(No Model.)

2 Sheets—Sheet 1.

E. E. BEAN.

SHOE SEWING MACHINE.

No. 524,986. Patented Aug. 21, 1894.

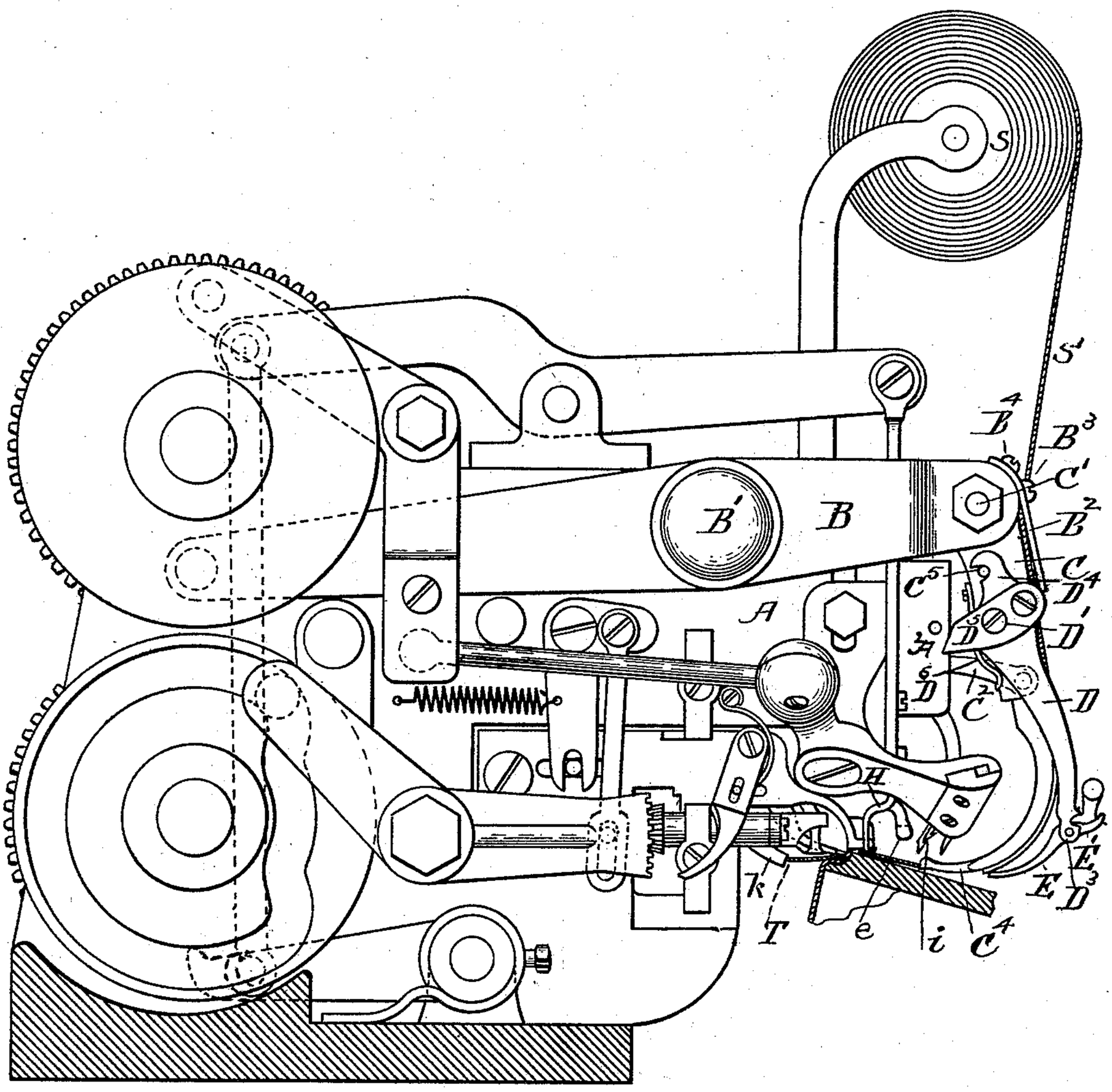

Fig. 1.

WITNESSES.

Frank G. Parker

Frank G. Hattie

INVENTOR

Edwin E. Bean.

(No Model.) 2 Sheets—Sheet 2.

