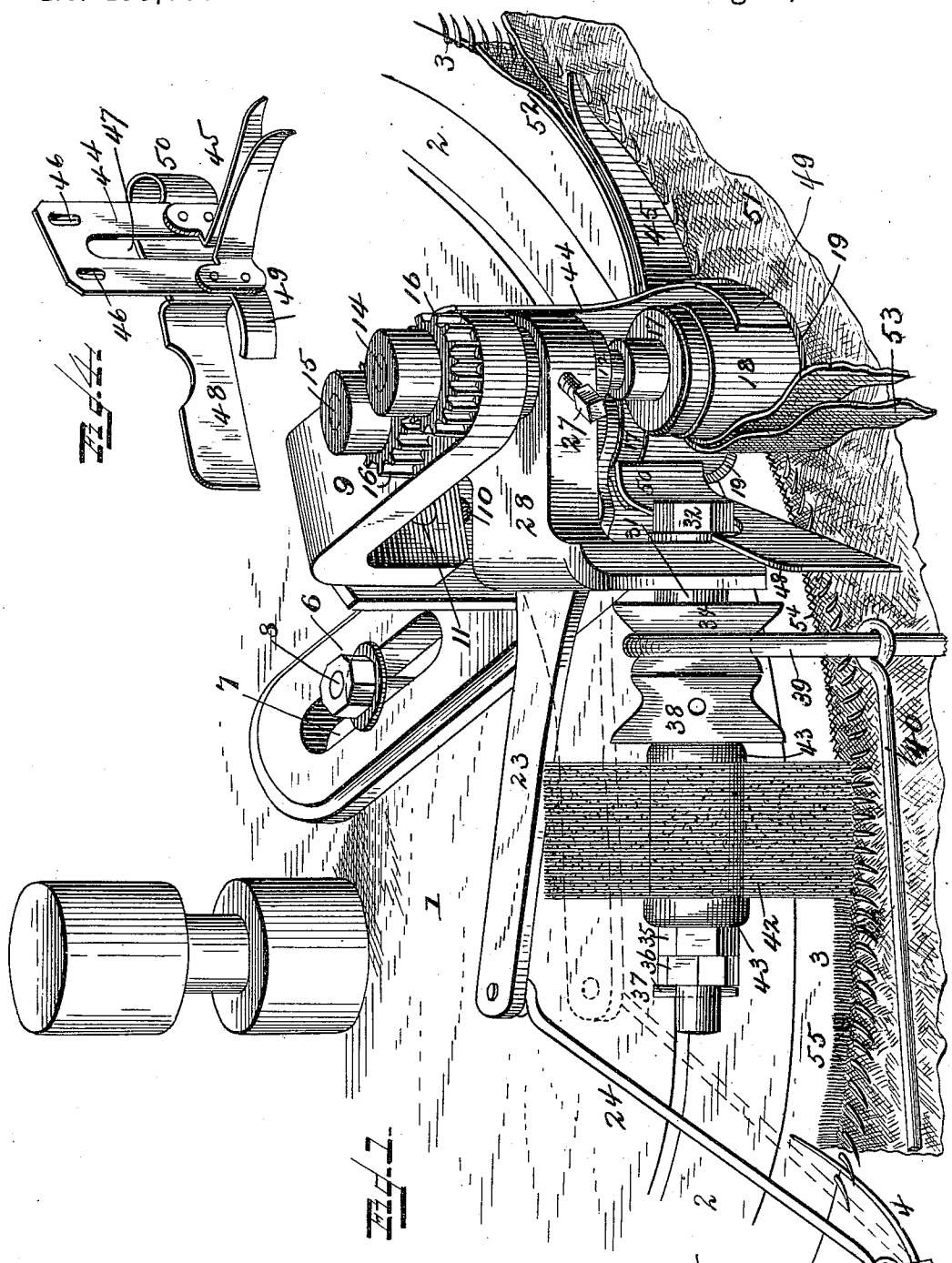
(No Model.) 2 Sheets—Sheet 1.

