

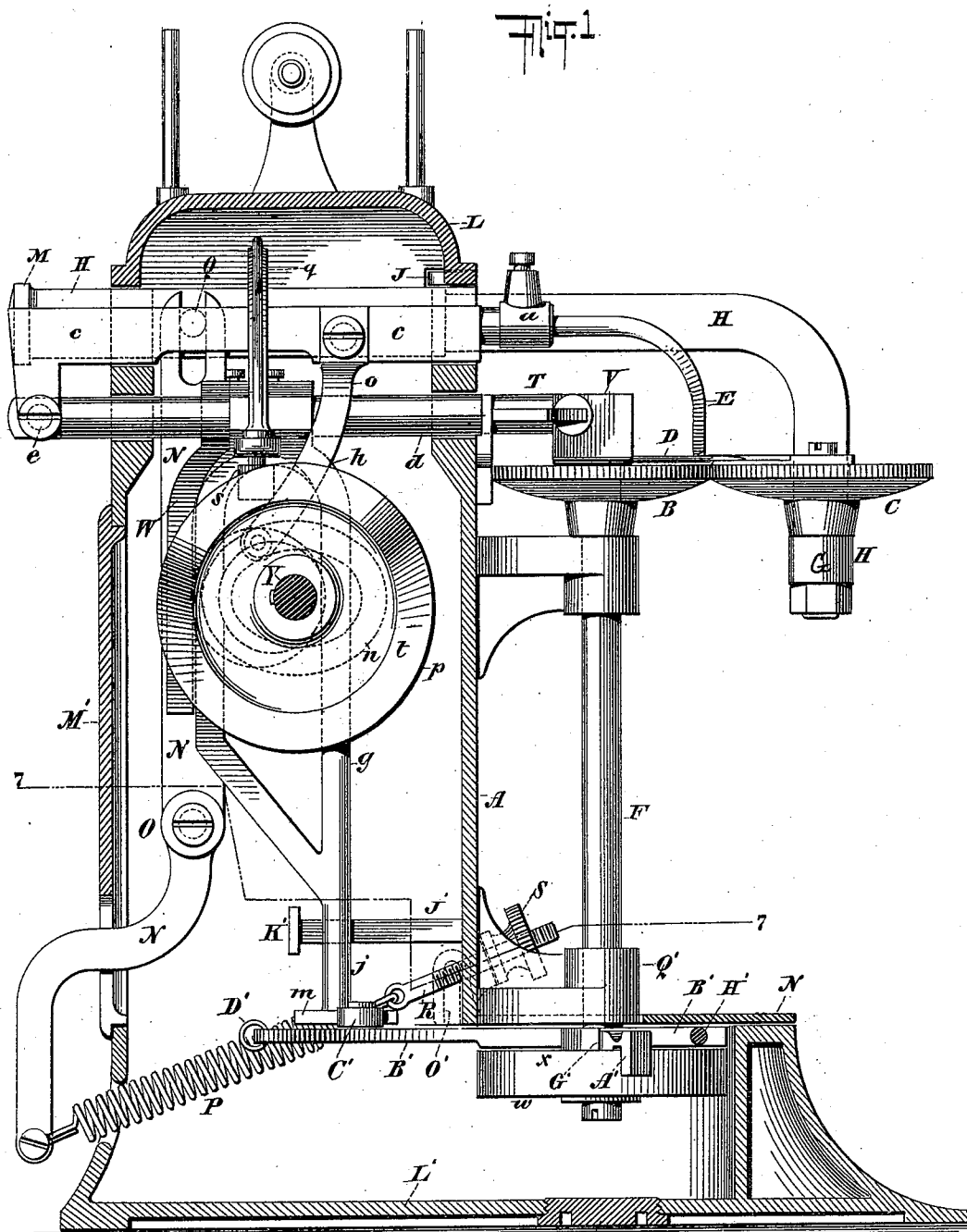
(No Model.)

4 Sheets—Sheet 1.

J. F. WILHELM.
GLOVE AND FUR SEWING MACHINE.

No. 562,109.

Patented June 16, 1896.



WITNESSES:

Gustave Dietrich.
John Kehlenbeck.

