

No. 667,200.

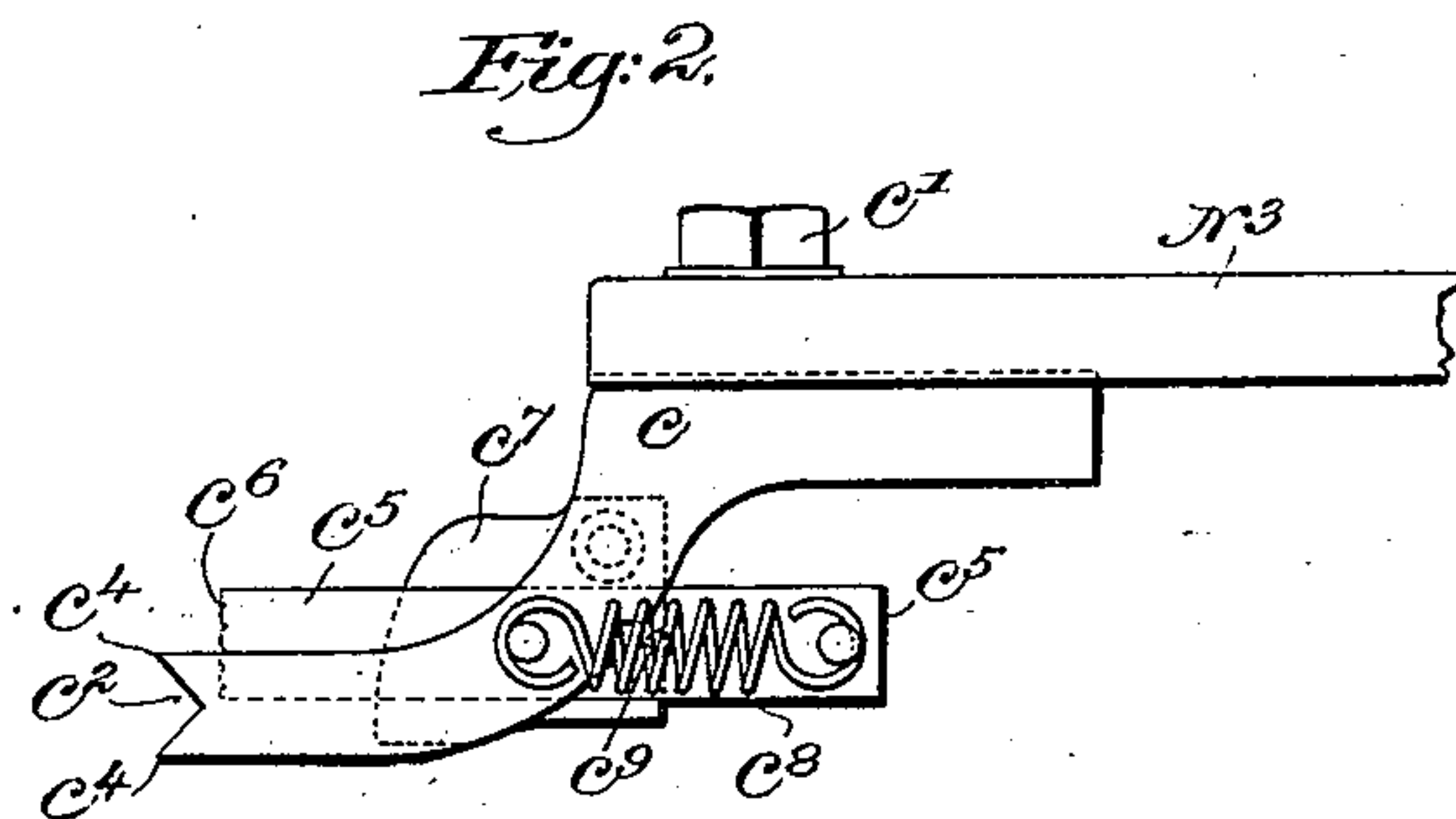
