(Model.)

J. B. DAUDELIN.

LOOM SHUTTLE.

No. 563,455. Patented July 7, 1896.

Fig. 1.

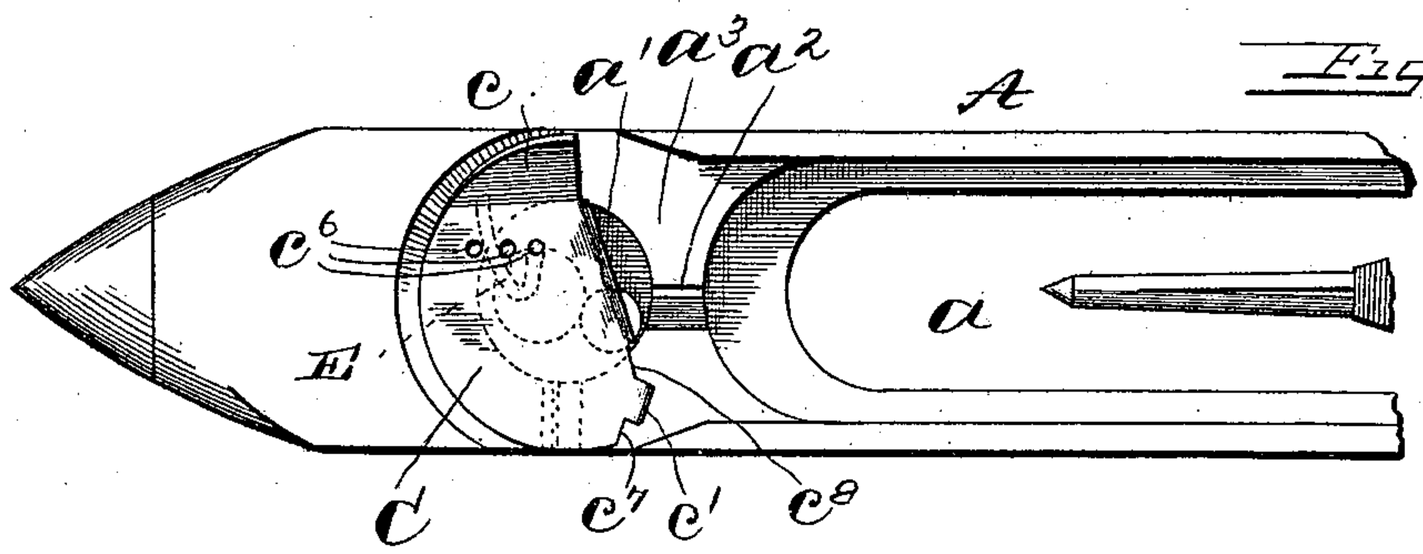


Fig. 2.

