

No. 612,011.

Patented Oct. 11, 1898.

H. A. BLANCHARD.  
SEWING MACHINE.

(Application filed July 5, 1895.)

(No Model.)

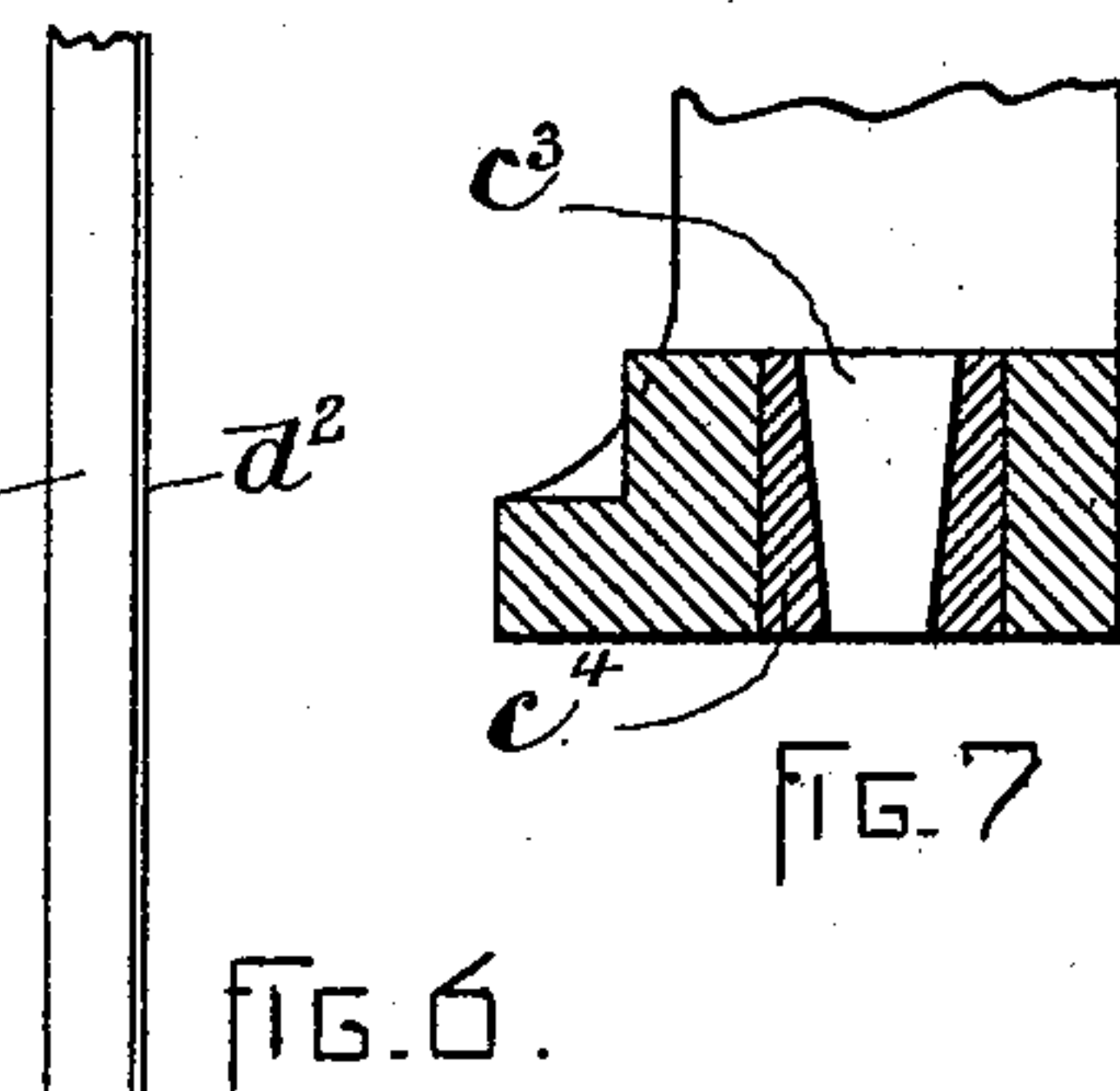
