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TRIMMING ATTACHMENT FOR MACHINES FOR UNITING KNIT FABRICS.

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992,116.

Patented May 9, 1911.

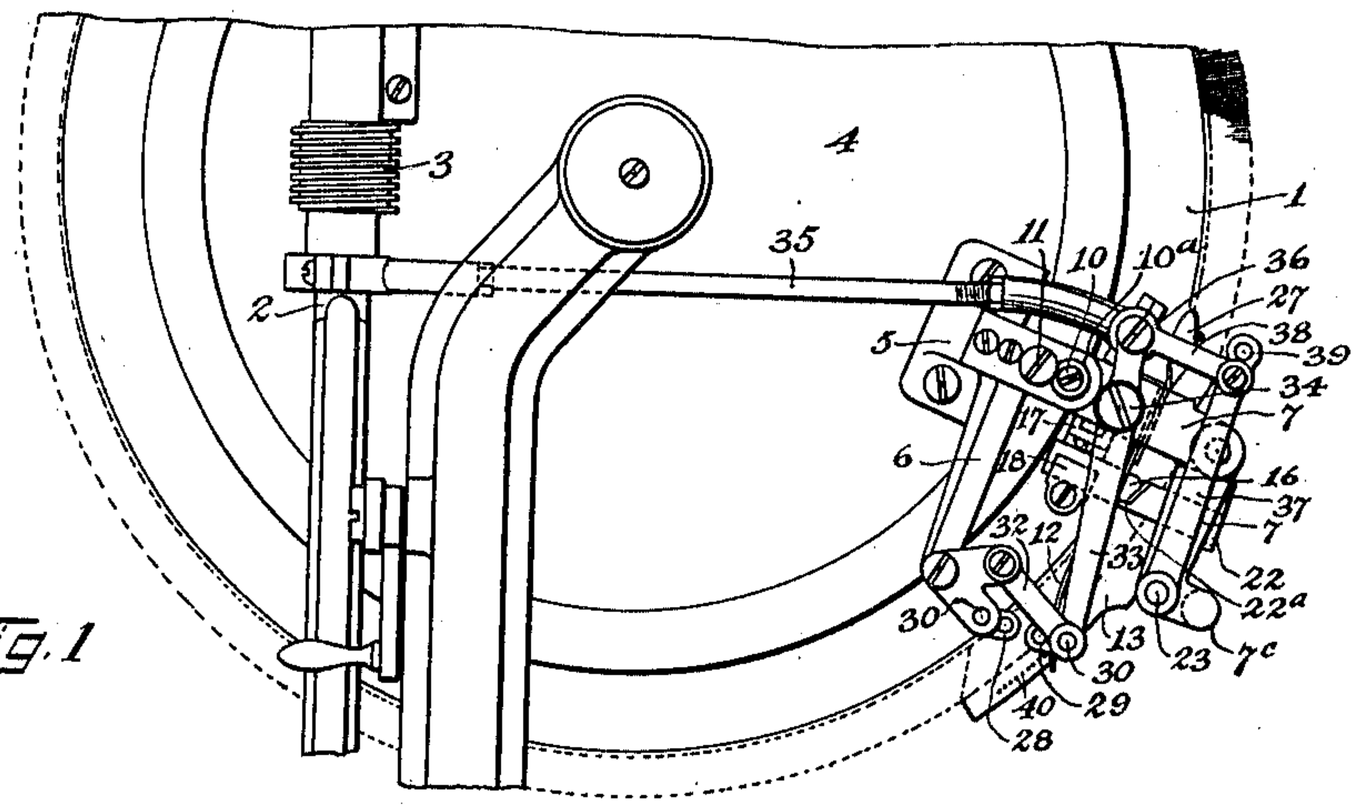

Fig. 1

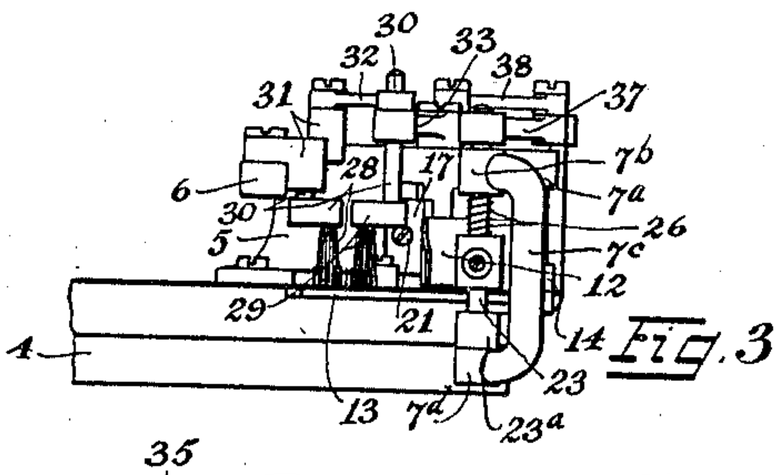

Fig. 3

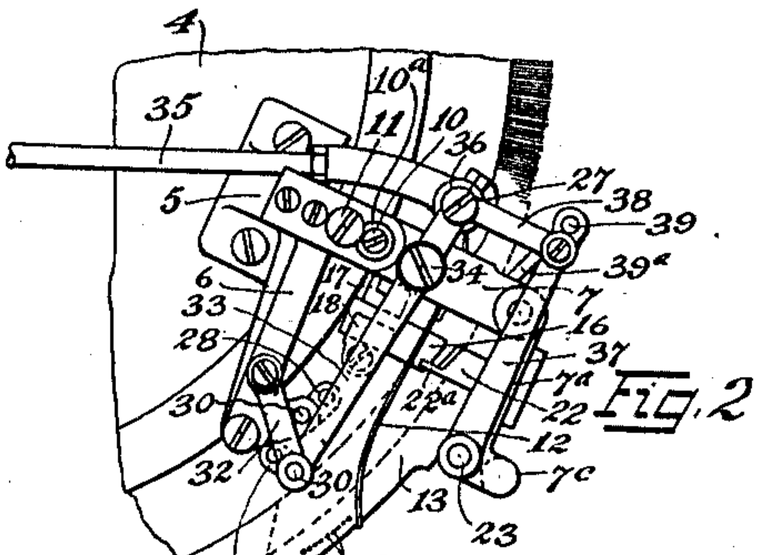

Fig. 2

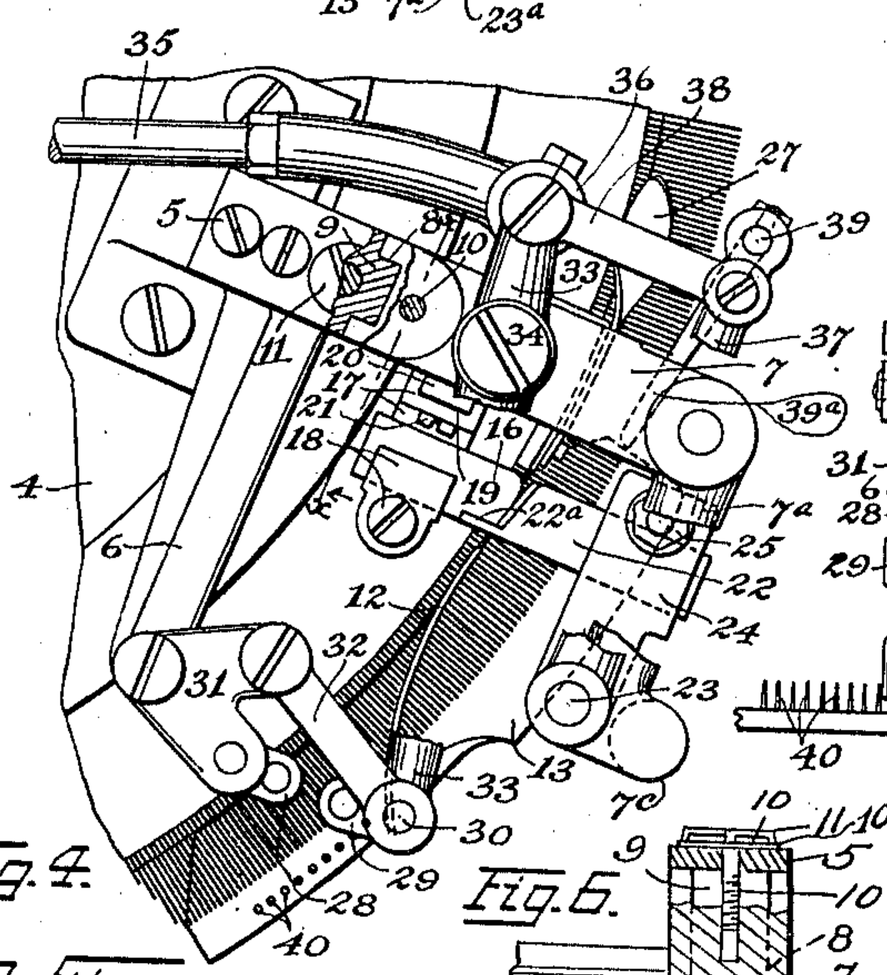

Fig. 4.

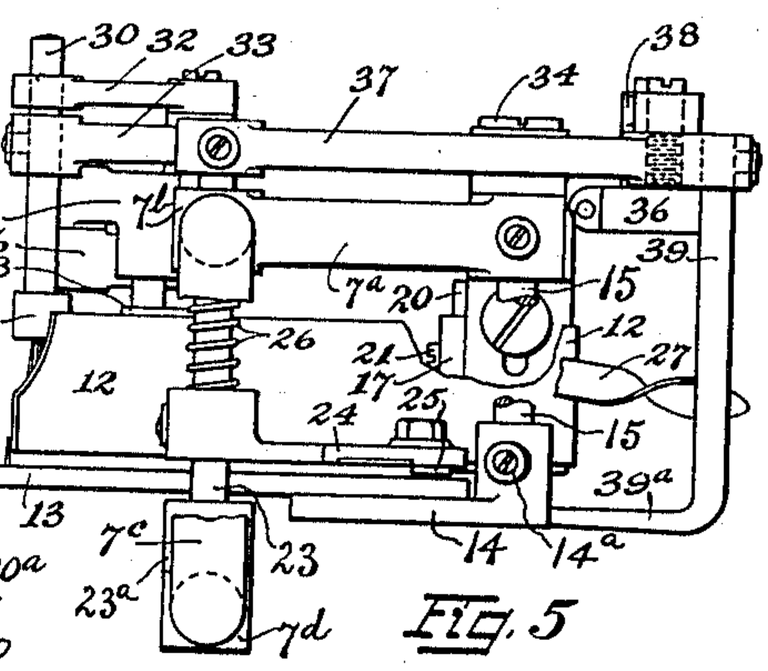

Fig. 5

Fig. 6.

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TRIMMING ATTACHMENT FOR MACHINES FOR UNITING KNIT FABRICS.

992,116. Specification of Letters Patent. Patented May 9, 1911.

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To all whom it may concern:

Be it known that I, EDWIN O. DAVIS, a citizen of the United States, residing at Paducah, in the county of McCracken and State of Kentucky, have invented certain new and useful Improvements in Trimming Attachments for Machines for Uniting Knit Fabrics, of which the following is a specification.

My invention relates to improvements in trimming attachments for machines for uniting knit fabrics wherein sewing or looping mechanism is combined with either an intermittently or continuously revolving ring of impaling-pins upon which the adjacent loops of the two portions of fabric to be united are carried; and this invention relates particularly to a trimming attachment for such machines whereby the superfluous or projecting edges of the fabric are severed at a uniform distance from the loops of fabric on the impaling-pins and the ravelings cleared therefrom preparatory to the sewing or looping operation.

