No. 793,359. PATENTED JUNE 27, 1905.

S. A. DUDLEY.

LOOM SHUTTLE.

APPLICATION FILED JAN. 8, 1904.

Fig. 1.

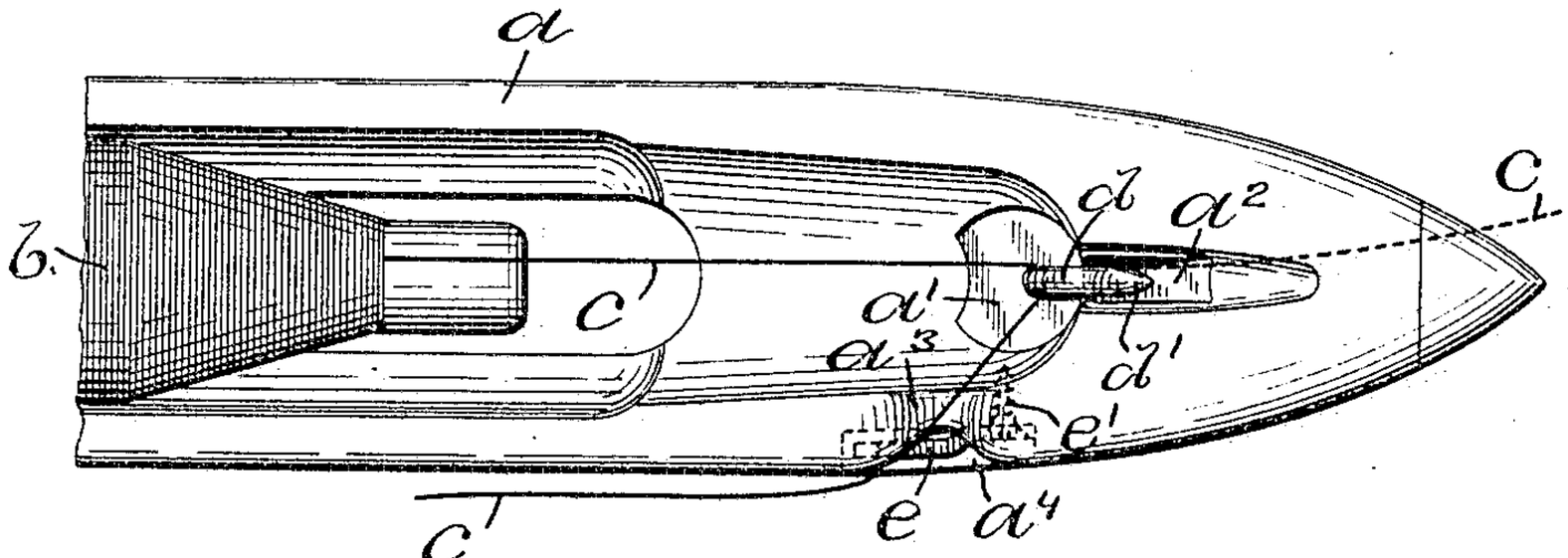

Fig. 2.

