

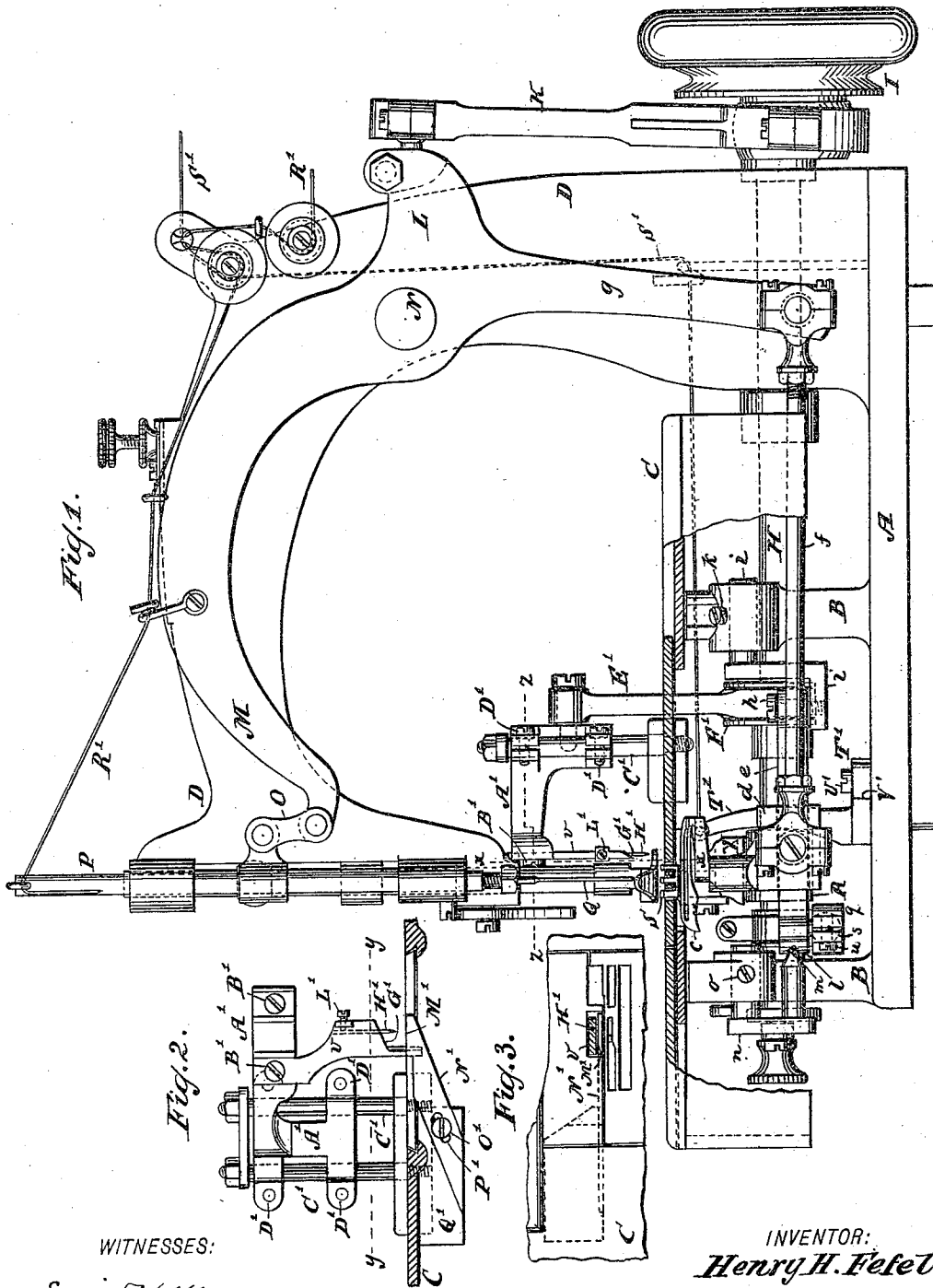
(No Model.)