INVENTOR

John F. Wilhelm,
BY
Chas. C. Gill
ATTORNEY

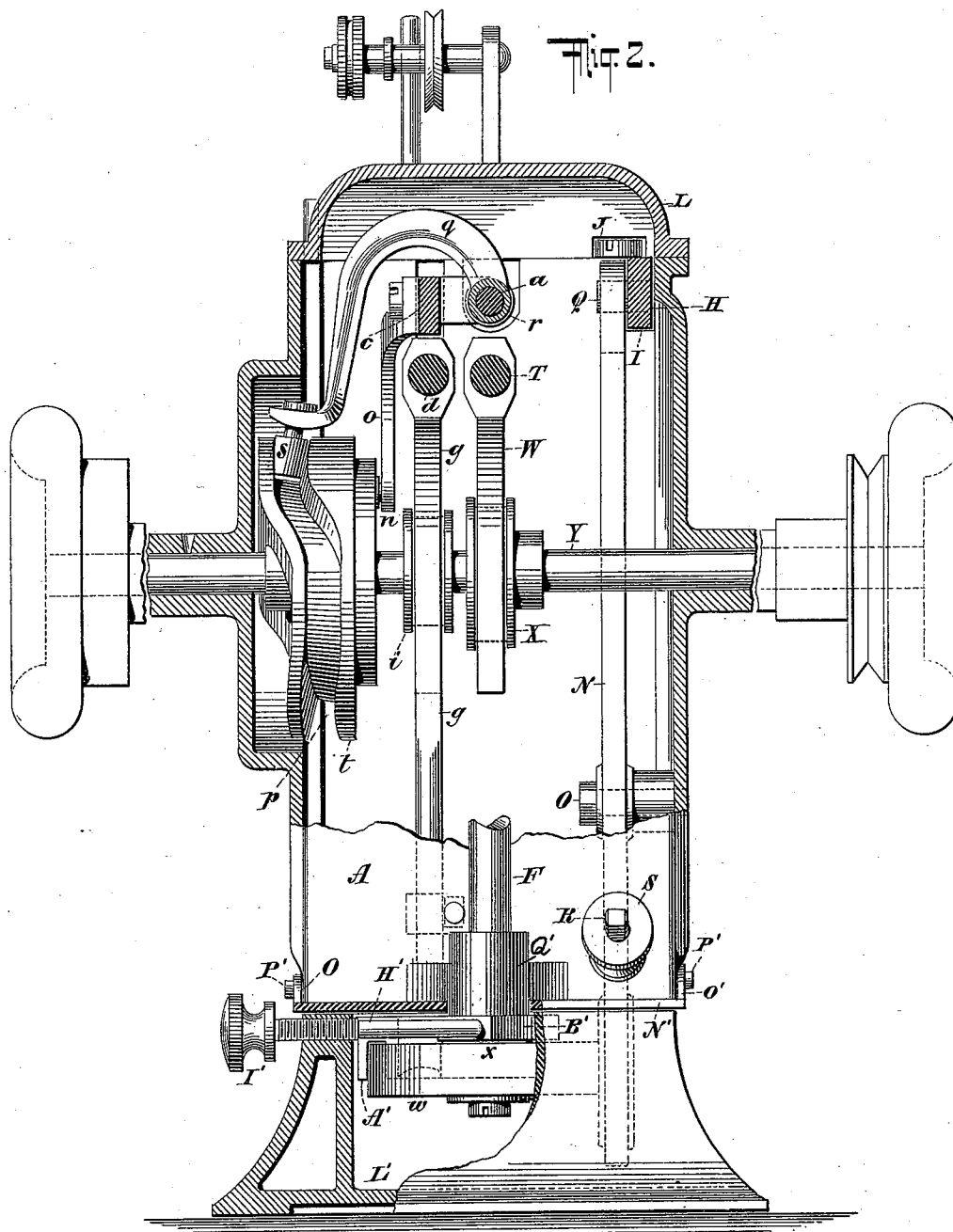
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4 Sheets—Sheet 2.

