No. 698,342. Patented Apr. 22, 1902.

R. R. WANLESS.

BUTTON SEWING MACHINE.

(Application filed Oct. 23, 1901.)

(No Model.) 2 Sheets—Sheet 1.

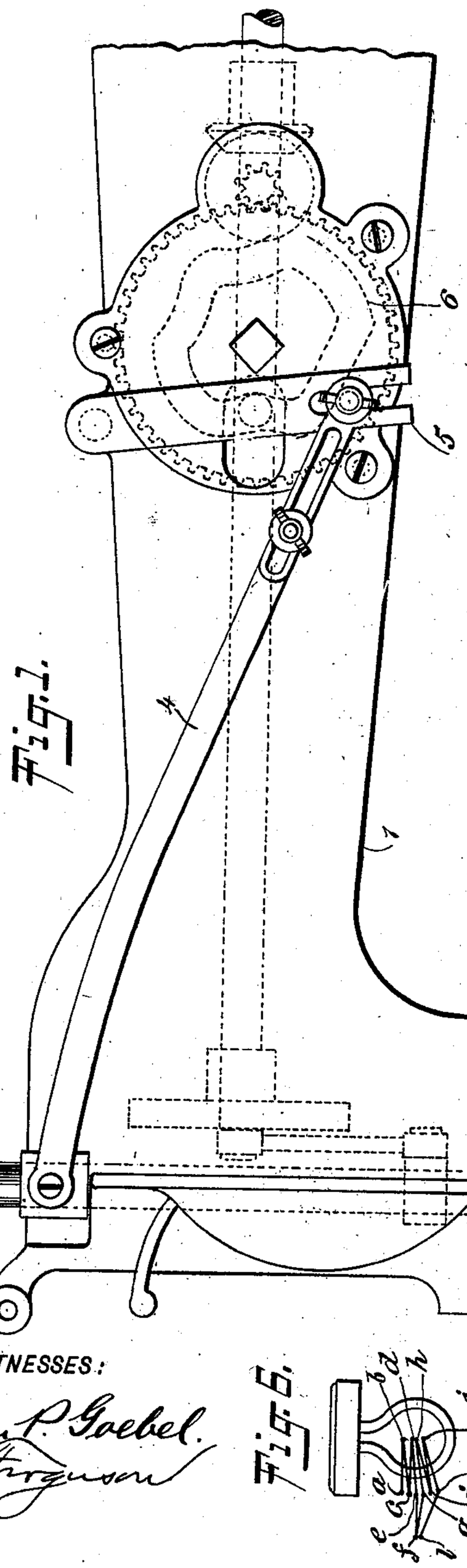

Fig. 1.

