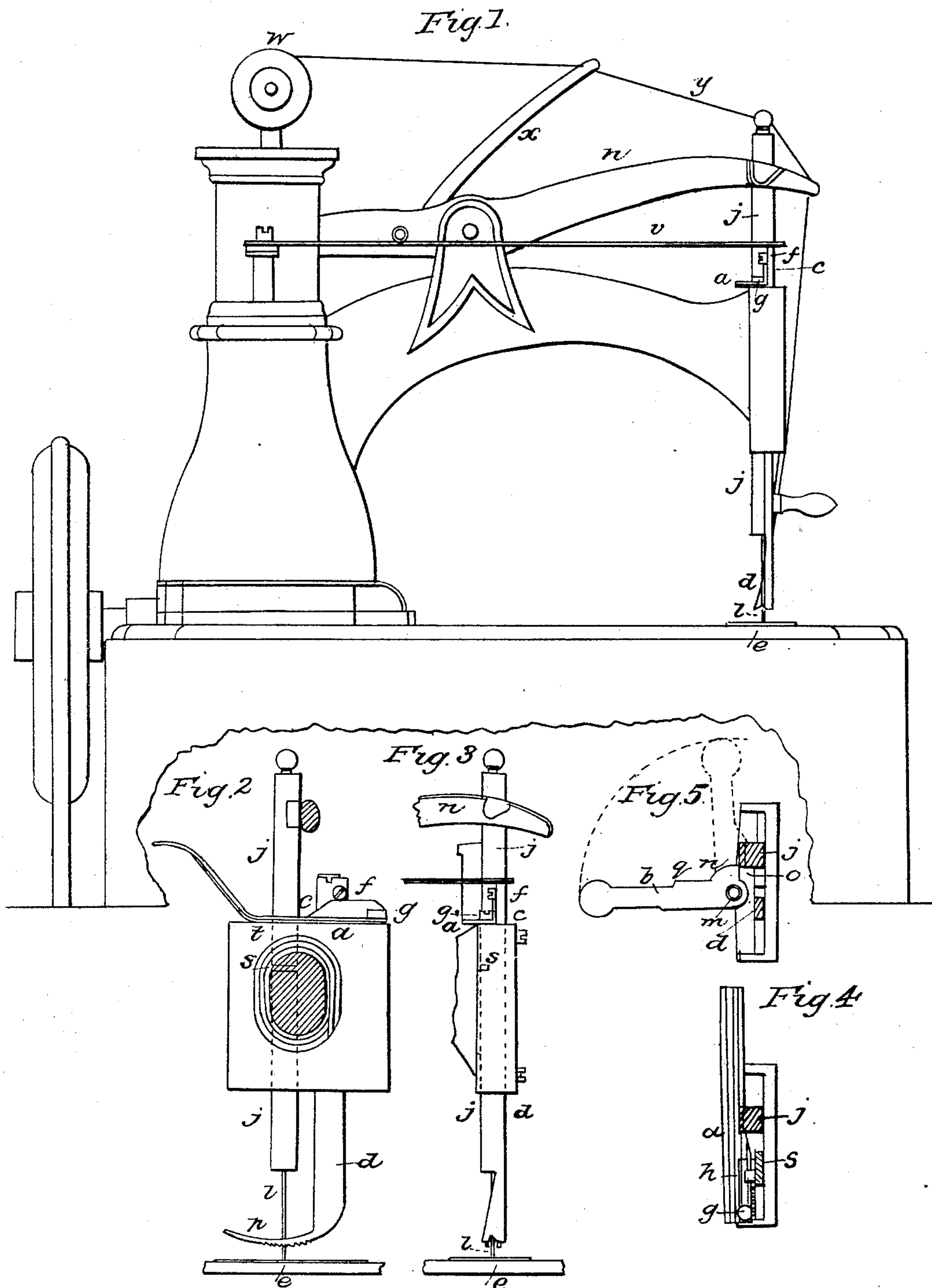


J. N. CHAMBERLIN.

Sewing Machine.

No. 28,452.

Patented May 29, 1860.



WITNESSES
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IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 28,452, dated May 29, 1860.

To all whom it may concern:

Be it known that I, JOHN N. CHAMBERLIN, of the city of Troy, county of Rensselaer, and State of New York, have invented new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereupon and making a part of this specification.

