

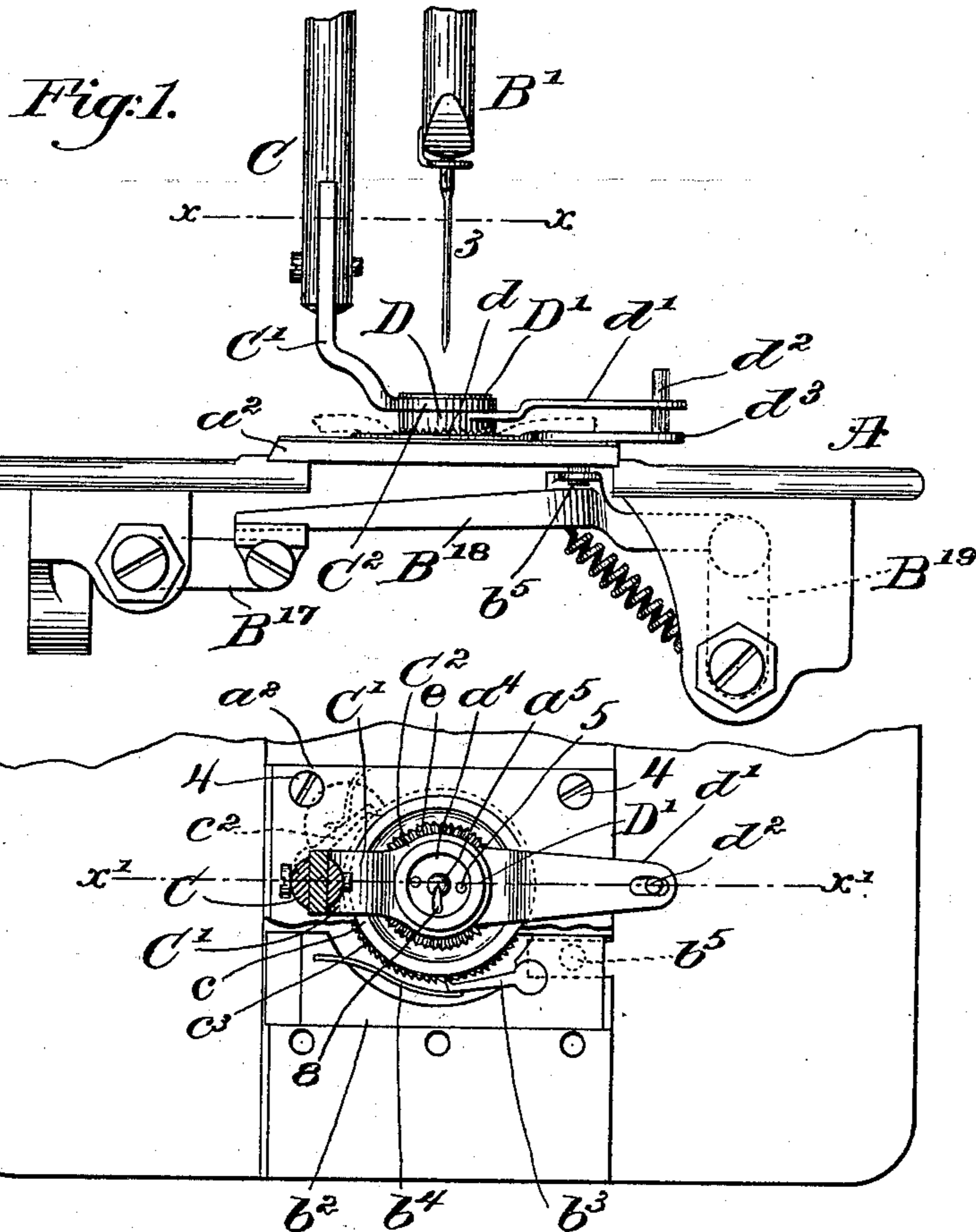
No. 624,223.

Patented May 2, 1899.