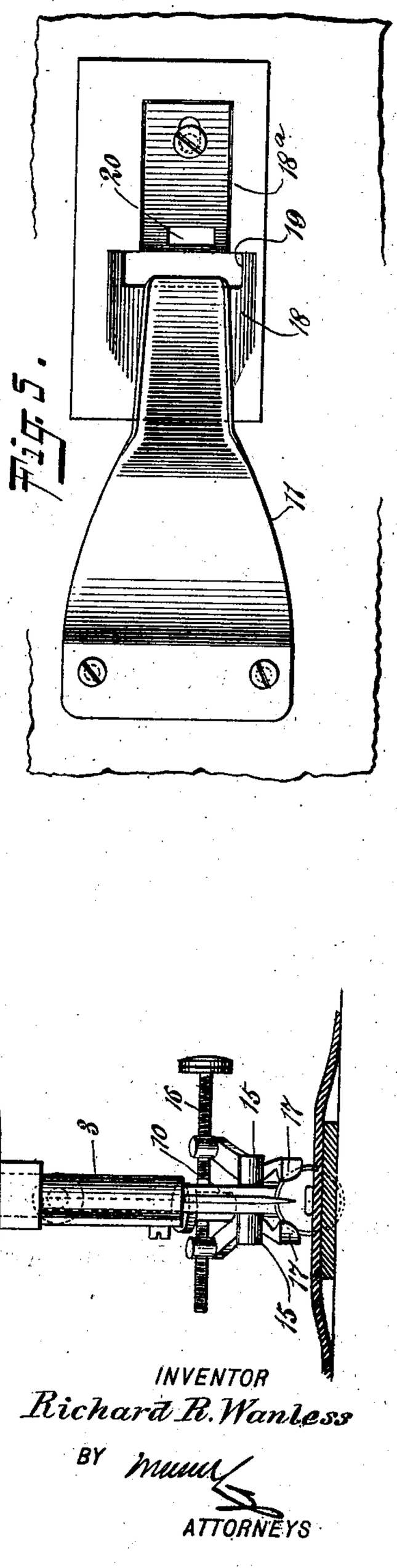

Fig. 5.

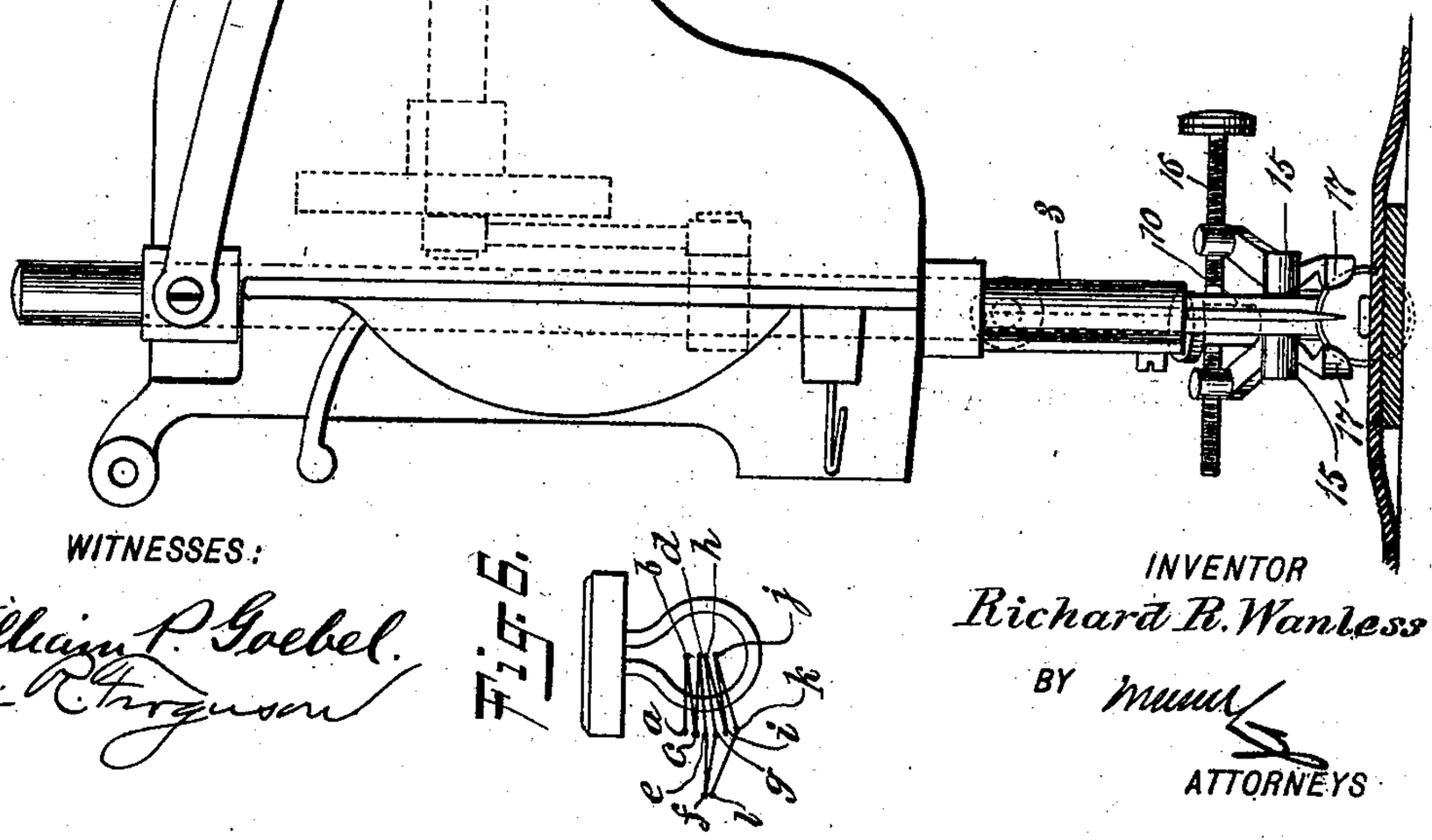

Fig. 2.