J. F. WILHELM.
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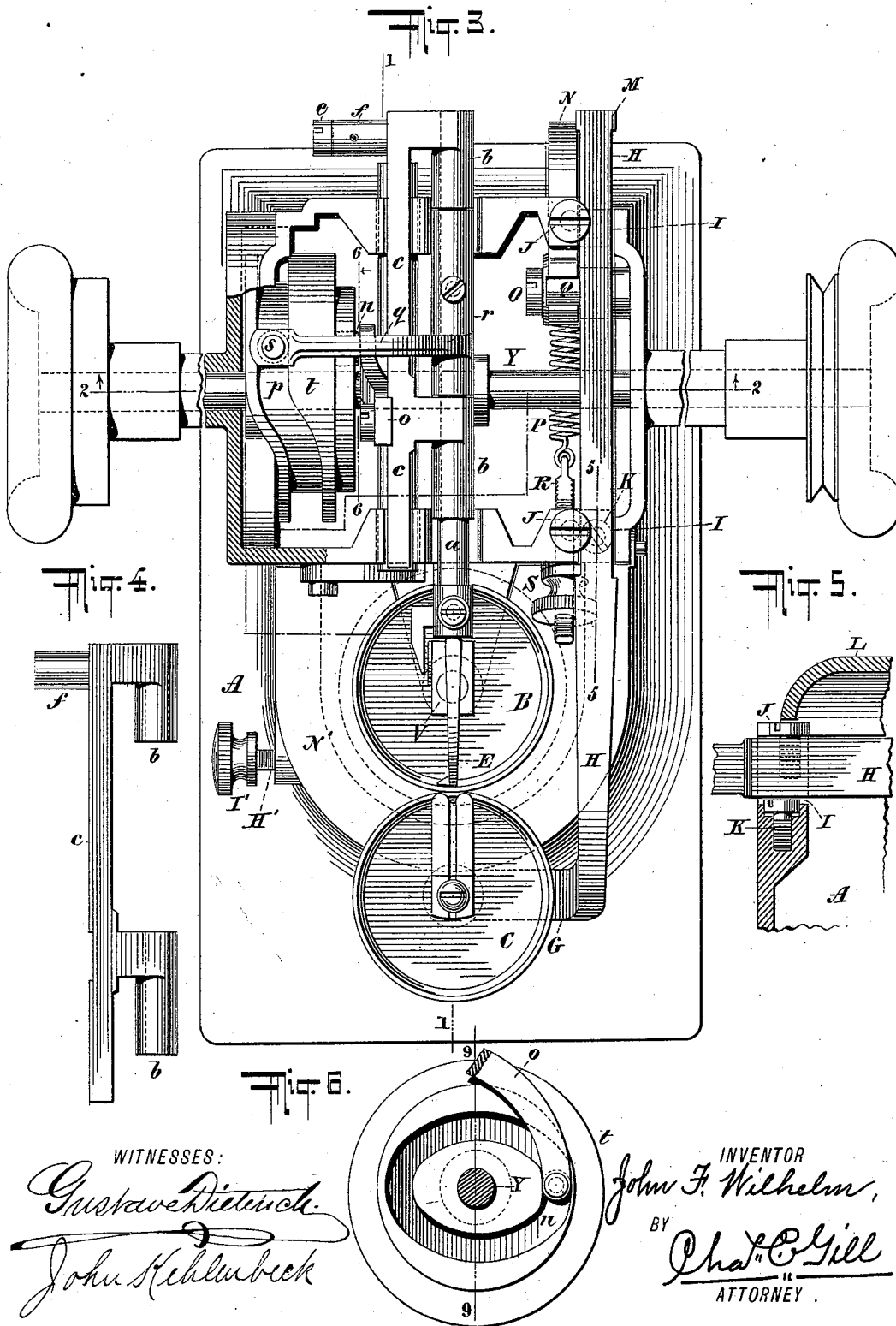
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4 Sheets—Sheet 3.

