No. 675,810. Patented June 4, 1901.

J. C. BRYAN.

SHUTTLE FOR LOOMS.

(Application filed Sept. 7, 1900.)

(No Model.)

Fig. 1.

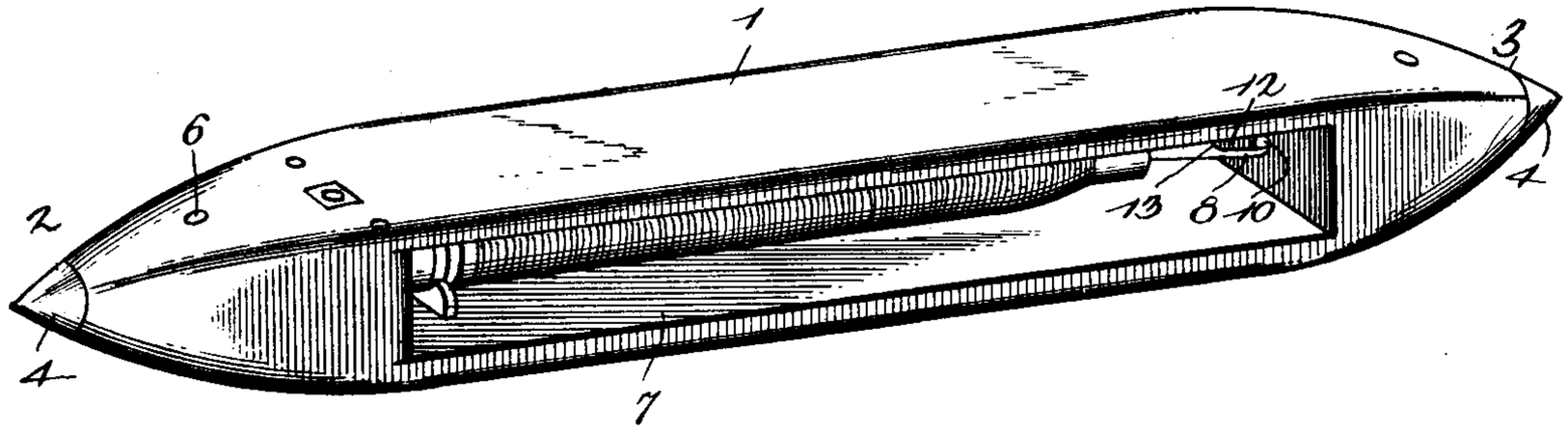


Fig. 2.

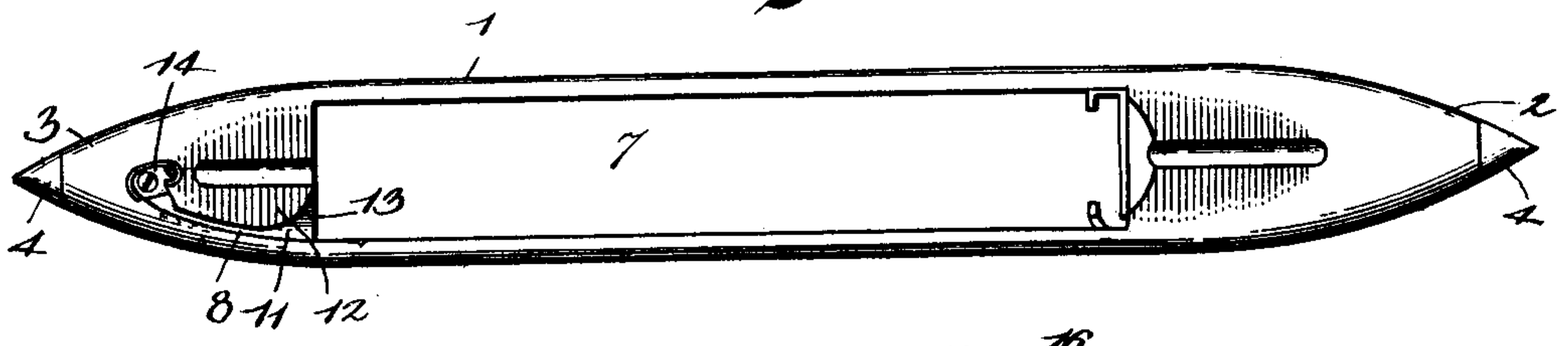
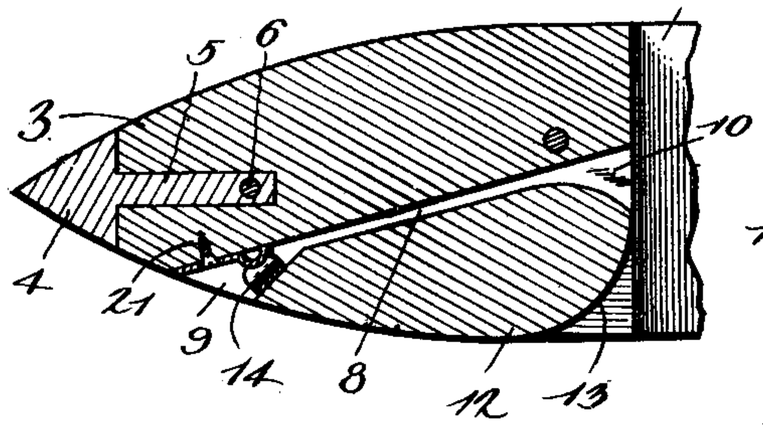


