

A. CUPPS & C. R. HINZ.
 THREAD CUTTING MECHANISM FOR SEWING MACHINES.
 APPLICATION FILED MAR. 6, 1912.

1,046,274.

Patented Dec. 3, 1912.

2 SHEETS-SHEET 1.

Fig. 1

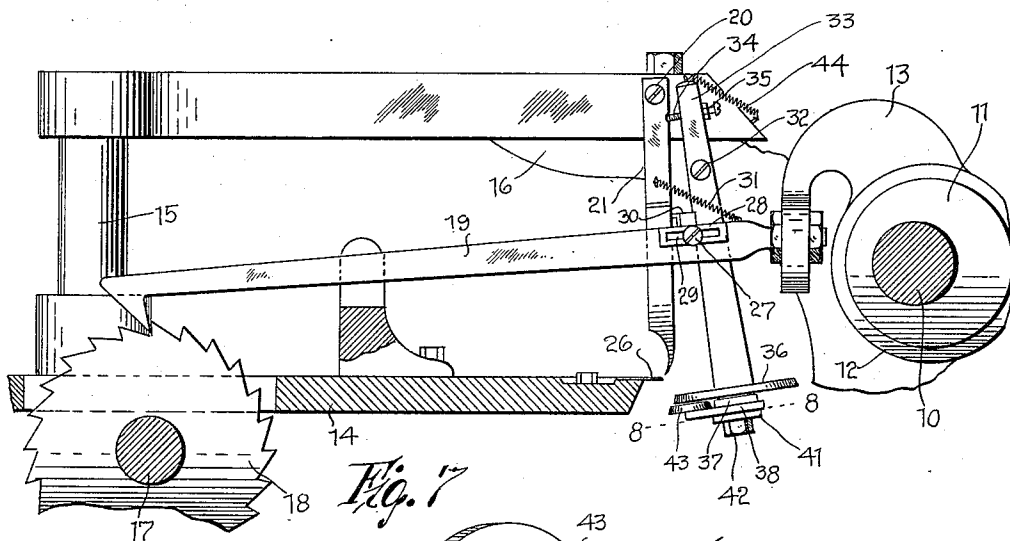


Fig. 7

Fig. 8

Fig. 9

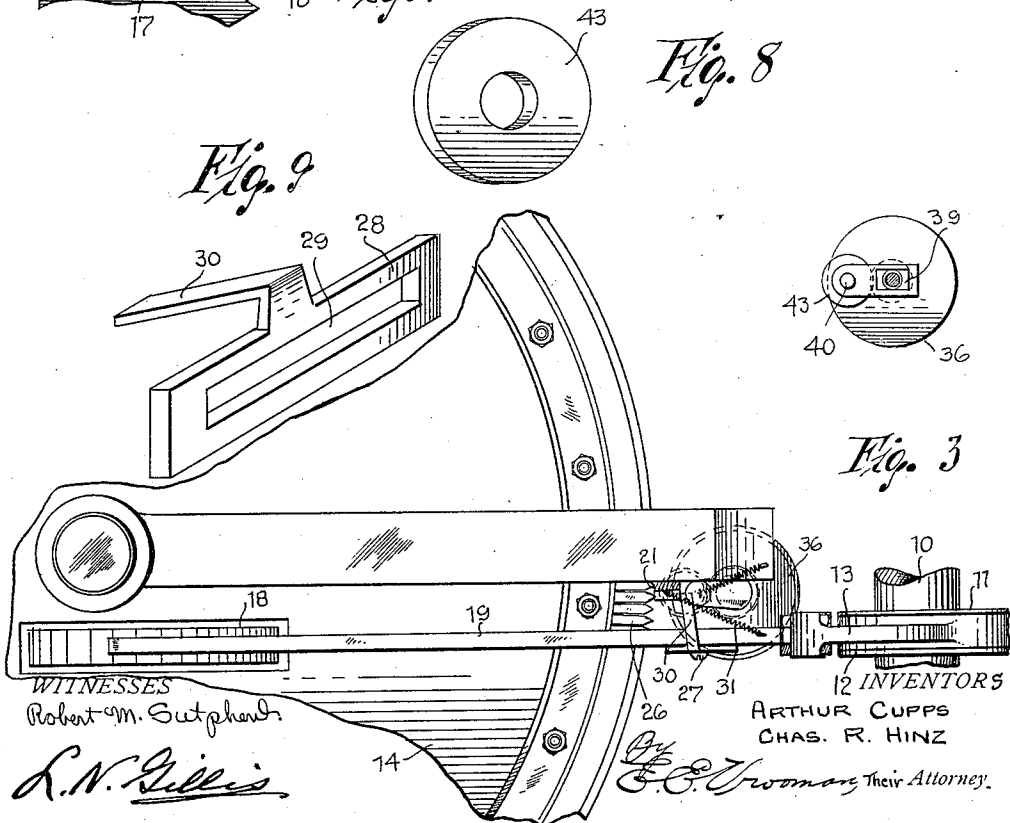


Fig. 3