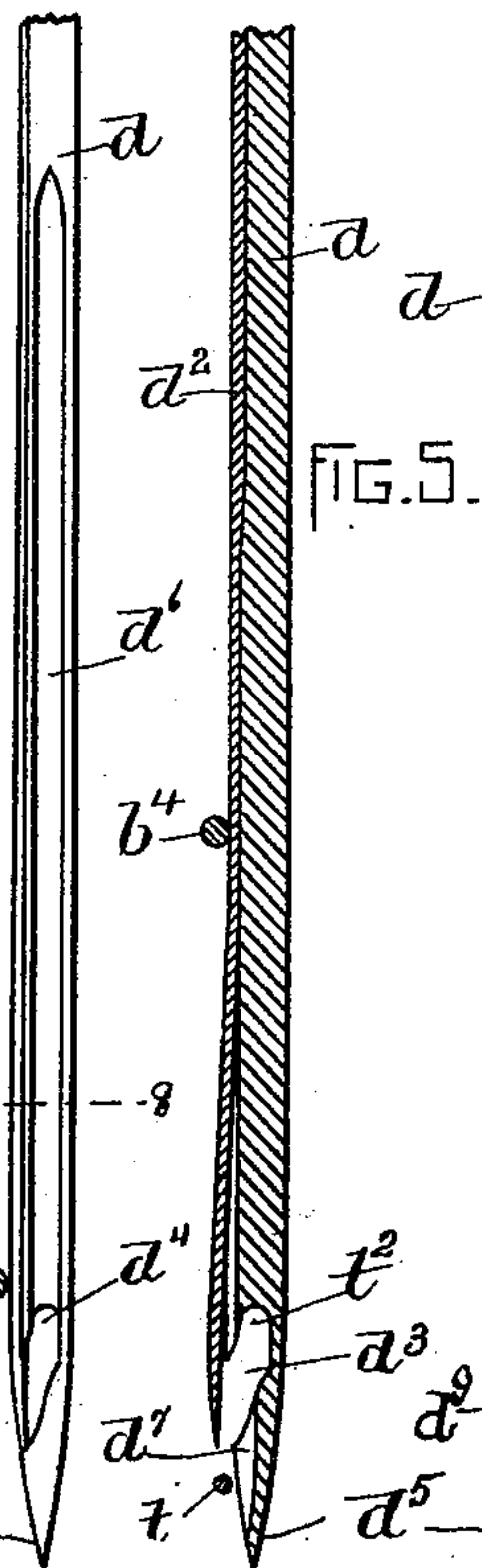
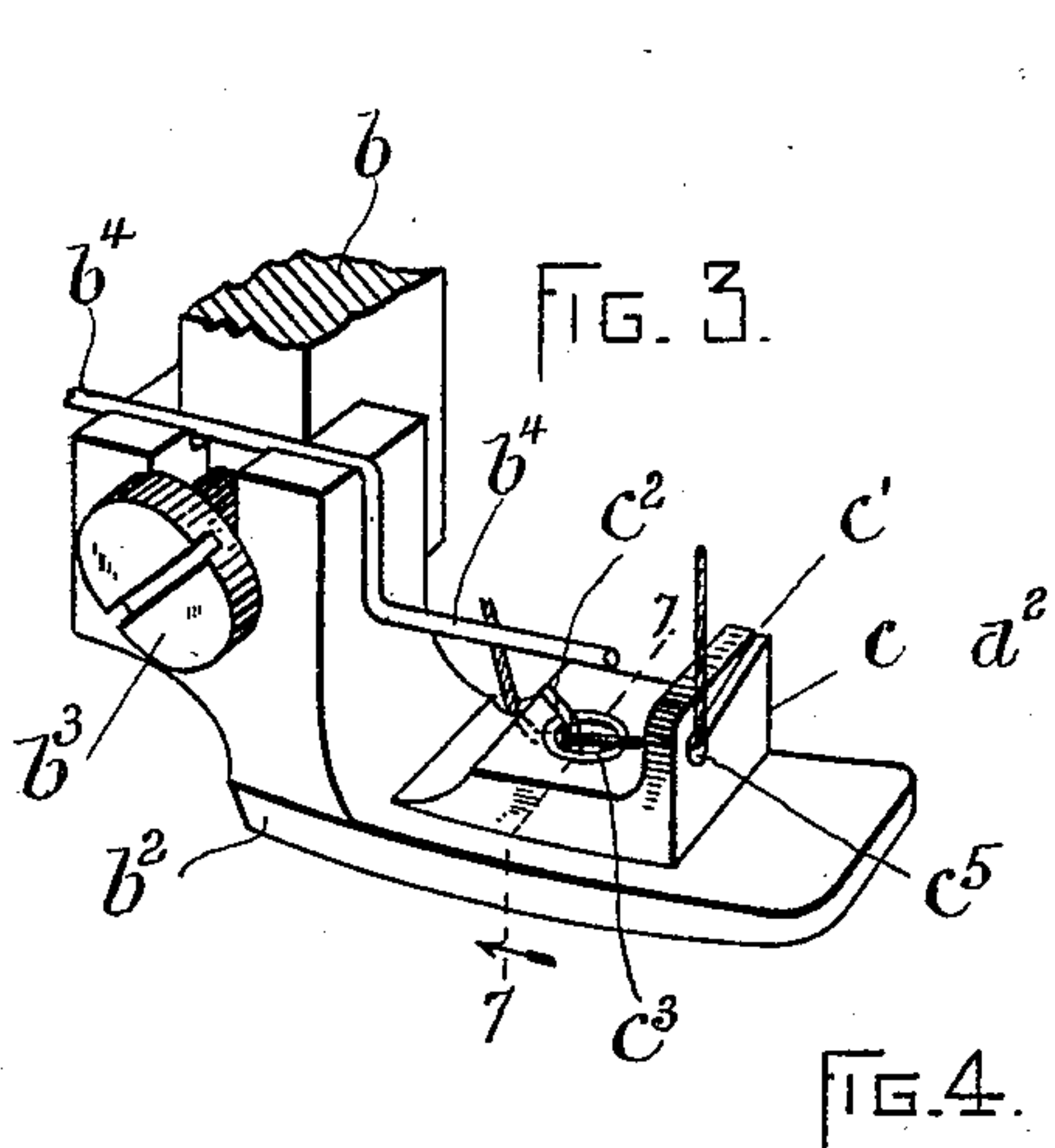