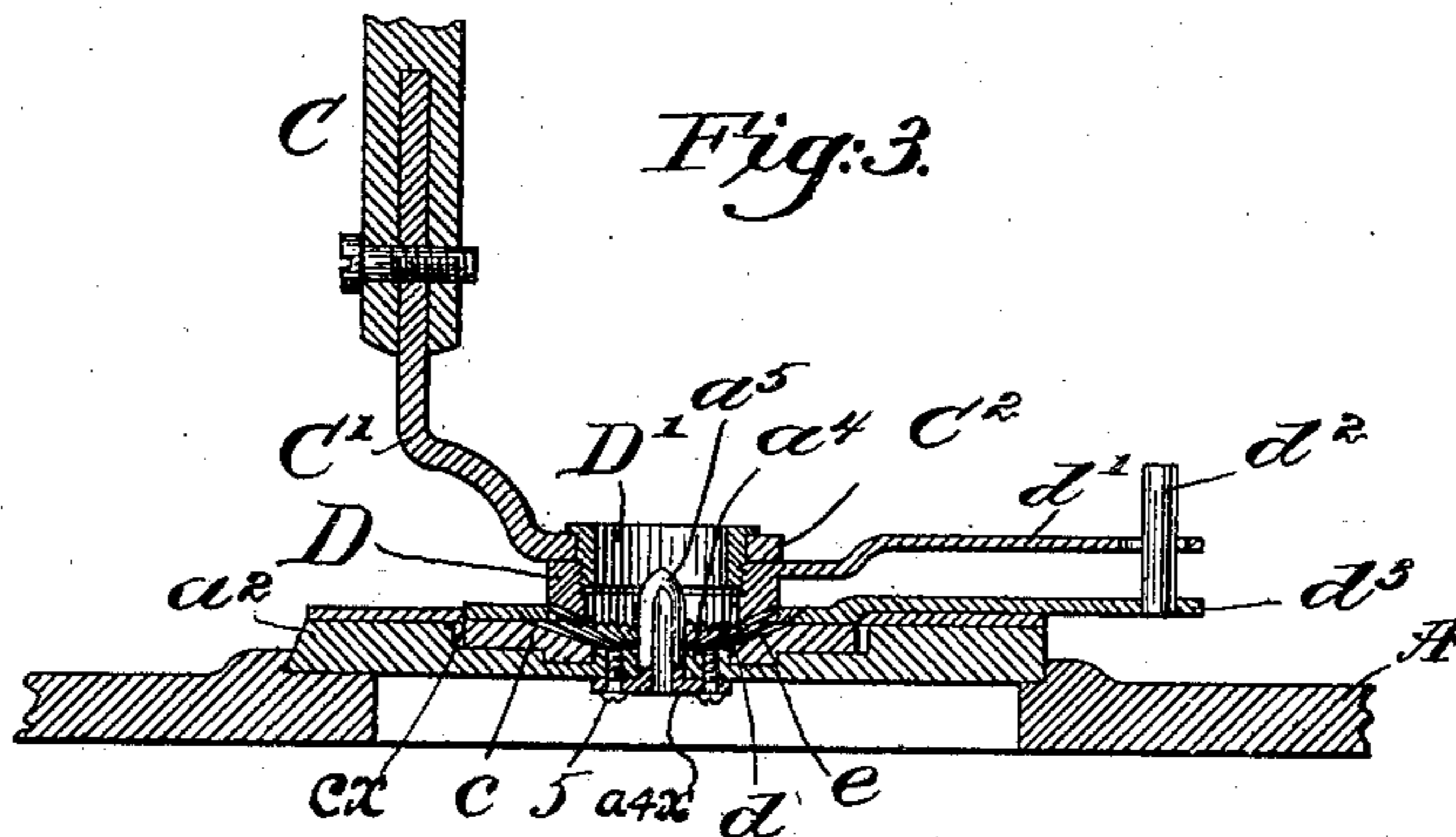
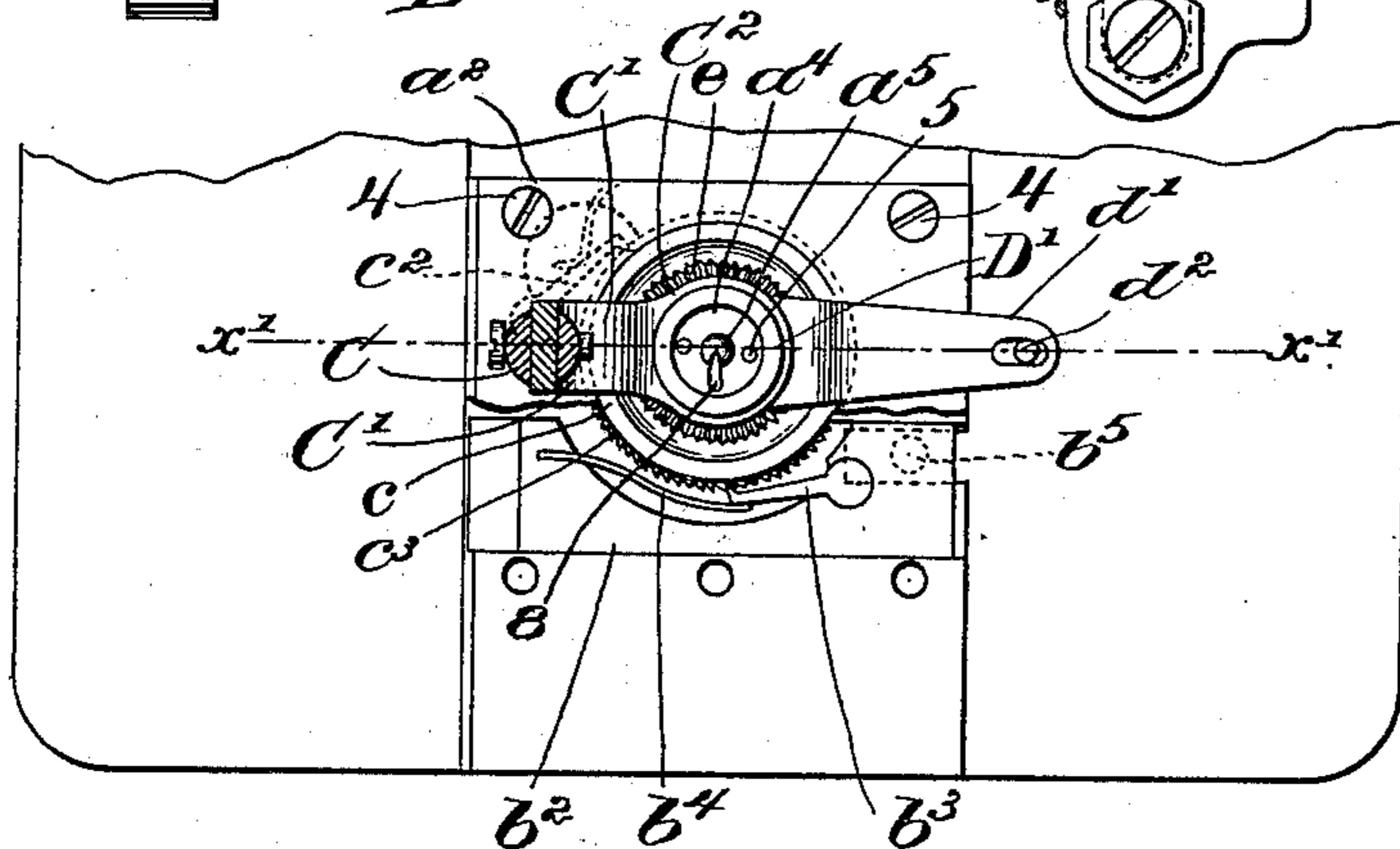
P. KRIPPENDORF.  
SEWING MACHINE FOR STITCHING EYELETS.

