

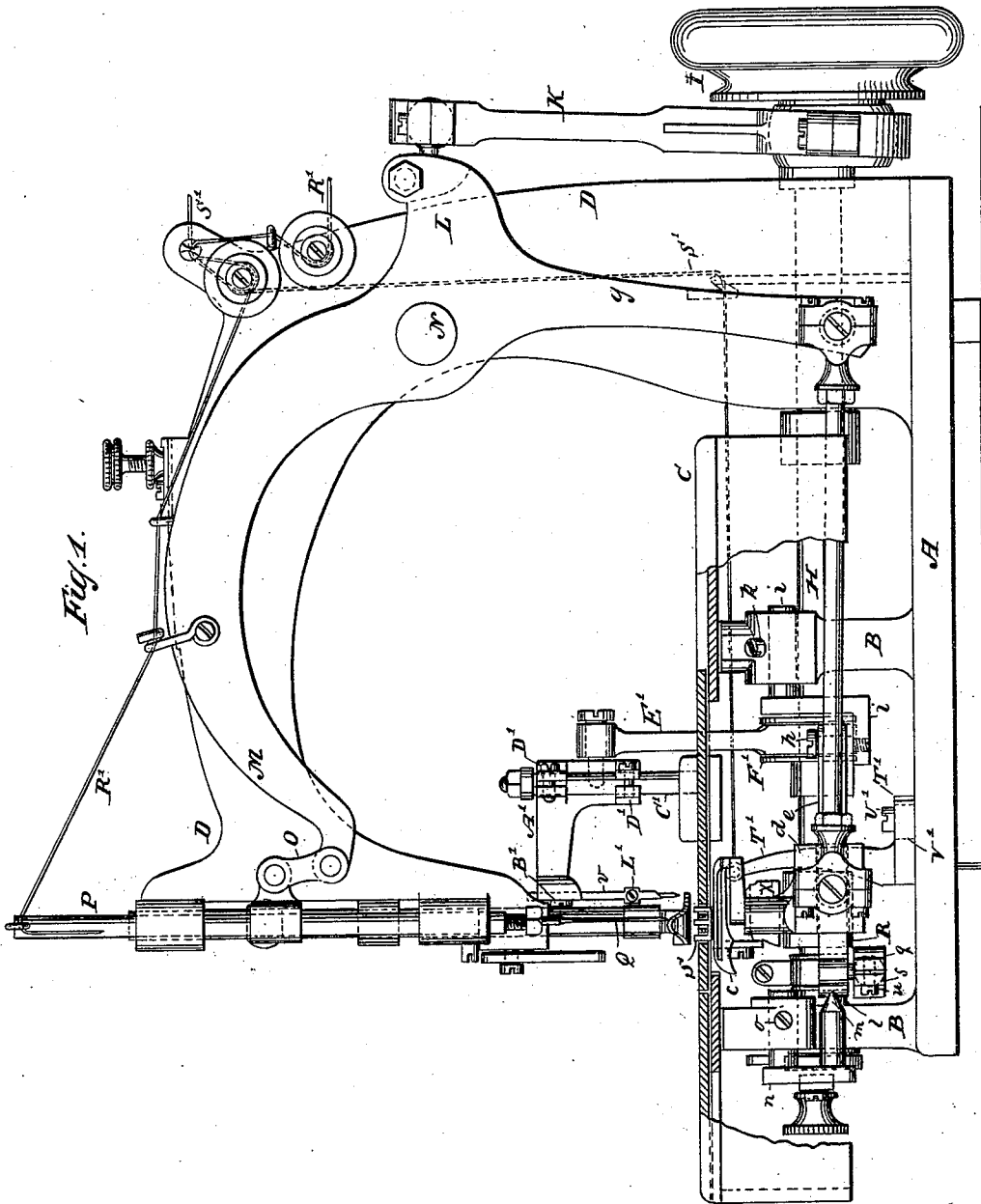
(No Model.)

2 Sheets—Sheet 1.

H. H. FEFEL.
SEWING MACHINE.

No. 513,009.

Patented Jan. 16, 1894.



WITNESSES:

E. Wolff
Chas. E. Frensen

INVENTOR:
Henry H. Fefel.
BY
Hauff & Hauff
ATTORNEYS.

