

(No Model.)

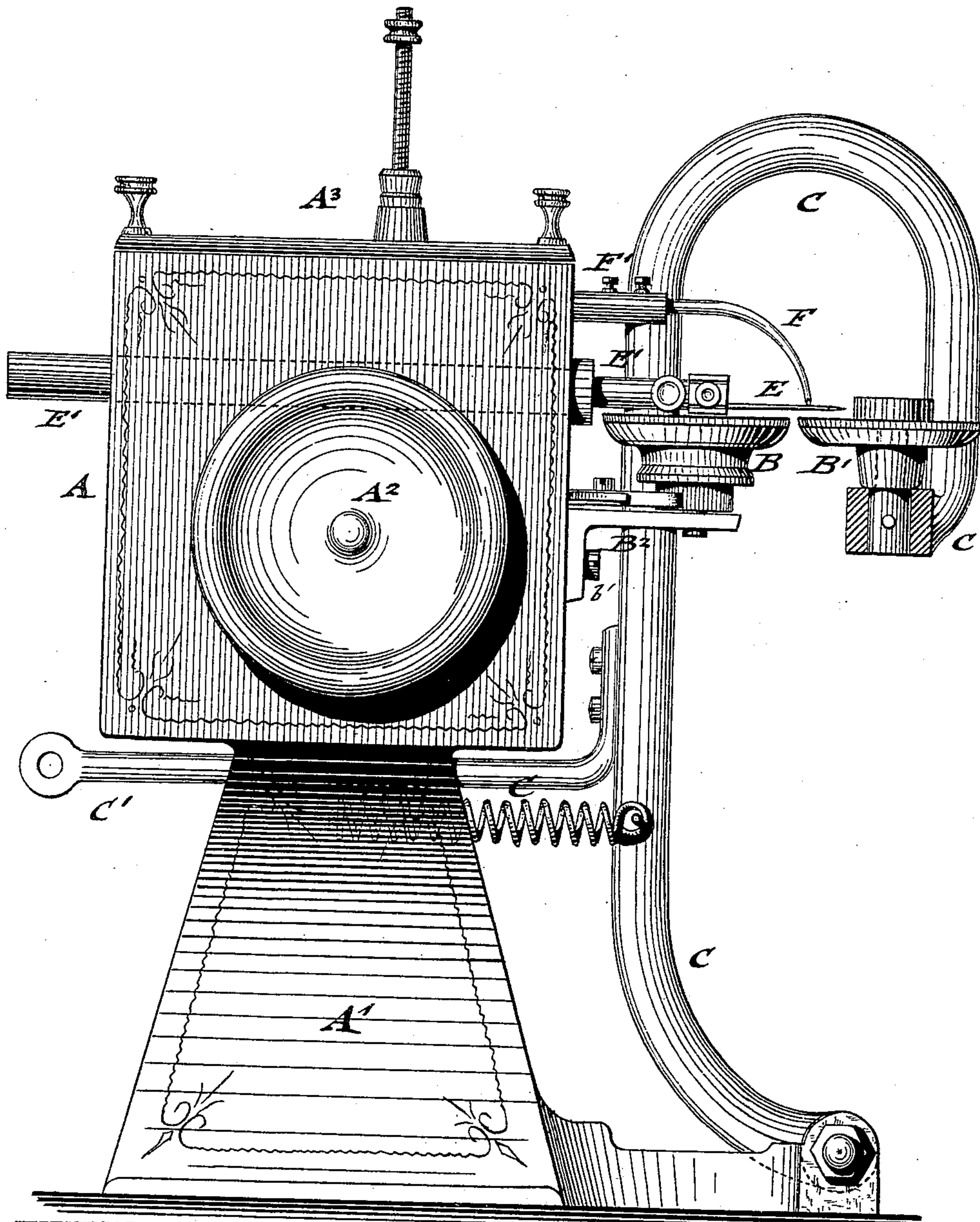
4 Sheets—Sheet 1.