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2 SHEETS—SHEET 2.

Fig. 7

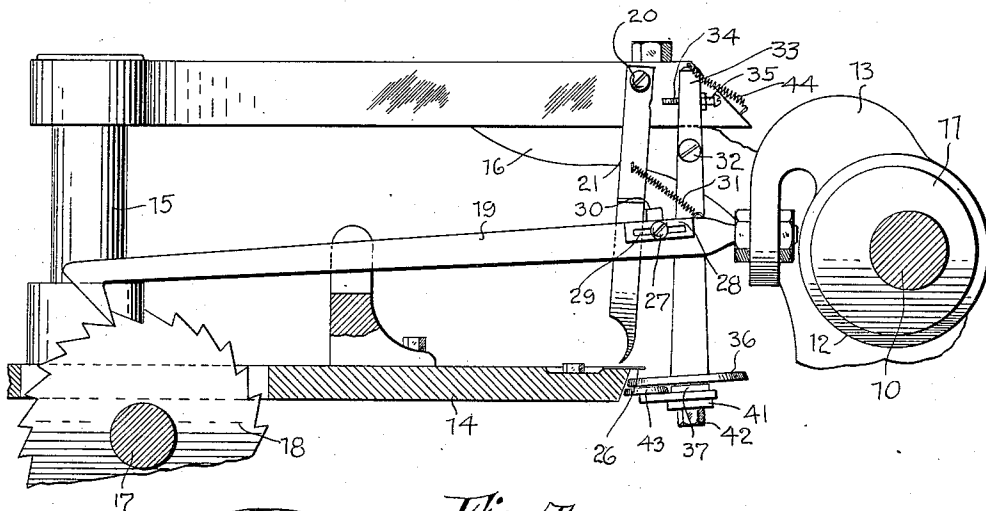


Fig. 7

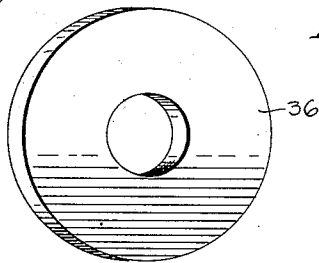


Fig. 5

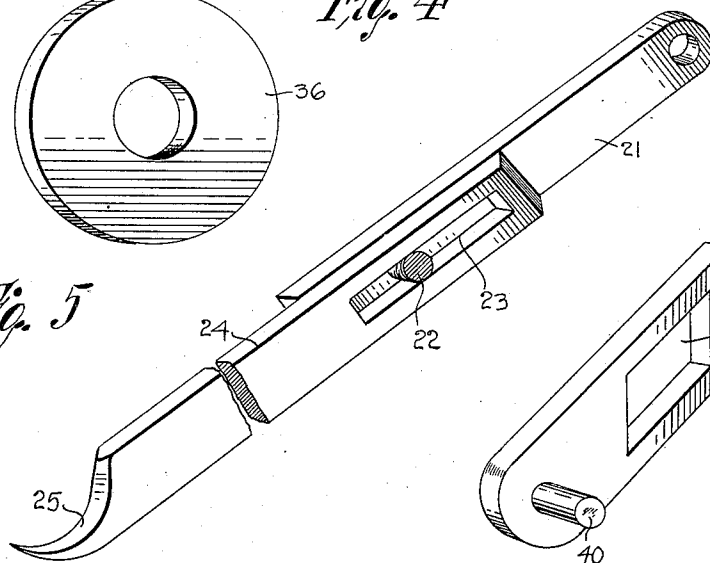
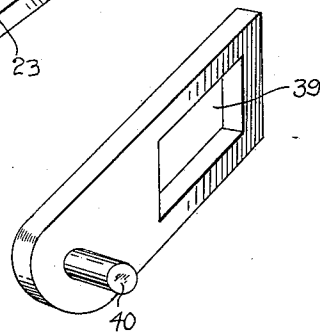


Fig. 6



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UNITED STATES PATENT OFFICE.

