

(No Model.)

3 Sheets—Sheet 1.

S. HENSHALL, Dec'd.

A. K. HENSHALL, Executrix.

MACHINE FOR SEWING LOOPED FABRICS.

No. 580,313.

FIG 1

Patented Apr. 6, 1897.

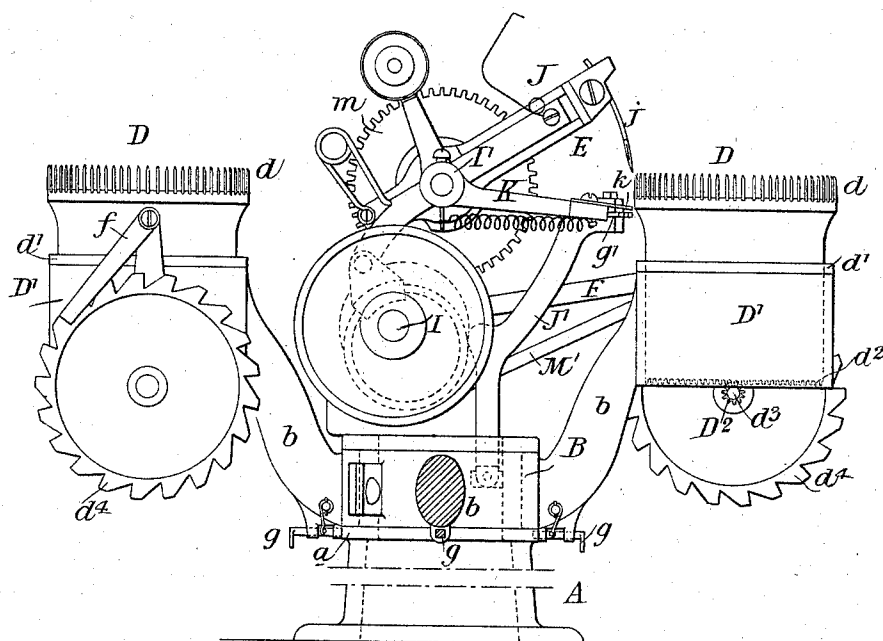
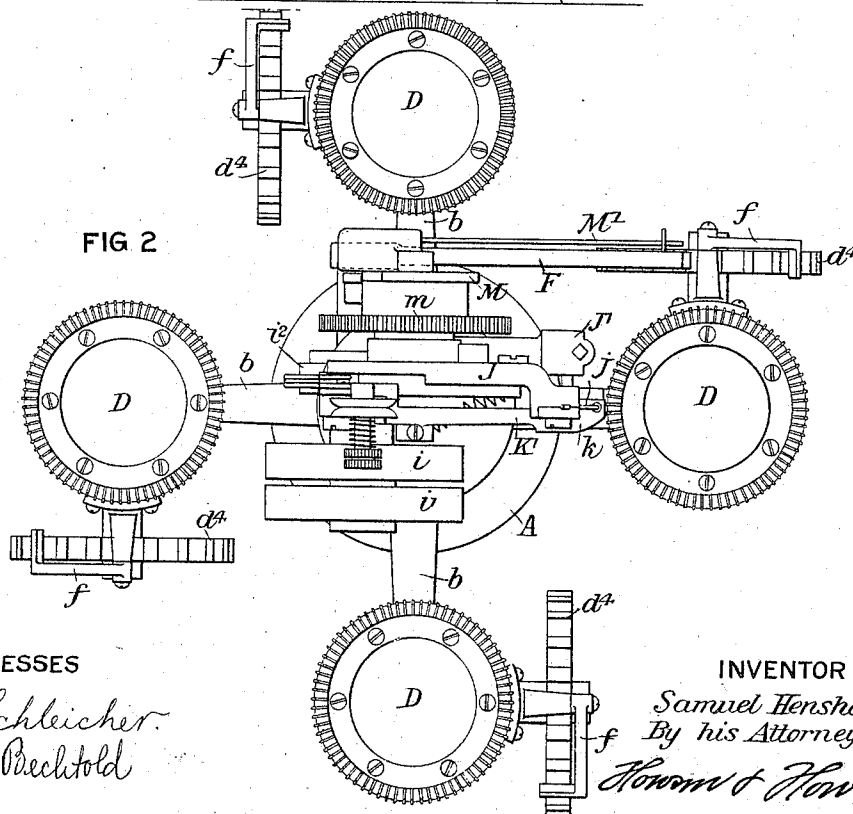


FIG 2



WITNESSES

R. Schleicher.
Frank Bechtold

INVENTOR

Samuel Henshall
By his Attorneys

Howman & Howman

(No Model.)