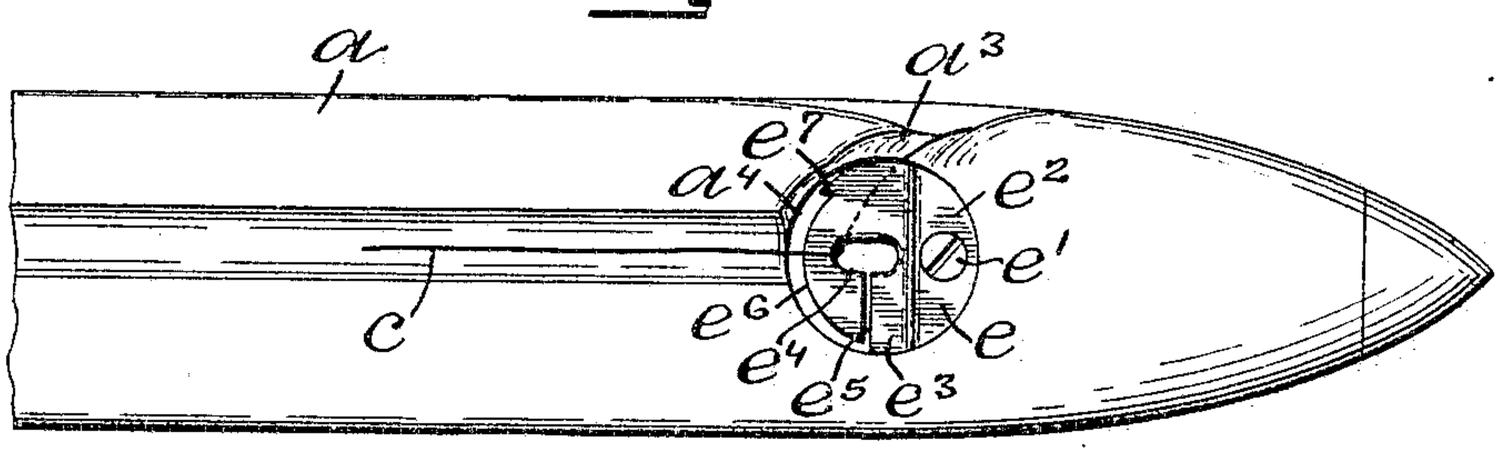

Fig. 3.

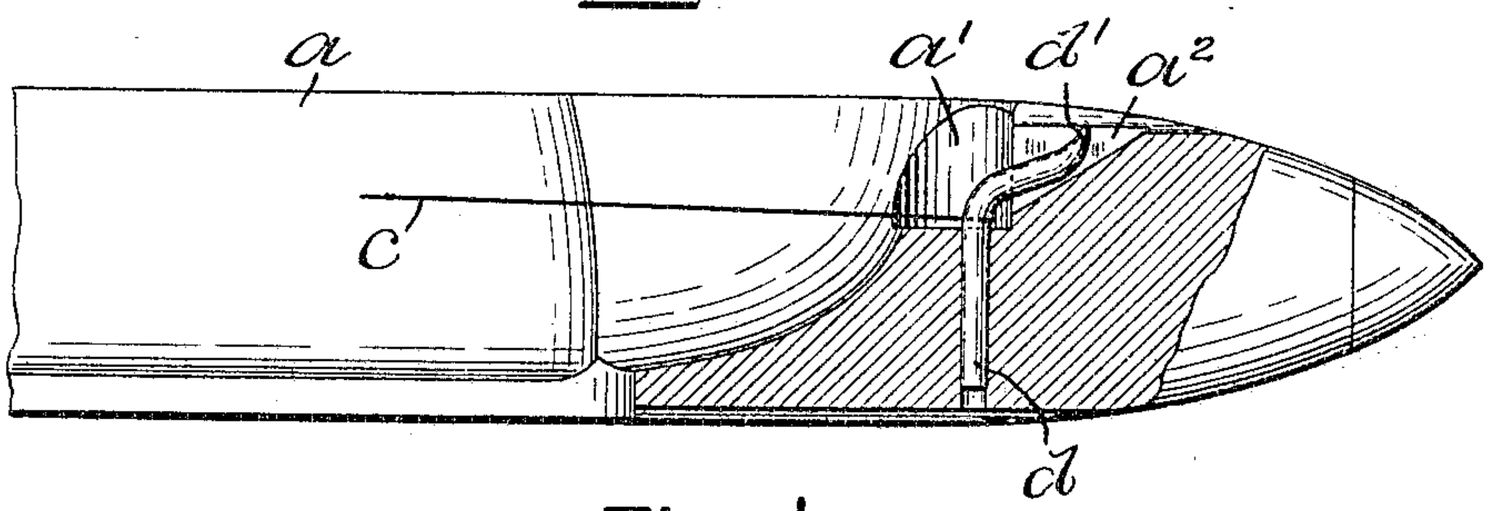

Fig. 4.

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UNITED STATES PATENT OFFICE.

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LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 793,359, dated June 27, 1905.

Application filed January 8, 1904. Serial No. 188,166.

To all whom it may concern:

Be it known that I, SUMNER A. DUDLEY, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification.

This invention has reference to an improvement in loom-shuttles, and more particularly to an improvement in the mechanism for threading the shuttle.

In devices for threading loom-shuttles without suction as heretofore generally constructed a slot is cut through the side wall of the shuttle, which connects the eye with the interior cavities of the shuttle. This slot weakens the side wall of the shuttle, causing the shuttle to break in the shuttle-box or the side of the shuttle to spring outward and smash the warp-threads in the loom.

The object of my invention is to provide a mechanical device for threading loom-shuttles without suction and without the use of a slot through the side wall of the shuttle.

A further object of my invention is to improve the construction of a device for threading a loom-shuttle without suction, whereby the operation of threading the shuttle is simplified.