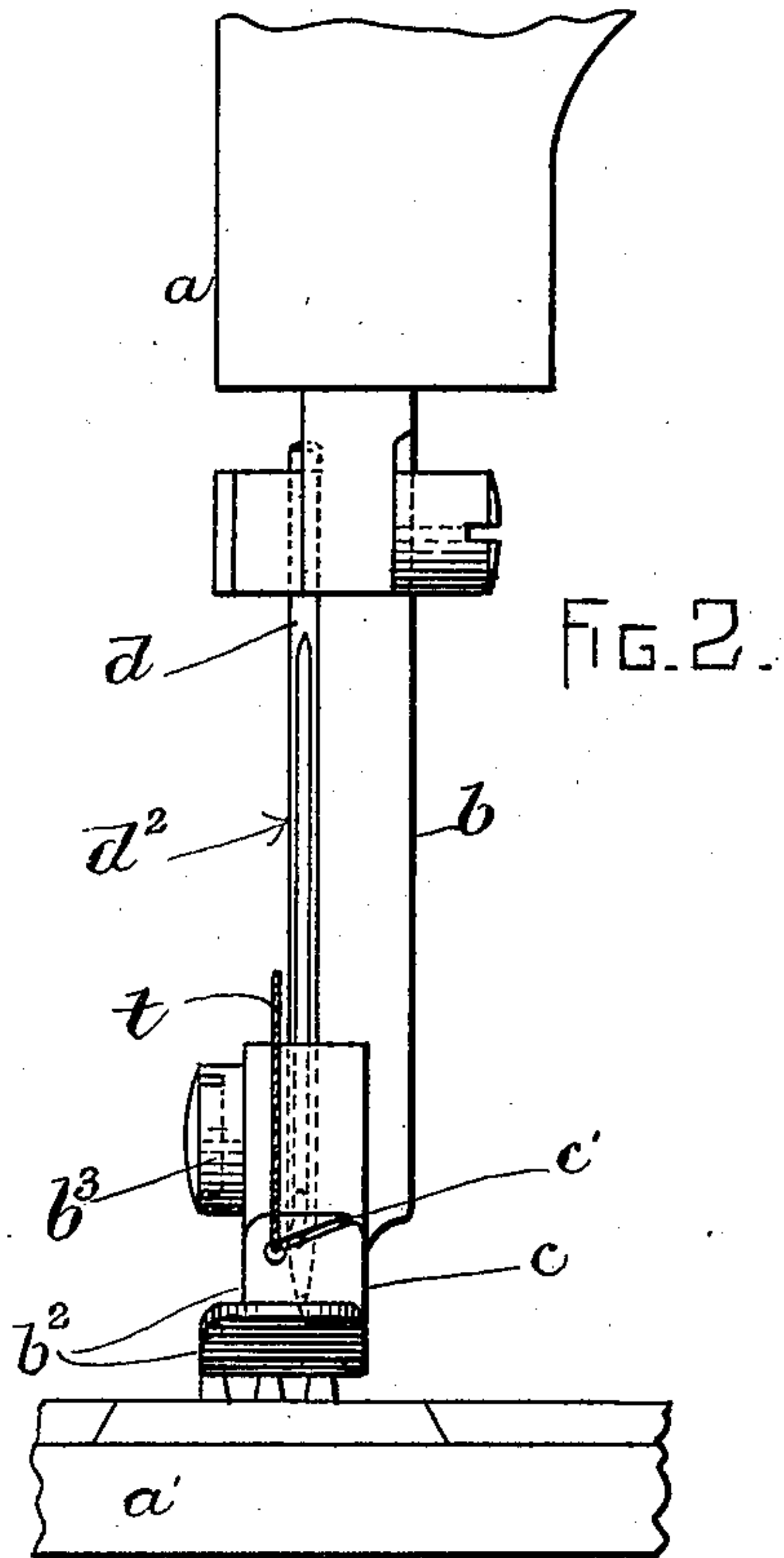
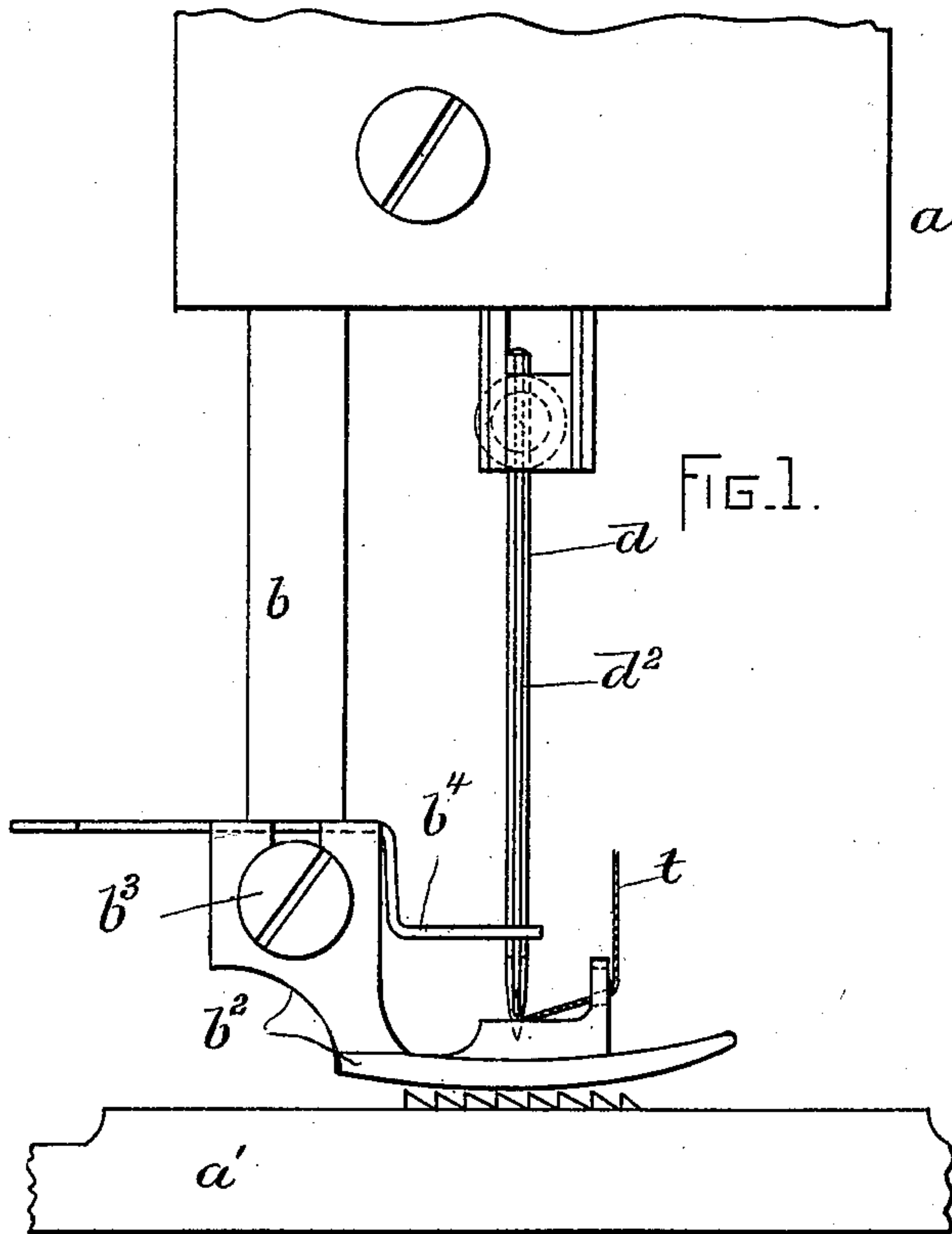


