

(No Model.)

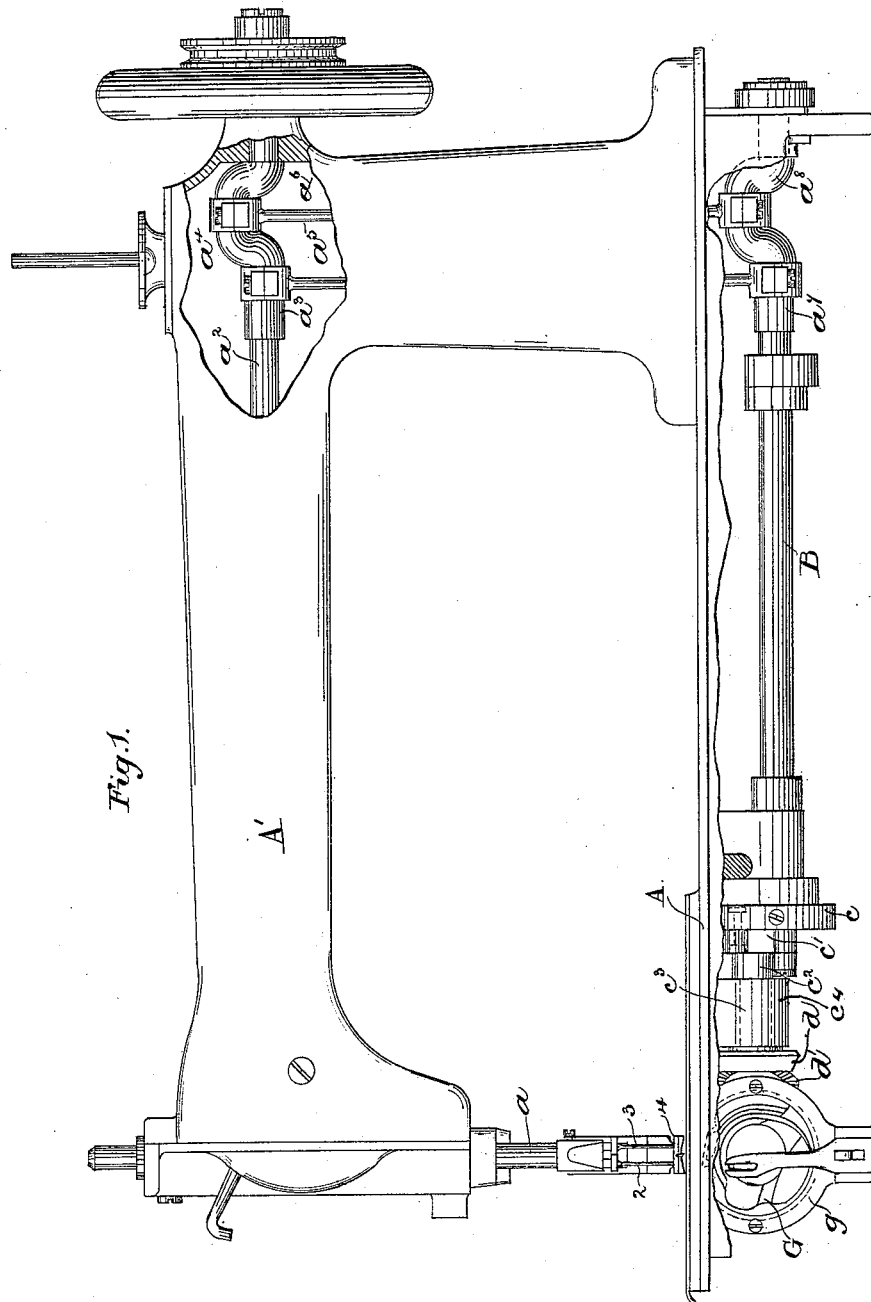
2 Sheets—Sheet 1.

W. A. NEELY.

LOOP TAKING APPARATUS FOR SEWING MACHINES.

No. 419,541.

Patented Jan. 14, 1890.



Witnesses:

Frederick S. Greenleaf
Frederick L. Emery.

Inventor:

William A. Neely.
by Leroy Frigou attys.

(No Model.)