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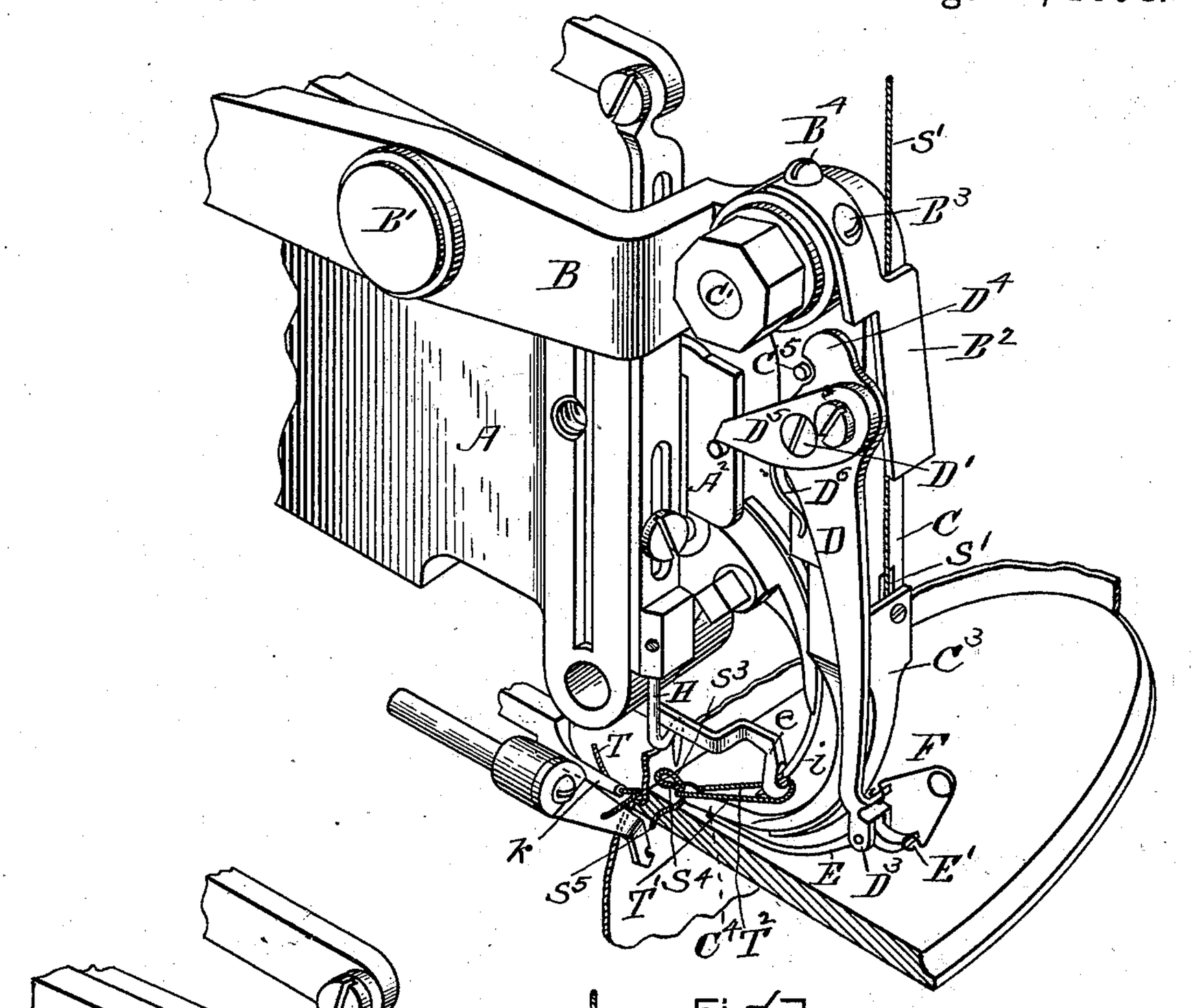

Fig. 2.

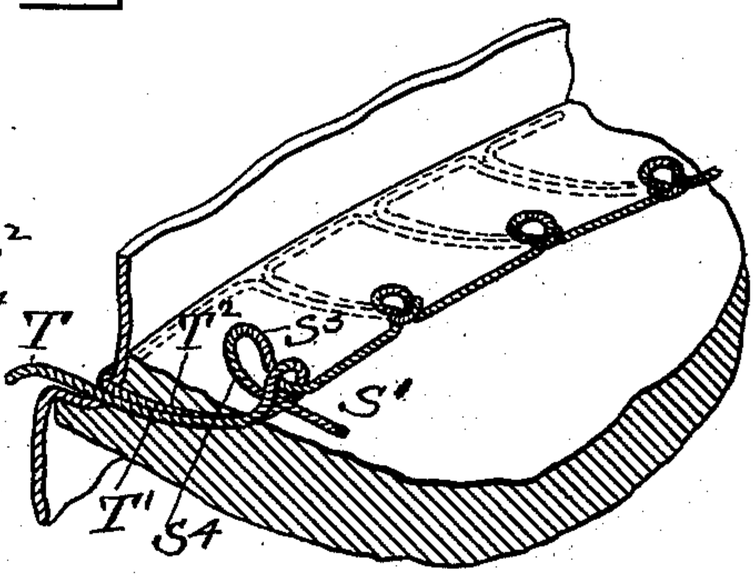

Fig. 4.