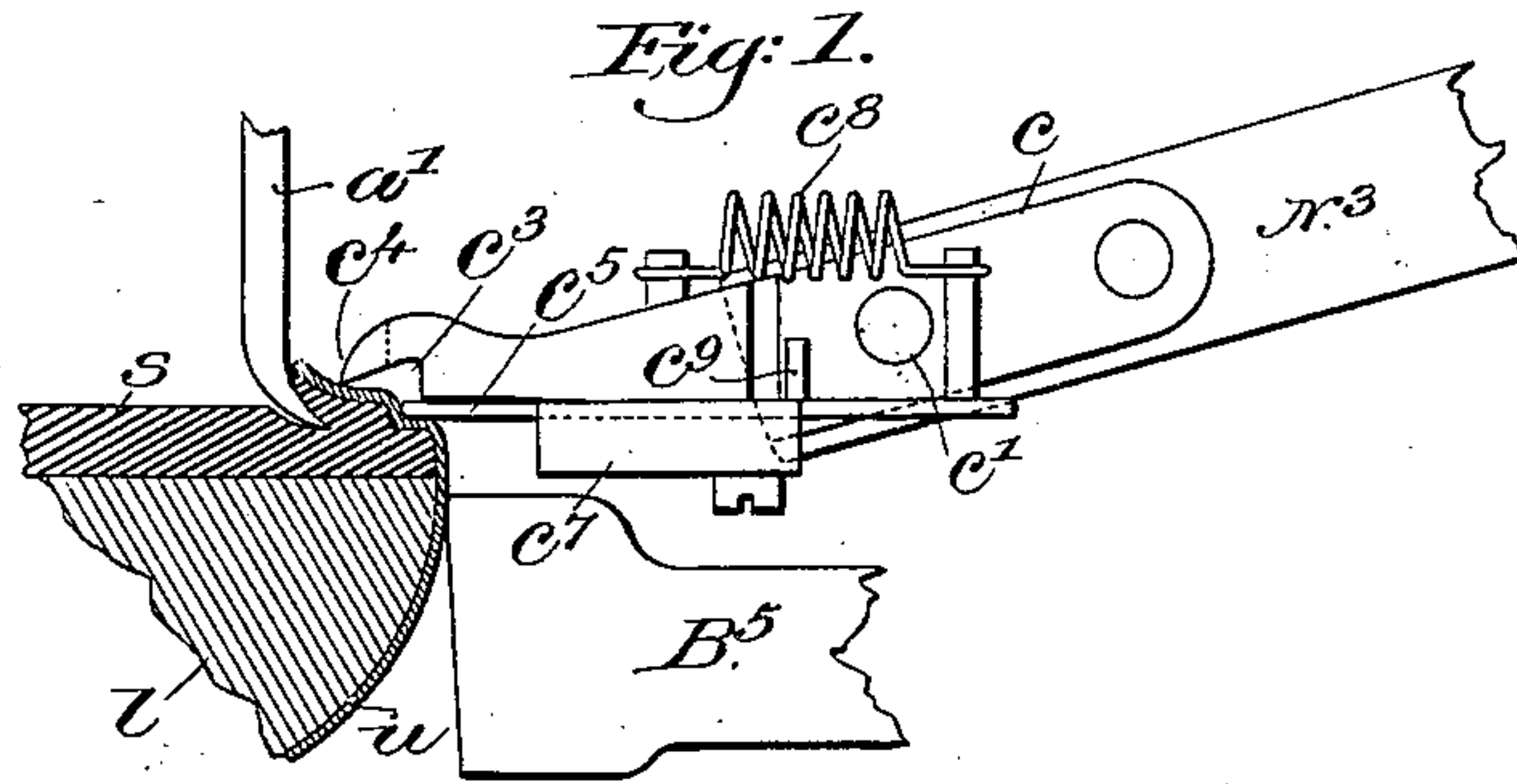
Patented Feb. 5, 1901.