(Application filed Feb. 14, 1898.)

(No Model.)



*Fig. 2.*



*Witnesses.*  
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# UNITED STATES PATENT OFFICE.

PAUL KRIPPENDORF, OF CINCINNATI, OHIO, ASSIGNOR TO THE WHEELER & WILSON MANUFACTURING COMPANY, OF BRIDGEPORT, CONNECTICUT.

## SEWING-MACHINE FOR STITCHING EYELETS.

SPECIFICATION forming part of Letters Patent No. 624,223, dated May 2, 1899.

Application filed February 14, 1898. Serial No. 670,167. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL KRIPPENDORF, of Cincinnati, county of Hamilton, State of Ohio, have invented an Improvement in Sewing-Machines for Stitching Eyelets, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention in sewing-machines for over-stitching eyelet-holes has for its object to improve and simplify the construction of the machine represented in United States Patent No. 473,869, dated April 26, 1892. In that patent  
15 the material containing the eyelet-hole to be overstitched at its edge was impaled upon pins of a rotating plate, said material being acted upon by the under side of a presser-foot, and the material during the stitching  
20 operation was moved under or with relation to the under side of the said foot. Herein the material is clamped at its upper and lower sides, and the clamping means rotates uniformly with the material in which the eyelet-hole is being stitched, so that there is no friction whatever upon the material during the  
25 feeding operation; neither is the material at all injured by means of impaling-pins. The circularly-moving plate upon which the material rests while the eyelet-hole is being  
30 stitched is provided with a series of teeth, and said plate has an extended arm which by or through a suitable pin or device connects with another like arm extended from a circular ring-block mounted loosely in a holder,  
35 herein shown as extended from the usual presser-foot bar or carrier, and as said plate is rotated the ring-block is rotated in unison with it, the plate and ring-block firmly clamping and holding the material.