B. SCHMITT.  
GLOVE SEWING MACHINE.

No. 270,343.

Patented Jan. 9, 1883.

*Fig. 1.*



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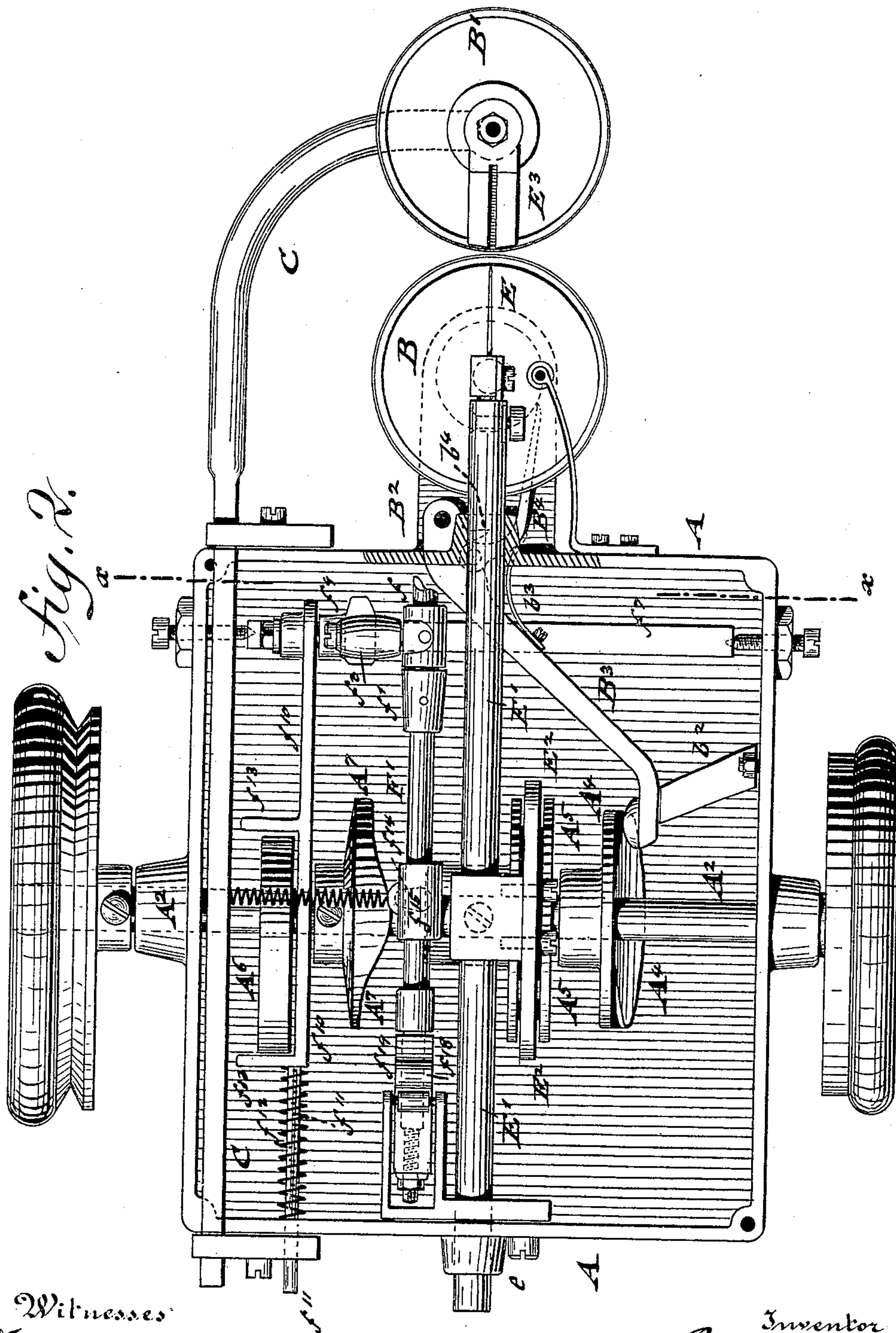
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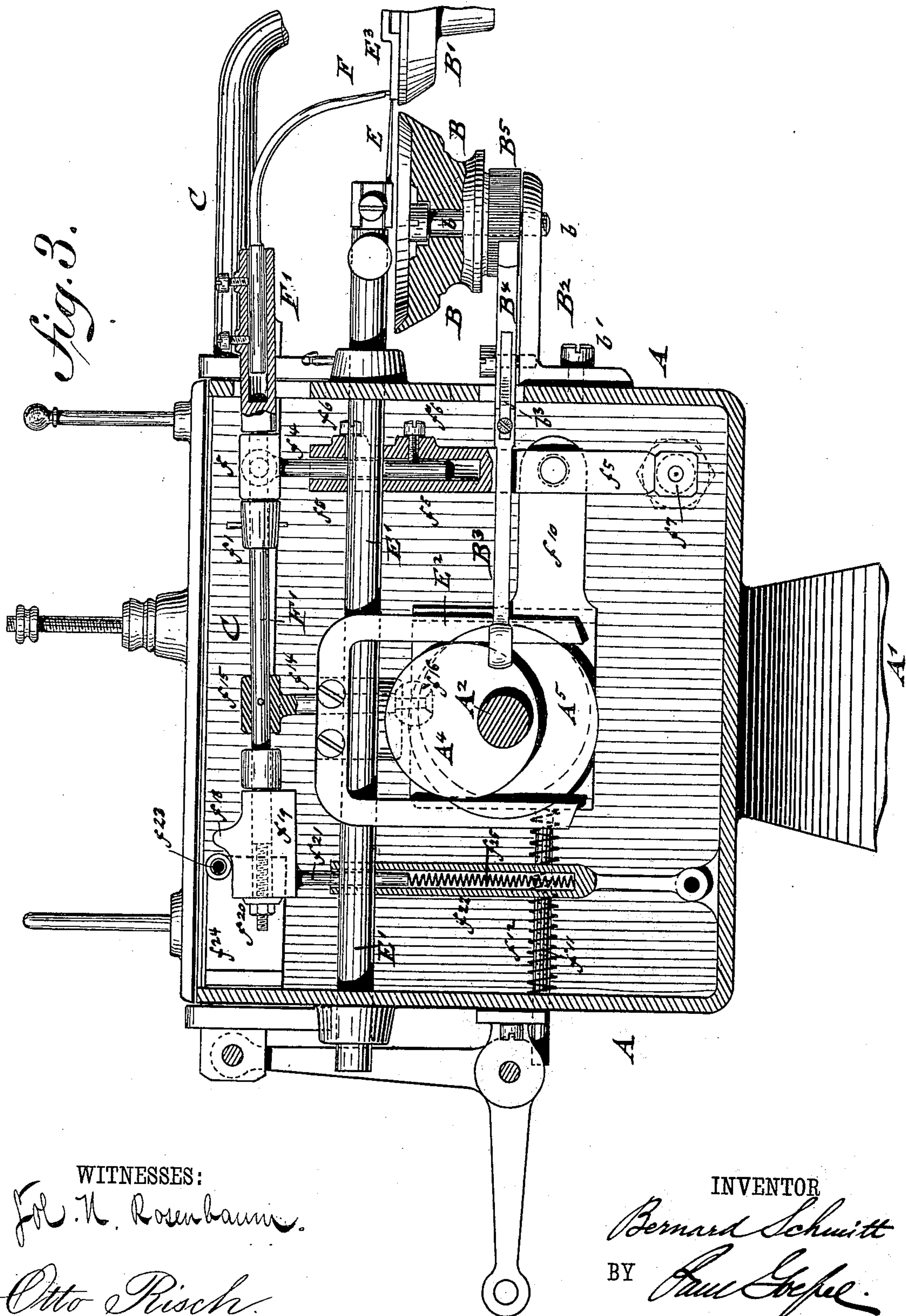
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