Fig. 6.

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Fig. 2.

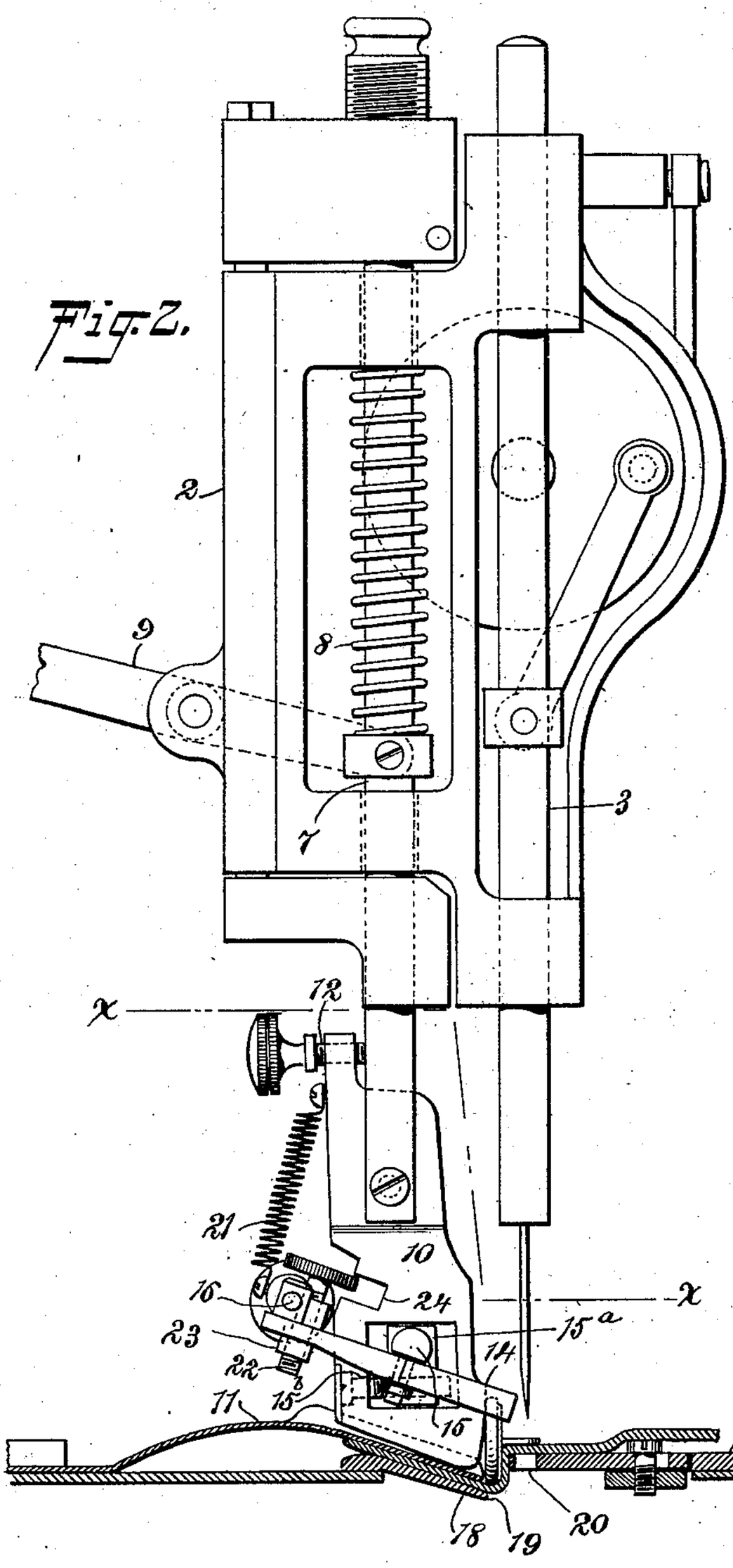


Fig. A.