3 Sheets—Sheet 2.

S. HENSHALL, Dec'd.

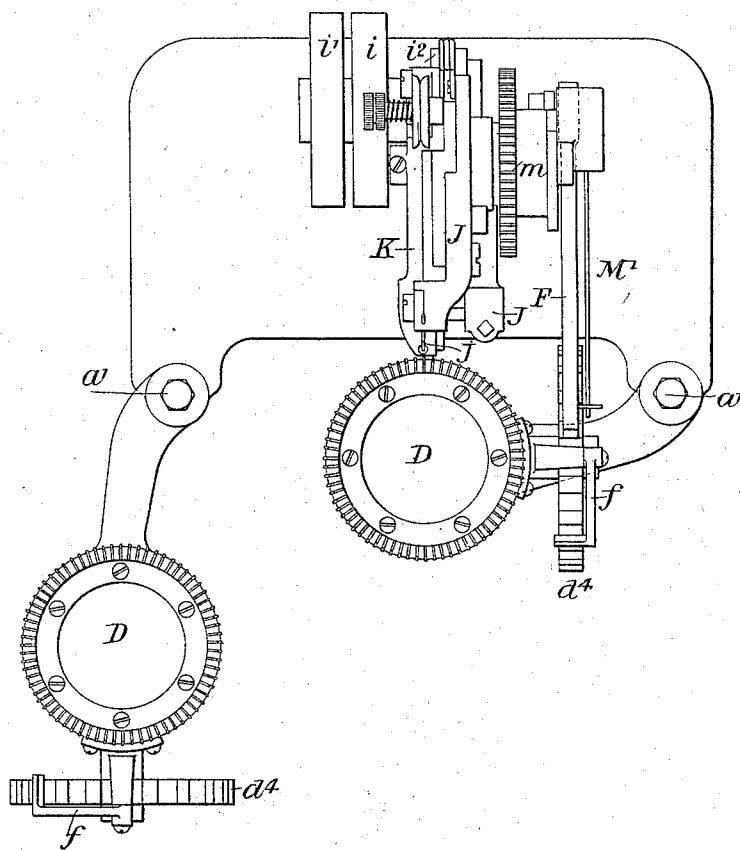
A. K. HENSHALL, Executor.

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FIG 3



WITNESSES

R. Schlicher.
Frank Bechtold.

INVENTOR

Samuel Henshall
By his Attorneys
Howson & Howson

(No Model.)

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S. HENSHALL, Dec'd.

A. K. HENSHALL, Executrix.

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FIG 4

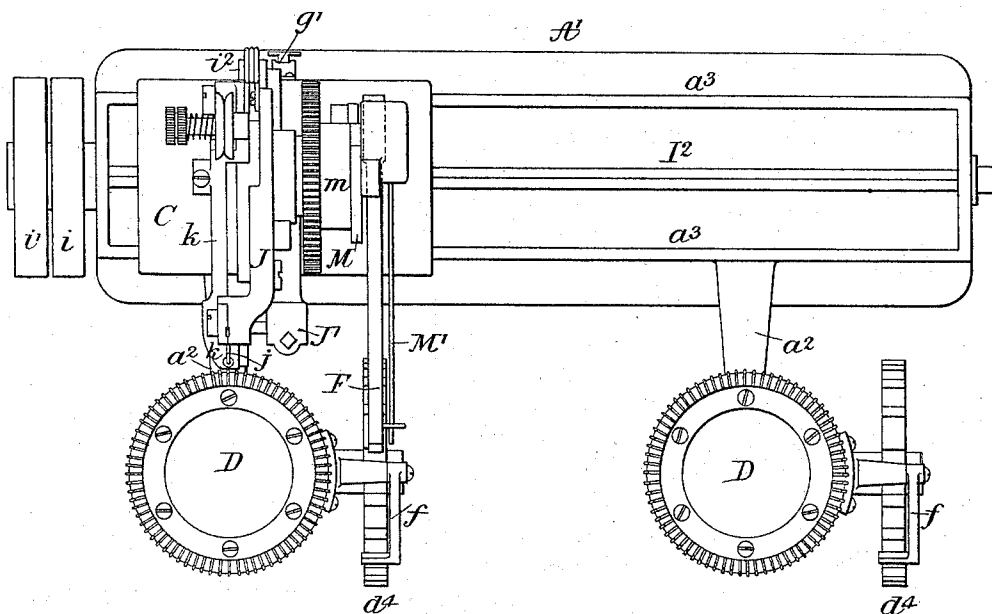
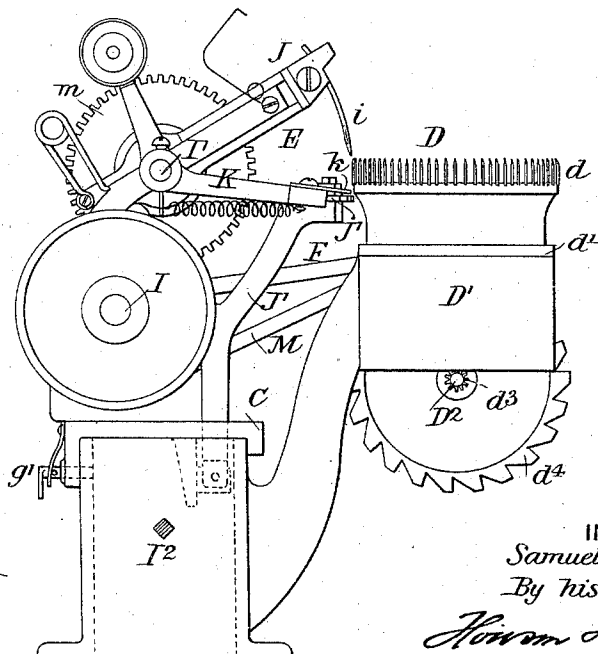


