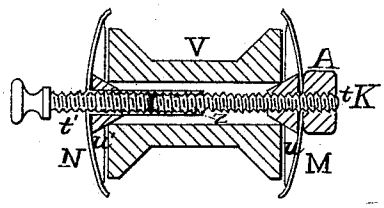
(No Model.)

# T. DE QUINCY TULLY.

## SEWING MACHINE.

No. 280,773. Patented July 3, 1883.

Fig. V.



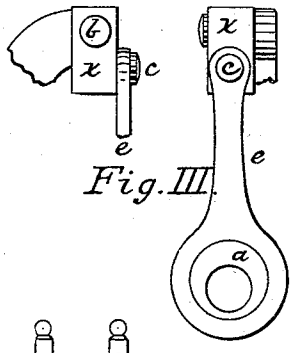
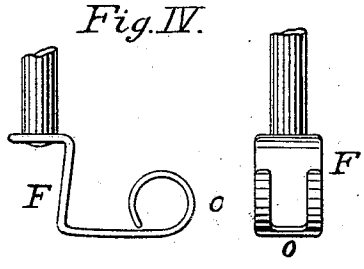




Fig. III.

Fig. IV.



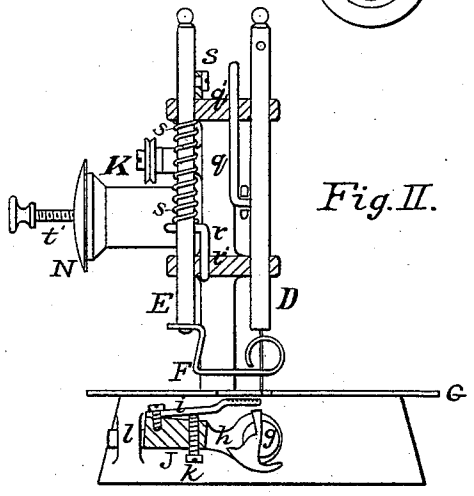




Fig. II.

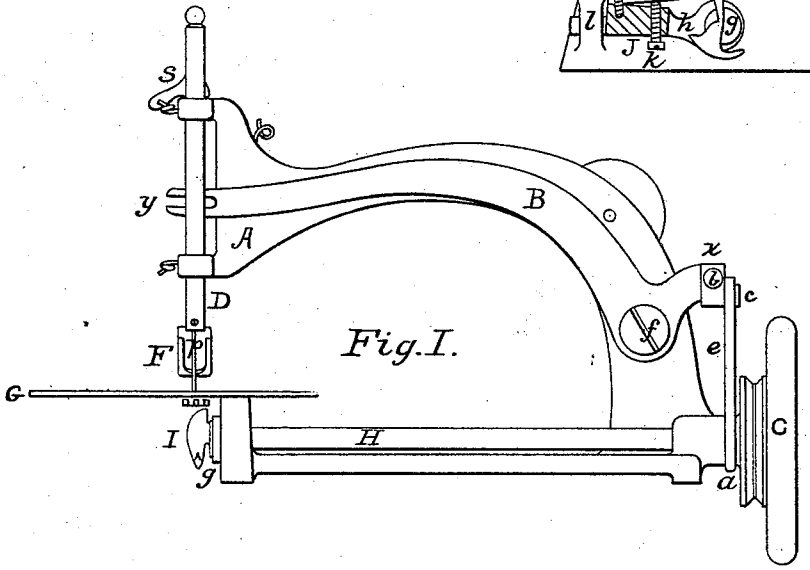



Fig. I.

Witnesses:

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# UNITED STATES PATENT OFFICE.

T. DE QUINCY TULLY, OF CLEVELAND, OHIO, ASSIGNOR TO THE DAISY SEWING MACHINE COMPANY, OF SAME PLACE.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 280,773, dated July 3, 1883.

Application filed March 27, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, T. DE QUINCY TULLY, of Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, such that persons skilled in the art to which it appertains may be able to make and use the same.

The object of my invention is to simplify the construction and thereby reduce the cost of production or fabrication of sewing-machines, while maintaining their practical efficiency.

My invention consists, first, in providing an open needle guard or case, so that there is no danger of getting the fingers of the operator between the point of the needle and the cloth-plate when the guard is in position.

It consists, further, in providing the needle-bar with a branch or fork to run in a proper bearing to prevent such bar from rotating on its axis, the lateral part of the branch also serving as a medium for coupling the bar with the needle-arm.

It further consists in a similar branch from the presser-foot bar to keep it in proper adjustment and prevent it from turning, the lateral part of this branch also serving as a bearing for the presser-foot spring.

It also consists in a novel construction of spool-holder, whereby spools of different dimensions may be adjusted with a tension to be determined by the operator and then fastened in such position.

It further consists of a novel coupling between the connecting-rod and needle-arm; and, finally, it consists in a novel construction or improvement in feeds for sewing-machines.

The primary purpose of the novel construction in needle-bar, presser-foot bar, and improved coupling is economy of production, the bearings in all of these cases being cylindrical and adapted to be produced by the simplest kind of drilling machinery.