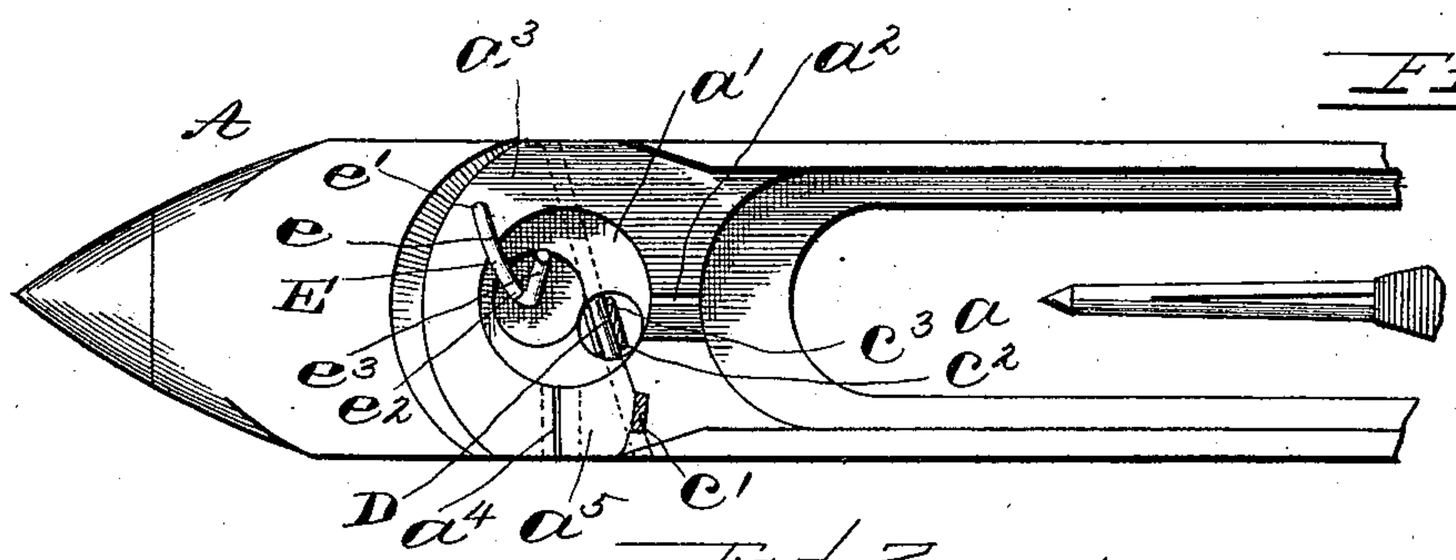


Fig. 3.

Fig. 7.

Fig. 8.

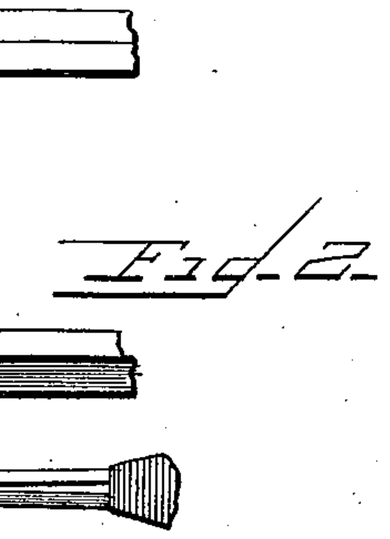
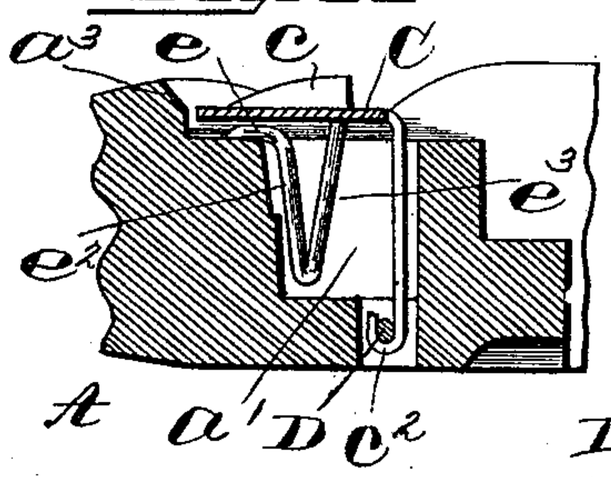


Fig. 4.



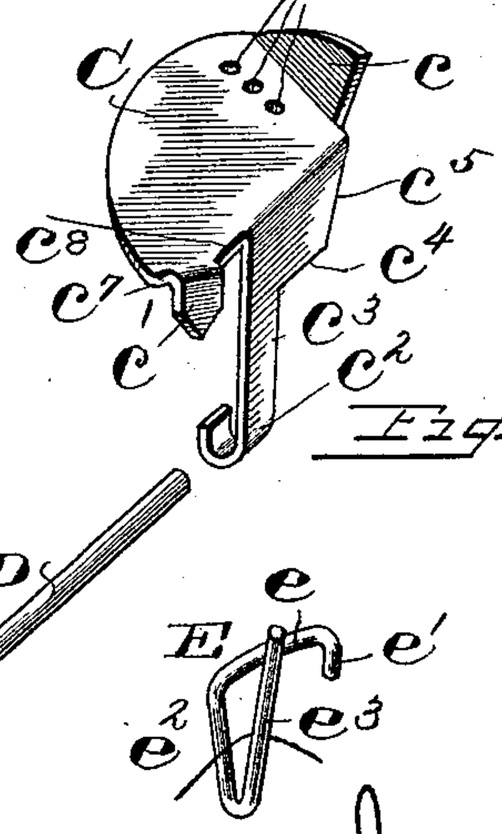
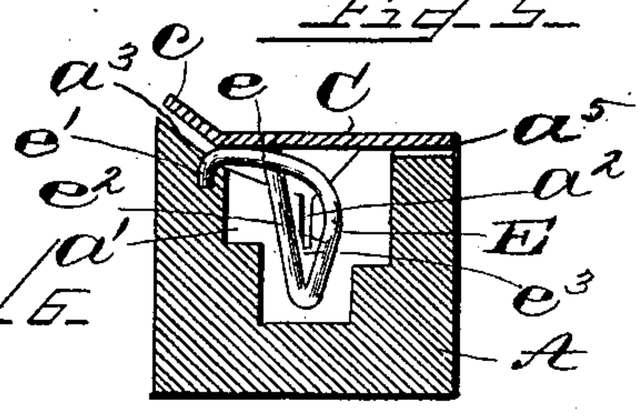