FIG 5



WITNESSES

P. Schlichter.
Frank Beckhold

INVENTOR

Samuel Henshall
By his Attorneys

Howe & Howe

UNITED STATES PATENT OFFICE.

SAMUEL HENSHALL, OF PHILADELPHIA, PENNSYLVANIA; ANNA K. HENSHALL EXECUTRIX OF SAID SAMUEL HENSHALL, DECEASED.

MACHINE FOR SEWING LOOPED FABRICS.

SPECIFICATION forming part of Letters Patent No. 580,313, dated April 6, 1897.

Application filed March 27, 1894. Serial No. 505,311. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HENSHALL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Looping-Machines for Knit Fabrics, of which the following is a specification.

My invention relates to that class of looping-machines which are employed for uniting, by means of a line of stitches, two or more knitted tubular webs, each of which has a course of loops applied to the points of the machine.

The object of my present invention is to provide a looping-machine with two or more circular heads which can be thrown into and out of position in front of the stitch-forming mechanism, the points of each head being adapted for the reception of tubular webs, so that while the said stitch-forming mechanism is uniting the knitted webs on one head the operator or operators can place other knitted webs upon the head or heads not in position, and as soon as the stitch-forming mechanism has united the knitted webs on one head that head can be thrown out of position and another head thrown into position without loss of time.

In the accompanying drawings, Figure 1 is a side view with one of the arms in section, illustrating a looper having four heads. Fig. 2 is a plan view of the device shown in Fig. 1. Fig. 3 is a plan view showing the looper having two heads. Fig. 4 is a plan view showing a looper having two heads in which the stitch-forming mechanism is movable, the heads being fixed; and Fig. 5 is an end view of the device shown in Fig. 4.

Referring in the first instance to Figs. 1 and 2, A is the base of the machine, carrying at its upper end the stitch-forming mechanism E, which can be of the ordinary chain-stitch construction, using a single thread.

Mounted on the base is a sleeve B, resting in the present instance on a collar *a* of the base, and this sleeve has a series of projecting arms *b*, four in the present instance, carrying at their outer ends the heads D, which are simply cylinders mounted in bearings D', and around the upper ends of these heads are pins or points *d*, to which are applied the

knitted webs to be united. Each head has a collar *d'*, which rests upon the bearing D', as clearly shown, and on the lower portion of the head is an annular rack *d²*, meshing with a spur-pinion *d³* on a shaft D², on which shaft is a ratchet-wheel *d⁴*.

A pivoted detent *f* is mounted on the bearing D', so as to prevent back movement of the ratchet-wheel, the latter being moved into gear with the feed-pawl when the head is brought into operative relation to the sewing mechanism and out of gear when the head is moved away, each head carrying its own ratchet-wheel and a single feed-pawl being mounted on the fixed portion of the machine and driven by the mechanism which operates the needle.

