(No Model.)

R. S. LOOKER.

SPOOL BOX FOR SEWING MACHINES.

No. 349,440. Patented Sept. 21, 1886.

Fig. 1

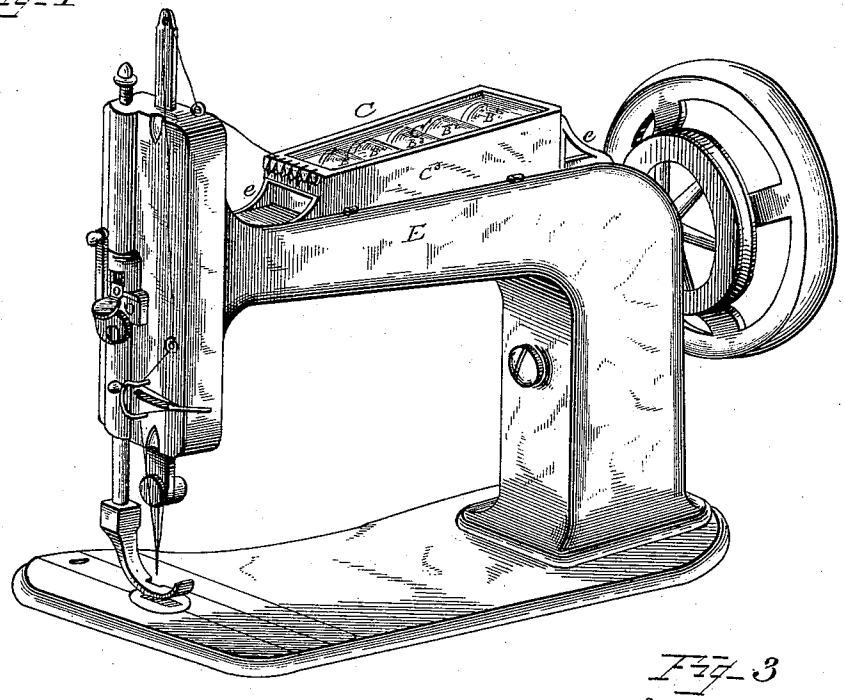


Fig. 3

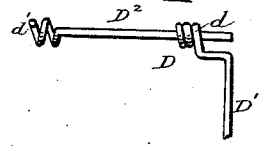
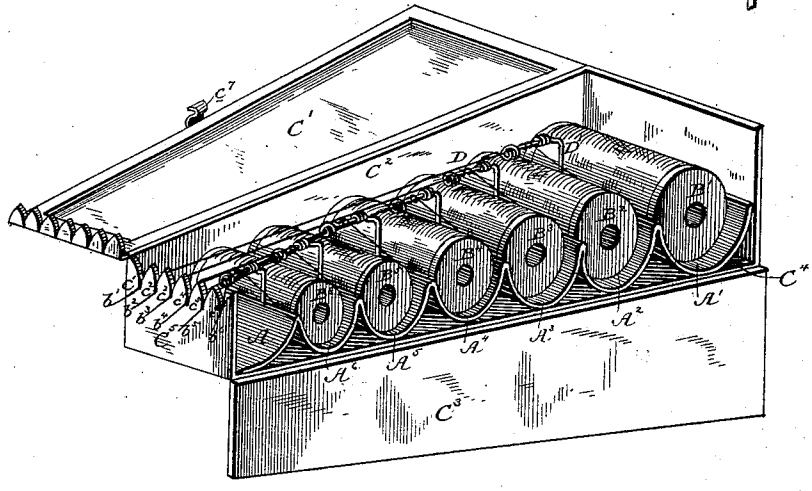


Fig. 2



WITNESSES

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ROBERT SMITH LOOKER, OF SPRINGFIELD, OHIO.

SPOOL-BOX FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 349,440, dated September 21, 1886.

Application filed December 7, 1883. Renewed July 30, 1886. Serial No. 209,595. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SMITH LOOKER, of Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Spool-Holders and Tension Devices for Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

The object of my invention is to provide a box or rack to contain a series of spools of varying size and threads of different fineness, each of which is provided with a separate tension device, the whole being so constructed and arranged that it may be attached to or supported upon the arm of a sewing-machine and supply any kind of thread that may be required to the needle under proper tension without special adjustment of spool and tension whenever a change of thread is required.

The improvement consists in the construction and arrangement of parts as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a sewing-machine with a spool-rack applied thereto; Fig. 2, a similar view of the spool-rack, upon an enlarged scale, detached from the machine, and Fig. 3 a view in elevation of the tension-arm shown enlarged in detail.