2 Sheets—Sheet 1.

H. H. FEFEL.
SEWING MACHINE TRIMMER.

No. 513,008.

Patented Jan. 16, 1894.



WITNESSES:

Edward Hoff,
William Miller

INVENTOR:
Henry H. Fefel.
BY
Van Santvoord & *Hay*
ATTORNEYS.

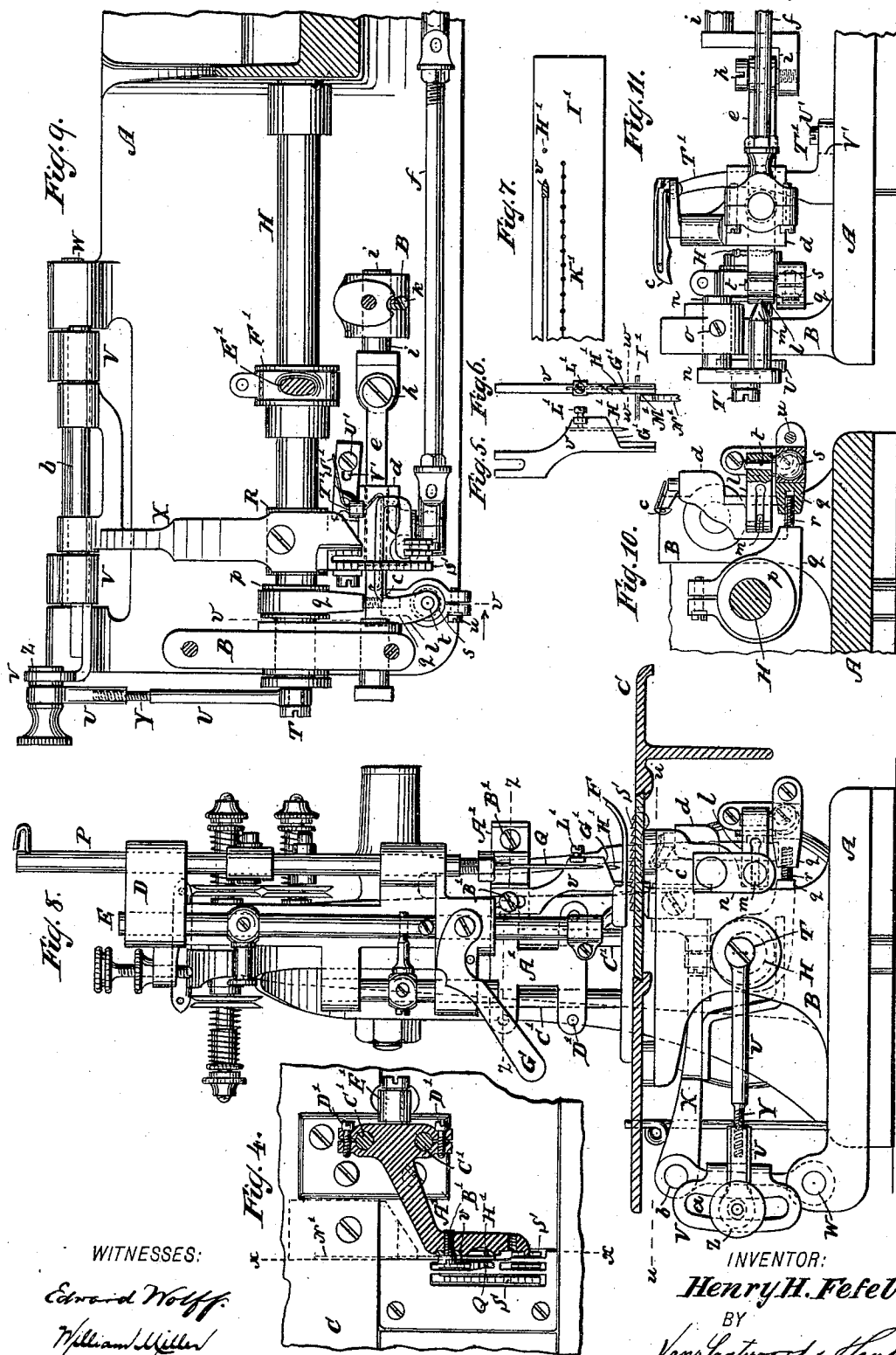
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UNITED STATES PATENT OFFICE.