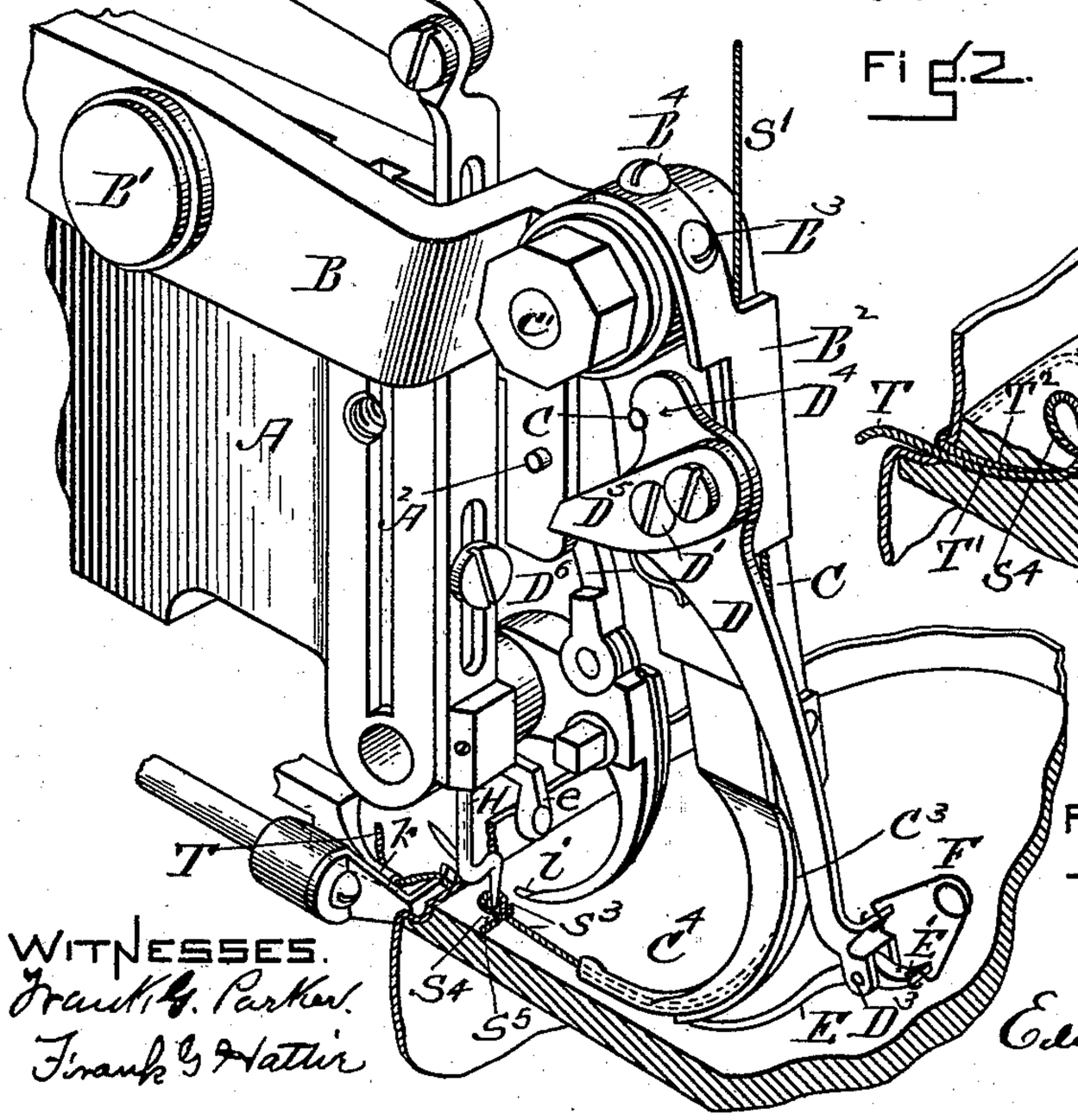

Fig. 3.

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Edwin E Bean

UNITED STATES PATENT OFFICE.

EDWIN E. BEAN, OF BOSTON, MASSACHUSETTS.

SHOE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 524,986, dated August 21, 1894.