C. L. EATON.
SHOE SEWING MACHINE.

(Application filed Jan. 9, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
John F. C. Pringle
L. Kitching.

Inventor:
Clarence L. Eaton,
By his attorney,
Phillips & Anderson.

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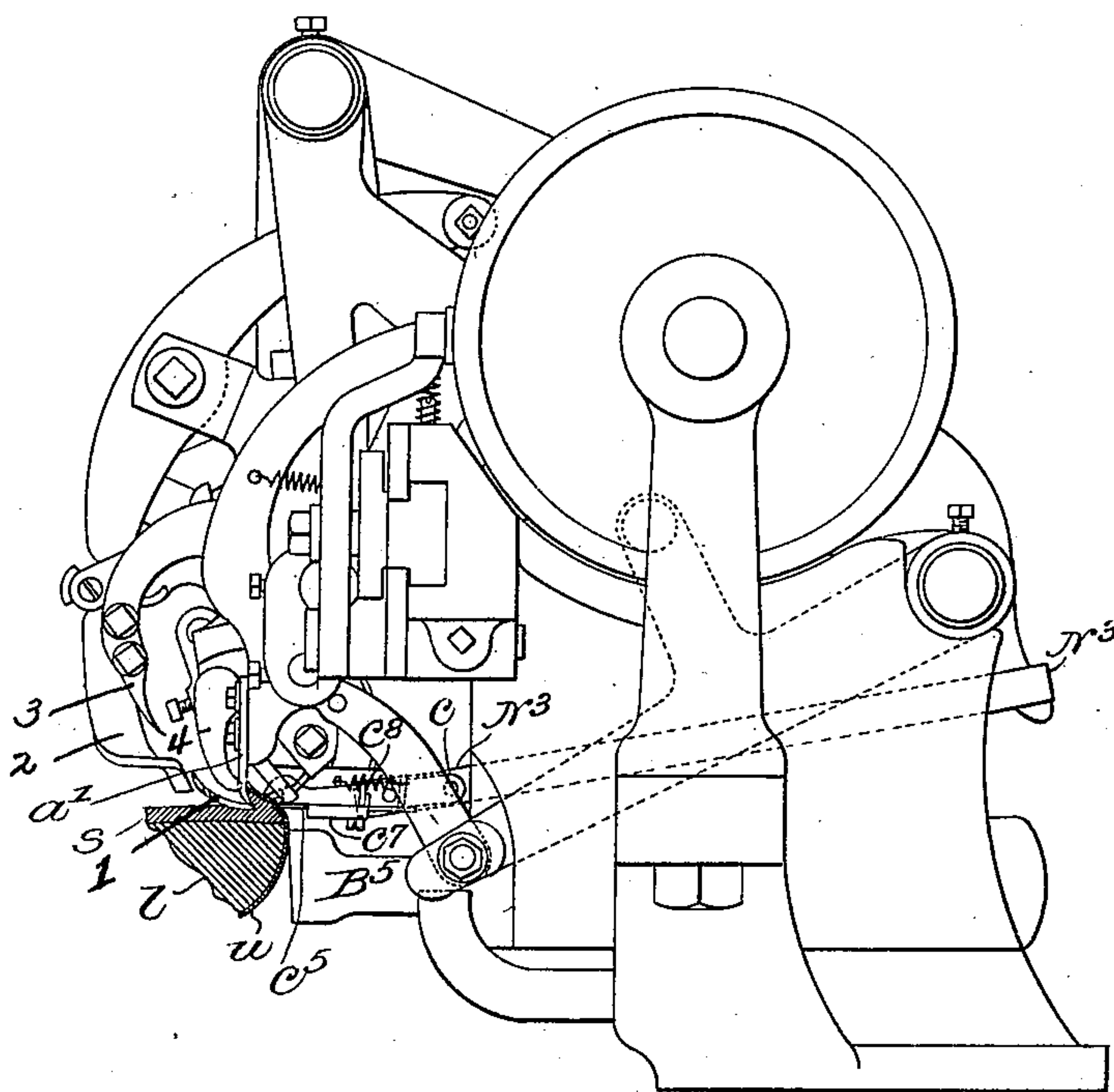
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SHOE SEWING MACHINE.

(Application filed Jan. 9, 1899.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.



Witnesses:

John F. C. Printz

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Inventor:

Clarence L. Eaton

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UNITED STATES PATENT OFFICE.

CLARENCE L. EATON, OF ROCHESTER, NEW YORK.

SHOE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 667,200, dated February 5, 1901.

Application filed January 9, 1899. Serial No. 701,614. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE L. EATON, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Shoe-Sewing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to shoe-sewing machines, and more particularly to those shoe-sewing machines which are employed in uniting the upper and sole in a turned shoe or the upper, insole, and welt in a welted shoe, a well-known type of such machine being the one known to the trade as the "Goodyear welt and turn machine."

The object of the present invention is to provide such a shoe-sewing machine with an upper-stretching device arranged to stretch the upper and press it into the angle formed by the lip and feather of the insole of a welted shoe or the shoulder and edge of the sole of a turned shoe, whereby the upper will be closely united to the sole and conformed to the last to a great degree without subjecting the stitch-forming devices to the great strain necessary to pull the upper closely into the angle and to a great degree adapt the machine which unites the upper and sole for performing the lasting operation, thus simplifying the manufacture of shoes and saving considerable expense.

To the above end the present invention consists of the devices and combination of devices which will be hereinafter described and claimed.

In the accompanying drawings the present invention is shown as applied to the shoe-sewing machine disclosed in Letters Patent of the United States issued to The Goodyear Shoe Machinery Company as the assignee of Z. T. French and W. C. Meyer, of October 8, 1889, No. 412,704; but it will be understood that its application is not limited to such machine.

Figure 1 shows a side elevation of portions of the machine of said patent with my invention applied thereto and illustrating the operation thereof. Fig. 2 shows in top plan view

the upper-stretching device. Fig. 3 shows a side elevation of the machine of said patent with my invention applied thereto.

Similar characters of reference will be used to designate corresponding parts throughout the specification and drawings.