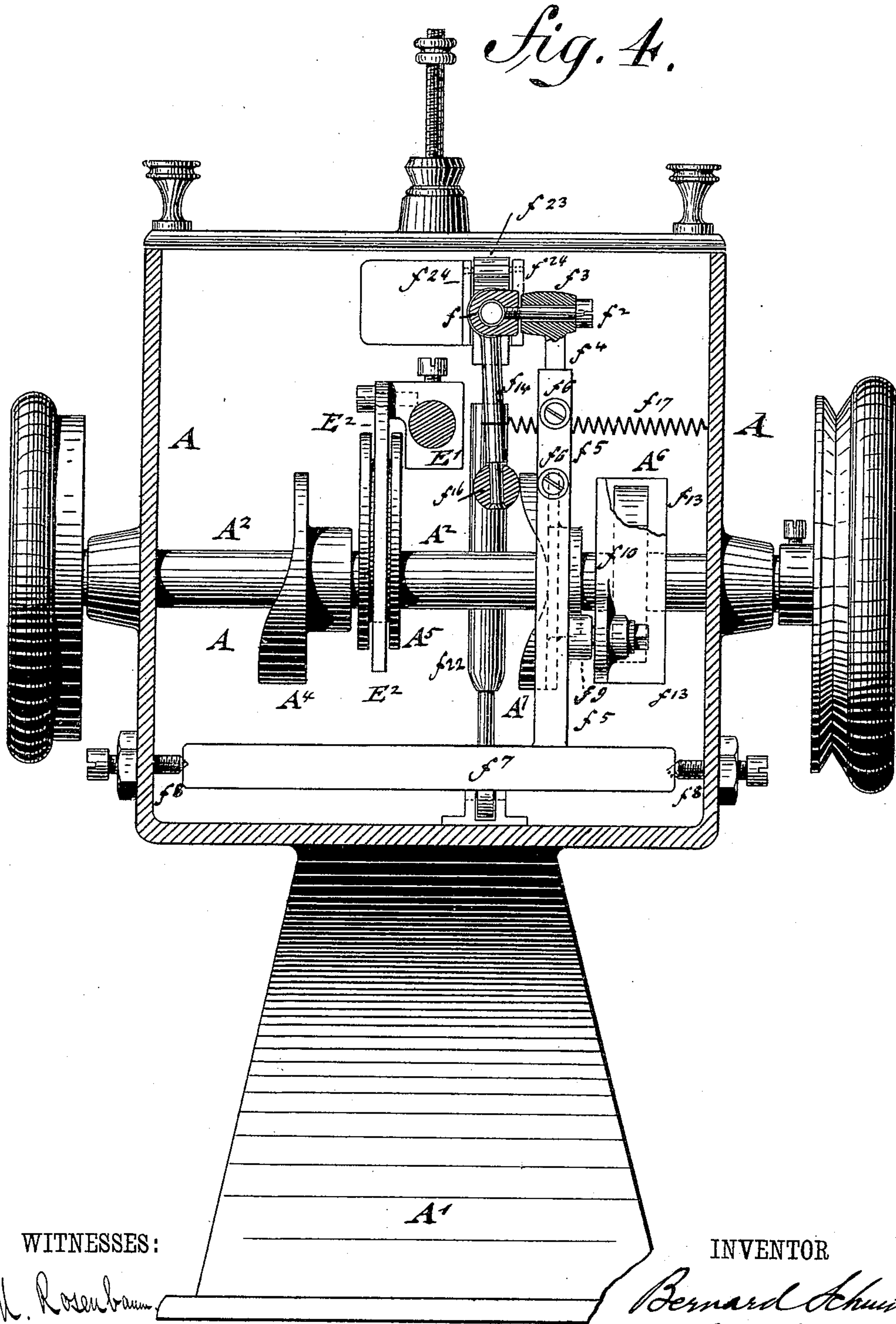
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# UNITED STATES PATENT OFFICE.