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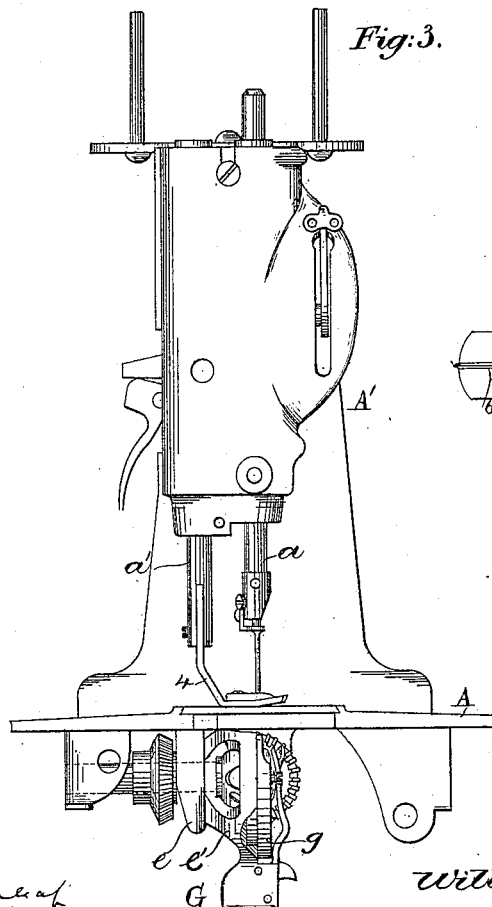
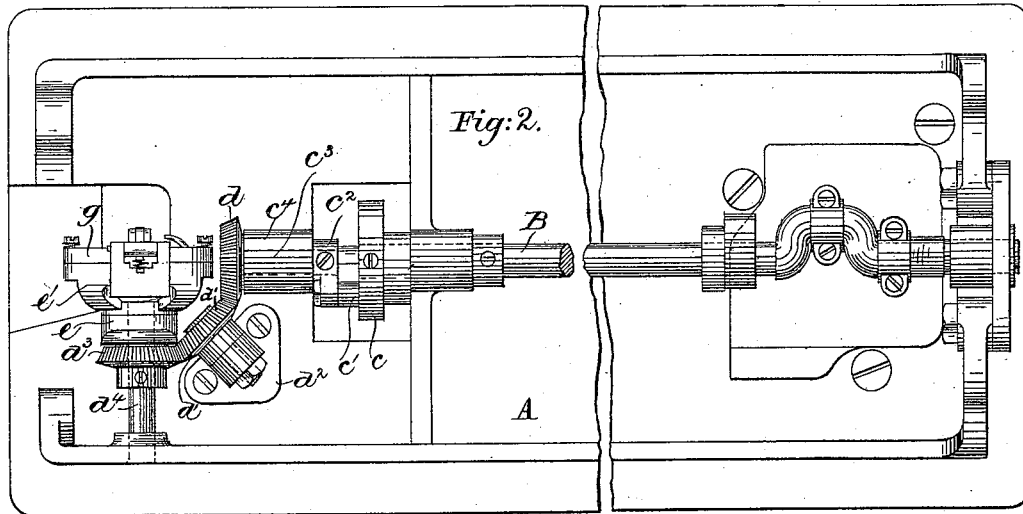


Fig. 5.

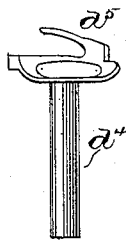
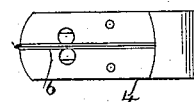


Fig. 4.



Witnesses.

Fred. S. Greene of
Franklin L. Emery.

Inventor.

William A. Neely.
by Lewis & Gregory
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. NEELY, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE WHEELER
& WILSON MANUFACTURING COMPANY, OF BRIDGEPORT, CONNECTICUT.

LOOP-TAKING APPARATUS FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 419,541, dated January 14, 1890.

Application filed November 1, 1888. Serial No. 289,765. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. NEELY, of
Lynn, county of Essex, State of Massachu-
setts, have invented an Improvement in Sew-
ing-Machines, of which the following descrip-
tion, in connection with the accompanying
drawings, is a specification, like letters on the
drawings representing like parts.

This invention has for its object the pro-
duction of a sewing-machine containing a
loop-taker which rotates in a vertical plane
at right angles or transverse to the line of
sewing, whereby the loop-taker of the said
machine is adapted to enter loops of thread
formed through the material in different hori-
zontal planes transverse to the bed-plate.

The machine herein to be described em-
bodying my invention is represented as hav-
ing two needles, the loop-taker entering the
loops of thread thrown out by both of the
needles at the under side of the material.

In my improved machine the needle-bar
derives its movement of reciprocation from
a rotating shaft in the overhanging arm of
the machine, the said shaft having a crank
and being connected by a link or links with
a shaft parallel with it, but located below the
bed-plate, the said shaft, by a link and crank-
pins, rotating a short shaft mounted in bear-
ings eccentric to the shaft which is connected
with the needle-bar-operating shaft, the said
short shaft having a beveled gear, which,
through an intermediate beveled gear, en-
gages a beveled gear on and rotates a driver-
shaft at right angles to the said short shaft,
the said driver-shaft having a driver which
engages and moves a loop-taker, which takes
the loop of needle-thread and passes it about
a bobbin containing an under thread.

My invention in sewing-machines consists,
essentially, of a needle-bar, a needle carried
thereby, a rotating shaft to actuate the needle-
bar, an under shaft, a link connecting it
with the needle-bar-actuating shaft, a short
shaft, and means between the short shaft and
the said under shaft to actuate the short
shaft at a variable speed, combined with a
driver-shaft at right angles to the said short
shaft, gearing between the said driver-shaft
and short shaft to actuate the driver-shaft,

and a loop-taker rotating in a vertical plane
at right angles or transverse to the direction
of the seam, substantially as will be de-
scribed; also, in a sewing-machine, a needle-
bar, two eye-pointed thread-carrying needles,
means to actuate the needle-bar, combined
with a loop-taker guide, a loop-taker rotating
therein in a vertical plane at right angles or
transverse to the line of the seam, and with
means to rotate the said loop-taker at a vari-
able speed, substantially as will be de-
scribed.