A. L. TRAVER.

MACHINE FOR SEWING LOOPED FABRICS.

No. 433,880. Patented Aug. 5, 1890.



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Fig. 2.

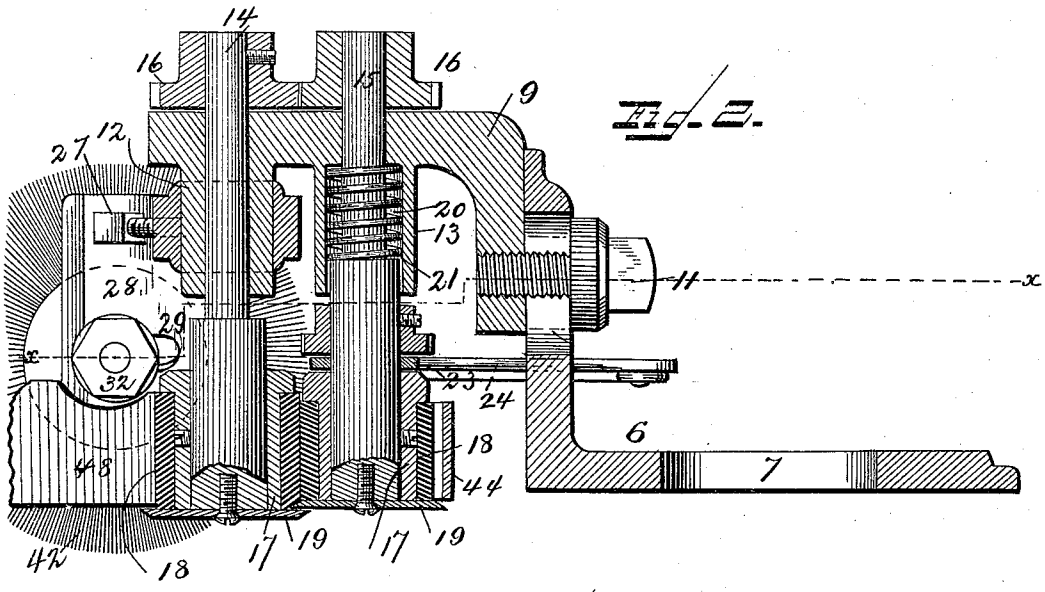
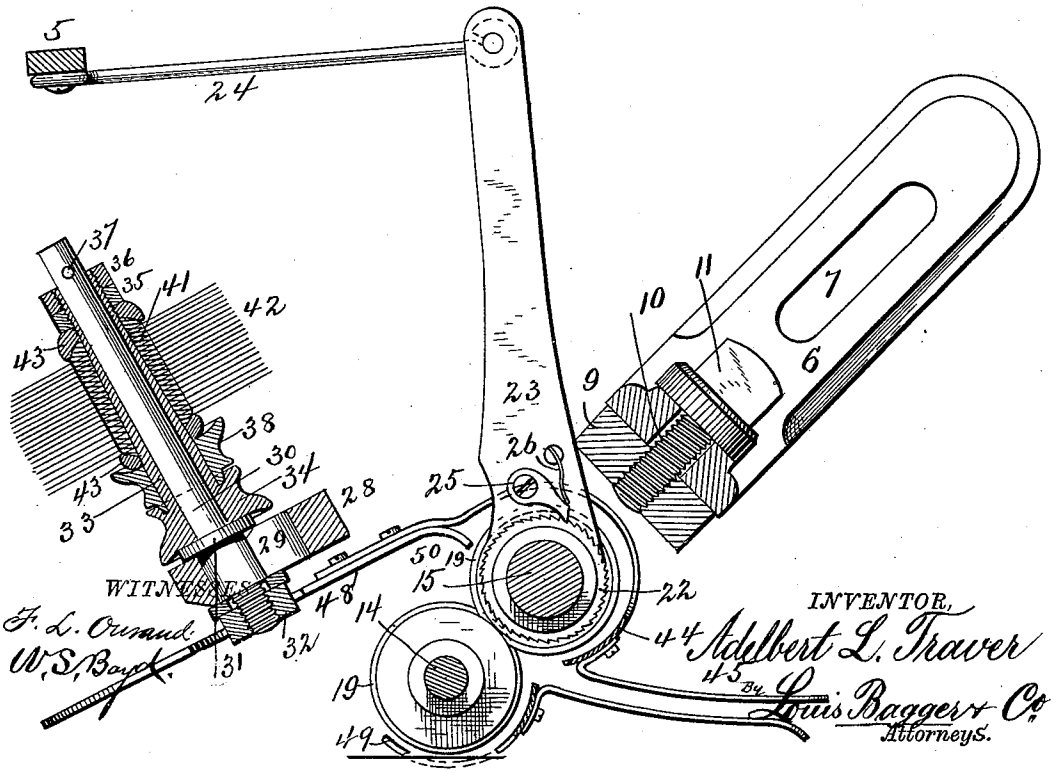