HENRY H. FEFEL, OF NEW YORK, N. Y.

SEWING-MACHINE TRIMMER.

SPECIFICATION forming part of Letters Patent No. 513,008, dated January 16, 1894.

Application filed January 14, 1893. Serial No. 458,328. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. FEFEL, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to an improvement in sewing machines and the invention consists in certain novel details of construction set forth in the following specification and claims and illustrated in the annexed drawings in which—

Figure 1, is a side elevation of the machine. Fig. 2, is a section along $x x$ Figs. 1 and 4. Fig. 3, is a section along $y y$ Fig. 2. Fig. 4, is a section along $z z$ Fig. 1. Fig. 5, is a detail face view of a trimmer. Fig. 6, is an edge view of Fig. 5. Fig. 7, is a section along $w w$ Fig. 6. Fig. 8, is a front elevation of the machine. Fig. 9, is a section along $u u$ Fig. 8. Fig. 10, is a section along $v v$ Fig. 9. Fig. 11, is a detail side elevation of the looper and adjacent parts.

In the drawings, the letter A indicates a base or support from which rise standards B supporting a cloth plate C. The goose neck D is provided with a presser bar E and presser foot F actuated by lever G as well known. The driving shaft H has a driving pulley I. A suitable eccentric on said shaft actuates link K giving motion to lever L M fulcrumed at N and linked or connected at O to the needle bar P for actuating the latter with its needle Q. A cam R on driving shaft H gives the up and down motion to the feed dog S. The driving shaft has fixed to its forward end a crank pin T (Figs. 8 and 9) connected by link U to a horizontally oscillating lever or frame V fulcrumed at W and having the feed bar X extending to the feed dog S for giving the latter a forward and backward movement. The link U is made in two parts or sections connected by screw thread Y so as to be properly adjustable in length. Said link U is adjustably connected to the lever or frame V by a pin and slot connection Z^a so that said link U can be set to vary the degree of feed. The feed bar X is connected to the lever V by a pivot or joint b . The looper c acts in connection with needle Q and feed S to form a line of stitches. Said looper c has a

forward and backward motion being mounted on a slide d reciprocating on a support or guide e . The slide d is actuated by link f connected to said slide and to the arm g (Fig. 1) extending from lever L M. The guide or bar e is supported at or near one end by a pivot or joint h so as to be capable of a certain swing for giving the looper its lateral movements in addition to its forward and backward play. The pivot or joint h is supported on a bracket i adjustably held by set screw k in a post or standard B in which said bracket i can be adjusted or set to the proper position. The forward or free end of guide e is provided with an arm l into a slot in which extends a point or guide pin m supported by bracket n . Said last named bracket n can also be adjusted in a post B by means of set screw o . The lateral play or swing of guide bar e is obtained from an eccentric p on driving shaft H. From said eccentric p extends a link or connection q made in two parts or sections connected by screw thread r so as to be adjustable in length. Said link q connects by a ball joint s with the guide e said ball s having a stem t engaging the guide e . The link is connected at one end to the eccentric by a strap or band extending in the usual way from the end of the link about the eccentric, the other end of the link being jointed or pivoted to the part of the mechanism to be actuated by such eccentric. The socket part of link q in which is seated the ball s is split or partly so and held together by a screw u on removing or loosening which the ball s can be removed. The socket part of link q is then free to be turned one way or another along screw thread r until properly adjusted. The lateral play or swings of guide bar e derived from eccentric p are imparted to looper c so that the latter has a lateral movement or swing in addition to its forward and backward motion.