The primary object of the invention is to provide a generally improved trimming attachment of this class in which the various parts are so arranged and combined as to more effectively meet the demands of actual service.

The invention comprises a novel construction and arrangement of presser device and guide-members whereby the fabric is directed to and maintained at the base of the impaling-pins; a novel construction and arrangement of cutting-members whereby clean and uniform severance of the impaled edges is effected; and a novel construction and arrangement of brushes linked together and operated in such a manner as to be adapted to be alternately advanced and retracted and having their intersecting paths of travel in the path of travel of the severed edges of the fabric on the impaling-pins whereby trimmings and ravelings are effectively cleared therefrom.

With the above mentioned and other ends in view, the invention consists in the novel construction, arrangement, and combination of parts hereinafter described, illustrated in one of its embodiments in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the drawings, forming a part of this specification, Figure 1, is a top plan view of the improved attachment applied to a looping machine of the continuously and uniformly revolving type. Fig. 2, a top plan view of the attachment showing the parts in a position opposite to that illustrated in Fig. 1. Fig. 3, a plan view of the brush end or portion of the same. Fig. 4, an enlarged top plan view of the same, a portion of the linked operating levers and over hanging bearing bracket, being broken away for the purpose of clearer illustration of the parts. Fig. 5, a side elevation of the improved trimming attachment. Fig. 6, a cross sectional view taken through line x—x of Fig. 4, showing form of connection, and adjustment between the base supporting bracket, and vertically movable overhanging bearing bracket carried by the latter.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

In the accompanying drawings, the improved trimming attachment is shown applied to a looping machine in which the ring of impaling-pins 1, is adapted to be continuously and uniformly revolved by means of a driving-shaft 2, having a worm gear 3, connected to suitable intermediate gearing beneath the support or dial-plate 4, as shown and described in my application for Letters Patent for improvements in machines for uniting knit fabric, filed April 22, 1909, Serial No. 491,511.

The improved trimming attachment comprises a supporting base member or bracket 5, mounted upon the support or dial plate 4, and provided with a laterally extending bearing arm 6.

An over hanging bearing bracket 7, is carried by the supporting base member 5, and is vertically adjustable thereon by being provided with a guide-way or recess 8, taking over similarly shaped guide-member or flange 9, on the front or face side of said supporting bracket. The over hanging bracket 7, together with its attachments, are adapted to be vertically adjusted by means of an adjusting-bolt 10, loosely mounted in the base bracket 5, and provided with a flanged screw head, said adjusting bolt being normally held in position by means of a head 11, of a screw member impinging upon the flanged portion 10^a of the bolt-head 10, as shown. It will thus be seen that the

bearing bracket 7, is vertically supported and carried upon the threaded end of the adjusting bolt 10, loosely mounted in a plain opening in the bracket 5, normally held down by the screw head 11, and extending downwardly into a threaded opening in said bracket as shown most clearly in Fig. 4, of the drawings, and that by turning said bolt 10, to the right or to the left, said bracket may be moved upwardly or downwardly to give it any vertical adjustment desired.

The over hanging bearing bracket 7, comprises a main body portion terminating in a laterally extending bearing-arm 7^a, forming a bearing 7^b, and provided with a depending portion 7^c, said depending portion terminating at its lower end in a second bearing 7^d.

Fabric guide-members 12, and 13, are carried by the bearing bracket 7, the guide-member 12, having its lower edge disposed just above the ring of impaling-pins and curved rearwardly and outwardly in the direction of travel of the ring of impaling-pins for the purpose hereinafter explained. The guide member 13, is disposed just beneath the impaling-pins, and is vertically and horizontally adjustable by being supported at one end on a bearing bracket 14, adjustably secured upon the lower end of a depending bearing pin or bar 15, extending downwardly from the end of the main body portion of the bracket 7.

The bearing bracket 14, and guide member 13, carried by said bracket 14, are supported and carried by the bearing pin 15, and said members 13 and 14, are secured thereon by means of a clamping screw 14^a by means of which said members may be given any desired vertical or horizontal adjustment or disposition in an obvious manner.

