May 5, 1942. H. B. RUDD 2,281,716

PINKING CUTTERS

Filed Oct. 22, 1940

Fig 1

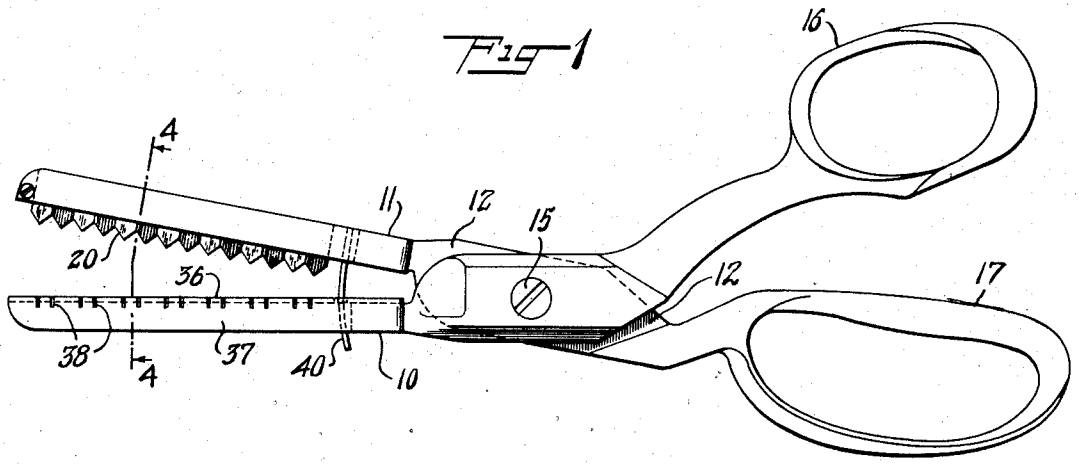


Fig 2

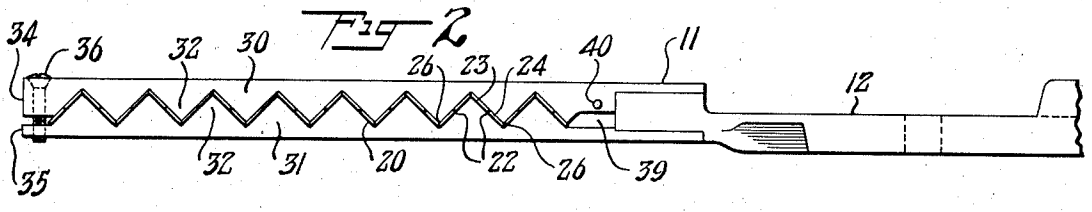
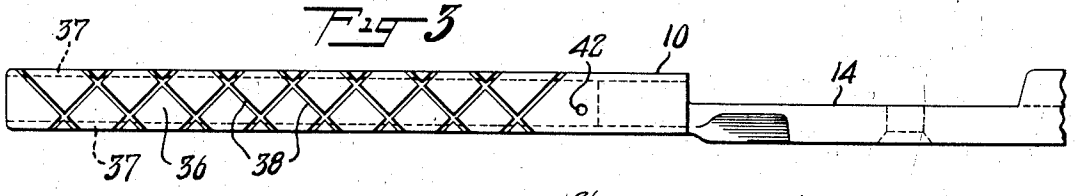