Application filed April 13, 1894. Serial No. 507,431. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. BEAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Shoe-Sewing Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to attachments to be combined with the working parts of a shoe sewing machine described in Letters Patent of the United States No. 513,048, dated January 16, 1894, subject, shoe sewing machine, the object being to make a shoe sewing machine that will rapidly make a lock stitch having two threads, one of which only goes through the stock. This object I attain by means of the mechanism shown in the accompanying drawings, in which—

Figure 1 is a view in elevation showing the principal parts of a shoe sewing machine, having my improvements. Fig. 2 is a perspective view showing the stitch forming parts, the stitch being partly formed. Fig. 3 is a perspective view showing the stitch forming parts, the stitch being about complete. Fig. 4 is a perspective view showing a part of a shoe, illustrating the stitch and the method of making it.

In the drawings, A represents a part of the frame of the machine and to which the moving parts are attached.

In the following description I refer to such parts only as it may be necessary to an understanding of the working of the stitch forming appliances. The mechanism for operating such parts may be of the kind shown and described with patent above referred to, or of any desirable construction.

B is a lever pivoted at B′ to the frame A of the machine; a thread clamp B^2 is rigidly attached to the front end of this lever by screws B^3 B^4 or otherwise.

C C^4 is a pendent arm pivoted to the lever B at C′. This arm C C^4 moves bodily up and down with the front end of the lever B and has in addition a swinging movement imparted to it by the link C^2 which is operated by a cam or other suitable mechanism; a plate C^3 is attached to the front of the arm C C^4 and is so curved and arranged that it, together with the arm C C^4 forms a thread holder and carrier for the second thread S′.

For convenience in description, I designate the thread S′, the second thread. This thread forms the "bite" (see S^3 S^4 Fig. 4) and engaging with the loop T′ T^2 of the thread T (first thread) and makes a lock stitch of it. The second thread passes downward in a channel made on the under side of the arm C C^4 and is pushed forward in said channel by the thread pushing arm E. This pushing forward of the thread S′ causes it to form a loop S^3 S^4 in front of the end of the carrier C^4 which forms a bite or lock for the stitch formed by the first thread T. The pushing forward of the second thread to form the "bite" is effected by the following described device: The thread pushing arm E′ E is pivoted at D^3 to the lever D while the said lever D is pivoted in turn to the pendent arm C C^4 at D′ and has an arm D^5 attached to it, so arranged that as the pendent arm C is moved downward by the lever B and inward by the link C^2, the arm D^5 will come in contact with the pin A^2 which will stop its downward movement and thus cause the lever D to swing so as to throw its lower end inward; this action will carry the feeder E in the same direction, which in turn will take the "second" thread with it and thus form the loop or "bite" S^3 S^4. The feeder E E′ is held in contact with the thread by the spring F. Now the loop-bite being formed as shown in Fig. 2, the loop-bite holder H will descend so as to enter and hold the loop-bite as shown in Fig. 3. The pendant arm C C^4 will be swung outward by the motion of the link C^2. This movement will cause the thread to be drawn taut, since the part S^5 is held by a previously made stitch, and that part of the thread that is between the holder H and the reel S will be clamped and held by the clamp plate B^2 and the pendent arm C; for the reason that the clamp B^2 is relatively stationary while the arm C C^4 is made to swing against it, thus pinching the thread S^2 and giving it the required tension for insuring the proper drawing up of the loop-bite. The lever D is

held in its normal position by a spring D^6 and a pin C^5 which limits the movement of the upper end D^4 of the lever D.

While the above described formation of the loop-bite from the "second" thread S′ has been taking place, the stitch from the first thread T has also been made as I will now explain.

The thread T or first thread comes through the looper *k* which passes it around the point of the needle *i* so as to engage with the hook of the needle; now the needle retreats and draws the thread through the stock and forms a long loop T′ T^2 (Fig. 2); this loop is thrown off the hook of the needle by the cast-off *e* and immediately the take-up (not shown) operates to draw the loop tight down upon the loop-bite and the stitch is complete (see Fig. 3).

In the above description, the presser-foot, feed device, and awls, have not been described as they form no part of my present invention and are fully illustrated and described in the Patent No. 513,048 above referred to.

I claim—

1. In a sewing machine, the combination of the lever B, carrying the thread clamp B^2, and the pendent arm C C^4 pivoted to the lever B, and adapted to swing back and forth in relation to the thread clamp B^2 and therewith form a tension device for the thread S′ S^2; with the clamp B^2 substantially as and for the purpose set forth.

2. In a sewing machine, the combination of the lever B, carrying the thread clamp B^2 and the pendent arm C C^4 pivoted to the lever B and having attached to it a plate C^3 adapted to act in connection with channeled part C^4 of the arm C C^4 as a thread-holder and carrier; with the lever D pivoted to pendent arm C C^4, thread pushing arm E, arm D^5 attached to said lever D and pin A^2, all adapted to operate together substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 30th day of March, A. D. 1894.

EDWIN E. BEAN.

Witnesses:

FRANK G. PARKER,

FRANK G. HATTIE.