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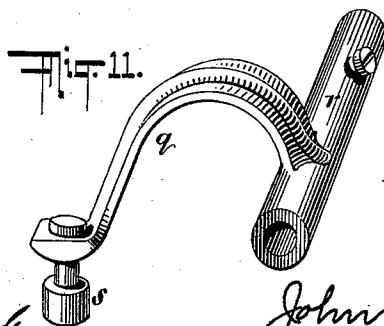
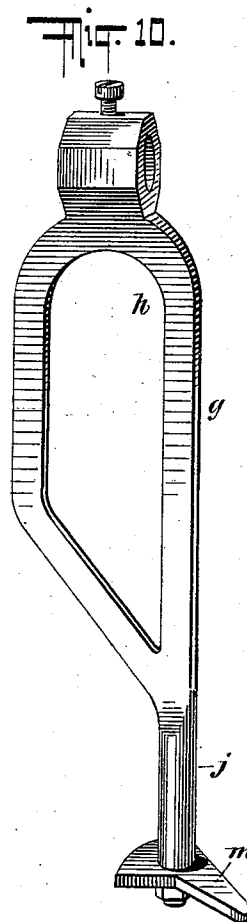
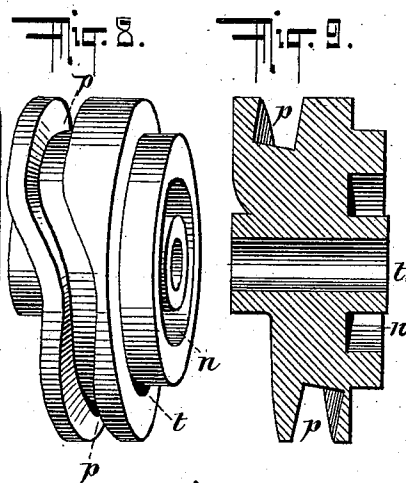
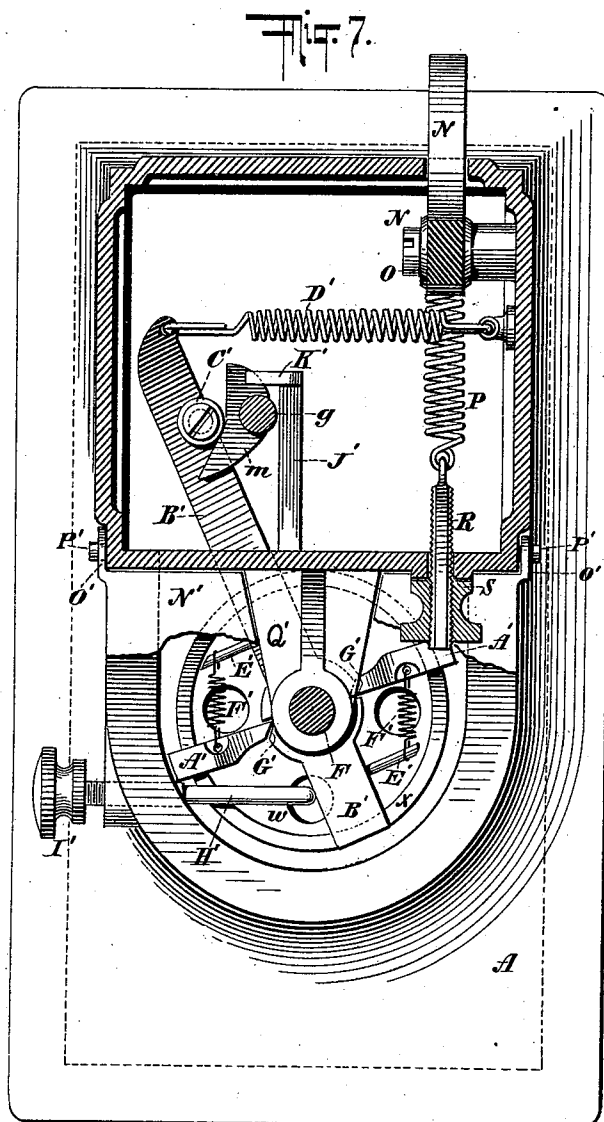
(No Model.)

4 Sheets—Sheet 4.

J. F. WILHELM.
GLOVE AND FUR SEWING MACHINE.

No. 562,109.

Patented June 16, 1896.



WITNESSES:
Gustave Dittus
John Kehlbeck.

INVENTOR
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UNITED STATES PATENT OFFICE.

JOHN F. WILHELM, OF NEW YORK, N. Y.

GLOVE AND FUR SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 562,109, dated June 16, 1896.

Application filed October 21, 1895. Serial No. 566,287. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. WILHELM, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Glove and Fur Sewing Machines, of which the following is a specification.

The invention relates to improvements in fur and glove sewing machines; and it consists in the novel features of construction and arrangement of devices and combinations of parts hereinafter described, and particularly pointed out in the claims.

The machine made the subject hereof embraces the usual parallel horizontal feed-disks, horizontal reciprocating needle and oscillating looper, all of which in the present machine have their customary and usual movements.

The present invention resides in certain improvements in the main supporting-frame of the machine and in the operative mechanism intermediate the feed-disks, needle and looper, and the main driving-shaft.

The object of the invention is to simplify the operative mechanisms, reduce them in number, bring them into more effective operative relations, render them more positive in action and more durable in use, and adapt them for convenient adjustment, and to produce a machine capable of ready manufacture and ease of operation.

The invention will be readily understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section through a machine constructed in accordance with and embodying the invention, the section being on the dotted line 1 1 of Fig. 3. Fig. 2 is a vertical transverse section of a portion of same on the dotted line 2 2 of Fig. 3 and illustrates a part of the front of the machine, a portion of the latter being in section in line with the screw by which the feed mechanism may be adjusted. Fig. 3 is a top view, partly in section, of same, the covering-cap for the frame of the machine being omitted. Fig. 4 is a detached top view of a reciprocating bar which carries the looper-bar. Fig. 5 is a detached vertical section of a portion of the ma-

chine on the dotted line 5 5 of Fig. 3. Fig. 6 is a detached elevation of one of the cams forming a part of the operative mechanism of the machine. Fig. 7 is a transverse horizontal section of the machine on the dotted line 7 7 of Fig. 1. Fig. 8 is a perspective view of the cam shown in side elevation in Fig. 6. Fig. 9 is a vertical section of same on the dotted line 9 9 of Fig. 6. Fig. 10 is a perspective view of a portion of the interior mechanism of the machine and is hereinafter specifically referred to, and Fig. 11 is a perspective view of an actuating-arm which in use is intermediate the cam illustrated in Fig. 8 and the looper-bar and imparts motion from the former to the latter.

