

H. A. KENNEDY.
 THREAD GUIDE OR EYE FOR LOOM SHUTTLES.
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1,225,035.

Patented May 8, 1917.

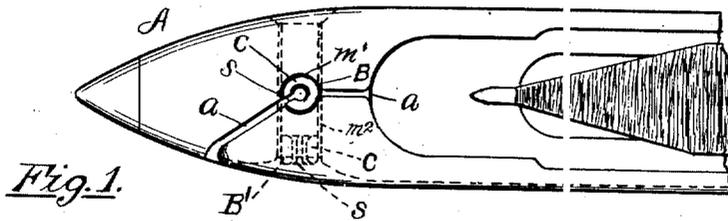


Fig. 1.

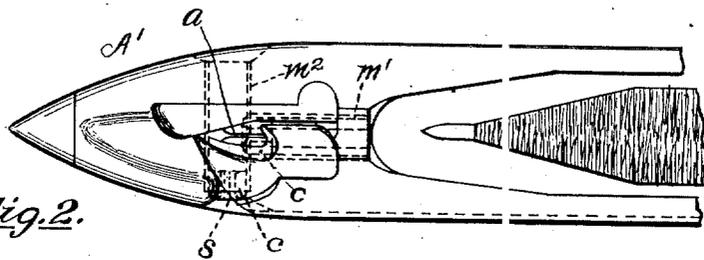


Fig. 2.



Fig. 5.

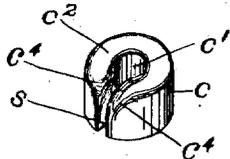


Fig. 3.

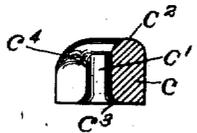


Fig. 4.

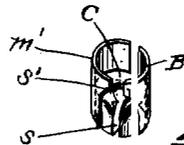


Fig. 6.

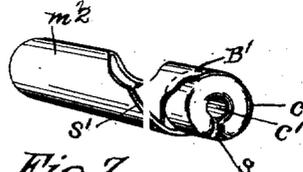


Fig. 7.

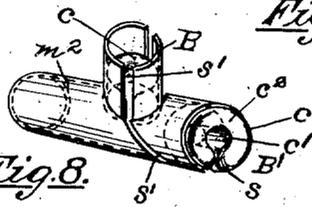


Fig. 8.

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UNITED STATES PATENT OFFICE.

HENRY A. KENNEDY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF FIVE-EIGHTHS TO ALBERT W. CHAPMAN, OF PROVIDENCE, RHODE ISLAND, AND ONE-EIGHTH TO HOPEDALE MANUFACTURING COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

THREAD GUIDE OR EYE FOR LOOM-SHUTTLES.

1,225,035.

Specification of Letters Patent.

Patented May 8, 1917.

Application filed August 28, 1914. Serial No. 859,057.

To all whom it may concern:

Be it known that I, HENRY A. KENNEDY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Thread Guides or Eyes for Loom-Shuttles, of which the following is a specification.

The invention forming the subject of this application for patent relates more particularly to improvements in thread-guides or eyes constructed for use in loom shuttles of the automatic and hand-threading types, and it consists in the novel improvement hereinafter set forth and claimed.

My invention resides in the combination in a loom-shuttle having a passage cut therein to receive the yarn, of slitted initial and secondary metal eye members fixed in the shuttle-body at an angle with each other and in communication with said yarn passage, and a slitted thread-guide formed of non-metallic material confined in the yarn-delivery end portions of each of the metal eyes, the slits of the said eye and guide members being in communication with the said yarn passage cut in the shuttle body.

Usually, heretofore, in the construction of loom-shuttles the metal eyes of the shuttle, when in use, were subjected to continuous wear by reason of the passage of the thread through the metal eyes, which not only increased the degree of friction by wearing grooves in the walls and abrading the thread itself, but at the same time shortened the life of the eyes and caused an unevenness in the quality of the woven fabric, the result being to add materially to the percentage of waste. By means of my improvement the loss or waste referred to is practically eliminated and the quality of the output improved.

In the accompanying drawings Figure 1 represents a top plan view of portions of a hand-threading loom-shuttle provided with my improvement; Fig. 2 is a similar view of portions of an automatic threading-shuttle embodying my improvement; Fig. 3 is a perspective view, enlarged, of the non-metallic or porcelain thread-guide itself, adapted to be mounted in the delivery or exit end of a metal eye fixed in the shuttle body;

Fig. 4 is a corresponding sectional view of the thread-guide, taken through its center; Fig. 5 is a top plan view of it; Fig. 6 is a perspective view showing the assembled initial tubular eye and its porcelain thread-guide positioned therein, disconnected from the shuttle; Fig. 7 is a perspective view representing the secondary eye member and its porcelain thread-guide, detached from the shuttle; and Fig. 8 represents, in perspective, the relation of the initial and secondary eye members and their porcelain thread-guides, substantially as they appear when arranged in a hand-threading shuttle, the shuttle body, however, not being shown. When employed in a so-called automatic shuttle, corresponding with Fig. 2, the said members, shown in Fig. 8, would be turned bodily to the right substantially 90°.