40 Figure 1 shows a sufficient portion of a sewing-machine which, taken in connection with the apparatus shown in said patent, will enable one to readily understand the invention herein to be described. Fig. 2 is a section below the line  $x$ , Fig. 1. Fig. 2 is a vertical section in the line  $x'$  of Fig. 2.

45 The cloth plate or bed A of the machine, the arm B<sup>17</sup>, extended from a rock-shaft, the reciprocating feed-actuator B<sup>18</sup>, connected with the arm B<sup>19</sup>, extended from a rock-shaft,

the pawl-carrier b<sup>2</sup>, having a pawl b<sup>3</sup> acted upon a spring b<sup>4</sup>, said pawl-carrier having a depending pin b<sup>5</sup>, which enters a notch in the feed-actuator B<sup>18</sup>, the stationary throat-plate 55 a<sup>2</sup>, held in position on the bed-plate by suitable screws 4, said plate having a circular recess c<sup>x</sup>, the center of said recess having a hole made through it, (see Fig. 3,) through which rises a spur a<sup>5</sup>, carried by a washer or  
60 plate a<sup>4x</sup>, which is held stationary in said recess by screws 5 entering threaded holes in a hub a<sup>4</sup>, which serves as a guide for and about which may be rotated a circular plate c, to be described, said spur being slotted at  
65 one side and perforated from top to bottom, so that the needle 3 may descend through the needle-hole 8 in the plate a<sup>4x</sup> when making the stitch, the presser-bar C, and the needle-bar B' and its needle 3 are and may be all substantially as shown in said Letters Patent,  
70 wherein most of the parts hereinbefore enumerated are designated by like letter.

It will be understood that the needle-bar in this invention has a lateral movement to 75 produce the overedge and depth stitch required for finishing the edge of an eyelet-hole or a buttonhole; but inasmuch as the means for moving said needle-bar laterally is old and common in the patent referred to it 80 has not been considered necessary to illustrate the same herein.

The presser-bar C (see Fig. 3) is provided with a holder C', having an open ring-like circular portion C<sup>2</sup>, which receives within it and 85 acts as a guide for an open center ring-block D' D. The part D of this ring-block is provided at its under side with a series of teeth d, and it has a series of internal screw-threads to receive the threaded shank of the part D' 90 of the ring-block, said part D' having at its upper end a flange or shoulder and being passed through the circular portion C<sup>2</sup> of the holder C'. The ring-block is free to be rotated in the circular portion C<sup>2</sup>, and the teeth 95 d at the lower end of the part D of the ring-block rest upon the top of the cloth or other material having the eyelet-hole to be over-stitched at its edge, said hole being fitted over the spur a<sup>5</sup>.

The portion D of the ring-block has a laterally-extended arm d', represented as slotted 100

at one end to receive a pin  $d^2$ , carried by an arm  $d^3$ , extended laterally from the circular plate  $c$ , the latter being fitted into the recess  $c^x$  of the throat-plate  $A^2$ , the open center of said circular plate surrounding the hub  $a^4$  of the throat-plate. The upper side of this circular plate is represented as concaved, and the said concaved surface is provided with a series of serrations  $e$ , against which the under side of the material containing the eyelet-hole to be stitched rests, the upper and under sides of said material being firmly clamped between the serrated surface  $e$  and the toothed surface  $d$  by a force due to the usual spring surrounding the presser-bar, a spring common to said patent.

The circular plate  $c$  is toothed externally, as represented at  $c^3$ , and said teeth are acted upon to rotate said circular plate step by step for the proper distance by means of the pawl  $b^3$ , mounted on the pawl-carrier  $b^2$ , represented, in unison with the feed-actuator  $B^{18}$ , any retrograde movement of the said circular plate being prevented by means of any usual or suitable spring-controlled detent, as  $c^2$ , engaging said teeth, as provided for in said patent.

The complementary stitch-forming mechanism coöperating with the needle is not herein represented, and in practice it may be substantially as shown in the said patent.

