wedging action, the stitches will first be guided into the flared end of the throat 29, then through the straight narrow part thereof, and finally into the enlarged cutting chamber 34 where the threads will be cut. Since the chamber 34 is fairly wide, the cutting action will be distributed over a greater length of the blade. The severed threads will feed from the chamber 34, on both sides of the device, and up into the notches 35 and 36 which will permit free exit thereof and, thereby, prevent clogging of the space between

the finger 19 and the holder 5. It will be understood that the finger 19 will always be closely adjacent the holder 5 so that the throat 29 will be narrow. The width of this throat may be varied by adjusting the nut 22 in accordance with the thickness of the cloth material.

My device may be moved along the seam very quickly without any danger of injury to the cloth material or the fingers of the user of the device. The cutting edge is completely protected so that the cloth cannot be injured thereby. The cutting edge will merely act on the stitches which are guided to it by the throat 29 since the cloth and the fingers cannot come into contact with it.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalty thereon or therefor.

What I claim is:

1. A seam ripper comprising a blade holder having a socket formed in one face thereof at a point spaced above and parallel to the lower edge thereof, a removable plate disposed in said socket for retaining the blade in position, said holder having a lower edge of wedge-shape cross-section, a finger secured at one end of said blade holder and being of substantially the same cross-section as the holder so that its front and rear surfaces are substantially flush with the corresponding surfaces of the holder, said finger having its upper end secured to a pin which extends into a bore formed in the upper end of the holder, and means for moving said pin axially to change the spacing of the finger from the adjacent end of the holder, said finger also having a blade-receiving socket for receiving the end of the blade.

2. A seam ripper according to claim 1 including a removable finger grip on the upper end of the holder.

3. A seam ripper according to claim 1 wherein the adjacent surfaces of the lower portions of the finger and holder form a thread-receiving throat, said surfaces being so formed that they provide an outer flared open end, an intermediate straight section, and an enlarged cutting chamber at its inner end.

4. A seam ripper according to claim 1 wherein the adjacent surfaces of the lower portions of the finger and holder form a thread-receiving throat, said surfaces being so formed that they provide an outer flared open end, an intermediate straight section, and an enlarged cutting chamber at its inner end, said blade retaining plate and said holder having notches formed therein directly above the cutting chamber.

5. A seam ripper comprising a member adapted to be inserted in the seam and carrying a cutting edge, means for engaging and guiding the threads of the seam into association with said cutting edge, said means including a guide throat formed in said member, said throat having an outer flared end, an intermediate straight narrow section and a widened inner cutting chamber, said cutting edge being associated with said inner chamber.

6. A seam ripper in accordance with claim 5, wherein the edges of said throat are movable relative to each other, in a direction perpendicular to said cutting edge.

7. A seam ripper comprising a blade holder, a blade, a guide finger attached to one end of said holder, said finger having a blade-receiving

socket therein, means for securing said blade to said holder so that it extends into the blade-receiving socket of said finger, the cutting edge of said blade being perpendicular to the axis of said finger and spaced from the lower edges of said holder and said finger, the adjacent cooperating surfaces of said finger and said holder at the portions thereof below the blade being shaped to provide a throat which has a flared outer end, an intermediate straight section, and an enlarged inner end which serves as a cutting chamber.

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