BERNARD SCHMITT, OF NEW YORK, N. Y.

## GLOVE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 270,343, dated January 9, 1883.

Application filed October 19, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, BERNARD SCHMITT, of the city, county, and State of New York, have invented certain new and useful Improvements in Glove-Sewing Machines, of which the following is a specification.

This invention relates to certain improvements in machines for sewing gloves, furs, and similar articles in which an overseam-stitch is required, the improvements relating more especially to glove-sewing machines of that class in which two parallel feed-disks, a reciprocating needle, and an oscillating looper are employed; and the invention consists of the specific construction of the actuating mechanisms by which the required complex motion is imparted to the oscillating looper, as will appear more fully hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved glove-sewing machine. Figs. 2 and 3 are respectively a plan with top plate removed, and a vertical longitudinal section of the same, drawn on a somewhat larger scale than Fig. 1; and Fig. 4 is a vertical transverse section on line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the casing which incloses the actuating mechanism of my improved glove-sewing machine, and A' a strong standard, on which the casing is supported, and which is applied to the table or other support.

The different mechanisms which actuate the parallel feed-disks, the reciprocating needle, and the oscillating looper receive motion from a transverse driving-shaft, A<sup>2</sup>, that turns in suitable bearings of the side walls of the casing A, and receives motion by a belt-and-pulley transmission operated in the usual manner. The casing A is closed by a top plate, A<sup>3</sup>, which is arranged with the customary thread-holding and tension device used in this class of machines.

The operating parts of the machine—to wit, the feed-disks, the needle, and the looper—are arranged outside of and at one end of the casing A.

The vertical shaft *b* of the inner feed-disk,

B, is supported on a bracket, B<sup>2</sup>, attached to the end wall of the casing A, and held in position by a suitable screw-bolt, *b'*. The circumference of the feed-disk B is milled in the usual manner, so as to engage the milled circumference of the second feed-disk, B'. The latter is supported in bearings at the end of a curved arm, C, which is hinged to a base-plate of the machine, outside of the casing, as shown in Fig. 1, said arm being acted upon by a strong spiral spring, so that the feed-disk B' is pressed firmly against the feed-disk B for tightly holding the fabric fed through the casing. A rigid arm, C', extends from the curved arm C along side of the standard A, and is connected at its outer end, in the usual manner, to a bell-crank lever connected to a treadle, so that the arm C may be turned on its hinge, so as to carry the feed-disk B' away from the feed-disk B, and admit thereby the removal or insertion of the fabric.

In place of the curved and hinged arm C, (shown in Fig. 1,) the feed-disk B' may be applied to a curved arm, C, which is longitudinally guided in suitable recesses of the casing A, as shown in Figs. 2 and 3, and which is actuated by a bell-crank lever and treadle and a suitable spring in the same manner as before described.

By the frictional contact of the feed-disk B' with the feed-disk B the former turns simultaneously with but in opposite direction to the latter, so that the fabric to be sewed is properly taken hold of, fed through between the disks, and exposed to the joint actions of the needle and looper.