The several heads as they are moved into position are locked by spring-bolts *g*, so that all that is necessary in order to shift the position of the heads is to draw one bolt and turn the carrier a quarter-revolution, when the next bolt enters the opening, so as to lock the head in position in front of the sewing mechanism.

I is a driving-shaft mounted in suitable bearings in the upper portion of the base A, and on this driving-shaft are fast and loose pulleys *i i'* and a cam *i²* for actuating the needle-bar J, the latter having the needle *j*. On the shaft I is a double cam for actuating the looper-arm J', which has a looper *j'*, the throat-plate *k* being carried by a fixed arm K, which also carries the tension device.

On the shaft I is an eccentric which moves the feed-pawl F, and on said shaft I is also a spur-pinion meshing with a spur-wheel *m* on an upper shaft I', which carries a cam M for actuating the feed-pawl-controlling arm M', so that as the machine is at present geared the pawl F will feed the ratchet-wheel every other revolution of the main shaft. I have simply described this mechanism in brief, as I do not claim it in this application.

The device shown in Fig. 1 is provided with four heads, but it will be understood that the device may be provided with two or three heads, or more than four, without departing from my invention.

In Figs. 1 and 2 the heads are mounted on a revolving frame, so that one after another

is moved into position in front of the sewing mechanism.

In Fig. 3 I have illustrated a looper provided with two heads, each head being pivoted on an independent pivot a' , one on one side of the sewing mechanism and the other on the opposite side, so that when one head is swung out of position the other head can be thrown into position.

In Figs. 4 and 5 I have shown a device in which the looper-heads D are mounted on arms a^2 , projecting from the base or bed A' , on which are ways a^3 .

The sewing mechanism and feeding-pawl are mounted on a carriage C, which can be traversed on the ways of the bed so as to be brought into line with either one of the heads D. On the back of the carriage is a spring-bolt g' , which is adapted to enter holes in the bed, so that when the carriage is brought into proper position the bolt will be shot into the opening.

The driving-shaft I^2 is adapted to bearings in the bed A' and is square in the present instance, so that the several wheels can slide on the shaft, but are compelled to turn therewith.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A machine for uniting tubular-knitted webs, having as elements stitch-forming mechanism and two or more circular web-holders each provided with its own carrier, one of said elements being movable in respect to the other, whereby the circular web-holders may alternately be brought into operative relation with the stitch-forming mechanism, in combination with mechanism for intermittently moving either of said circular web-holders in its carrier when said web-holder is in operative relation with the stitch-forming mechanism, substantially as specified.

2. A machine for uniting tubular-knitted webs having as elements stitch-forming mechanism, and a series of circular web-holders, each with its own carrier, one of said elements being movable in respect to the other, whereby the circular web-holders may alternately be brought into operative relation with the stitch-forming mechanism, in combination with mechanism for rotating said circular web-holders, said mechanism comprising a single vibrated pawl, and gearing mounted upon each of the web-holder carriers and having as an element a ratchet-wheel which

is brought into operative relation with said pawl when its web-holder is brought into operative relation with the stitch-forming mechanism, substantially as specified.

3. The combination in a machine for uniting tubular-knitted webs, of stitch-forming mechanism mounted upon a fixed support, and a series of circular web-holders each with its own carrier, said circular web-holder carriers being mounted so as to swing in respect to the stitch-forming mechanism, whereby the circular web-holders may alternately be brought into operative relation with said stitch-forming mechanism, in combination with mechanism whereby either of the circular web-holders may be rotated in its carrier when it is in operative relation with the stitch-forming mechanism, substantially as specified.

4. The combination in a machine for uniting tubular-knitted webs, of stitch-forming mechanism mounted on a stationary support, a series of circular web-holders each with its own carrier, a rotatable sleeve having radiating arms upon which said circular web-holder carriers are mounted, so that the web-holders may successively be brought into operative relation with the stitch-forming mechanism, and means for intermittently rotating each of said circular web-holders in its carrier when it is thus brought into operative relation with the stitch-forming mechanism, substantially as specified.

5. A machine for uniting tubular-knitted webs, having as elements stitch-forming mechanism, and a series of circular web-holders each provided with its own carrier, one of said elements being movable in respect to the other so that the circular web-holders may alternately be brought into operative relation with the stitch-forming mechanism, means for locking said elements together when either web-holder is in operative position, and mechanism for rotating either of the circular web-holders in its carrier when said web-holder is in operative relation with the stitch-forming mechanism, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL HENSHALL.

Witnesses:

JOSEPH H. KLEIN,
FRANK BECHTOLD.