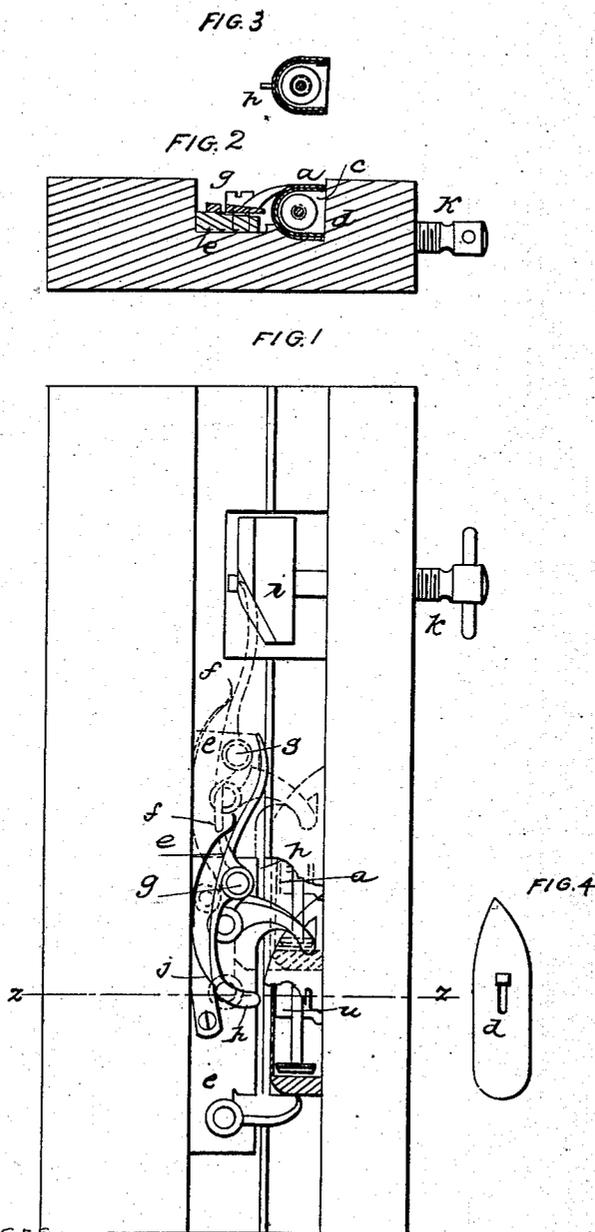


J. P. SCHENKL.

Adjustable Tension Device for Sewing Machine Shuttles.

No. 47,462.

Patented April 25, 1865.



WITNESSES  
W. B. Gleason  
W. Gould

INVENTOR  
Fredrick Schenk  
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# UNITED STATES PATENT OFFICE.

JOHN P. SCHENKL, OF BOSTON, MASSACHUSETTS; FREDERIKA SCHENKL ADMINISTRATRIX OF THE ESTATE OF SAID JOHN P. SCHENKL, DECEASED.

## IMPROVEMENT IN ADJUSTABLE TENSION DEVICE FOR SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. 47,462, dated April 25, 1865.

*To all whom it may concern:*

Be it known that the late JOHN P. SCHENKL, formerly of Boston, in the county of Suffolk and State of Massachusetts, invented a new and Improved Adjustable Shuttle-Tension for Sewing-Machines; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of his said invention sufficient to enable those skilled in the art to practice it.

The object of this invention is to produce any desirable degree of tension upon the shuttle-thread of a sewing-machine at the time when the needle-thread is drawing into the work.

Said invention consists in means for effecting said object, substantially such as are herein shown and described.

In the drawings which embody said invention, Figure 1 shows in plan a shuttle-race with the shuttle, shuttle-driver, and other appendages thereunto, the shell of the shuttle being partially broken away, so as the better to illustrate the invention, the shuttle, where broken, being shown in longitudinal section. In said figure the black lines pertaining to the shuttle and shuttle-driver show these parts and others immediately therewith connected in the position which they have before there is any need of tension on the shuttle-thread. The red lines in said figure show the shuttle and shuttle-driver and the parts immediately connected therewith in the position where the shuttle has passed through the loop of the needle-thread, and with tension upon the shuttle-thread. Fig. 2 is a cross-section taken on the plane of the line *z z*, shown in Fig. 1, and showing the parts in the position in which the thread is free from tension. Fig. 3 is a cross-section taken through the shuttle, and showing the parts in the position which puts a tension upon the shuttle-thread.

Within the shuttle is a spring-piece, *a*, fixed to the shuttle at *b*, and in its normal condition partly surrounding the bobbin, and located close to the shell of the shuttle, the end of the spring terminating close to the hole, through which the thread emerges from the shuttle. Said end of the spring is free to be moved on application of pressure, and it is covered by a

guard-piece, *c*, in which is a thread-hole corresponding to the outlet-hole of the thread from the shuttle. It will now be seen that thread from the bobbin can be passed freely through both holes mentioned over the end of spring *a*, and it will be clear that more or less resistance to the passage of the thread through said holes will be offered, according as the spring *a* is pressed from its normal position away from the shuttle-shell and into the guard *c*. As the spring *a* is thrust into *c*, the passage for the thread becomes tortuous, and by further movement of *a* in the same direction the thread is more or less tightly pinched between the guard *c* and the end of *a*, and this pinching may be made to stop all rendering of the thread from the bobbin during the time the pinch is maintained.

The method of operating the spring *a* and of graduating its action upon the thread, so as to suit any size thereof, and to conform to the varying requirements of sewing mechanisms, will now be explained.

The shuttle shown is one of a common kind, slotted at *d*, as seen in Figs. 2 and 3, and also in Fig. 4, which is a view of the convex side, made merely to exhibit said slot, which is opposite the spring-piece *a*.

Secured to the shuttle-driver *e* is a lever, *f*, pivoted at *g*, one end of which lever is so shaped at *h* that it can freely enter into the slot *d* of the shuttle, and operate therein the spring *a*. The other end of the lever is suitably shaped, as shown, so as to be operated by impingement on the incline on piece *i* at each forward motion of the shuttle. The lever *f* is kept in its normal position, as shown by the black lines in Fig. 1, by the spring *j*, which is secured to the shuttle-driver *e*. It will now be obvious that when the shuttle-driver is in its forward position (shown in red lines) the forward end of the lever will come in contact with and be pressed outward by the incline on *i*, and hence the other end, *h*, of the lever will be made to enter the slot *d* in the shuttle, and that the extent of its entrance in said slot will depend on the position of the piece *i*, which, as it may be seen, is adjusted within any required limit by the screw *k*. To increase the tension on the thread the screw *k* is so turned as to move the piece *i* in a direc-

tion away from the shuttle-race, while to lessen the tension the screw is turned in the opposite direction.

What is claimed is—

The arrangement and combination of mechanism herein described, when made to operate substantially in the manner and for the purpose specified.

In witness whereof I hereunto set my hand this 11th day of March, A. D. 1865.

FREDERIKA SCHENKL,

*Administratrix of the estate of John P. Schenkl.*

In presence of—

J. B. CROSBY,

F. GOULD.