While the presser-bar and the ring-block are lifted, the material having the eyelet-hole to be overstitched will be placed in position under the said ring-block and surrounding the spur  $a^5$ , and thereafter the presser-bar and ring-block will be permitted to descend, thus clamping the material firmly in place. Now the machine will be started, and as the feed-actuator  $B^{18}$  is reciprocated it will, through the pawl  $b^3$ , rotate the circular plate  $c$  step by step, and it, by or through its extended arm having the pin  $d$  entering a suitable slot in the arm  $d'$  of the hub  $D$ , will cause said hub to rotate in unison with said circular plate, and the material held between them will be rotated while the eyelet-hole is being worked with the overedge and depth stitch, and during such operation there will be no friction whatever exerted upon the said material which will in any way tend to mar the same or to displace any of its threads.

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

1. In a sewing-machine for stitching eyelet-holes, the following instrumentalities, viz: a rotatable open-centered ring-block having a laterally-extended arm; an annular support to sustain said ring-block loosely during its rotations; a stationary throat-plate; an open-centered ring-like plate mounted loosely therein and toothed to receive against it the material to be stitched; means to guide said ring-like plate in its rotations, said plate having an arm extended therefrom laterally; means to connect loosely the arm extended

from said block with the arm extended from said ring-like plate, and means to rotate said ring-like plate and its arm step by step continuously during the operation of stitching an eyelet, said ring-block rotating continuously with the said ring-like plate through the connection of said arms, the said ring-block partaking of all the movements of the said ring-like plate, the block and plate being rotated positively in unison, the loose connection between the arms of the block and plate enabling the block to adapt itself to the thickness of the material containing the eyelet-hole to be stitched, said material being clamped between the block and plate continuously during the operation of stitching the eyelet-hole, substantially as described.

2. In a sewing-machine for stitching eyelet-holes, the following instrumentalities, viz: a rotatable open-centered ring-block having a laterally-extended arm; an annular support to sustain said ring-block loosely in its rotation; a stationary throat-plate having rising from it a hollow post or guide to enter the eyelet-hole, the edge of which is to be stitched; an open-centered ring-like plate mounted loosely in said stationary throat-plate and toothed at its top side to receive against it the material to be stitched and surrounding said hollow post or guide and toothed at its top side to engage the material to be stitched, said plate also having other teeth, as  $c^3$ , and a laterally-extended arm; means to connect loosely the arm of said ring-block and said ring-like plate; devices to engage the teeth  $c^3$  of said ring-like plate and impart to it only a motion of rotation in said throat-plate, whereby said ring-like plate is moved step by step continuously, the arm of said plate connected with the arm of the ring-block imparting to said ring-block a continuous step-by-step rotary motion, the said ring-block and toothed plate clamping the material uniformly throughout the entire operation of stitching the eyelet-hole, substantially as described.

3. A presser-bar, an attached holder having a circular opening, a ring-block mounted loosely in said opening, said ring-block being composed of two parts engaged by screw-threads to hold the parts together, one of said parts being provided with teeth at its under side, and a laterally-extended arm connected with said ring-block, combined with a throat-plate, a circular plate rotatively mounted in said throat-plate, and having a laterally-extended arm, means to connect said arms loosely, a slotted hollow spur fixed with relation to said throat-plate, and passing through the center of said circular plate and said ring-block, means to rotate said circular plate intermittently and through said arms move in unison with it the said ring-block, and a detent coöperating with teeth formed upon the exterior of said circular plate to prevent undue rotation thereof, substantially as described.

4. A throat-plate having a recess and pre-  
senting a circular hub in said recess, a cir-  
cular plate toothed at its periphery and pro-  
vided at its center with a series of beveled  
5 teeth made in a concaved part of said plate,  
said teeth being directed toward said hub, a  
laterally-extended arm connected with said  
circular plate, a presser-foot, a connected  
holder provided with a circular opening, a  
10 two-part ring-block united by screw-threads  
and free to rotate in the circular opening of  
said holder, said ring-block being truncated  
at its lower end and toothed, and having ex-  
tended from it laterally an arm, combined

with means to connect the outer ends of said 15  
arms loosely at a distance from the center of  
rotation of said circular plate and ring-block,  
and a hollow slotted spur fixed with relation  
to said throat-plate and rising in the centers  
of said circular plate and said ring-block, sub- 20  
stantially as described.

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

PAUL KRIPPENDORF.

Witnesses:

FRANK R. MORSE,  
THOMAS FAY.