Figure 1 is a side view of the main part of the machine. Fig. 2 is a front view, showing the needle-bar, step-bar, and one form of the catch for the purpose of locking and holding in two certain and required positions the said needle-bar and the said step, for purposes hereinafter defined. Fig. 3 shows the attachment of the needle-bar to the end of the working-lever; also the attachment or connection of a certain spring, hereinafter to be described, to and with the said step-bar and working the same. It also shows an end view of the said catch. Fig. 4 shows one form or construction of the catch or latch for the purpose as aforesaid, and more fully described hereinafter. Fig. 5 is another form or construction of a latch or catch for the purpose aforesaid.

Like letters refer to and represent like parts.

The nature of my invention consists in constructing, arranging, and combining with the needle-bar and the step-bar (moving up and down in the head or front part of any sewing-machine and directly over the material being sewed) a catch or latch, whereby both the needle-bar and step-bar are firmly and jointly held in two certain fixed and necessary positions for the purpose of correctly and properly fixing or adjusting the needle in the lower end of the needle-bar; also for the purpose of holding the said needle-bar and step-bar up jointly and away from the material sewed or to be sewed.

To enable others skilled in the art to construct and use my invention, I will now proceed to describe it.

I construct my improvements in sewing-machines of any material to answer the purpose, and of any form, size, or shape to perform the required work.

I usually construct the catch or latch as seen at *a*, Figs. 2 and 4, or as seen at *b*, Fig. 5. When constructed as shown at *a* in said Figs.

2 and 4, it has a sliding motion in its operation. When constructed as shown at *b*, Fig. 5, it turns upon a pin or point for that purpose. The catch or latch *a* (shown at Figs. 2 and 4) is made from any material that will answer the purpose, and has an incline plane upon one side thereof, which shall be upon that part adjoining the needle-bar and step-bar. The incline is upon that part which is bent upward at a right angle to the body of the plate, and its inclination is toward the horizon. The incline is shown at *c*, Fig. 2, and is for the purpose of lifting or raising up the step-bar *d* to a desired position, whereby it is held away from and above the table *e*, upon which rests the material to be sewed. This step-bar being thus held in a certain and fixed position, the operator is enabled to fully move the material thereunder without any obstruction from or by reason of the said step-bar.

At *f*, Fig. 2, is shown a pulley or a pin, by which the incline plane *c* raises the said step-bar *d* when the catch or latch is moved forward or toward the needle-bar *j*.

At *s*, Fig. 2, is shown a pin for the purpose of guiding or directing in a proper course the catch or latch *a* in raising and lowering the step-bar *d*. To accomplish this there is a slot-mortise in the base or plate of the said catch or latch, which mortise is shown at *h*, Fig. 4. The lever end of this catch or latch is bent upward, as shown in Fig. 2, which is for convenience.

At *j*, Fig. 2, is shown the needle-bar, which may be held in two required positions by the use of the same catch or latch used to hold or fasten the said step-bar. The said step-bar and needle-bar may be held or secured at one and the same time and operation, or each may be held or fastened separately, as hereinafter described. The needle-bar *j* is constructed with two grooves or channels horizontally across one side thereof for the express purpose of receiving one part of the catch or latch herein described, so as to secure it in two required and necessary positions, whereby many advantages are gained, as hereinafter set forth. The upper position is for the express purpose of adjusting the needle to its proper working position, which is done by placing the eye of the needle upon a direct line with the upper surface of the table *e*. The lower position, ob-