ARTHUR CUPPS AND CHARLES ROBERT HINZ, OF WAUPUN, WISCONSIN,

THREAD-CUTTING MECHANISM FOR SEWING-MACHINES.

1,046,274.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed March 6, 1912. Serial No. 681,949.

To all whom it may concern:

Be it known that we, ARTHUR CUPPS and CHARLES R. HINZ, citizens of the United States, residing at Waupun, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Thread-Cutting Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to sewing machines for looped fabrics.

The invention more particularly refers to a device for cutting the chain stitch between successive knitted articles, the device being operated automatically.

The invention consists in general of certain novel constructions, arrangements and combinations of parts as will be hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and: Figure 1 is a partial sectional view showing a portion of the sewing machine with the device applied thereto, the latter being shown in operative position. Fig. 2 is a similar view showing the knife released for operation. Fig. 3 is a partial plan view of a sewing machine showing the application of the device. Fig. 4 is a detail perspective of the knife. Fig. 5 is a detail perspective view of a roller used in connection herewith. Fig. 6 is a detail perspective of a certain adjustable arm used in connection herewith. Fig. 7 is a view of a second roller carried by the arm. Fig. 8 is a detail section on the line 8-8, Fig. 1. Fig. 9 is a detail perspective showing a certain plate and arm used herewith.

The sewing machine, of which a part is here shown, is to be taken as typical of any form of sewing machine wherein there is provided a driving shaft 10 on which is an eccentric 11 surrounded by an eccentric strap 12 whereto is connected an arm 13. This type of sewing machine also is provided with a revolving plate or disk 14 supported on a shaft 15 held in suitable bear-

ings in the frame 16. Beneath the disk 14 is a horizontal shaft 17 whereon is a ratchet wheel 18, the shaft 17 carrying a similar gear not deemed necessary here to be shown for revolving the plate and being actuated by a pawl 19 at the end of which is connected the arm 13 so that as the shaft 10 revolves the pawl 19 is drawn backward and forward over the ratchet 18, thus causing it to revolve and operate by a step-by-step motion.

Turning now to the description of the invention which forms the subject matter of this application,—there is pivoted to the frame 16 as at 20 an arm 21 having a suitable opening for the reception of a screw 22 which passes through a slot 23 formed in a knife bearing 24 having a curved and sharpened edge 25 at its lower end, the edge being brought to a sharp point, as can clearly be seen by reference to Fig. 4. By means of this construction, the length of the two members may be varied at will so that the point of the knife may be brought closer to or from the impaling pins 26 which are carried by the disk 14. Secured to the pawl 19 by means of a screw 27 is a plate 28 having a slot 29 extending longitudinally thereof and being provided with an arm 30 which bears against the back of the knife. In order to hold the knife against the arm 30 there is provided a spring 31 connected at one end to the bar 21 and at the other end to the pawl 19. Now unless movement of the knife is stopped it will be seen that the reciprocation of the pawl 19 will cause oscillation of the knife blade and if the points be properly adjusted this oscillation will cause the point to catch the stitches on the impaling pins and cut them. In order that this cutting operation shall take place at the proper time, there is also pivoted to the frame, by means of a screw 32 which is located intermediate its ends, a bar 33. Passing through the upper end of this bar and bearing against the bar 21 is a screw 34 provided with a lock nut 35. Upon the lower end of the bar 33 there is provided a roller 36 below which is a nut 37. Beneath the nut 37 there is provided an arm 38 hav-

ing a slot 39 therein and carrying a pin 40. This arm is held in adjusted position by means of a washer 41 and nut 42 and on the pin 40 is a roller 43. Now so long as any article of apparel is on the impaling pins 26 the same will bear against the rollers and will force the lower end of the bar 33 outward, thus forcing the knife inward to the position shown in Fig. 1.