Figure 1 is a side elevation, partially broken
out, of a sewing-machine embodying my in-
vention. Fig. 2 is an under side view of the
machine shown in Fig. 1. Fig. 3 is a front
end view of the machine shown in Fig. 1, the
feed-bar being omitted from all the draw-
ings. Fig. 4 is an under side view of the
presser-foot, and Fig. 5 shows the driver-shaft
and driver alone.

The bed-plate A, the overhanging arm A',
having at its front end bearings for the needle-
bar *a* and for the presser-foot bar *a'*, the main
rotating shaft *a*² for operating the needle-
bar, the said shaft having two cranks, as *a*³
*a*⁴, the two links *a*⁵ *a*⁶, connecting the said
cranks with the cranks *a*⁷ *a*⁸ on the under
shaft B, are all common to what is known as
the "Wheeler & Wilson No. 12 machine," the
under shaft B being rotated from the upper
shaft *a*². The under shaft B at its end
farthest from the cranks has a disk *c*, pro-
vided with a crank-pin which receives a link
*c*¹, the opposite end of which is connected
with a crank-pin of a crank *c*², attached to the
short shaft *c*³, (shown by dotted lines as ro-
tating in a bearing *c*⁴,) the axis of the short
shaft *c*³ being out of line or eccentric to the
axis of the under shaft B, the short shaft *c*³
being rotated by the under shaft B at a vari-
able speed due to the said link, as is well un-
derstood in the Wheeler & Wilson form of
sewing-machine. The short shaft *c*³ has a
beveled pinion *d*, which engages an interme-
diate beveled wheel *d'*, mounted on a stud of
a plate *d*², (shown as secured to the under
side of the bed-plate,) the said intermediate
beveled gear engaging a beveled gear *d*³ fast
on a driver-shaft *d*⁴, provided at its front end

with a driver d^5 . (Shown in Fig. 5.) This driver-shaft d^4 has its bearings in a lug e , extending from the under side of the bed-plate, and to which lug is secured the raceway e' , in which rotates a loop-taker G, the said loop-taker being substantially the same in shape, construction, and operation as the loop-taker designated by like letter in United States Patent No. 328,165. The loop-taker is retained in the raceway by means of a cover-plate g , which may be held in place in any usual manner.

The needle-bar a is herein shown as provided with two eye-pointed thread-carrying needles 2 3, each supplied in practice with thread from suitable spools, the thread between the spools and the eyes of the needles being acted upon by any usual tension devices and take-up devices.

The presser-foot 4, secured to the presser-bar in usual manner, has two needle-holes, one for each needle, and the under side of the presser-foot has a longitudinally-projecting flange or keel 6, which is especially adapted to enter a seam which has been previously made—as, for instance, the closing seam of the quarter of a boot or shoe.

In the manufacture of boots and shoes, after the quarters have been closed with their faces together the quarters are spread out flat and two other rows of stitching are made parallel with the closing-seam, so as to catch the edges of each quarter beyond the closing-seam to itself at one side of the closing-seam. To enable this class of work to be done on a Wheeler & Wilson machine, I have arranged the loop-taker as described and shown, so that it rotates at a variable speed in a vertical plane at right angles or transverse to the line of the seam or to the direction of the feeding movement of the material being stitched, the point of the loop-taker entering one loop after the other of the two needles at each descent of the needle-bar.

The machine herein described may be made to sew parallel seams, the needle-thread of the two seams being connected at the under side of the material by a thread taken from a single bobbin. If, however, it be de-

sired to use the machine for ordinary work, one needle may be omitted, as the variably-rotating loop-taker arranged at right angles or transverse to the seam is adapted to work equally well with either one or two needles.

I have omitted from the drawings the feed and the tension mechanism, so as to avoid confusion of the drawings; but in practice the feed-actuating mechanism and tension mechanism may be of any form common to sewing-machines or as in the said patent.

I do not desire to limit my invention to the exact form of connections between the two shafts A^2 and B, as instead of these I may employ any other well-known devices by which to rotate one shaft from another. I do not claim the two cranks and their connections.

I claim—

1. In a sewing-machine, a needle-bar, a needle carried thereby, a rotating shaft to actuate the needle-bar, an under shaft B, a link connecting it with the needle-bar-actuating shaft, the short shaft c^3 , and means between the short shaft and the said under shaft to actuate the short shaft at a variable speed, combined with the driver-shaft at right angles to the said short shaft, gearing between the said driver-shaft and short shaft to rotate the driver-shaft, and a loop-taker rotating in a vertical plane at right angles or transverse to the direction of the seam, substantially as described.

2. In a sewing-machine, a needle-bar, two eye-pointed thread-carrying needles, means to actuate the needle-bar, combined with a loop-taker guide, a loop-taker rotating therein in a vertical plane at right angles or transverse to the line of the seam, and with means to rotate the said loop-taker at a variable speed, substantially as described.

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

WILLIAM A. NEELY.

Witnesses:

BERNICE J. NOYES,
B. DEWAR.