In the drawings, A designates the main frame of the machine; B C, the usual horizontal substantially parallel feed-disks; D, the needle, and E the looper. The disks are of the usual well-known form and construction, the disk B being mounted upon the upper end of the usual revoluble vertical shaft F, upon whose lower end the feed-actuating mechanism is applied, as hereinafter described. The feed-disk C is mounted upon the lower inwardly-turned end G of the reciprocating bar H, the main body of which ascends above the disk C and thence turns directly rearward through guides I, formed in the frame A of the machine. The bar H is held within the guides I by means of the screws J J, entering the frame of the machine, as illustrated in Fig. 3, and having their heads projecting over the upper surface of said bar H. In the base of the guide I is provided the screw K, upon which the bar H rests and the position of which regulates the position of the bar H and consequently the relation of the disk C to the disk B. By adjusting the screw K upward or downward the disk C may be adjusted vertically in accordance with the character of the goods under treatment and the desire of the operative. Upon the cap L of the frame A being removed the screws J become exposed and upon their withdrawal the bar H may be removed and the screw K adjusted at will. The screws J are adapted to the various possible adjustments of the bar H and will be screwed downward more or less in accordance with the position of the

screw K, the object being to have the screws J retain the bar H in position without so firmly pressing thereon as to interfere with its proper reciprocating movement.

5 The rear end of the bar H is provided with shoulders M, which serve as stops to prevent any undue forward movement of said bar. The bar H is pivotally connected with the upper end of the lever N, which is pivotally
10 mounted at O and at its lower rear end is connected with the usual treadle (not shown) and also with the spring P. Upon the treadle being depressed by the foot of the operative the lower end of the lever N will be thrown
15 rearward and this will have the effect of causing the upper end of the lever N to move the bar H and feed-disk C forward, thus separating the disks B C and permitting the insertion of the goods between them. Upon the
20 foot of the operative being removed from the usual treadle the spring P will restore the lever N to its normal position, thereby causing the bar H and disk C to return rearward to their former position, the disk C pressing
25 the goods against the edge of the disk B, as usual.

The upper end of the lever N is slotted, as illustrated in Fig. 1, and passes upon the pin Q, secured to the bar H, and hence the lever
30 N is enabled to actuate the bar H in the manner above described. The spring P at its rear end is connected with the lever N, while at its front end said spring is connected with the screw R, which passes through the front of
35 the machine and is provided with the adjusting-nut S. The screw R is not permitted to revolve, but is adapted to have a direct longitudinal movement under the action of the nut S, the purpose of which is to enable the
40 operative to conveniently regulate the tension of the spring P upon the lever N, bar H, and disk C.

It will be observed that the nut S is in convenient position to be readily grasped by the
45 operative and that the tension on the disk C may be quickly and conveniently adjusted. The opposite sides of the screw R are flattened, as indicated in Fig. 7, in order to prevent the screw from revolving axially within
50 the aperture through which it passes, the walls of the aperture closely fitting against the flattened sides of the screw.

The bar H is of a form, as illustrated in Figs. 1 and 3, which leaves the lower part of the machine entirely open for the reception of the
55 goods to be introduced between the feed-disks B C, and this is a feature of great importance, particularly when heavy seal goods are to be treated.

60 The needle-bar is lettered T and moves in guides formed in the frame of the machine. Upon the front end of the bar T is provided a usual head V for clamping the needle D, and within the frame of the machine there is
65 secured upon the bar T the bifurcated frame W, whose opposite members pass downward upon the opposite sides of the grooved cam

X, rigidly mounted upon the driving-shaft Y. The needle-bar T, frame W, and cam X are not in themselves new, and are shown in Letters Patent No. 275,506, granted to W. Ludeke
70 April 10, 1883. The needle-bar T is given a due reciprocating movement through the frame W and cam X from the driving-shaft Y.

The looper-rod proper is lettered *a*, and it
75 carries the usual looper E and imparts to it a longitudinal reciprocating motion, a transverse oscillatory motion, and an up-and-down motion, all of which motions are customary and usual in this class of machines. The
80 looper-bar *a* is mounted in the sleeves *b b* of the bar *c*, (shown in detail in Fig. 4,) which is at its rear end pivotally connected with the rod *d* by means of a screw *e* entering the sleeve *f*, the latter being integral with the
85 said bar *c*. The bar *d* is mounted in guiding-apertures in the frame of the machine and has a due longitudinal reciprocating motion therein, and upon the said bar *d* is mounted
90 a frame *g*, (shown in detail in Fig. 10,) the upper end of which forms a yoke *h*, encompassing the grooved cam *i*, secured upon the driving-shaft Y.