Fig. 3.



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UNITED STATES PATENT OFFICE.

ADELBERT LEE TRAVER, OF PHILMONT, NEW YORK.

MACHINE FOR SEWING LOOPED FABRICS.

SPECIFICATION forming part of Letters Patent No. 433,880, dated August 5, 1890.

Application filed August 27, 1887. Serial No. 247,990. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT LEE TRAVER, of Philmont, in the county of Columbia and State of New York, have invented certain new and useful Improvements in Attachments for Machines for Sewing Looped Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved attachment as applied to a machine, only so much of the machine being shown as is necessary to show the manner of attaching and operating my improvement. Fig. 2 is a vertical sectional view through a portion of it. Fig. 3 is a horizontal sectional view taken on the line *x x* of Fig. 2, and Fig. 4 is a detail view.

My invention relates to machines for sewing looped fabrics, and more especially for sewing the edges of knit goods together; and it has for its object to provide such a device as will cut or trim the edges of the goods as they pass around to the needle of the machine, and will also brush out or remove any short pieces of yarn that may be formed by the trimmer, and brush out the ends of the cut portions of the yarn, so that when the edges are sewed together they will have the appearance of having been knit together, or be what is called "seamless."

My invention therefore consists in the improved construction and combinations of such an attachment, as will be hereinafter more fully described, and pointed out in the claims.

Referring to the accompanying drawings, in which the same numerals of reference indicate corresponding parts in all of the figures, 1 indicates the stationary part of any ordinary machine for sewing looped fabrics, by means of which it is secured to a table or other support and upon which all the other parts are secured.

2 indicates the rim or circular part, which is provided with the fringe of needles 3, upon which the work is placed and by means of which it is carried forward under my attachment and past the needle 4, which is operated by the arm 5.

A bracket 6, or the base-piece of my attachment, is adjustably secured to the stationary part 1 of the sewing-machine by means of the slot 7 and bolt 8, while a bracket-shaped arm 9 is also adjustably secured to the bracket 6 by means of the slot 10 and bolt 11. Two lugs 12 and 13 project from the under side of this second bracket or arm 9, which are bored out to form bearings for two vertical shafts 14 and 15, the shafts projecting up through the bracket far enough to receive two pinions 16. Upon the lower ends of these shafts, which are enlarged, are secured two spools or rollers 17, which are each provided with a band of elastic material 18, as of rubber or cloth, these bands being adapted to clamp the upper edge of the knit goods between them and assist in feeding it forward as they are rotated. Upon the extreme lower end of these shafts are two beveled disks of metal 19, each of a larger diameter than the diameter of the spools with their bands, so that they will overlap each other and thus form a trimmer or cutting device as the beveled sides of the disks are placed away from each other, as shown. To cause these disks to always work close together and prevent the goods from passing between them uncut, even though they should become dulled from use, the bore of one of the lugs is enlarged, as shown at 20, and a coiled spring 21 is placed in it, which presses down upon the shoulder formed by making the lower portion of the shaft enlarged, and thus forces the disk at the bottom of that shaft which has its beveled side up down against the other disk, which has its beveled side down.