The projecting ends of the fabric are adapted to be cut or trimmed by means of a pair of coacting cutting members or blades disposed just above the base portions of the impaling-pins and between the vertical planes of the guide members 12, and 13, said cutting members being carried by and vertically adjustable on the over hanging bearing bracket 7, as now described. A stationary cutting member or blade 16, is removably mounted in a bearing bracket 17, by means of a clamping block and screw 18. The bearing bracket 17, in the present instance, is secured at one side of the bearing bracket 7 and vertically adjustable, by means of a guide-way or recess 19, taking over a guide member 20 formed by one side of the bracket 7, and a set screw 21 as shown most clearly in Figs. 4 and 5 of the drawings. A second or coöperating cutting member or blade 22, is provided, said second blade being provided with a guide member 22^a, to maintain the blade 22, in proper operative relationship with the cutting member 16, when reciprocated as hereinafter described. As a means for reciprocating the cutting member 22, and giving it the proper motion with respect to the blade 16, a vertical rock shaft 23, is mounted in the bearings 7^b and 7^d, of the depending portion of the bracket, said rock shaft being provided with a horizontally extending arm 24, removably carrying the cutting member 22, by means of a clamping-bolt 25. By reason of the location of the cutting edge of the blade 22, relative to the rock shaft 23, it is obvious that when the latter is oscillated by the means hereinafter described, the cutting edge of the blade 22, will not only be moved toward the edge of the coacting blade 16, but will be moved rearwardly in the direction of travel of the fabric to be cut or trimmed between the blades. As a means for effectively holding the cutting blade 22, in operative relationship with the blade 16, a coiled spring 26, is interposed between the boss portion of the arm 24, and the bearing 7^b, said coiled spring surrounding the rock shaft 23, as shown. If desired, a bearing sleeve or boss 23^a, may be provided as shown, said sleeve or boss being adapted to bear against the lower bearing 7^d.

As a means for engaging and elevating the superfluous or projecting portions of the fabric which may be disposed flatwise on the ring portion of the impaling-pins in the act of placing the loops of fabric on said impaling-pins, a downwardly and forwardly projecting curved finger portion 27, is secured upon the fabric guide member 12, said finger portion being adapted to take under the superfluous fabric in an obvious manner and elevate the same to rest and travel along the side of the guide member 12, until severed by the cutting members of blades, after which it falls down upon the impaling pins and is carried off of the pointed ends of the same by reason of the curvature of the guide member 12.

As a means for effectively clearing the trimmings and ravelings from the severed edges of the fabric, a pair of reciprocatory brushes 28, and 29, are mounted upon the ends of vertical bearing bars 30, and as a means for causing said brushes to be alternately advanced and retracted across the path of travel of the cut fabric, and also for causing the paths of travel of the respective brushes to intersect each other in the path of travel of the fabric, the brush 28, is mounted in a horizontally swinging bell crank member 31, said brush 28, and bell crank 31, being linked to the bearing bar 30, of the brush 29, by means of a connecting link 32. It will be observed that the bell crank member 31, is pivoted upon the laterally extending bearing arm 6, of the stationary base bracket 5, and hence, in order to permit the brush operat-

ing lever 33, on the vertically adjustable bearing bracket 7, to be carried vertically in the adjustments of the bearing bracket 7, the connecting link 32, is loosely mounted upon the bearing bar 30, of the brush 29, so as to be capable of a sliding or vertical movement on the bar 30, during this adjustment.

As a means for reciprocating the brush operating lever 33, on its pivot bearing 34, a connecting arm 35, is eccentrically mounted at one end upon the driving-shaft 2, and is connected, in the present instance, to the short end of the operating lever 33, by means of a suitable universal or ball and socket bearing 36, below the short end of the lever 33.