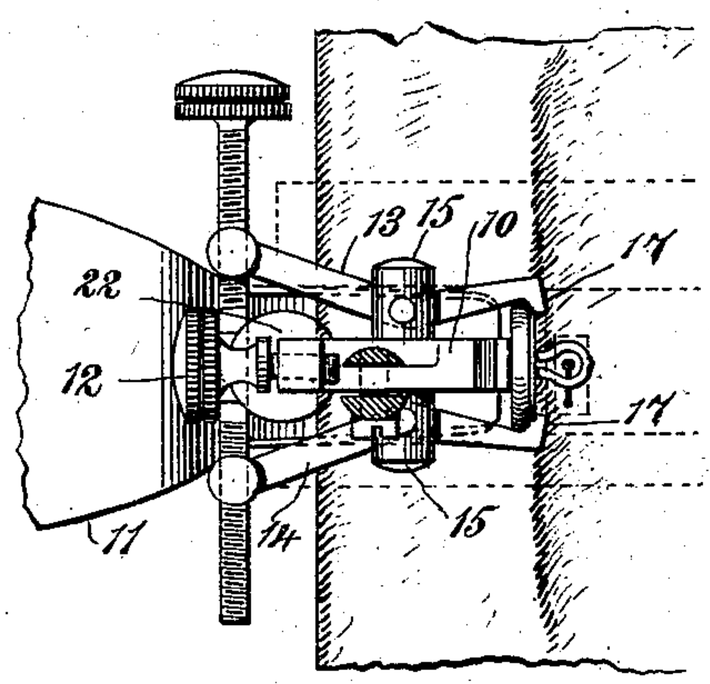
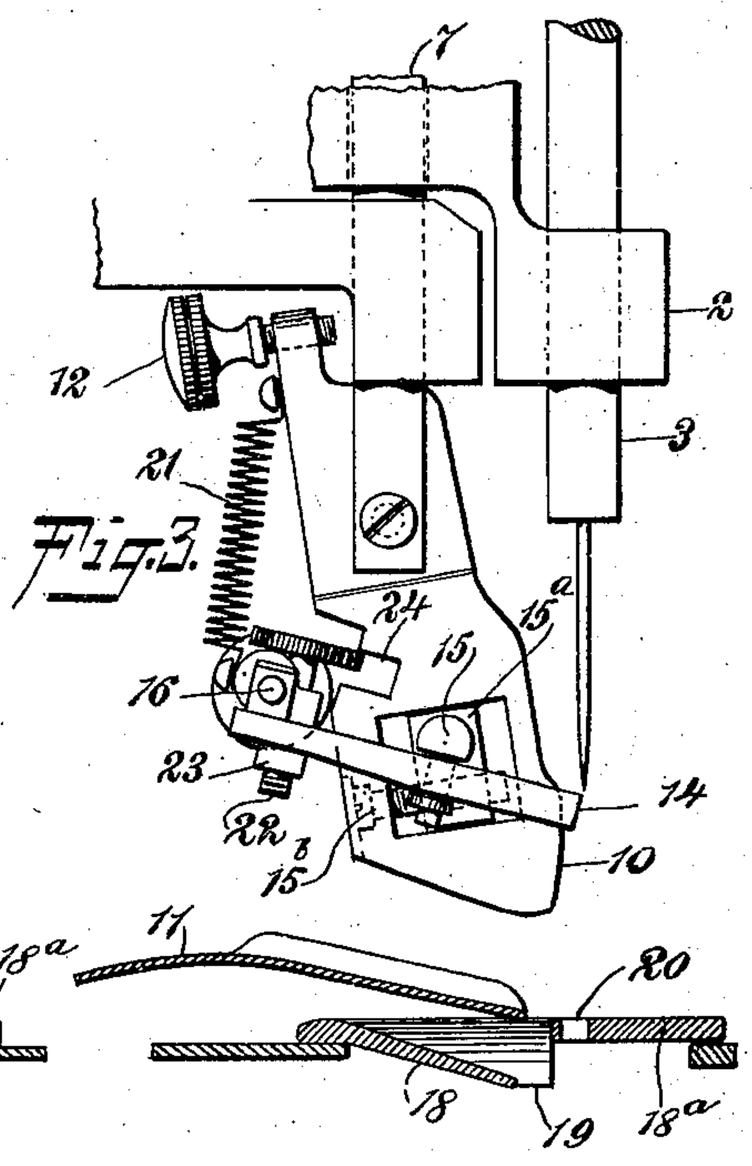