By reason of the lightness of the spring 31 there will be little tendency for its lower end to move inwardly and this will be overcome by the article of apparel above referred to. However, when the device arrives at the space between the two articles of apparel there will be nothing to prevent the bar from swinging inward at its lower end and the rollers will then engage the edge of the dial. This will cause the bar 33 to swing outward at its upper end and release the knife whereupon the arm 30 will actuate the knife and cause the same to move forward as the same rotates as previously described, the spring 31 pulling the knife backward at each stroke. In order to assist the bar 33 in its movement inward at its lower end there is provided a spring 44 connected at one end to the upper end of said bar 33 and at the other end to the frame 16. It will be obvious that the movement of the knife may be regulated by the screw 27. The roller 43 may be adjusted in or out or forward or back as desired so that the cutting operation will be slightly delayed by reason of the roller 43 still resting on the material. Similar adjustment will provide for stopping the cutting operation at any desired point prior to reaching the garment, it being understood that the adjustment will be different for different machines.

There has thus been provided a simple and efficient machine of the kind described and for the purpose specified.

It is obvious that many minor changes may be made in the form and construction of the invention without departing from the material principles thereof and it is therefore not wished to confine the invention to the exact form herein shown and described, but it is wished to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:—

1. A thread cutting mechanism for sewing machines for looped fabrics including a frame, a reciprocating element, a dial, an oscillatory knife pivoted at one end to said frame, a slotted plate on said reciprocating element provided with an arm engaging the back of said knife, a screw passing through the slot in said plate to hold the same in adjusted position, spring means for holding said knife in engagement with said arm, and means controlled by an article of apparel carried by said dial for moving the knife

against the action of said spring means during the passage of the article of apparel beneath the knife.

2. A thread cutting mechanism for sewing machines for looped fabrics including a frame, a dial, a reciprocating member, an oscillatory knife, means connected to the reciprocating element for moving the knife in one direction, yieldable means for moving the knife in the opposite direction, a bar pivoted to the frame intermediate its ends, means carried by the upper end of the bar and bearing against the knife blade to move the same against the action of said yieldable means, and fabric engaging means at the lower end of the bar.

3. A thread cutting mechanism for sewing machines for looped fabrics including a frame, a dial, a reciprocating member, an oscillatory knife, means connected to the reciprocating element for moving the knife in one direction, yieldable means for moving the knife in the opposite direction, a bar pivoted to the frame intermediate its ends, means carried by the upper end of the bar and bearing against the knife blade to move the same against the action of said yieldable means, a slotted plate projecting radially from the lower end of said bar and having a pin thereon, a nut screwed upon the lower end of said bar to lock said plate in an adjusted position.

4. A thread cutting mechanism for sewing machines for looper fabrics including a frame, a dial, a reciprocating member, an oscillatory knife, means connected to the reciprocating element for moving the knife in one direction, yieldable means for moving the knife in the opposite direction, a bar pivoted to the frame intermediate its ends, means carried by the upper end of the bar and bearing against the knife blade to move the same against said yieldable means, a slotted plate projecting radially from the lower end of said bar and having a pin thereon, a nut screwed upon the lower end of said bar to lock said plate in an adjusted position, a roller carried on said pin and adapted to bear against an article of apparel carried by the dial, and a second roller carried by the lower end of the bar.

5. A thread cutting mechanism for sewing machines for looped fabrics including a frame, a dial, a reciprocating member, an oscillatory knife, means connected to the reciprocating element for moving the knife in one direction, yieldable means for moving the knife in the opposite direction, a bar pivoted to the frame intermediate its ends, means carried by the upper end of the bar and bearing against the knife blade to move the same against the action of said yieldable means, a slotted plate projecting radially from the lower end of said bar and having a pin thereon, a nut secured upon the lower

end of said bar to lock said plate in an adjusted position, a roller on said pin adapted to bear against an article of apparel carried by the dial, a second roller carried by the
5 lower end of said bar, and a spring normally urging said rollers in the direction of the dial.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

ARTHUR CUPPS.

CHARLES ROBERT HINZ.

Witnesses:

G. H. SCHROEDER,
JACOB TUFY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