tained by means of the lower recess or groove in the said needle-bar, is for the purpose of holding the said needle-bar *j* up and entirely away from the material sewed and to be sewed. This prevents any liability to break or injure the needle in consequence of being caught by the material sewed or to be sewed thereunder. By this arrangement the needle is firmly held out of the way of any material thereunder, and securely against any accident; and when the needle-bar and step-bar, hereinbefore described, are each together raised up and fastened by means of the said catch or latch, then any material to be sewed may be passed between the upper surface of the table *e* and the lowest points of each of the said needle and step bars without interruption from either or any liability to accident. I have another form or manner for constructing a catch or latch for the same purpose of the one hereinbefore described, and may be seen at *b*, Fig. 5. This may be made of any material to answer the purpose required. It turns upon the pin *m*, and at this end has an eccentric or quarter-circle, *n*, for the purpose of holding the step-bar *d* by passing into the groove or recess *o* in the said bar, and seen at Fig. 5. This cam or eccentric of the said catch *b* enters the said groove or recess *o*, and thereby holds up the said step-bar, together with the step *p*, Fig. 2, thereto attached, so as to allow the material worked upon to pass freely thereunder without obstruction between the said step and the table *e*, on which rests any material to be sewed. When that part (the aforesaid catch or latch *b*) is brought into the said recess, as above described, then a projection of the said catch (marked *q*) enters into a recess or groove crosswise on the said needle-bar, as aforesaid, as shown in dotted lines at Fig. 5. The notches, grooves, or recesses in the needle-bar and in the step-bar are shown by light lines at said Fig. 5. They are also in part shown in red lines at Figs. 2 and 3, and lettered *s* and *t*, the upper ones being occupied by that part of the aforesaid-described catch or latch for the aforesaid purpose. The needle-bar *j* always requires two recesses or grooves, as aforesaid, the upper one being for the purpose of securing and firmly fastening the said needle-bar at a certain point, in order to correctly and accurately set, gage, and adjust the needle *l* in connection and in conjunction with the hook, shuttle, or any suitable sewing apparatus directly below the table *e*, and not shown in the drawings, because no wise deemed necessary. When the needle-bar *j* is correctly arranged for the purpose of receiving the needle for its proper adjustment, as aforesaid, the eye of the said needle will come on an exact line or level with the top of the table *e*, while the catch or latch aforesaid will secure the aforesaid needle-bar in a required and desired position by the use of the upper groove or recess aforesaid, as shown at Fig. 2. At Fig. 1 may be seen the working bar or beam *u*, and

the spring *v*, also the spool of thread *w* and the tension-regulator *x*.

The regulator *x* is constructed as follows, to wit: It is made of any desired material, with its lower end flat upon two sides, through which a slot-mortise is made, so as to receive a pin or screw-bolt, which shall firmly secure it to the machine when it is properly adjusted. The slot-mortise will allow of a higher or lower adjustment, whereby the tension is made more even. The upper end of this regulator may be round, and at or near its extreme end there is drilled entirely through a small hole for the purpose of passing the thread *y*, in its passage from the spool *w*, through the upper end of the needle-bar *j* and the end of the working-beam *u* down through the eye of the needle *l*. This regulator is secured or attached to the stationary part of the machine by means of any screw-bolt passing through the said slot-mortise into the frame-work of the machine, and is adjusted by means of the same screw-bolt. The upper end of this regulator may be bent or crooked in any desired or required direction.

The spring *v* is for the purpose of regulating the step-bar *d*. The arm or working-beam *u* gives the upward and downward motion of the needle-bar *j*.

The rod or bar *x* regulates the tension as follows, to wit: When on a direct line with the top of the spool *w* and the hole in the upper end of the needle-bar *j*, through which passes the said thread, which needle-bar must be raised upward until the aforesaid catch or latch will move into the recess or groove *s* thereon, and then secure the said needle-bar, thus making the thread *y* nearly parallel to and with the surface of the table *e*, then, upon operating the entire machine, it will be found that the spool *w* will give off its thread by both the upward and downward motion of the aforesaid needle-bar. By moving the said needle-bar downward the distance from the spool *w* to the end of the said working beam or bar *u*, where is attached the said needle-bar, becomes greater, because the said regulating-bar *x* holds the thread *y* in a fixed position, thus compelling the said thread to form an arc, which gives a drawing motion to the said thread, thus moving the said spool. So the same result is attained upon the reverse or upward motion of the said needle-bar. By this operation the stitch is made more tight by being drawn upward into the material, thus preventing a heavy ridge, which is brought about by keeping the said thread from becoming loose while the said needle-bar is making its downward and upward motion. By this arrangement, therefore, the tension is more even, while the thread is taken more evenly from the aforesaid spool, and is taken therefrom both at the downward and upward motion of the needle-bar *j*, where if this rod or bar *x* were not used as aforesaid described, then the said thread would only be taken from

the aforesaid spool in the upward motion of the said needle-bar.

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

1. The construction, arrangement, and combination of the catch or latch with the needle-bar *j* and the step-bar *d*, as herein set forth.

2. The needle-bar *j*, constructed with two channels or grooves, *s* and *t*, crosswise of the same, in connection and combination with the

catch or latch *a* or *b*, for the purpose of holding the said needle-bar in a certain position for a correct and working adjustment of the needle *l*, as well as to hold the same upward and away from any interference of the material to be worked, as herein described and set forth.

JOHN N. CHAMBERLIN.

Witnesses:

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ROXANA HARRISON.