Intermittent rotary motion is imparted to the feed-disk B by means of a fulcrumed lever-arm, B<sup>3</sup>, the outer end of which is pivoted to the bracket B<sup>2</sup>, supporting the feed-disk B, while its inner convex or rounded-off end is pressed by a spring, *b*<sup>2</sup>, in contact with a cam, A<sup>4</sup>, on the driving-shaft A<sup>2</sup>, the face of said cam having such an inclination that the required motion is imparted to the lever-arm B<sup>3</sup>. The arm B<sup>3</sup> moves in a horizontal slot of the casing A, and is provided with a hinged pawl, B<sup>4</sup>, near the fulcrum of the lever-arm B<sup>3</sup>, said pawl being acted upon by a spring, *b*<sup>3</sup>, so that its outer end engages a milled collar, B<sup>5</sup>, at the lower part of the feed-disk B. The lever-



arm B<sup>3</sup> has a projecting stop, *b*<sup>4</sup>, near its hinge-connection with pawl B<sup>4</sup>, but at the side opposite spring *b*<sup>3</sup>, for the purpose of withdrawing the pawl from the milled collar B<sup>5</sup> when the inner end of the lever-arm B<sup>3</sup> is pressed inwardly by the spring *b*<sup>2</sup> in moving along the inclined face of cam A<sup>4</sup>. When the thicker part of cam A<sup>4</sup> presses the lever-arm B<sup>3</sup> back the pawl B<sup>4</sup> is thrown into engagement with the milled collar B<sup>5</sup>, so as to move the feed-disk B forward for the required distance, and so on. In this manner the feed-disk B is intermittently rotated by the alternately-receding and forward motion of the pawl B<sup>4</sup>, and thus the forward feeding of the fabric is kept up in a regular manner.

The horizontally-reciprocating needle E is operated by a needle-bar, E', which is guided in bearings *e* in the side wall of the casing A. To the needle-bar is attached a fixed downwardly-extending U-shaped yoke, E<sup>2</sup>, which is acted upon by a cam, A<sup>5</sup>, on the driving-shaft A<sup>2</sup>, said cam being preferably grooved at its circumference, so as to retain the yoke and prevent any axial motion of the needle-bar E'. The needle-bar E' is provided at its outer end with a socket and fastening device for the needle, and with means whereby the thread is guided to the eye thereof and held at the proper tension.

A fixed radial guide-plate, E<sup>3</sup>, extends in line with the axis of the needle over the feed-disk B', said guide-plate being grooved for the needle, as shown in Fig. 2.

The looper F receives a complex motion by the joint action of three different mechanisms, which impart the required forward-and-backward motion, axial motion, and up-and-down motion to the looper, so as to enable the same to take up the thread from the needle and carry the same over the seam. The looper F is curved and socketed to the outer end of an inclined looper-rod, F', which passes through a slot in the end wall of the casing A to the inside of the same. The looper-rod F is supported at the interior of the casing A by a sleeve, *f*, which is retained by a shoulder of the rod F' and by a fixed collar, *f*', keyed thereto. The sleeve *f* is provided at one side with a square face or cheek, to which is rigidly applied a laterally-extending screw-post, *f*<sup>2</sup>, that carries a sleeve, *f*<sup>3</sup>, having a downwardly-extending guide-rod, *f*<sup>4</sup>. (Shown in Figs. 3 and 4.) This guide-rod *f*<sup>4</sup> extends downward into a hollow vertical arm, *f*<sup>5</sup>, and is tightly secured thereto by means of set-screws *f*<sup>6</sup>, so as to be adjusted higher or lower, as required, for the motion of the looper. The arm *f*<sup>5</sup> is secured to or made part of a transverse bar, *f*<sup>7</sup>, that is supported by end bearings on the conical ends of supporting set-screws *f*<sup>8</sup> of the casing A. The upright socket-arm *f*<sup>5</sup> is connected by a pivot, *f*<sup>9</sup>, with reciprocating guide-plate *f*<sup>10</sup>, which is extended by a rod, *f*<sup>11</sup>, at the rear end, through the casing A, and acted upon by a spiral spring, *f*<sup>12</sup>, interposed between the end wall of the casing and the rear part of guide-plate *f*<sup>10</sup>, as