The spool-rack A is formed of a corrugated metal plate forming semicircular troughs A′ A^2 A^3, &c., of unequal width and depth, within which a series of spools, B′ B^2 B^3, &c., of unequal size, (graduated from one end to the other of the rack,) is placed, and the whole is preferably inclosed in a box or casing, C, which tapers upon one of its sides and upon the top from the largest spool at the rear end to the smallest spool at the front end of the series. The cover C′ of the box is hinged to the rear side piece, C^2, and is fitted with a glass plate, through which the spools and threads may be viewed at all times to ascertain their condition. The front side, C^3, of the box is hinged to the bottom C^4 of the same, so that both it and the top may be opened to give access to the spool for replacing full spools, or for general purposes. The front end, C^5, of the box is formed with notches c' c^2 c^3, &c., through each of which one of the threads b' b^2 b^3, &c., are passed and guided, and the front end of the cover C′ is provided with a flange similarly notched to correspond with the front end of the box, so that when the cover is closed a diamond-shaped orifice will be provided for each of the threads, through which they may freely pass to the thread-guides, needle-bar, and needle.

The tension device D is formed of a wire post, D′, and spindle D^2, attached to the upper end of the post and at right angles thereto, by bending the upper end of the post at right angles and twisting it spirally a number of times to form a sleeve, *d*, through which one end of the spindle may pass. The spirals may be expanded by pressing them apart with a knife-blade or screw-driver to lessen the diameter of the sleeve, and may be pressed together with pliers to increase the diameter of the sleeve, by which means the sleeve may be at all times shaped to hold the end of the spindle more or less tightly. The other end of the spindle is spirally twisted at *d′* to form an eye, through which the thread may be passed and held in such manner that it may be wound around the spindle in either direction a sufficient number of times to give to the thread the desired tension, and the spiral twists *d′* are arranged sufficiently open to admit of the threads being passed freely through them into the eye without having to pass the thread longitudinally through the eye of the spindle. The posts D′ are arranged between the spools in advance of the spool for which it is the tension, and passes vertically through the division-ridges of the corrugated rack-plate A, and are secured to the bottom of the box in any desired manner. The tension devices are arranged diagonally and lengthwise of the box, to direct each of the threads to its respective notch, and the posts D are made each shorter than the other from the rear to the front end of the box, by which means, as well as by their relative arrangement, as above described, the threads are made to clear each other to avoid entanglement. The spools rest freely in their respective troughs, and the thread is carried from their under side diagonally across the post D′ to the spindle D^2, and being wound around the spindle sufficiently to secure the desired tension, passes through

the eye to the front end of the box, and thence through the openings c' c^2, and may be conducted to the needle, or may be drawn from the spools, when desired for any purpose, without changing the tension. The weight of the spool is generally sufficient to prevent slack thread from escaping therefrom before it passes the tension; but an additional spring of the most simple form may be made to press against the spool, or upon the thread between the spool and tension device, to prevent the thread from becoming slack upon the tension, and thereby rendering it ununiform. As the thread is drawn from the bottom of the spool, it is not liable to uncoil from the ends of the spool in an irregular manner, and the dividing-ridges between the troughs form smooth guiding-surfaces over which the threads freely pass in unwinding from end to end of the spools.

The casing or box C may be made cheaply of sheet metal, and a spring-clasp, c^7, upon the cover or side door, may serve to hold them together in their closed positions. The rack may be supported upon the arm E of the machine, and held between brackets *e e*, cast upon the arm, or a single screw or stud bolt may be passed through the bottom of the rack and into the arm, which will serve to hold it securely upon the arm, but permit it to be swung around upon its retaining-screw as a pivot to reel off the thread when it is desired. When the tensions are properly adjusted upon each of the threads, they will be ready at all times for use, and any of them may be affixed to the needle of the machine for immediate use, thus avoiding the loss of time incident to replacing one spool with another and adjusting its tension every time an exchange of thread is made, as usual with the single spool-holder and tension device.

The tension device may be used upon a sewing-machine independently of the rack to good advantage, as it is cheap, simple, and effective, and may be readily threaded through the twisted eye of the spindle.

I do not broadly claim a tension device wherein the thread is twisted upon a spindle and passes through an eye in the end thereof, as such devices are well known; neither do I limit myself to the specific construction of the rack and the arrangement of its several parts herein described and claimed, as various modifications may be made in these particulars without avoiding my invention.

I claim as new and desire to secure by Letters Patent—

1. A spool-holder for a sewing-machine, formed with a series of troughs, within which the spools may rest and revolve, and a corresponding series of independently-adjustable tension devices to receive the thread from the spools, substantially as described.

2. The combination, with a sewing-machine arm, of a spool-rack formed of a series of troughs, within which the spools rest and revolve, said troughs being inclosed in a box having top and side lids, and a series of independently-adjustable tension devices to receive the thread from the spools, substantially as described.

3. In a spool-box, the combination of a series of spool-holders, and a series of tension devices arranged diagonally across the tier of spool-holders, to direct the thread to openings at the end of the box, substantially as described.

4. The combination, with a sewing-machine arm, E, of a spool-box, C, having hinged top and side C' and C^5, a rack, A, inside of said box, independent tensions D for each thread, and the thread-throats c' c^2 c^3, &c., in the end C^5 of the box, substantially as described.

In testimony whereof I have hereunto set my hand this 27th day of November, A. D. 1883.

ROBERT SMITH LOOKER.

Witnesses:
WM. H. ROWE.
JAMES K. MCCATHRAN.