Fig 3



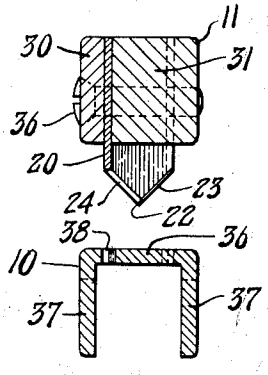


Fig 4

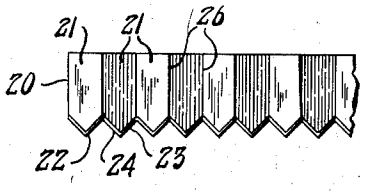


Fig 5

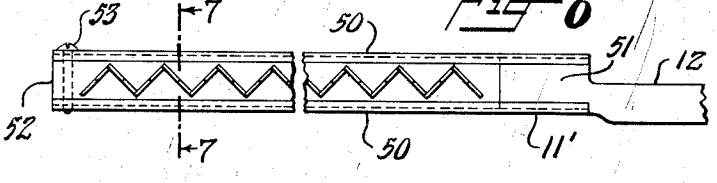


Fig 6

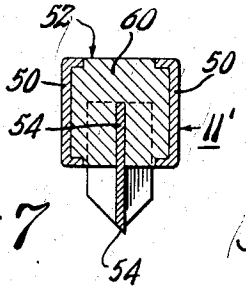


Fig 7

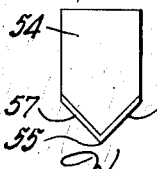


Fig 8

INVENTOR

Harry B. Rudd

BY

Morgan Finnegan & Durham

ATTORNEYS

Patented May 5, 1942

2,281,716

UNITED STATES PATENT OFFICE

2,281,716

PINKING CUTTER

Harry B. Rudd, Flushing, N. Y.

Application October 22, 1940, Serial No. 362,187

13 Claims. (Cl. 30—230)

The present invention relates to new and useful improvements in pinking cutters and more particularly to an improved manually operated device for pinking the edge of textile material.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawing, referred to herein and constituting a part hereof, illustrates two modifications of the invention, and together with the description, serves to explain the principles of the invention.

Of the drawing:

Figure 1 is a side elevation of a typical and illustrative embodiment of the present invention;

Figure 2 is a bottom plan view of the upper portion of the pinking cutter, carrying the cutting member;

Figure 3 is a top plan view of the lower member of the pinking cutter which cooperates with the cutting blade;

Figure 4 is a vertical section taken on the line 4—4 of Figure 1;

Figure 5 is a fragmentary detailed side elevation of a cutting blade or knife used in connection with the embodiment of Figure 1;

Figure 6 is a bottom plan view, with parts broken away, of a modified form of cutting member;

Figure 7 is a sectional view taken on the line 7—7 of Figure 6; and

Figure 8 is a detailed side elevation of one of the elements of the cutting knife used in connection with the modification of Figures 6 and 7.

The present invention has for its object the provision of a novel and improved pinking cutter particularly adapted for manual operation. A further object of the invention is the provision of a manually operated pinking cutter which is simple in construction, relatively inexpensive, and in which the cutting members may be easily replaced in case they become dull. Still another object of the invention is the provision of an improved apparatus for pinking textile material which does not require the use of accurately ground cooperating parts, and in which the cutting members are easily replaceable at a minimum of expense.

Referring now in detail to the typical and illustrative embodiment of the invention as shown in Figures 1 to 5 of the accompanying drawing, the pinking cutters are shown as formed to resemble a pair of scissors, and the lower member 10 and upper member 11 are provided with flat portions 12 and 14 through which passes a pivot screw 15. At one end the member 10 is provided with the thumb loop 16 and adjacent it the other member 11 is provided with a finger loop 17, by which the members may be pivotally moved toward and away from each other in the manner of an ordinary pair of scissors.

The upper member 11 is provided with a zig-zag cutting blade 20 which is shown in detail in Figure 5, and this cutting member or knife comprises a plurality of interconnected sections 21 each of which are straight, relatively short, and may be formed by bending a long narrow strip of suitable metal. Along one edge the portions 21 are pointed, as at 22, and are ground to provide two cutting edges 23 and 24 preferably being exceedingly sharp and resembling a short portion of a razor edge. Alternate portions 21 are parallel to each other so that the finished blade comprises a zig-zag strip extending along the member 11, with all of the points 22 in substantial alinement and disposed centrally of the under side of the member 11, the cutting edges 23 and 24 diverging from the central points 22 and meeting at the bends 26 in the blade 20.