The action of the cam *i* during the operation of the machine is to impart to the rod *d*
95 a reciprocating motion, the said cam coming into contact with the opposite sides of the yoke *h*. One member of the frame *g* forms a downwardly-extending rod *j*, carrying the cam *m*, which, during the reciprocating
100 motion of the frame *g* and rod *d*, serves to actuate the feed mechanism, as hereinbefore described. The cam *i* and frame *g*, acting through the rod *d*, impart to the frame *c* a reciprocating motion, and since said frame *c*
105 carries the looper-bar *a* the latter will, during the operation of the machine, have imparted to it a reciprocating motion. It is necessary, however, that, in addition to the reciprocating motion, the bar *a* shall have an axial
110 motion and an up-and-down motion, and hence the bar *c* is actuated from the cam *m* through the arm *o* to have its up-and-down motion, and the bar *a* is actuated from the cam *p* through the curved arm *q* to have its axial
115 motion, the latter being essential to cause the looper to have an oscillatory motion across the path of the needle. The arm *q* is illustrated in Fig. 11 and has upon one end the sleeve *r*, which is secured upon the bar *a*,
120 while at the other end of said arm *q* is provided the roller *s*, which enters the cam-groove *p*, as illustrated in Figs. 2 and 8. During the revolution of the driving-shaft Y the cam *p* will cause the lower end of the arm *q* to have
125 an oscillating movement, and since said arm is secured by a screw or other means to the bar *a* the latter will have imparted to it an axial movement within the sleeves *b b*, connected with the bar *c*. The revolving motion
130 of the driving-shaft Y, acting through the cam *n* and arm *o*, will, during the operation of the machine, cause the bar *c* to have an up-and-down movement, and since the bar *c* is con-

nected with the bar *a* the latter and the loop-
E will have imparted to them the proper up-
and-down motion. In view of the fact that
the bar *c* is pivotally connected with the rod
5 *d* the said bar may have the up-and-down
motion just referred to without interfering
with its reciprocating motion. The cams *n p*
are formed in the wheel *t*, which is eccentric-
ally secured upon the driving-shaft Y.

10 Upon the lower end of the vertical feed-
shaft F is rigidly secured, within the frame of
the machine, the disk *w*, which has an up-
wardly-extending annular rim *x*, which sup-
ports the two pawls A', the latter at their outer
15 ends being thickened and grooved to fit upon
the upper edges of said rim *x*, as indicated
more clearly in Figs. 1 and 7. The shaft F
has mounted upon its lower end, above the
disk *w*, the arm B', which extends rearwardly,
20 and is provided with a stud C' and spring D',
the stud being in contact with the cam *m*,
hereinbefore referred to, and being caused to
follow the outline of said cam by means of
the spring D'.

25 The arm B' carries the pins E', to which are
connected the springs F', which pass thence
to the pawls A', as indicated in Fig. 7, and
upon said arm B', adjacent to the base of the
shaft F, are provided the ratchet-teeth G',
30 which are engaged by the points of the pawls
A'. During the reciprocating motion of the
rod *d* and frame *g* the cam *m*, carried by said
frame, moves against the stud C' on the arm
B' and causes the latter to have an oscillatory
35 motion, whereby the ratchet-teeth G' are
caused to act upon the pawls A' and through
said pawls to rotate by intermittent motions
the disk *w* and shaft F. The disk *w*, having
the rim *x*, the pawls A', and ratchet-teeth G',
40 engaging said pawls, are not of themselves
new at this time, they having been shown and
described in the aforesaid Letters Patent of
the United States, No. 275,506.

45 The front end of the arm B' extends for-
ward of the shaft F and operates in connec-
tion with the stop H' to limit the movement
of the arm B' and disk *w*. The stop H' con-
sists of the threaded rod mounted in a thread-
ed aperture formed in the frame of the ma-
50 chine, as illustrated more clearly in Fig. 7,
and said stop H' is provided with a head I',
by which it may be adjusted to suit prevail-
ing conditions. By moving the stop H' out-
ward the bar B' is permitted to have a larger
55 throw, and consequently the disk *w* will un-
der each movement of the cam *m* have a more
extended axial motion, and when the stop H'
is adjusted inward the extent of movement
of the arm B' is restricted and the disk *w*
60 will have a shorter intermittent revolving
motion. The arm B', as shown in Fig. 7, is
moved in one direction by the cam *m* and in
the opposite direction by the spring D'.
Within the machine I have provided the
65 guide-rod J' for the frame *g*, and upon the end
of this rod J' is formed the flange K', which
serves as a stop at the end of the natural

movement of the frame *g*. The guide-rod J'
serves not only to guide the frame *g*, but to
brace the lower portion of same and keep the
cam *m* with firmness against the stud C' on
70 the arm B'. In the absence of the rod J' the
force of the spring D' might tend to prevent
regularity of action in the cam *m*.