Fig. 3.



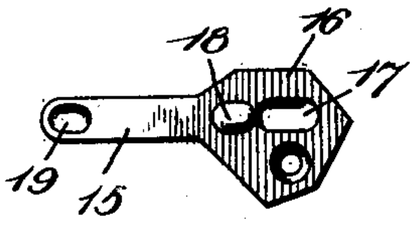


Fig. 4.

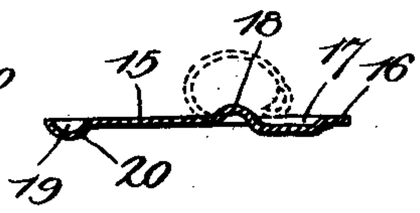


Fig. 5.

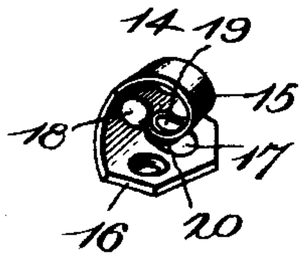


Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN C. BRYAN, OF AUGUSTA, GEORGIA.

SHUTTLE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 675,810, dated June 4, 1901.

Application filed September 7, 1900. Serial No. 29,287. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BRYAN, a citizen of the United States, residing at Augusta, in the county of Richmond and State of Georgia, have invented a new and useful Shuttle for Looms, of which the following is a specification.

This invention relates to shuttles for looms, and more particularly to means for facilitating the automatic threading and feeding the thread from the bobbin, the objects in view being to effect these operations in a positive manner without obstructing the movement of the shuttle under instrumentalities ordinarily employed in a loom organization and to simplify the construction without affecting the strength of the shuttle-body or materially increasing its cost of manufacture.

The invention primarily consists in a shuttle having a thread-aperture extending diagonally through a portion of one end of the body thereof and in communication with a throat that opens out exteriorly and guarded by an overhanging lip, an eye of a specific form being located adjacent the delivery extremity of the said aperture and having means for directing the thread thereinto and holding it against accidental disengagement.

The invention secondarily consists in the details of construction and arrangement of the several parts of the eye, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a shuttle embodying the features of the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a horizontal section on the line 3 3, Fig. 2. Fig. 4 is a top plan view of the eye-blank. Fig. 5 is a longitudinal vertical section of the eye-blank, showing a portion thereof bent over in dotted lines. Fig. 6 is a detail perspective view of the completed blank.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a shuttle-body which, as usual, is preferably constructed of wood and has the opposite extremities 2 and 3 similarly tapered and each provided with a metallic nose 4, comprising a shank 5, as shown by Fig. 3, fastened by a pin 6 to prevent it from working loose and also to strengthen the shuttle. A carrier or bobbin slot 7 is cut through the body 1 in a horizontal plane completely from one side to the other.

In the tapered extremity 3 a thread-aperture 8 is formed in a diagonal plane and extends from about the center of the front end wall of the slot 7 outwardly through one side of said extremity near the nose 4. The opposite terminals of the said aperture are increased in dimensions, as at 9 and 10, to permit the thread to have free play on entering and exiting into and from the same, and thus materially avoid wear and also injury to the thread. Near the bottom side of the extremity 3 in which the thread-aperture 8 is formed an elongated throat 11 communicates with said aperture and opens outwardly at said side, the said throat extending completely from the front end wall of the slot 8 to the delivery terminal or enlargement 9 of the aperture and is guarded by an overhanging lip 12, which has the lower corner 13 thereof adjacent the front end wall of the slot 8 regularly curved or rounded to facilitate the ingress of the thread into the aperture 8 through the throat and without catching upon obstructing corners or angles. The throat 11 has an upward inclination, and when the bobbin is in position in the shuttle the free end of the spindle thereof is directly in line with the inner enlarged extremity 10 of the said thread-aperture, and a resistance will thus be offered against the easy disconnection of the thread from the thread-aperture after the shuttle has been properly threaded. It will be observed that the entrance to the throat 11 is disposed at a low level, and this is for the purpose of insuring the entrance of the thread into the aperture 8 when the shuttle is automatically filled by the filling mechanism with which it is adapted to be used. This filling mechanism may be of any form, as the construction of the shuttle is not necessarily dependent upon any precise arrangement of parts in the filling mechanism.