Secured to the spring-actuated shaft at a slight distance below the lower end of the lug, to permit of a slight vertical movement of the shaft, is a ratchet 22, by means of which the shafts are operated. Between this ratchet and the top of the spool on the lower end of the shaft is loosely mounted one end of a lever 23, the other end of which is connected with the needle-arm 5 by means of a link 24. As the needle-arm is moved back and forth to sew or loop the edges of the goods together this lever is swung back and forth, which

causes the shafts 14 and 15 to be rotated through the pawl 25 on the inner end of the lever which engages with the ratchet 22, the pawl being kept in engagement with the ratchet by means of a spring 26.

Mounted upon one of the projections or lugs upon the bracket 9, preferably the outer one, and adjustably secured by the set-screw 27, is an arm 28, the outer end of which is bent downward and provided with a slot 29. Adjustably secured in this slot is a spindle 30, having a collar 31 at one end, which bears against one side of the arm 28, a nut 32 bearing against the other side and holding the spindle in place. Loosely mounted upon this spindle is a sleeve or collar 33, which is preferably made slightly tapering, having a pulley 34 at one end, the other end of the sleeve being screw-threaded and provided with jam-nuts 35 and 36. This sleeve is prevented from coming off the spindle by means of a pin 37 through its outer end, or an ordinary nut may be screwed on, which will answer the same purpose.

Loosely mounted upon the end of the sleeve, next the pulley 34, which is rigidly secured to the sleeve, is another pulley 38, onto which the belt 39 is shifted when the machine is stopped. The shifter 40 for this belt is secured to the ordinary device for starting and stopping the looper at one end, so that when the machine is stopped the shifter 40 will throw the belt 39 from the operating-pulley 34 onto the loose pulley 38, and thus stop the brush and prevent its wearing out the edge of the knit goods which happen to be under it when the machine is stopped. Of course as soon as the machine is started the shifter 40 will be thrown in the opposite direction, which will throw the belt off the loose pulley onto the fast pulley, and thus cause the revolution of the brush. This brush consists of a suitable sleeve 41, preferably formed of a piece of leather, secured together at two of its edges and slipped upon the collar 33 and caused to revolve with it. Small wire teeth 42 are secured in this sleeve 41, and are of such a length that when the brush is revolved the ends or points of these wires will engage with the edge of the goods where they have been trimmed by the disks 19, and thus remove any short pieces of thread or yarn which may be formed by the operation of trimming and also brush out or fray the edges of the goods, so that when they are sewed or looped together they will appear as though they had been knit together or seamless. Two small washers 43 are placed upon the sleeve or collar 33, one at each end of the brush, and assist in keeping it in place, the inner sides of the washers being preferably made concave, as shown. This brush is easily adjusted by means of the set-screw 27 and the slot 29, so that it can be made to fit any machine and can also be changed to suit the kind of work which it is desired to have done upon the machine, and also to compensate for the wear of the wires composing the brush.

In placing the goods upon the fringe of needles or pins 3 the least stretching of the edges of the goods will cause them to curl, or they may curl or turn over because of the width of the edge of the goods above the pins, or from any other cause which would prevent their being presented to the disks 19 in such a manner as to be cut by the disks. To prevent this trouble I secure a guide 44 to the rear of the bracket 9, having the rearwardly-projecting arms 45. The plate 44 is adjustably secured by means of the slots 46, and is also provided with a vertical slot 47, which registers with the contact-point of the spools 17, and through which the goods pass to the spools. The wings or arms 45 are secured to the lower end of this plate in any suitable manner, one upon each side of the slot 47, and extend rearwardly parallel with each other, except at their extreme ends, where they are flared sufficiently to permit of the entrance of the goods. They are curved just enough to correspond with the circle of the fringe of needles, so that the edges of the goods will not be drawn out from between them after they have entered, but will be carried around in a vertical position, and if the goods are bent over or curled when they enter between these arms they will be straightened up and caused to pass between the spools and disks in the proper condition for being cut off as near the needles as desired.