Fig. 6.

Fig. 5.



Witnesses—

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UNITED STATES PATENT OFFICE.

JEAN BAPTISTE DAUDELIN, OF FALL RIVER, MASSACHUSETTS.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 563,455, dated July 7, 1896.

Application filed March 25, 1896. Serial No. 584,830. (Model.)

To all whom it may concern:

Be it known that I, JEAN BAPTISTE DAUDELIN, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Loom-Shuttles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in the novel features of construction and combination of parts hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a top plan view of the portion of a shuttle containing the threading mechanism constructed according to and embodying my invention. Fig. 2 is a similar view with the threading-plate removed. Fig. 3 is a side elevation of the same. Fig. 4 is a partial longitudinal sectional view of the shuttle. Fig. 5 is a transverse sectional view taken through the threading-slit. Fig. 6 is a detail perspective view of the threading-plate, its securing devices, and the thread-tension device. Fig. 7 represents a horizontal section through the thread-tension device. Fig. 8 is a similar view showing the device adjusted to another position.

Referring to the drawings, A represents the shuttle-body, which is provided with the usual spindle-recess a and a threading-recess a' in advance of the spindle-recess, preferably circular in cross-section. The threading-recess a' is connected with the spindle-recess a by a vertical guiding-notch a^2, which is in line with the spindle. The upper face of the shuttle-body is cut away slightly adjacent to the threading-recess and is provided with an inclined or beveled face a^3 from a point adjacent to the notch a^2 around to a point directly over the delivery-eye B of the shuttle, which communicates with the threading-recess, and a threading-slit a^4 extends from the face a^3 down into and communicating with the delivery-eye, as shown in the drawings.

Adjacent to the threading-slit a^4 on the side nearest the spindle-recess is a horizontal supporting-face a^5 in a slightly higher plane than the portion of the shuttle-body on the opposite side of the said threading-slit a^4, (see Fig. 3,) and upon this face the threading-plate C is supported. This plate C has a main body of semicircular form, provided on one side with an upturned lip c, paralled to the inclined face a^3, to deflect the thread into the thread-passage formed beneath it, between said plate and the upper face of the shuttle-body. The said plate is also provided with a retaining-lug c', which engages an aperture in the supporting-face a^5, and a downwardly-depending hook-shaped securing projection c^2, which extends down into a subrecess in the bottom of the threading-recess, and is engaged by a removable securing-pin D, lying transversely of the shuttle in an aperture provided for it, (see Figs. 2, 3, and 4,) thereby securing the plate C in position without the use of screws, which are very liable to crack the shuttle-body or to cause it to split in operation. This securing projection c^2 is so arranged as to have one of its vertical edges c^3 in line with one side wall of the guiding-notch a^2, and said edge is provided near its upper part with a horizontal retaining-shoulder c^4 for preventing the thread from rising, and above said shoulder is an inclined edge or face c^5 for directing the thread downward below the shoulder c^4.

In the threading-recess is located a tension device E for the thread, which consists, preferably, of wire bent into the form shown in detail in Fig. 6. This device has an inclined portion e, having a retaining-lug e' at its end engaging an aperture in the inclined face a^3, as clearly shown in Fig. 5. The wire then extends downwardly into the threading-recess at e^2 and has an upwardly-extending spring adjusting-arm e^3 on the side of the part e nearest the spindle-recess. This tension device is so arranged, as will be seen by reference to the drawings, that when the thread is drawn forward from the spindle beneath the plate C it will be drawn over the inclined portion e of the tension device, and as the thread is drawn laterally toward the delivery-eye it will pass behind the vertical adjusting-arm e^3 and will occupy the position shown on a larger scale in Fig. 7, passing around the

adjusting-arm e^3 and the stationary arm e^2, giving the thread two turns or deflections.