As an effective auxiliary in making the self-threading operation of the shuttle positive and practical an eye 14 is fitted in and held relatively to the thread-aperture 8. This

eye is pushed inward into the outer enlarged delivery-terminal of the said aperture 8 and is of the form and construction clearly shown by Figs. 4, 5, and 6, and comprises a hook member 15 and a body 16, primarily constructed in the form of a blank, as shown by Fig. 4. The body 16 is formed with an elongated concaved depression 17 in alinement with the hook member 15, and between said hook member and the depression a convex guard 18 is formed in said body by striking the same upwardly from the lower side. The hook member 15 also has its free extremity formed with a concave depression 19, which provides a guard projection 20 on the opposite side for a purpose which will be hereinafter set forth.

In producing the eye from the blank set forth the hook member 15 is turned or doubled over the body or support 16 and bent in spiral contour in a regular curve and the terminal of said hook member is brought close to the convex guard 18, which will now stand opposite the same in the bend made in forming the said hook. The guard projection 20 will be now located in the depression 17, just sufficient space being left between the greatest extent of the said guard projection and the depression, as well as between the terminal of the hook and the guard 18, to permit the thread to pass between the same into the hook; but the thread will be prevented from accidentally becoming disengaged from the hook by the guard 18, which will throw it over against the internal portion of the body of the hook and past the small opening where it entered. This arrangement of the eye is clearly shown on an enlarged scale in Fig. 6, and it is intended that the hook and body be given a slight converging contour to aline with the aperture 8 and snugly fit the inner termination of the enlargement 9. When the eye is fully positioned in the enlargement 9, it is firmly secured by a single fastening-screw 21, passed therethrough into the adjacent material of the shuttle. The head of the said screw is in a position, however, to accommodate an easy application or removal of the eye, and while this eye is particularly intended for use in the form of shuttle shown it will be understood that it is contemplated to make its use general, and particularly in all forms of self-threading shuttles to which it may be applicable.

The entrance of the thread from the bobbin or carrier into the throat leading to the aperture 8 is facilitated by the movement of the thread itself by unwinding from the end of the carrier or bobbin-spindle and the tension exerted on the thread during the time it is held by a part of the filling mechanism, and in the threading operation the side of the extremity through which the said throat opens outwardly will be adjacent the said filling mechanism. The improved eye can also be used in hand-threaded shuttles.

Having thus described the invention, what is claimed as new is—

1. In a shuttle for looms, the combination of a body having a slot for the reception of a carrier or bobbin, and a thread-aperture in one extremity with an outwardly-opening downwardly-inclined throat communicating therewith, and an eye in the delivery extremity of said throat.

2. In a shuttle for looms, a body having means for receiving and holding a carrier or bobbin and a thread-aperture through one extremity provided with an outwardly-opening throat having a downward inclination and an overhanging lip.

3. In a shuttle for looms, a body having means for receiving and holding a carrier or bobbin, and a thread-aperture through one extremity provided with an outwardly-opening throat with a downward inclination and a low external entrance guarded by an overhanging lip.

4. A shuttle for looms, having a thread-aperture with an external entrance-opening throat having an upward angle of inclination to the throat and guarded by an outer overhanging lip.

5. A shuttle for looms, comprising a body having an outwardly-opening thread-aperture through one extremity with opposite terminal enlargements, the said aperture being downwardly inclined and guarded by an overhanging lip having an inner rounded corner.

6. An eye for the thread-aperture of a loom-shuttle consisting of a hook provided with an inturned terminal and a guard in the body adjacent said terminal adapted to deflect the thread past the opening between the hook-terminal and said guard.

7. An eye for the thread-aperture of a loom-shuttle, comprising an inturned hook and a guard opposite the terminal of said hook struck out from the body of the latter.

8. An eye for the thread-aperture of a loom-shuttle comprising an inturned hook and a convex guard adjacent to and struck out from the free terminal portion of said hook.

9. An eye for the thread-aperture of a loom-shuttle consisting of a body having an inturned hook provided with a guard projection located over and partially in a depression in said body, the latter also having a guard adjacent to the terminal of the hook.

10. An eye for the thread-aperture of a loom-shuttle having an inturned hook with an outstruck projecting guard near the free terminal thereof, the body of the eye also having an outstruck guard near the hook-terminal in a reverse plane to that of the latter.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN C. BRYAN.

Witnesses:
WM. M. HITT,
H. H. MURPHY.