shown in Fig. 2. The guide-plate *f*<sup>10</sup> has vertical laterally-projecting flanges *f*<sup>13</sup>, which are engaged by an eccentric, A<sup>6</sup>, of shaft A<sup>2</sup>, so as to impart thereby reciprocating motion to the guide-plate *f*<sup>10</sup>, oscillating motion to the socket-arm *f*<sup>5</sup>, and reciprocating motion to the looper at each revolution of the driving-shaft. The lateral motion of the looper is imparted by the axial turning of the looper-rod F', which is effected by a downwardly-extending arm, *f*<sup>14</sup>, that is rigidly applied by a sleeve, *f*<sup>15</sup>, at its upper end to the looper-rod F', said arm being provided at its lower end with a spherical anti-friction roller, *f*<sup>16</sup>, and held in contact with the beveled face of an actuating-cam, A<sup>7</sup>, by a spiral spring, *f*<sup>17</sup>, as shown clearly in Figs. 3 and 4. The third motion which is imparted to the looper is a vertical up-and-down motion, which is obtained by the action of a projection, *f*<sup>18</sup>, of an adjustable sleeve, *f*<sup>19</sup>, applied to the rear end of the looper-rod F'. The sleeve *f*<sup>19</sup> is secured to a collar of the looper-rod F' by an adjusting-screw, *f*<sup>20</sup>, as shown in Fig. 3. From the sleeve *f*<sup>19</sup> extends downward an arm, *f*<sup>21</sup>, which is guided in an oscillating socket, *f*<sup>22</sup>, and retained in contact with an anti-friction roller, *f*<sup>23</sup>, of a fixed bracket-bearing, *f*<sup>24</sup>, by a spiral spring, *f*<sup>25</sup>, inserted in the socket below the arm *f*<sup>21</sup>, as shown clearly in Fig. 3. The three different motions which are thus imparted to the looper F combine to give to the looper the complex motion required for the work to be accomplished by the same. The motion of the looper can be exactly adjusted and regulated by adjusting the mechanisms which perform the different motions. The formation of the stitch takes place in the same manner as in other glove-sewing machines of this class, the essential feature of this construction being the accurate and nicely-adjusted motion which is imparted to the looper by the different mechanisms described, whereby a regular overseam-stitch is formed over the edges of the fabrics to be sewed.

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

1. In a glove-sewing machine, the combination of the looper F, looper-rod F', sleeve *f*, fixed screw-pivot *f*<sup>2</sup>, lateral sleeve *f*<sup>3</sup>, having downwardly-extending guide-rod *f*<sup>4</sup>, oscillating socket-arm *f*<sup>5</sup>, having clamp-screw *f*<sup>6</sup>, and mechanism for imparting oscillating motion from the main driving-shaft to the socket-arm and reciprocating motion to the looper, substantially as set forth.

2. In a glove-sewing machine, the combination of the looper F and looper-rod F' with a fixed sleeve, *f*<sup>15</sup>, a downwardly-extending arm, *f*<sup>14</sup>, having an anti-friction roller, *f*<sup>16</sup>, at its lower end, a beveled face-cam, A<sup>7</sup>, and spring *f*<sup>17</sup>, for keeping the roller in contact with the cam and imparting lateral motion to the looper, substantially as specified.

3. In a glove-sewing machine, the combination of the looper F, looper-rod F', sleeve *f*<sup>19</sup>, having projection *f*<sup>18</sup> and downwardly-ex-

tending guide-rod  $f^{21}$ , oscillating socket-arm  
 $f^{22}$ , having interior cushioning-spring  $f^{25}$ , and  
anti-friction roller  $f^{23}$ , supported in bracket-  
bearings  $f^{24}$  above the sleeve  $f^{19}$ , and forming  
5 contact therewith, so as to impart an up-and-  
down motion to the looper, substantially as set  
forth.

In testimony that I claim the foregoing as  
my invention I have signed my name in pres-  
ence of two subscribing witnesses.

BERNARD SCHMITT.

Witnesses:

PAUL GOEPEL,  
SIDNEY MANN.