Fig. 3.



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UNITED STATES PATENT OFFICE.

RICHARD R. WANLESS, OF NEW YORK, N. Y., ASSIGNOR TO ALFRED WEIL, OF NEW YORK, N. Y.

BUTTON-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 698,342, dated April 22, 1902.

Application filed October 23, 1901. Serial No. 79,614. (No model.)

To all whom it may concern:

Be it known that I, RICHARD R. WANLESS, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Button-Sewing Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in machines for sewing shank-buttons on garments; and an object is to provide in connection with such machines a simple device for holding the buttons, the said device being adjustable to different sizes of buttons.

A further and essential object is to provide a cam movement for shifting the needle-bar in such manner as to form extra stitches at the outer side of the shank, somewhat in the manner of hand-sewing, to prevent the drawing out of the thread.

I will describe a button-sewing machine embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of a portion of a sewing-machine arm and illustrating my invention. Fig. 2 is a side elevation, partly in section. Fig. 3 is a partial side elevation and partial section showing the button-holding device in its uppermost position. Fig. 4 is a section on the line $x\,x$ of Fig. 2. Fig. 5 is a plan view of the cloth-holder and throat-plate employed, and Fig. 6 shows diagrammatically the manner of sewing and fastening the end of the thread.

Referring to the drawings, 1 designates the arm of the sewing-machine, on the forward end of which is mounted a rocking frame 2, which carries the needle-bar 3. Rocking motion is imparted to the frame 2 to cause the needle to move to the inner portion of a button-shank and to the outer portion thereof by means of a rod connection 4 with a swinging arm 5, operated by a cam 6, arranged in the sewing-machine arm. Mounted in the machine-arm is a lifting-bar 7, normally held downward by means of a spring 8, which surrounds said bar, engaging at its lower end with a collar on the bar and at its upper end with a wall of an opening in the swinging frame. A lever 9 is provided for raising said bar to release the work, as will be hereinafter described.

Mounted to swing on the lower end of the bar 7 is a work-holding block 10, the lower end of which is inclined downward and forward, and this lower end is designed to engage the upper surface of a work-holding spring-plate 11, mounted on the bed-plate of the machine. The swinging movement of the block 10 may be regulated by means of a screw 12, engaged in a tapped hole in the upper end of said block and adapted to engage against the rod or bar 7.

Carried on the block 10 is a button-holding device comprising jaws 13 and 14, these jaws being pivoted to swing in a horizontal direction on lugs 15, attached to a block 15^a, movable back and forth in an opening in the block 10 and held, as adjusted, by a screw 15^b. The jaws are moved toward and from each other at their gripping end by means of a screw 16, having right and left hand threads, these threads engaging in the rear projected ends of the jaws. At their gripping or forward ends the jaws have inwardly-extended fingers 17 for engaging against the inner surface of the button, while the outer surface of the same is pressed against the forward portion of the block 10, as clearly indicated in Fig. 2.

Arranged below the holding-plate 11 is a bed-plate 18, provided with an opening 19, into which the goods and button may be pressed, as indicated, and adjustable on the bed-plate of the machine is a plate 18^a, provided with a slot 20 for the passage of the needle. The plate 18^a is made adjustable for the purpose of regulating the distance between the inner end thereof and the end of the block 10 to provide for different lengths of button-shanks, and the upward adjustment of the jaws 13 and 14 is to provide for the different sizes or circumference of buttons, while the longitudinal adjustment is to provide for different thicknesses of buttons.