FIG. 8.  
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Helen A. Blanchard  
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# UNITED STATES PATENT OFFICE.

HELEN A. BLANCHARD, OF NEW YORK, N. Y.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 612,011, dated October 11, 1898.

Application filed July 5, 1895. Serial No. 554,930. (No model.)

*To all whom it may concern:*

Be it known that I, HELEN A. BLANCHARD, of New York, in the county of New York and State of New York, have invented certain  
5 new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to an improvement in sewing-machines; and it consists in the  
10 novel features of construction and relative arrangement of parts hereinafter fully described in the specification, clearly illustrated in the drawings, and particularly pointed out in the claims.

15 Reference is to be had to the accompanying sheet of drawings, forming a part of this specification, in which like characters indicate like parts wherever they occur.

In the drawings, Figure 1 is a side elevation of a sufficient portion of a sewing-machine to illustrate my invention in connection therewith. Fig. 2 is a view taken at right angles from that shown in Fig. 1. Fig. 3 is a detached view of my presser-foot. Fig. 4 is a front elevation of my improved needle. Fig. 5 is a vertical section thereof. Fig. 6 is a view of the needle, showing the opposite side of the needle from that illustrated in Fig. 4. Fig. 7 is a sectional view of the presser-foot on the line 7 7 of Fig. 3, looking in the direction of the arrow. Fig. 8 is a section on the line 8 8 of Fig. 4, looking in the direction of the arrow.

35 The overhanging arm *a* and the bed-plate *a'* may be of the ordinary construction, also the style of the machine.

The particular construction of the mechanism for driving the needle-bar and feeding mechanism I have not illustrated, since they  
40 form no part of my invention. I have only shown the particular portions of a sewing-machine to which my invention applies.

The presser-bar *b* is provided at its lower end with my improved presser-foot *b<sup>2</sup>*. This  
45 presser-foot is secured to the bar by means of the screw *b<sup>3</sup>*. Formed in this presser-foot is a tapering aperture *c<sup>3</sup>*, arranged with its wider opening at the top. The sides of this aperture are preferably of glass, and to this  
50 end the presser-foot may be made of glass, or a glass cylinder *c<sup>4</sup>*, having a tapering opening,

may be inserted in a suitable hole in the presser-foot, as shown in Fig. 7.

*c'* represents a slanting slot cut in a projecting portion of the block *c* of the presser-foot. This slot terminates in a circular portion *c<sup>5</sup>*. Upon the opposite side of the aperture *c<sup>3</sup>* from the part *c<sup>5</sup>* there is another slot *c<sup>2</sup>*. The slots *c'* and *c<sup>2</sup>* are preferably, as shown, arranged at an angle to each other. 60 The thread *t* is slid into the slot *c'* and pressed down into the slot *c<sup>2</sup>*, thus extending across the aperture *c<sup>3</sup>* in the path of the needle, for purposes hereinafter explained.