In the drawings m^1 , Fig. 2, indicates the initial metal eye member or tube disposed in the forward portion of an automatic loom-shuttle, and m^2 the secondary metal eye positioned transversely in the shuttle's body; the longitudinal axes of the eye members being at substantially right angles with each other. The said metal eye members are permanently fixed in the shuttle body, each eye member, m^1 and m^2 , having a slot s^1 for the thread cut through its wall in register with a thread passage a formed in the body A^1 .

A thread-guide c of porcelain or other suitable non-metallic material is secured in the thread-outlet end of the respective eyes m^1 , m^2 ; the thread-guides are practically alike and have well-rounded outer ends c^2 ; an open central passage c^1 and open slot s extend longitudinally of the guide and are in open communication with the said passages a and s^1 . The outlet ends c^2 of the guides extend beyond the corresponding ends of the metal eyes to protect the thread from chafing wear and friction as the thread is bent or deflected from the initial eye m^1 into the secondary eye m^2 and through its porcelain guides, which deliver the thread smoothly from the shuttle to and between the harness shelled warps. The mouth c^4 of the slot s of the porcelain guide is rounded or flaring, is also the inner end c^3 of the central passage.

The metal eyes m^1 , m^2 serve to both protect and reinforce the porcelain thread-guides c secured therein.

In the case of hand-threading shuttles, wherein portions of the body A, Fig. 1, are represented, the construction and arrangement of the initial and secondary metal eye members m^1 , m^2 , respectively, are substantially as before described. Fig. 8 represents the relation of the assembled eye and guide elements, with the shuttle body omitted. In the drawings B¹ indicates the slotted secondary metal eye m^2 , together with the slotted, secondary porcelain thread-guide fixed therein, and B indicates the assembled initial metal eye m^1 , having the longitudinally slotted wall and being provided with the slotted initial porcelain thread-guide. See also Fig. 6.

By means of my improvement it will be seen that the protected first or initial non-metallic slotted thread-guide member is mounted in and registers with the slot formed in the shuttle body and is adapted to receive into and guide the strand or thread of yarn as it is drawn direct from the cop or supply; the thread being bent or deflected at an angle from the projecting outlet end c^2 of the guide, without coming in contact with the metal eye, the thread passes from the guide into the slitted and protected secondary non-metallic guide positioned in the slitted secondary eye member m^2 located transversely within the shuttle-body. The outer end of the last-named guide extends through the eye m^2 and through the adjacent outer side of the shuttle; the reciprocatory movements of the shuttle, as in weaving, causing the thread to render freely through and from side to side across the mouth of the guide without wear and without engaging the metal eye, thereby increasing the efficiency of the shuttle and subjecting the thread to a more uniform degree of tension or drag, which acts to increase the quality of the woven fabric.

I claim:—

1. The combination in a loom-shuttle, a shuttle-body, means connected with the body

for holding a limited amount of yarn, an opening cut in the shuttle-body for the passage of a strand of the yarn, initial and secondary tubular eye members fixed in the shuttle body, the said eye members being disposed at substantially right angles to each other, the walls of the eye members being longitudinally slotted and communicating with said yarn passage, a pair of non-metallic yarn-guide members having longitudinally slotted walls, the said non-metallic guides being secured in and projecting from the yarn delivery ends of the respective said eye members, the slots formed in the guide members being in open communication with the slots of the respective eye members, substantially as described, and for the purpose set forth.

2. In a loom-shuttle, a shuttle body provided with means adapted for holding a supply of yarn, and a passage formed in the shuttle body adapted to receive the strand of yarn, the combination of an initial metal tube or eye positioned to receive the yarn direct from said supply, a non-metallic guide member secured within said initial eye and projecting from the terminal or outlet end of the eye, the walls of said initial eye and guide members being longitudinally slitted and in open communication with each other and with said yarn-passage in the shuttle body, a secondary metal eye member seated transversely in the shuttle body, a non-metallic yarn-guide member secured within the secondary eye and extending from the outer end of the latter, and having the walls of said secondary eye and its guide member longitudinally slitted and in open communication with each other and with the said yarn passage formed in the shuttle body, substantially as described and for the purpose set forth.

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

HENRY A. KENNEDY.

Witnesses:

CHARLES C. REMINGTON,
A. W. CHAPMAN.