As a means for oscillating the rock shaft 23, and reciprocating the attached arm 24, and cutting blade 22, an operating lever 37, is mounted upon the rock shaft 23, the arm of said lever 37, extending from said rock shaft 23 in an opposite direction to that of the direction of travel of the ring of impaling-pins, and being linked to the arm of the brush operating lever 33 by means of a link member 38. By reason of this connection the linked operating levers 33, and 38, are simultaneously reciprocated through the eccentric connecting arm 35, and the linked brushes 28, and 29, and cutting blade 22, are simultaneously operated.

As a means for directing or driving the impaled fabric toward the base portions of the impaling-pins (in case the fabric is not properly placed on the pins), a depending presser bar or member 39, is secured to the end of the operating lever 37, and provided with a horizontally extending presser finger portion 39[a], said presser finger portion being disposed beneath said impaling-pins and being adapted to be moved toward the base portions of said pins when the lever 37, is reciprocated, whereby the presser finger 39, by its contact with the fabric suspended below the impaling-pins, is adapted to direct or drive the fabric toward the base portions of the impaling-pins, and before being acted upon by the fabric guide member 13. As a means for clearing the brush 29, of trimmings or ravelings during the brushing operation, the fabric guide member 13, is provided at one end with a comb formed by a series of upwardly extending brush cleaning points or teeth 40, over which the brush 29, is adapted to pass in its outer point of throw or reciprocation in the brushing operation.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily understood.

Having thus described an embodiment of my invention, what I claim and desire by Letters Patent is,—

1. In a trimming attachment, a ring of impaling-pins and a support, an overhanging bearing bracket provided with guide members and a stationary cutting member, a vertical rock-shaft provided with an arm carrying a coacting cutting member, a lever secured to said rock-shaft and having its arm extending from said shaft opposite the direction of travel of said ring of impaling-pins, a depending presser bar secured to said lever and provided with a presser finger disposed beneath said impaling-pins and adapted to be moved toward the base portion thereof when said lever is reciprocated, and means for reciprocating said lever.

2. In a trimmer, a ring of impaling-pins and a support, an overhanging bearing bracket, suitable guide and cutting members carried thereby, linked brushes adapted to alternately travel across a common path, linked operating levers for simultaneously reciprocating said linked brushes and one of said cutting members, a presser member carried by one of said linked levers and disposed beneath said ring of impaling-pins, and means for reciprocating said operating levers.

3. In a machine of the class described, a ring of impaling-pins, a support therefor, a driving shaft, a bearing bracket carried above said impaling-pins, guide members arranged in different planes to receive said impaling-pins between them, a rock-shaft provided with an arm, coacting cutter members one of which is carried by said arm, linked brushes adapted to alternately travel to and from each other and over the path of travel of the trimmed edges of the impaled fabric, linked operating levers one of the arms of which is connected to said linked brushes and the other of which is connected to said rock-shaft, a depending rod carried by said last mentioned lever and provided with a presser-finger extending beneath and toward the base of said impaling-pins, and an eccentric rod on said driving shaft and connected to said linked operating levers.

4. A machine of the class described, comprising a ring of impaling-pins, a fixed support therefor, a driving shaft, a supporting base member on said fixed support, a bearing bracket adjustably mounted on said base member and extending across the path of travel of said ring of impaling-pins, vertically adjustable fabric guide members carried by said bearing bracket, one of said members being horizontally adjustable beneath said impaling-pins and provided with brush-cleaning points, a pair of reciprocatory brushes adapted to traverse the path of travel of the cut edges of the fabric on said impaling pins, one of said brushes passing over said brush-cleaning points, linked operating levers on said bearing bracket one of said levers being operatively connected to said brushes and the other with a vertical

rock-shaft at one end and a depending presser-rod on the other, a stationary trimming-knife, an arm mounted on said rock shaft and provided with a coöperating trimming-knife, and a connecting arm eccentrically mounted on said driving shaft and connected to one of said linked operating levers.

In testimony whereof I have affixed my signature, in presence of two witnesses.

EDWIN O. DAVIS.

Witnesses:
FRAU BILLMAN,
O. C. BILLMAN.