The spring adjusting-arm e^3 extends upward into the plane of the threading-plate C, and the said plate is provided with a series of adjusting-apertures c^6, into any one of which the end of the adjusting-arm e^3 may be placed by loosening the plate C, and this effects an adjustment of the tension of the thread. In Fig. 8 I have shown the position of the tension device when the arm e^3 is adjusted to increase the tension and it will be seen that the angles formed by the thread in passing around the arms e^2 and e^3 are much sharper than in the position shown in Fig. 7. In order to enable the plate C to be held rigidly in position, I provide it with shoulders c^7 c^8 on each side of the lug c', which engage similarly-shaped shoulders formed on the shuttle-body (see Fig. 2) and assist in preventing lateral movement of the plate C.

In order to thread the shuttle, but two movements are necessary. The thread is drawn forward longitudinally of the shuttle until it is caught beneath the upturned end c of plate C and conducted thereby into the semicircular threading-passage formed beneath the plate C between said plate and the upper surface of the shuttle-body and is then drawn laterally toward the side on which the thread-delivery eye is located. This latter movement causes the thread to find the vertical threading-slit a^4, which takes it directly into the delivery-eye. As the thread is paid out it is drawn into engagement with the tension device E and made to engage the inclined edge c^5 of the plate C, which guides it down below the shoulders c^4, which prevents its rising. The thread will also be drawn by the movements just described into the thread-notch a^2, and will pay off from the spindle through said notch around the arms of the tension device, and directly out through the delivery-eye. The delivery-eye B is provided with the usual retaining-finger b to prevent the escape of the thread upwardly.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with the shuttle-body provided with a spindle-recess, a threading-recess forward of the spindle-recess, and a delivery-eye, located at one side of the shuttle, of a threading-plate adapted to cover the threading-recess, having a securing projection extending into said recess and a removable pin extending transversely of the shuttle for engaging said projection and securing the plate in position, substantially as described.

2. The combination with the shuttle-body having a spindle-recess, a threading-recess forward of the spindle-recess, and a delivery-eye at one side of the shuttle communicating with the threading-recess, a threading-plate covering said threading-recess, and provided with a series of adjusting-apertures and an adjustable tension device in said recess having a spring adjusting-arm engaging one of the apertures in said plate, substantially as described.

3. The combination with the shuttle-body, having a spindle-recess, a threading-recess forward of the spindle-recess, an inclined face partially surrounding said threading-recess and a delivery-eye at one side of the shuttle communicating with the threading-recess, of a tension device having two vertically-disposed arms, one of said arms being movable with respect to the other, and a part connected with the other arm and engaging said inclined face, to support said tension device and deflect the thread from the said face between the arms of the tension device and a threading-plate covering said threading-recess, forming a threading-slit between it and said inclined face, and having a series of adjusting-apertures adapted to be engaged by the movable arm of said tension device, and a threading-slit for the delivery-eye opening beneath the threading-plate, substantially as described.

4. The combination with the shuttle-body having a spindle-recess, a threading-recess forward of the spindle-recess, a thread-guiding notch in line with the spindle connecting said recesses and a delivery-eye at one side of the shuttle communicating with the threading-recess of a threading-plate covering the threading-slit, forming a threading-passage beneath the same, and having a downwardly-extending portion, extending into said threading-recess, provided with an inclined guiding edge, a retaining-shoulder, and a portion in line with the thread-guiding notch, a removable securing-pin, extending transversely through the shuttle-body, and engaging said downwardly-extending portion of said plate, and a threading-slit for the delivery-eye, opening beneath said plate, substantially as described.

5. The combination with the shuttle-body having a threading-recess forward of the spindle-recess and a delivery-eye at one side of the shuttle communicating with the threading-recess, of a tension device located in the threading-recess, comprising two vertically-disposed arms, one of said arms being movable with respect to the other, and a threading-plate covering said threading-recess, provided with a series of adjusting-apertures adapted to be engaged by said movable arm, and means for removably securing said plate in position, whereby said plate can be removed to adjust said tension device, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JEAN BAPTISTE DAUDELIN.

Witnesses:
ALVIN G. WEEKS,
GUY V. H. SLADE.