The jaws 13 and 14 are held yieldingly in engagement with a button by means of a spring 21, connected at one end to the jaws

and at the other end to the block 10. It will be noted that the jaws not only swing toward and from each other, but they are arranged to swing vertically, and as a means for limiting the vertical movement or adjusting the same I provide a set-screw 22, engaging in a lug 23, carried by the jaws, and the head portion of this screw is designed to engage with the upper wall of a notch 24, formed in the block 10.

In operation the garment or the edge thereof is to be placed between the plate 11 and the bed-plate 18, while the block 10 is in its uppermost position, as indicated in Fig. 3, and the button is to be placed upon the goods, as shown in Fig. 2, after which the block 10 is lowered, pressing the plate 11 downward and firmly holding the goods, and the jaws at this time by engaging with the button will hold it securely in place. Then upon the operation of the needle the threads will be carried through the goods within the shank of the button and also at the outer side thereof.

An understanding of the stitching for sewing on the button and for fastening the thread ends may be best understood by reference to Fig. 6. Assuming the needle to first enter at *a*, the cam movement will carry the next stitch to *b*, thence to *c*, thence to *d*, thence to *e* and to *f*, which makes a tying or fastening for the thread upon a rotation of the cam, and upon another rotation of the cam the stitch will be carried from *f* to *g*, thence to *h*, thence to *i*, then to *j*, and out to *k* and *l*, forming another fastening to prevent raveling. The movements for fastening the button I term the "normal" movement, while the tying-stitch is the "abnormal" movement of the needle-bar, and during these movements the goods remain stationary.

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

1. In a button-sewing machine, a needle-bar, means for moving the needle-bar vertically, and means for moving the needle-bar on a horizontal plane to cause a predetermined number of stitches alternately at the inner and outer sides of a button-shank and then to cause a further horizontal movement to form a fastening-stitch while the goods remain stationary, substantially as specified.

2. In a button-sewing machine, a frame mounted to swing on the machine-arm, a needle-bar carried in the frame, a cam, and a connection between the cam and frame, the said cam operating the frame to cause a predetermined number of stitches alternately at the inner and outer sides of a button-shank, and then to cause a further swinging movement to form a fastening-stitch adjacent to the first-named stitches, substantially as specified.

3. A machine for sewing on buttons, comprising a needle-bar, a swinging frame in which said needle-bar is mounted, means for causing movements of said swinging frame, a bar movable vertically in the swinging frame, a block having pivoted connection with said bar, jaws mounted to swing on said block, a screw-rod for moving said jaws toward and from each other and a spring-yielding presser-plate operated by said block, substantially as specified.

4. In a machine for sewing on buttons, a needle-bar, means for causing an oscillating movement of the needle-bar, a spring-pressed bar rearward of the needle-bar, a block mounted to swing on said spring-pressed bar, a limiting-screw engaging with the block, jaws mounted on said block to have a vertical swinging movement and to move toward and from each other, and a screw-rod for moving the jaws toward and from each other, substantially as specified.

5. A machine for sewing on buttons, comprising a needle-bar, means for imparting an oscillating motion to said bar, a block arranged rearward of the needle-bar, button-gripping jaws carried by said block, a spring-yielding presser-plate adapted to be moved downward and held by the block, and an adjustable plate having an opening for the passage of the machine-needle, substantially as specified.

6. A machine for sewing on buttons, comprising a needle-bar, means for imparting an oscillating motion to said needle-bar, a presser-block rearward of the needle-bar and having a downward and forwardly inclined lower end, a presser-plate operated by the block, button-gripping jaws mounted on said block so as to swing vertically and toward and from each other, means for adjusting the vertical movement of the jaws, a spring connection between the jaws and the block, and a screw for moving the jaws toward and from each other, substantially as specified.

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

RICHARD R. WANLESS.

Witnesses:
JNO. M. RITTER,
C. R. FERGUSON.