The frame A may be of any suitable or usual
75 construction, but in the present instance I
have provided certain advantageous features
in the frame A shown. Great difficulty has
been experienced in preventing the oil used
in the machine from getting upon the fur gar-
80 ments being treated, and to overcome this ob-
jection the bar H has been carried upward
and rearward out of the way and the bottom
of the frame A has been closed, as indicated
by the solid bottom L' in Fig. 1. 85

The rear portion of the frame A is provided
with a door M', by which the interior mech-
anism, with the exception of the feed mech-
anism, may be reached, and in order that the
feed devices may be readily inspected the up-
90 per front portion of the frame A is provided
with the covering-plate or horizontal door N',
the latter being directly over the feed-disk *w*
and being secured in a hinged manner by
means of the lugs O', engaging pins P', the
95 latter being upon the frame of the machine
and the former upon the lid or door N'. The
central portion of the cover N' is cut away to
fit around the bracket Q' for the lower end
of the shaft F, and the lugs O' are at the outer
100 corners of the said lid or cover and pass upon
the opposite side edges of the machine, as illus-
trated more clearly in Fig. 7.

It will be noticed that upon the elevation
of the lid or cover N' the pawls A', springs F',
105 disk *w*, and stop H' are all exposed and may
be readily reached. The presence of the cover
N' in the position referred to possesses the fur-
ther advantage that the machine does not have
to be turned upside down, as heretofore, when
110 the operative desires to get at the feed mech-
anism.

In the arrangement of the parts of the ma-
chine an aperture is formed in the bottom L'
of the machine, and the screw securing the
115 disk *w* to the shaft F is inserted upward
through this aperture, which is thereafter
closed by the screw-plug W', as illustrated in
Fig. 1.

As above described, the motions imparted
120 to the needle, looper, and feed-disks are the
usual and customary motions for this class of
machines.

The machine constructed in accordance
with the present invention is of great sim-
125 plicity, durability, and efficiency and has an
ease and smoothness of movement and posi-
tiveness of action not before attained, so far
as I know, in this class of machines.

The operation of the machine will be un-
130 derstood from the foregoing description, and
hence but a brief further reference thereto is
necessary. The feed-disk C receives its mo-
tion from the disk B, and the latter is actua-

ted from the main driving-shaft Y through the medium of the cam *i*, frame *g*, cam *m*, arm B', disk *w*, and pawls A'. The needle D has a plain reciprocating motion, as usual, and receives the same from the main driving-shaft Y through the cam X, frame W, and needle-bar T. The looper E receives its longitudinal reciprocating motion from the main driving-shaft Y through the cam *i*, frame *g*, bar *c*, and looper-rod *a*, and said looper has imparted to it its usual up-and-down motions or its motion from the position shown in Fig. 1 upward from the disk B, then downward when over the disk C, then upward when over and about to leave said disk C, and then downward when over the disk B to the position shown in Fig. 1, through the instrumentality of the cam *n*, arm *o*, frame *c*, and looper-rod *a*, the latter and the arm *c* at such time having a longitudinal oscillating or rocking motion on the screw *e*. The looper E receives its usual oscillatory motion across the path of the needle D by means of the cam *p*, arm *q*, and rod *a*.

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

1. In a sewing-machine of the character described, the feed-disk B, and actuating mechanism connected therewith, combined with the feed-disk C, the horizontal reciprocating bar H at its front end bent downward and under said disk C and carrying the same, guides for said bar H, the screw K at the base of one of said guides, the screws J for retaining said bar H, the pivoted lever connected with said bar H for moving the same in one direction, the forwardly-extending spring connected with said lever for moving the same in the opposite direction, and the screw R and nut S connected with said spring for adjusting the latter; substantially as set forth.