To prevent the cut-off portion of the goods from being carried forward by the machine until they are caught by the brush, a guard 48 is secured to the lower end of the plate 44 between the spools and the brush, the portion of the plate being extended around the inner spool, as shown. The lower edge of this guard is placed so low that it will prevent anything that should happen to cling to the goods after having been cut off from being carried around it to the brush, but will be scraped off and dropped into a suitable receptacle for it. To prevent anything from being carried around upon either one of the spools, the outer edge of the plate 44 is curved inward, as shown at 49, and the inner end of the guard is also curved inward, as shown at 50, each of the curved portions bearing against its respective roller, or placed very near to it.

To more clearly indicate the different steps in the operation of my attachment, I have shown a piece of goods 51 secured upon the pins of the sewing-machine, with the portion above the pins passing through the guides, as at 52, and having the same portion cut off and falling down, as seen at 53. After this portion has been cut off the edges of the goods will be comparatively rough, as shown at 54; but after they have passed under and been operated upon by the brush they will be frayed out and commingled, as shown at 55.

With a machine provided with my attach-

ment the necessity of trimming the goods with shears and then removing the cut portions of the yarn by hand is entirely avoided, as this work is done far more expeditiously and in better condition by the attachment, which works automatically, and thus enables the operator to do more work than where it is done by hand.

Having thus described my invention, I claim—

1. The combination, with a machine for sewing looped fabrics having the ordinary sewing-needle and the fringe of needles upon which the goods are secured, of a frame secured to the machine, trimmers secured to the frame, means for operating the trimmers, a spindle secured horizontally to the frame, and a revolving brush journaled upon the spindle, the teeth of which stand in a plane at right angles to the fringe of needles and pass entirely through or across the edges of the goods upon the fringe of needles.

2. In an attachment for sewing-machines, the combination of a frame having a trimmer or cutting device secured thereto, an arm adjustably secured to said frame, the outer end of which is bent downward and slotted, a spindle having a collar near one end secured in said slot, a sleeve having a pulley at one end mounted upon said spindle, and a brush upon said sleeve.

3. In an attachment for sewing-machines, the combination of a frame, an arm adjustably secured thereto, a spindle secured to said arm, a sleeve upon said spindle, one end of which is slightly tapering, a brush upon the tapering portion, washers and nuts for securing the brush upon the sleeve, and pulleys for rotating said sleeve and brush.

4. In an attachment for sewing-machines, the combination of a frame having a trimmer or cutting device secured thereto, and a guide secured to said frame, consisting of a plate and two vertical wings.

5. In an attachment for sewing-machines, the combination of a frame having a trimmer or cutting device secured thereto, and a guide consisting of a plate and two wings, said plate having two slots at its upper end and a vertical slot in its lower portion, said wings being secured to the plate, one on each side of said lower slot, and having their free ends slightly flared from each other, said wings being also slightly curved.

6. In an attachment for sewing-machines, the combination of a frame, two vertical shafts journaled therein, the lower ends of which are provided with spools and two cutting-disks, a guide secured to said frame, consisting of a plate and two wings, the outer portion or edge of said plate being curved and the opposite edge extended around the inner spool, and a guard secured to the extended portion of said plate having its inner end curved inward.

7. The combination, with a trimming attachment for sewing-machines, of a brush secured thereto between it and the needle of the machine, and a guard between the trimmer and brush.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ADELBERT LEE TRAVER.

Witnesses:
LOUIS BAGGER,
CHAS. N. ZIMMERMAN.