I find that although other forms of cutting edges may be employed, the provision of the centrally arranged line of cutting points 22 is an advantage, as the points pierce through the material to be cut and there is no tendency of the cut material to gather into the blade, as is sometimes experienced with other forms of cutting edge.

Means are provided for securely and accurately positioning and holding the cutting blade 20 in the cutter member 11, and for this purpose the member 11 is preferably formed as two longitudinally extending portions 30 and 31 which are provided on their adjacent sides with a plurality of interfitting teeth 32, the shape, size and spacing of these teeth 32 accurately corresponding with the zig-zag portions of the cutting blade 20. Preferably, the portions 30 and 31 are resilient, and tend to spring away from each other, their outer ends 34, 35 being held together by means of a small clamping screw 36, which is passed through an aperture in the end 34 and is threaded into a registering aperture in the end 35, so that as the members 30 and 31 are clamped together by a screw 36 after a blade 20 has been

positioned between the interfitting teeth 32, the blade 20 is securely and accurately held in a definite position with respect to the member 11 and the pivot 15. In order to increase the resiliency of the members 30 and 31, the ends of these members closest to the pivot 15 are preferably cut away to provide an open space 39.

The lower member 10 of the cutter comprises a plate 36 extending the length of the member, and strengthened by means of its channel-like sides 37. Plate 36 is slotted to receive and accurately register with the cutting edge of blade 20, and for this purpose it is provided with a plurality of narrow slots 38 extending through the plate 36, and these slots are interconnected to form a zigzag slot extending the length of the plate 36, the zigzag being of the same size and shape as the cutting edge of blade 20, and being so positioned with reference thereto and the pivot 15 that accurate register of the cutting edge of blade 20 with the slots 38 is assured.

In order to prevent the material being cut from becoming entangled between the overlapping portions of members 10 and 11, near their pivot 15, a guard is preferably provided between the cutting blade 20 and the pivot 15, and comprises an arcuate bar 40 concentric with the pivot 15 and mounted in the upper member 11, passing freely through a registering aperture 42 in the upper plate 36 of member 10.

Figure 4 of the drawing shows the cutter 20 about to enter the slot 38, and as will be observed from this figure, the material between the members 10 and 11 is first pierced by the point 22 after which it is cut by the edges 23 and 24 which easily pass through the material but tend to spread the material away from the point 22.

In the use of the pinking cutters, the person grasps them by means of the loops 16 and 17 in the manner of a pair of scissors, and oscillates the blades 10 and 11 toward and from each other, forcing the cutting blade 20 through the material to be cut and into the slots 38, which closely fit the zigzag edge of the cutter. The cutters may be moved along through the material, producing a pinked edge, and the cutting action is facilitated by reason of the fact that although all the points 22 and the cutting edges 23 and 24 are uniformly spaced from the member 11, they engage and cut through the material progressively so that the cutting action is distributed over a considerable angular movement of the members 10 and 11 towards each other.

When the cutter knife 20 becomes dull through long use, a new cutter 20 may be substituted merely by loosening the screw 36, allowing the portions 30 and 31 to spring away from each other, thereby releasing the knife 20, and a new knife may be inserted and accurately clamped by means of the screw 36.

Figures 6 to 8 illustrate a modified embodiment of the invention in which the upper member 11' is formed of a pair of longitudinally extending channel-like members 50 which are attached to the pivoting portion 12 by means of a shank 51 and receive between them a cutter knife assembly 52 which is securely and accurately held in proper registering relation with respect to the slots 38 and the pivot 15 by means of a screw 53 passing through the channels 50 near their outer ends, as well as through a registering aperture in the outer end of the assembly 52. Preferably the cutter bar assembly 52 is formed of a plurality of short blades 54, each provided with a cutting point 55 and cutting edges 56 and 57, and these blades 54 are assembled and securely held in zigzag relation, properly spaced with respect to the slots 38, by being embedded at their bases in a slightly wider block of thermo-plastic material 60 such as Bakelite or lead. The blade assembly 52 may be replaced by removal of the screw 53, which permits the assembly 52 to be slipped out and a new one slid into place.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:

1. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, a thin zigzag cutting knife releasably carried by one of the members, means for accurately positioning the knife with respect to the member by which it is carried, said other member being provided with narrow slots arranged zigzag and in registering relation to the knife.

2. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, a thin zigzag cutting knife carried by one of the members and registering with and closely fitting into zigzag slots in the other member, and handles connected to the movable members for pivotally moving the members into and out of cutting relation.

3. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, a thin zigzag cutting knife carried by one of the members and registering with and closely fitting into zigzag slots in the other member and a guard keeping material away from the pivot of the members and comprising an arcuate bar mounted on one member between the cutting knife and the pivot and an aperture in the other member to receive the arcuate bar.

4. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, a thin zigzag cutting knife carried by one of the members and comprising a plurality of short angularly arranged sections each having a sharply pointed portion, with the points arranged along a line centrally with respect to the knife carrying member, said other member being provided with a zigzag slot of narrow width closely fitting the cutting edge of the knife.

5. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, a thin zigzag cutting knife carried by one of the members and comprising a plurality of short angularly arranged sections each having a sharply pointed portion, said other member being provided with a zigzag slot of narrow width closely fitting the cutting edge of the knife.

6. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, one of said members comprising a pair of longitudinally extending bars spaced to receive a cutting member between them, said cutting members having a zigzag knife-cutting edge, the other of said movable members being provided with zigzag slots regis-

tering with and closely fitting the cutting edge when the members are moved together.

7. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, one of said members comprising a pair of longitudinally extending bars resiliently tending to spring apart, said bars having interfitting serrated edges, and being adapted to receive a zigzag knife cutting blade between them, said cutting member having sharp points on each of its short straight sections, said points being arranged in line centrally of the resilient bars, means for clamping said bars together against their resilient action to firmly grip the blade and the other member being provided with a zigzag slot which is relatively narrow to closely fit and register with the cutting edge of the knife blade.

8. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, one of said members comprising a pair of longitudinally extending bars resiliently tending to spring apart, said bars being adapted to receive a zigzag knife cutting blade between them, said cutting member having sharp points on each of its short straight sections, said points being arranged in line centrally of the resilient bars, means for clamping said bars together against their resilient action to firmly grip the blade and the other member being provided with a zigzag slot which is relatively narrow to closely fit and register with the cutting edge of the knife blade.

9. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, one of said members comprising a pair of longitudinally extending bars resiliently tending to spring apart, said bars having interfitting serrated edges, and being adapted to receive a zigzag knife cutting blade between them, means for clamping said bars together against their resilient action to firmly grip the blade and the other member being provided with a zigzag slot which is relatively narrow to closely fit and register with the cutting edge of the knife blade.

10. In a pair of pinking cutters, the combination of a pair of angularly movable members pivoted on each other, one of said members comprising a pair of longitudinally extending bars resiliently tending to spring apart, said bars being adapted to receive a zigzag knife cutting blade between them, means for clamping said bars together against their resilient action to firmly grip the blade and the other member being provided with a zigzag slot which is relatively narrow to closely fit and register with the cutting edge of the knife blade.

11. In a pair of pinking cutters the combination of a pair of pivoted members, a cutting knife having a wider base, one of said members being channeled to receive the base of said knife, means for locking the knife between said channels, the other of said members being provided with a narrow zigzag slot to fit closely and register with the cutting edge of the knife as the members are brought together.

12. In a pair of pinking cutters, the combination of a pair of pivoted members, handles for pivotally moving the members, each of said members being provided with a zigzag slot for a substantial portion of their length, a removable zigzag cutter blade fast in the slot in one member and movable into the slot in the other member for cutting material between the members.

13. In a pair of pinking cutters, the combination of a pair of pivoted members having handles at one end thereof, a zigzag cutting knife carried by one of the members registering with narrow slots in the other member, said knife being formed with pointed portions along its cutting edge.

HARRY B. RUDD.