2. In a sewing-machine of the character described, the feed-disks, and the vertical shaft carrying one of said disks, combined with the disk *w* on said shaft and having the rim *x* and pawls A', the arm B' on said shaft and having the ratchet-teeth, the springs intermediate said arm and pawls, the spring D' creating a tension on said arm B' in one direction, the rod *d* mounted in guides and adapted to reciprocate longitudinally therein, the frame *g* secured to the said rod *d* and terminating at its lower end in the rod *j*, the cam on the main driving-shaft engaging said frame and adapted to reciprocate the same, and the cam *m* on said rod *j* in engagement with said arm B' for moving the latter in the direction opposed to said spring D'; substantially as set forth.

3. In a sewing-machine of the character described, the feed-disks, and the vertical shaft carrying one of said disks, combined with the disk *w* on said shaft and having the rim *x* and pawls A', the arm B' on said shaft and having the ratchet-teeth, the springs intermediate said arm and pawls, the spring D' creating a tension on said arm B' in one direction, the

rod *d* mounted in guides and adapted to reciprocate longitudinally therein, the frame *g* secured to the said rod *d* and terminating at its lower end in the rod *j*, the cam on the main driving-shaft engaging said frame and adapted to reciprocate the same, the cam *m* on said rod *j* in engagement with said arm B' for moving the latter in the direction opposed to said spring D', and the adjustable regulating-stop H' for said arm B'; substantially as set forth.

4. In a sewing-machine of the character described, the feed-disks, and the vertical shaft carrying one of said disks, combined with the oscillatory arm B', pawl-and-ratchet mechanism intermediate said arm and said shaft for actuating the latter from the former, the vertical rigid reciprocating rod *j* having the cam *m* on its lower end in operative engagement with said arm B', the cam on the main driving-shaft for reciprocating said rigid rod *j*, and the spring retaining said arm B' against said cam *m*, substantially as set forth.

5. In a machine of the character described, the feed-disks and actuating mechanism therefor, and the needle-bar and actuating mechanism therefor, combined with the looper-bar, the bar *c* carrying said looper-bar, the rod *d* to which said bar *c* is pivoted, the cam for reciprocating said rod from the main driving-shaft, the wheel *t* forming the cams *n*, *p*, the arm *o* passing from the arm *c* to said cam *n*, and the arm *q* secured at one end on the looper-bar and at the other end engaged by said cam *p*; substantially as set forth.

6. In a machine of the character described, the feed-disks and actuating mechanism therefor, and the needle-bar and actuating mechanism therefor, combined with the looper-bar, the bar *c* carrying the looper-bar, the rod *d* to which said bar *c* is pivoted, the cam for reciprocating said rod from the main driving-shaft, the arm *o* rigidly connected to the arm *c*, the cam engaging said arm *o*, the arm *q* having a sleeve at one end on said looper-bar, and a cam engaging said arm *q*; substantially as set forth.

7. In a machine of the character described, the feed-disks and actuating mechanism therefor, and the needle-bar and actuating mechanism therefor, combined with the looper-bar, the bar *c* having the sleeves *b* in which said looper-bar is mounted, the rod *d* to which said bar *c* is pivoted, the cam for reciprocating said rod *d* from the main driving-shaft, the arm *o* rigidly connected to said arm *c*, the cam engaging said arm *o*, the arm *q* having a sleeve at one end on said looper-bar, and a cam engaging said arm *q*; substantially as set forth.

8. In a machine of the character described, the feed-disks and actuating mechanism therefor, and the main driving-shaft having the cams X and *i* and wheel *t*, the latter forming the cams *n*, *p*, combined with the needle-bar, the frame W thereon engaging said cam X, the rod *d* having a frame engaging said

cam *i*, the rod *c* pivoted to said rod *d*, the arm
intermediate said rod *c* and said cam *n*, the
looper-bar *a* carried by said bar *c*, and the
arm *q* at one end connected with said looper-
5 bar and at the other engaged by said cam *p*;
substantially as set forth.

9. In a machine of the character described,
the feed-disks and actuating mechanism
therefor, and the needle-bar and actuating
10 mechanism therefor, combined with the rod
d, the bar *c* pivotally connected therewith,
the looper-bar *a* carried by said bar *c*, the
cams *n*, *p*, arms intermediate the said cams
and said bars *c*, *a*, for actuating the latter
15 from the former, the cam *i* on the driving-

shaft, the frame *g* engaging said cam *i* and
connected with the rod *d*, and the rod *j* form-
ing a part of said frame and in operative re-
lation with the actuating mechanism of the
feed-disks, whereby the latter receive motion 20
from a positive reciprocating frame actuated
by the cam on the driving-shaft; substan-
tially as set forth.

Signed at New York, in the county of New
York and State of New York, this 9th day of 25
October, A. D. 1895.

JOHN F. WILHELM.

Witnesses:

CHAS. C. GILL,

E. JOS. BELKNAP.