My improved needle *d* consists of the body 65 portion provided at its end with the usual point *d<sup>5</sup>* and at a short distance from this point with the slot *d<sup>3</sup>*. *d<sup>2</sup>* is a spring secured in a groove *d'* in said needle, having its free end arranged across the mouth of the slot *d<sup>3</sup>* 70 and capable of extending into a cut or depression *d<sup>7</sup>* below the mouth of the slot in order to be sheathed thereby.

*d<sup>6</sup>* represents a groove preferably at right angles to the groove in which the spring is 75 secured. The groove *d<sup>6</sup>* terminates in the slot *d<sup>3</sup>*. The slot *d<sup>3</sup>* terminates at its upper end in a thread-engaging shoulder *d<sup>4</sup>*, against which the thread rests while being carried through the fabric, and at its lower end in a 80 thread-releasing incline *d<sup>9</sup>*.

*b<sup>4</sup>* is a spring-bar secured to the presser-foot in any desired way and arranged to bear against the spring in the needle in order to force the lower end of said spring across the 85 mouth of the slot *d<sup>3</sup>*. This rod I find is not necessary when a presser-foot with a tapered aperture is employed. The free end of the spring *d<sup>2</sup>* normally sets back away from the mouth of the slot *d<sup>3</sup>*, leaving said slot open, 90 the parts being shown in position, as in Fig. 1. As the needle descends the thread *t*, being in the path of said needle, first assumes the position indicated at *t'* in Fig. 5. Then as the needle descends the thread is guided to 95 the position *t<sup>2</sup>* in Fig. 5. Upon the continued descent of the needle the rod *b<sup>4</sup>* or the tapering sides of the aperture in the presser-foot force the end of the spring into the depression *d<sup>7</sup>*, making said spring assume the position 100 shown in Fig. 4. As the needle descends the thread is guided in the groove *d<sup>6</sup>* of the nee-



dle. After the needle has passed through the fabric the free end of the spring leaves the mouth of the slot, assuming the position shown in Fig. 5. Now as the needle is drawn upward the thread leaves the needle and a loop is formed. Particular attention is called to the groove  $b^6$  in the needle. By this construction I am enabled to form the loop with certainty, the thread being sheathed in the needle during the passage through the cloth.

From the foregoing it will be seen that I have invented a thoroughly useful and efficient form of self-threading needle. All of its parts are simple and not liable to get out of order.

The spring  $d^2$  is so set in the needle that the free end thereof normally stands out from the needle.

In Fig. 4 the bar  $b^4$  is shown in its position before the needle begins to descend. In Fig. 5 the bar  $b^4$  is in the position it would assume when the end of the needle is below the cloth or work; but, as heretofore stated, however, I may and preferably do dispense with this bar and make use only of the tapered aperture, the sides of the aperture engaging the sides of the spring, closing the mouth of the slot after the thread has taken the position shown at  $t^2$  in Fig. 5. There is no connection between the positions of the part  $d^4$  and thread, as at  $t^2$  in Fig. 5. When the thread is at  $t^2$ , the bar in active operation would be closer down to the end of the needle than shown in this figure. The positions of the bar  $b^4$  and of the thread in Fig. 5 are not relative to each other at all, but are independent.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. A sewing-needle provided above its point with a slot open at one side, the walls of said slot being formed at their upper ends to engage the thread during the downward movement of the needle and at their lower ends to release the thread during the upward movement of the needle and a spring secured to the shank of the needle and extending across the mouth of the slot.

2. A sewing-needle provided above its point with a lateral slot, the walls of said slot terminating at their upper ends in a thread-engaging shoulder and at their lower ends in a thread-releasing incline, and a spring secured in the shank of the needle and extending across the mouth of said slot.

3. A sewing-needle provided above its point with a lateral slot, the walls of said slot terminating at their upper ends in a thread-engaging shoulder and at their lower ends in a thread-releasing incline, a spring secured in the shank of the needle and extending across the mouth of said slot, said needle being formed with a vertical thread-groove terminating at the shouldered end of said slot.

4. In a sewing-machine in combination a presser-foot provided with a tapered aperture and means for guiding a thread across said aperture, and a needle provided with a thread-groove and a shouldered, spring-guarded, inclined, slot above the point of the needle, whereby the needle is enabled to pick up the thread on its downward movement, carry it through the material, and drop said thread on its upward movement.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 8th day of April, A. D. 1895.

HELEN A. BLANCHARD.

Witnesses:

A. D. HARRISON,  
W. P. ABELL.