

(No Model.)

G. W. LA RUE.
TENSION DEVICE FOR SEWING MACHINES.

No. 553,347.

Patented Jan. 21, 1896.

Fig 1

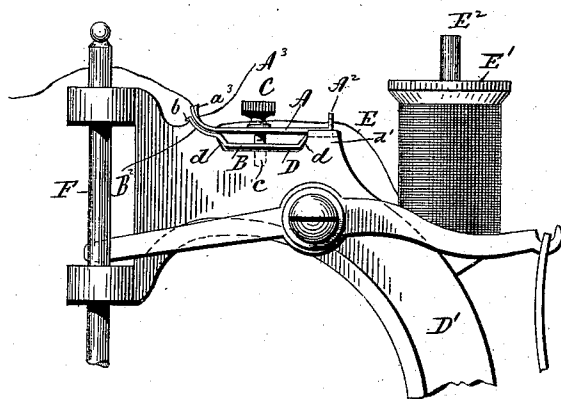


Fig 2

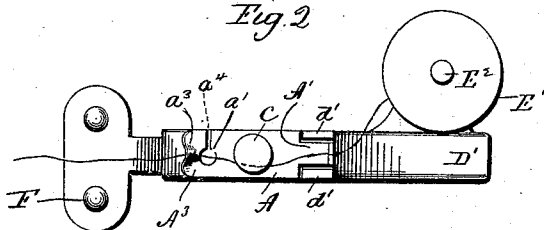


Fig 3

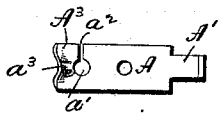


Fig 4

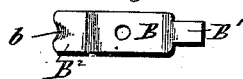
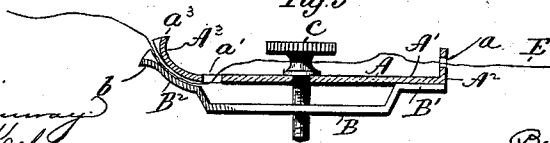


Fig 5



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE W. LA RUE, OF NEW YORK, N. Y.

TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 553,347, dated January 21, 1896.

Application filed February 4, 1895. Serial No. 537,199. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. LA RUE, of New York, in the county of New York and State of New York, have invented a new Improvement in Tension Devices for Sewing-Machines; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view, in side elevation, of a sewing-machine provided with a tension device constructed in accordance with my invention; Fig. 2, a plan view thereof; Fig. 3, a detached plan view of the upper tension-plate; Fig. 4, a corresponding view of the lower tension-plate; Fig. 5, a detached enlarged view, in vertical longitudinal section, of the two tension-plates and the thumb-screw; Fig. 6, a detached view, in end elevation, of the forward ends of the two plates to show how they are fluted.

My invention relates to an improved tension device for sewing-machines, and is particularly designed for simple miniature machines adapted to the use of children, the object being to produce a simple, effective and convenient tension device composed of few parts, not liable to derangement, and capable of being successfully manipulated and perfectly understood by any child.

With these ends in view my invention consists in a tension device for sewing-machines having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I employ an upper tension-plate, A, a lower tension-plate, B, and a thumb-screw C, the said three parts composing my improved device. The tension-plate B is set down into a horizontal recess D, formed in the upper edge of the arm D' of the machine-frame, the said plate being held against endwise movement by the end walls or shoulders $d\ d$ at the ends of the recess, to the form of which the middle portion of the plate is conformed by bending its ends upward and outward. At its rear or outer end the plate is provided with a finger B', extending upward and outward, which fits be-

tween two lugs $d' d'$ formed integral with the machine-frame at the rear end of the recess D, as shown in Fig. 2. This finger prevents the lower plate from lateral displacement by swiveling or turning on the thumb-screw C, which enters an internally-threaded opening c formed in the arm D' of the machine-frame and leading out of the bottom of the recess D, as seen in Fig. 1. The upper plate, A, which is arranged parallel with the plate B and superimposed upon the ends thereof, is straight throughout its main or body portion and therefore does not set down into the recess D, but clears the same and the lower plate, B, except at the ends thereof. At its rear end the said upper plate is furnished with a retaining-finger A', which enters between the lugs $d' d'$, and therein rests upon the corresponding finger B' of the lower plate and prevents the upper plate from swiveling on the thumb-screw C and so becoming laterally displaced. At its extreme rear end the said retaining-finger A' is turned upward at a right angle, as at A², and perforated, as at a , to receive the thread E, wound upon a spool E', which is set over a spindle E², carried by the arm D' of the machine-frame. At its forward end the upper plate is turned upward, as at A³, so as to bear upon the upwardly-turned forward end B² of the lower plate, the said forward ends of the plates being in frictional contact. The said forward end of the upper plate is constructed with an eye a' , through which the thread passes downward, so as to feed between the forward ends of the two plates. A slot a^2 , intersecting the outer edge of the plate and the said eye, provides for introducing the thread thereinto, or, as it might be said, threading the tension device. The extreme forward end of the upper plate is fluted, as at a^3 , and the corresponding end of the lower plate b , as seen in Fig. 6, so as to prevent the thread from being cut or chafed as it emerges from the two plates on its way to the needle-bar F. It will readily be apparent that by turning the thumb-screw C, down the upper plate will be sprung between its ends into the space between the middle portions of the two plates, whereby the pressure between the forward ends of the plates will be increased according to the extent to which the plates are sprung together, or, on

the other hand, by turning the thumb-screw in the opposite direction the tension between the forward ends of the plates will be reduced. Of course, the restraint put upon the feeding of the thread will be more or less, according to the pressure under which the forward ends of the two plates are held in contact.

My improved device being composed of only three parts, and all of those simple, is easy and cheap of manufacture, not liable to derangement, and so simple as to be effectively worked by any child.

It is obvious that in carrying out my invention some changes in the construction shown and described may be made, and I would therefore have it understood that I do not limit myself to the exact construction herein shown, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention. I am aware, however, that a tension device for sewing-machines comprising two longitudinally-arranged plates and a screw for increasing or decreasing the pressure between their engaged surfaces is old, and do not claim such construction broadly.

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

1. In a tension device for sewing-machines, the combination with an upper and a lower tension-plate arranged one above the other with a space between them, and applied to the frame of the machine and held against lateral deflection thereupon, of a thumb-screw passing through both of the said plates, en-

tering the frame of the machine and engaging with the upper plate for pressing the same downward, the forward ends of both plates being turned upward and arranged in contact with each other, and the forward end of the upper plate being constructed with an eye and a transverse slot through which the thread is entered into the said eye through which the thread passes downward, and thence outward between the upturned engaged ends of the plates, substantially as described.

2. In a tension device for sewing machines, the combination with an upper and a lower tension plate of which the lower plate is bent upwardly and outwardly at its ends to adapt it to be set down into a recess formed in the frame of the machine and prevented from endwise movement therein, and of which the upper plate is made straight throughout its main portion and rested at its ends upon the ends of the lower plate between which and it there is an open space, of a set-screw passing through the plates and entering the frame and engaging with the upper plate for pressing the same downward upon the lower plate, the forward ends of both plates being curved upwardly and fluted, and the forward end of the upper plate having a transverse slot and eye for the reception of the thread, substantially as described.

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

GEORGE W. LA RUE.

Witnesses:

FRED. C. EARLE,
LILLIAN D. KELSEY.