In the drawings, Figure 1 is a side view of the machine, showing the needle-arm, standard, &c. Fig. 2 is a front view of the machine with the cloth-plate cut away, showing feed, needle, and presser-foot bars, adjusted spool, &c. Fig. 3 shows my improved coupling; Fig. 4, the needle-guard as an attachment of the presser-foot; and Fig. 5, the spool-holder in section, with a spool adjusted into position.

In Fig. 1, A is the standard or frame, to which is connected the needle-arm B by means of the screw or pivot *f*. The needle-arm B is provided at its front end with a slot, *y*, which connects with the needle-bar D by means of the fork *q*.

C is the hand-wheel, attached to and operating the shaft H, at one end of which is securely fastened the rotating hook I.

Attached to the hand-wheel C or to shaft H is an eccentric, *a*, also shown in Fig. 3.

*e* is the connecting-rod, which connects the eccentric *a* and the needle-arm B through the medium of the block *x*, coupled on one side to the needle-arm B by means of the pivot or screw *b*, and to the connecting-rod on the other side by means of the pivot or screw *c*, so that it may have a motion on each.

D is the needle-bar. This bar is provided with a branch, *q*, made of round wire, as shown. The part at right angles with the bar serves as a means of connection with the vibrating needle-arm B through its slotted end *y*. The bar and fork move in suitable bearings in the frame A. By the use of this branch *q* at some distance from the bar the same is prevented from turning, and the needle is made to register with fittings less perfect than otherwise required.

E is the presser-foot bar, provided at the lower end with a presser-foot, F, and at its upper end with an eccentric or cam, S, whose office or purpose is to raise and hold the presser-foot away from the cloth-plate.

Attached to the presser-bar E near its lower end is the fork *r*, which consists of a wire bent in such form as to provide a bearing for the spring *s*. One end of this fork *r* passes through a suitable bearing, *r'*, in the frame A, and this acts as a guide and register to the presser-foot bar E.

The needle-guard consists of any suitable open device thrown or placed around the needle between the needle-bar D and the cloth-plate G. I accomplish this purpose economically, and so as not to obscure the needle from the operator, by elongating the front end of

the presser-foot and cutting out the center portion, and then bending inward the two ends thus formed in the shape of rings, as shown in Fig. 4. The needle, passing between the two rings thus formed, is not obstructed in passage, nor from view, while these projecting rings serve as a guard, preventing the fingers of the operator from coming in contact with or passing under the needle. This guard or cage, as constructed in this instance as a part of the presser-foot, serves the additional function of guide for the introduction of the cloth between it and the cloth-plate, and for the operator to follow the desired direction of the seam.

The spool-holder K, I attach preferably to the outer side of the frame A; but it may be attached in any other desirable position, and consists in a spindle, *t*, provided with a screw at its outer end and attached rigidly to the frame A, the binding-screw *t'*, the concave-shaped thread-guards M and N, and the cones *u* and *u'*, as shown in Fig. 5. The office of these thread-guards is to keep the thread from running off from over the end of the spool. The guard N is provided with sleeve, *z*, with a thread passing through its entire length. The cone *u* rests upon the spindle *t*, while the cone *u'* rests upon the sleeve *z*. The operation is as follows: The thread-guard N with its sleeve *z*, binding-screw *t'*, and cone *u'* are removed from the spindle *t*. The spool is then placed in position with one end on the cone *u*, and the thread-guard N on the spindle *t*, and the thread-guard N is finally screwed to the proper position. By this means I am enabled to use any length of spool desired, and the proper tension may be given to the thread by the amount of pressure put on the cones *u* and *u'*. When this adjustment has been made the parts are held in position by the binding-screw *t'*.

The feeding mechanism consists of a feed-bar, J, provided at one end with a collar, *h*, which fits an eccentric, *g*, attached to the drive-shaft H. At the other end it is provided with a dowel-shaped projection fitted loosely in a proper bearing, as at *l*. Upon the upper side of this feed-bar J is attached the feed, which consists of an elastic plate, *i*, having a toothed or roughened portion. The feed is adjusted so as to regulate the length of the stitch by the set-screw K—that is to say, the feed-bar being operated by the eccentric will bring the feed into operative contact with the cloth sooner, and cause it to retain its hold longer, the higher the feed is adjusted.

While I have shown the cage or needle-guard as applied to and as constituting a part of the presser-foot, it is obvious that the same may be arranged in other ways without departing from the spirit of my invention.

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

1. In a sewing-machine, the combination, with the needle thereof, of an open cage or guard for said needle, substantially as described.

2. In a sewing-machine, a presser-foot provided with the cage or needle-guard described.

3. A presser-foot for sewing-machines provided with forked and bent parts to form a cage for surrounding the needle, as shown and described.

4. The combination of the needle-bar provided with lateral and parallel branch, as described, the parallel part working in a circular bearing in the frame, and the forked needle-arm, substantially as hereinbefore described.

5. A spool-holder for sewing-machines consisting of the combination of the spindle *t*, sleeve *z*, the cones *u u'*, and set-screws *t'*, as herein specified.

6. The adjustable spool-holder and tension, consisting of the combination of thread-guard N, provided with the threaded sleeve *z*, the spindle *t*, set-screw *t'*, the cones *u u'*, and the thread-guard M.

7. The combination of the needle-arm, block *x*, pivots *b* and *c*, and connecting-rod *e*, substantially as and for the purpose set forth.

T. DE QUINCY TULLY.

Witnesses:
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