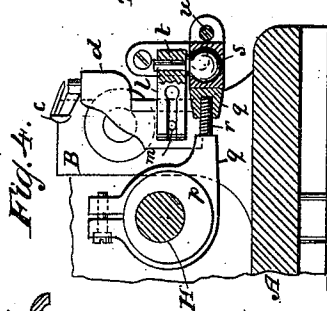
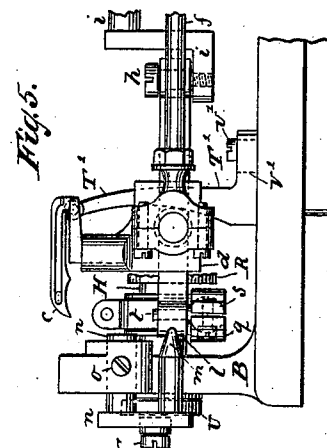
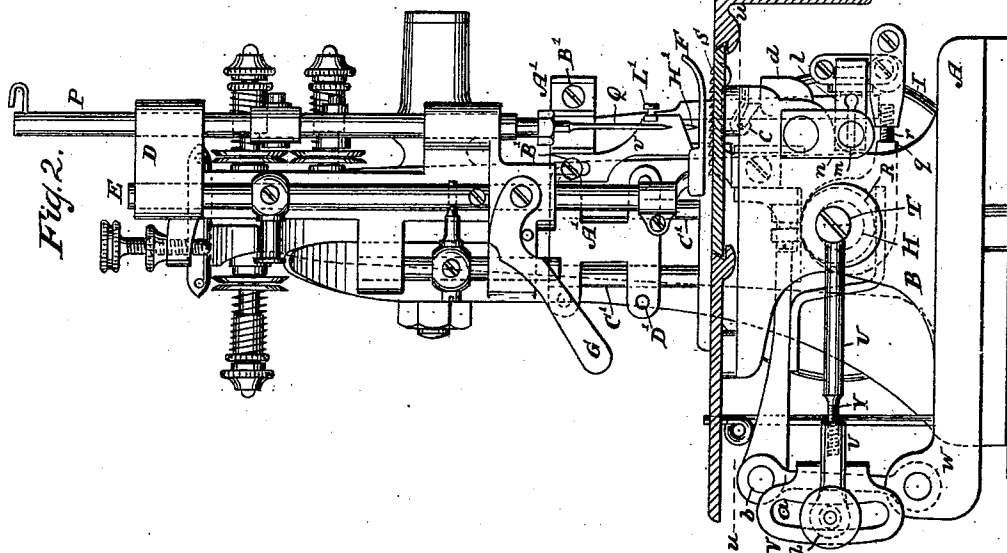
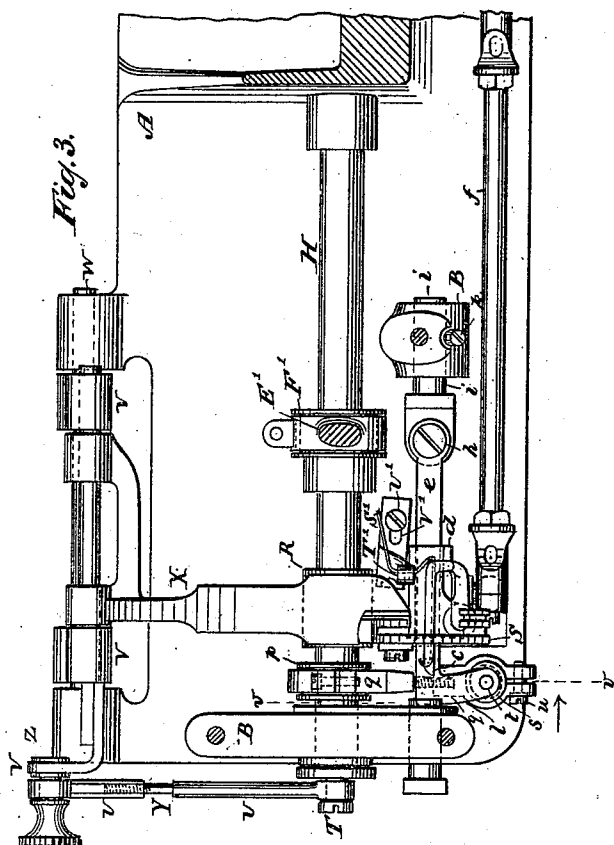
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H. H. FEFEL.
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UNITED STATES PATENT OFFICE.

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

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 513,009, dated January 16, 1894.

Application filed June 22, 1893. Serial No. 478,485. (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 front elevation of the machine. Fig. 3 is a section along *u u* Fig. 2. Fig. 4 is a section along *v v* Fig. 3. Fig. 5 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 cam 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 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 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. The needle thread R' is fed from any suitable spool or supply through tension and by 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 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 and the feeder. 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. The machine can also be provided with a trimmer *v* secured to carrier A' by fastening B', the carrier A' having split bearings engaging guides C' and provided with tightening screws D' and being actuated by link E' and cam F'. The trimmer is shown provided with a pin H' secured by screw L'.

The action of the trimmer is set forth in detail in my application, Serial No. 458,328, filed in the United States Patent Office, January 14, 1893.

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

1. The combination with a needle and its driving arm or lever of a feed dog, a driving shaft, a looper and a guide or support for
10 said looper, said guide being supported at one end by a pivot or joint and being provided near its other end with an adjustable connection extending to an eccentric on the driving shaft, a lever arm *g* for imparting a
15 sliding movement to the looper and a link *f* made to connect said lever arm and looper substantially as described.

2. The combination with a needle and its driving arm or lever, of a feed dog, a driving

shaft, a looper and a guide or support for 20 said looper, said guide being supported at one end by an adjustable pivot or joint and being provided near its other or free end with an adjustable connection extending to an eccentric on the driving shaft, a lever arm 25 *g* for imparting a sliding movement to the looper and a link *f* made to connect said lever arm and looper, and an adjustable support or pin *m* for said free end of the guide substantially as described. 30

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.