In the formation of a stitch the looper makes the well known four motions. The needle having pierced down into the cloth forms a loop of the needle thread and the looper then moves forward into this loop of the needle thread, the side of the looper along which lies the looper thread facing the needle. The needle then rises leaving the loop of needle thread held by the looper. The looper then moves laterally in the direction opposed to

the feed of the cloth so that the needle on its redescent will enter the loop of the looper thread. The looper then recedes casting off the loop of needle thread, the needle on completing its descent setting the stitch then
 5 formed or in other words, tightening or drawing in the slack of the thread forming such stitch. The looper then moves laterally in the direction of the feed of the cloth so that
 10 on its next forward stroke it takes the next loop of the needle thread.

A trimmer *v* is secured to a bar or carrier A' by means of a screw or fastening B'. The carrier A' has a series of fastenings or attachments B' so that the trimmer *v* can be set at
 15 various points as required. The trimmer can thus be set to trim before or after sewing as required. The carrier A' plays on guides or posts C' on the cloth plate C and said carrier
 20 A' is provided with split bearings which can be tightened by screws D' to take up the wear. A pitman or link E' carries motion direct from driving shaft H by means of eccentric F' to the carrier A' and trimmer *v*.
 25 The link is connected at one end to the eccentric by a strap or band extending in the usual way from the end of the link about the eccentric, the other end of the link being jointed or pivoted to the part of the mechanism to be actuated by such eccentric.
 30

The action of the cutting edge G' of trimmer *v*, I have found tends at times to gradually move or derange the cloth so that the neatness or accuracy of the work is interfered with. To avoid such annoyance I provide the trimmer with a cloth-piercer composed of a pin H' having a sharp free extremity or point to pierce or penetrate the
 35 cloth before the cutting edge G' begins to act, whereby the cloth is held against derangement during trimming.
 40

In Fig. 7 is shown a piece of cloth I' partly trimmed and engaged by the cloth-piercing pin H' and having a row of stitches at K'.
 45 The cloth-piercing pin H' is shown detachably secured to trimmer *v* by a screw or fastening L'.

The cutting edge G' of trimmer *v* with its cloth-piercing pin H' is located above the
 50 cloth plate C and said edge G' acts in connection with the edge M' (Fig. 2) of the counter blade N' to trim or shear the mate-

rial or cloth as it is being fed and sewed. The counter blade N' is located below the plate C and is adjustably held in place by
 55 means of the screw and slot connection O' P' securing the counter blade N' to a depending flange or shoulder Q' on cloth plate C.

The needle thread R' is fed from any suitable spool or supply through tension and by
 60 guides as usual to the eye of the needle near its point. The looper thread S' is similarly fed and guided as seen and passes under cloth plate C through an eye or guide T' secured to base A and thence through an eye in the
 65 looper near its point or free end.

The cloth plate C is slotted or perforated or provided with the customary throat plate to allow play for the needle, the feeder and the trimmer.
 70

By adjustably securing the guide T' as by means of a screw and slot connection U' V' said guide T' can be set toward or from the looper point as required.

I do not herein claim the looper mechanism described and shown, as it constitutes the subject-matter of a separate application for patent filed by me June 22, 1893, Serial No. 478,485.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a stitch-forming mechanism, of a trimmer, and a cloth piercer mounted thereon in juxtaposition to its cutting edge for piercing the cloth when the trimmer descends, and thus holding the cloth against displacement while being trimmed, substantially as described.
 85

2. The combination with a cloth plate and a stitch forming mechanism substantially as described, of a trimmer provided with a pricker or point located above the plate and made to operate through a slot or passage in said plate for piercing into the goods to hold the latter during the action of the trimmer, and a counter blade for said trimmer located below the plate, substantially as described.
 90 95

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY H. FEFEL.

Witnesses:

WM. C. HAUFF,
 E. F. KASTENHUBER.