In the drawings, 1 is the needle, 2 is the looper, 3 is the awl, and 4 is the thread-finger, all of which parts, together with their actuating mechanism, may be and preferably are the same as described in the said Letters Patent. B⁵ shows the back-rest, a' the channel-guide, and N³ the slide, which corresponds to the slide which carries the back-gage or the welt-guide of the machine of the patent referred to, and all of such parts may be and preferably are constructed, organized, and operated as similar parts designated by corresponding characters of reference in the patent referred to.

In the present machine the upper-stretching device is arranged to be advanced toward the shoe in substantially the same manner as the back-gage or welt-guide of the machine of the patent, and it is provided with means whereby as it is advanced by the slide N³ it will engage and stretch the upper, and also with what I will term a "yielding presser," arranged to force the upper into the angle of the shoe-sole, the upper being held by the device during the formation of a stitch, whereby a close fitting of the upper to the last is secured and also a close union of the upper and sole.

The upper-stretching device of the drawings consists of an arm c, secured by means of a bolt c' to the slide N³ and preferably offset, as shown in Fig. 2, whereby its working end will be brought substantially in line with the channel-guide a'. At its forward end the arm c is preferably notched, as shown at c², and undercut, as at c³, forming the downturned teeth c⁴, arranged to engage and stretch the upper u as the slide N³ is advanced, as shown clearly in Fig. 1 of the drawings, wherein is shown in cross-section a portion of a last l, the upper u, and sole s.

Arranged below the arm c is the yielding presser c⁵, which in the machine of the drawings comprises a thin bar or plate preferably notched or roughened at its forward end, as

shown at c^6 , and which is supported by and arranged to slide in a suitable guide c^7 , carried on the under side of the arm c .

The presser c^5 is normally held with its forward end advanced to a point slightly in the rear of the teeth c^4 , as shown in Fig. 2 of the drawings, it being drawn forward by means of a suitable spring c^8 , which at one end is connected with the presser c^5 and at its other to the arm c . A suitable stop, shown as a pin c^9 , is carried by the presser c^5 in position to engage the arm c , to thus limit the forward movement of the presser c^5 , but permitting said presser to yield freely in a backward direction against the tension of the spring c^8 .

The operation of the machine of the drawings is as follows: Assuming that the shoe is supported in proper relation to the stitch-forming devices and held in engagement with the channel-guide a' , as shown in Fig. 1, the advance of the slide N^3 , which takes place before the needle enters the work, causes the teeth c^4 of the arm c to engage and exert a pull upon the upper u , thus stretching and conforming the upper to the last, and the action of the teeth c^4 will be backed up by the presser c^5 , the forward end of which will engage the upper u below the teeth c^4 and force it into the angle of the sole s , as shown in Fig. 1, it being clear from the drawings that the relative movement between the teeth c^4 and the presser c^5 permits a further advance and stretching action of said teeth after the presser has come in contact with the work.

I do not consider the present invention as limited to the illustrated embodiment thereof, as the details of the form and arrangement thereof may be variously modified without departing therefrom.

Having fully described the construction and operation of my invention, I claim as new and desire to protect by Letters Patent of the United States—

1. In a shoe-sewing machine, the combination with stitch-forming mechanism, of an upper-stretching device for engaging and stretching the edge of the upper over the sole, a presser arranged to engage the upper below the stretching device and force it against the shoulder of the sole, and mechanism for imparting to said stretching device and presser

movements in substantially horizontal and parallel planes, substantially as described.

2. In a shoe-sewing machine, the combination with stitch-forming mechanism, of an upper-stretching device for engaging and stretching the edge of the upper over the sole, a presser carried by said upper-stretching device arranged to engage the upper below the stretching device and force it against the shoulder of the sole, and mechanism for actuating said stretching device and presser, substantially as described.

3. In a shoe-sewing machine, the combination with stitch-forming mechanism, of an upper-stretching device for engaging and stretching the upper over the sole, a presser for engaging the upper and forcing it against the shoulder of the sole, and mechanism for actuating the stretching device and presser constructed and arranged to permit a yielding of the presser during a continued advance movement of the stretching device, substantially as described.

4. In a shoe-sewing machine, the combination with stitch-forming mechanism, of an upper-stretching device for engaging and stretching the edge of the upper over the sole comprising a toothed arm, means to advance said stretching device toward the shoe in substantially the plane of the sole, and a sliding spring-controlled presser carried by said stretching device arranged to engage the upper of the shoe below said stretching device and force it against the shoulder of the sole, substantially as described.

5. In a shoe-sewing machine, the combination with stitch-forming mechanism, of an upper-stretching device for engaging and stretching the upper over the sole, a presser arranged to engage the upper below the stretching device and force it against the shoulder of the sole, and mechanism for actuating said stretching device and presser, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE L. EATON.

Witnesses:

H. E. COLE,
GEORGE CLARK.