My invention consists in the peculiar and novel construction of a device for threading loom-shuttles without suction, said device consisting of a semicircular recess extending downward and opening into the bobbin-cavity of the shuttle, a central longitudinal slot opening from the semicircular recess and extending at an angle from a point near the bottom of the recess upward toward the point of the shuttle, a pin driven into the bottom of the recess, the pointed end of which is bent over and into the slot and then upward to a point near the top of the slot, a circular recess in the outer side wall of the shuttle adjacent the semicircular recess in the shuttle, the wall above the circular recess being dished and rounded to form a guide for the weft-thread, and a metal disk secured in the circular recess by a screw, said disk being bent outward to form a space between the bottom of the recess and the disk and having a central slot forming the delivery-eye, a downwardly-extending slit from the eye to the edge of the disk, said edge being cut away to the left from the lower end of the slit upward for a predetermined distance to form a projecting stop on the disk, and a space between the side wall of the recess and the edge of the disk for the thread in threading the shuttle.

Figure 1 is a top plan view of the delivery end of my improved shuttle, showing the weft-thread from the bobbin passing around the bent guide-pin, over the dished and rounded edge of the shuttle, and down through the slot in the disk forming the eye of the shuttle. Fig. 2 is a side view showing the weft-thread coming over the dished and rounded edge of the shuttle, downward between the disk and the bottom of the circular recess, and outward through the central slot in the disk forming the eye of the shuttle. Fig. 3 is a sectional view taken lengthwise through the shuttle, showing the position of the guide-pin in the semicircular recess and the upwardly-extending slot; and Fig. 4 is an enlarged detail sectional view through the disk forming the guide-eye and part of the shuttle, showing the disk secured in the circular recess by a screw.

In the drawings, a indicates the shuttle; b, the bobbin; c, the weft-thread; d, the bent guide-pin, and e the metal disk forming the delivery-eye of the shuttle. The shuttle a has the semicircular recess a', extending downward and opening into the bobbin-cavity of the shuttle, the central longitudinal slot a^2, extending upward from a point near the bottom of the semicircular recess a' toward the point of the shuttle, the dished and rounded edge a^3 to form a guide and to bring the weft-thread below the surface of the shuttle, and the circular recess a^4 in the side of the shuttle for the metal disk e. Otherwise the shuttle may have the construction of any of the well-known forms of loom-shuttles.

The guide-pin d is made from wire and shaped to have the pointed end d' bent approximately at right angles and then slightly upward, as shown in Fig. 3. The pin is then driven into the bottom of the semicircular recess a' in the shuttle in a position to bring the pointed end into the upwardly-extending slot

a^2, which is sufficiently large to give clearance around the pin for the weft-thread.

The metal disk e is secured in the circular recess a^4 in the side of the shuttle by the screw e' through the inwardly-bent portion e^2. The outwardly-bent portion e^3 forms a clearance between the bottom of the circular recess a^4 and the disk and has the oblong slot e^4, forming the delivery-eye of the shuttle, the downwardly-extending slit e^5 from the slot e^4 to the edge of the disk, and the cut-away periphery e^6 of the disk, forming the projecting stop e^7, and a space between the wall of the recess and the edge of the disk for the weft-thread in threading the shuttle.

In the operation of threading my improved shuttle the operator draws the weft-thread from the bobbin through the slot a^2 on the left of the guide-pin d, as shown in broken lines in Fig. 1, and by the finger of the left hand moves the thread downward to the bottom of the semicircular recess a'. The end of the thread is now brought back by the right hand under the point d' of the guide-pin d, then over the dished edge a^3 of the shuttle, then down through the space formed by the wall of the circular recess a^4 and the cut-away periphery e^6 of the disk e, and up through the slit e^5 in the disk to the oblong slot e^4, through which it extends, the oblong slot forming the delivery-eye of the shuttle.

In the preferred form, as shown in Fig. 2, the slot e^4, forming the delivery-eye of the shuttle, is made oblong in form and rounded on the edge. The shuttle in its forward-and-backward movement in the loom moves the thread back and forth in the slot e^4. This changes the position of the thread on the dished edge a^3 of the shuttle and prevents wear on the shuttle by the thread.

If by chance in threading the shuttle the thread should not enter the slot e^4, forming the eye, the forward movement of the shuttle would cause the thread to catch on the projecting stop e^7 on the disk e, and the next backward movement of the shuttle would cause the thread to enter the slot e^4 through the slit e^5 in the disk, completing the threading of the shuttle automatically.

By my improved construction of a loom-shuttle the operation of threading the shuttle is simplified and a more durable and perfect shuttle is constructed than has heretofore been done.

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

1. In a loom-shuttle, the combination with a shuttle-body having a recess in the side thereof and a bobbin-cavity, and a guide-pin secured in the shuttle-body near the delivery end of the bobbin, of a disk supported in said recess and having a guide-eye, a slot opening into the guide-eye and a stop formed on the edge of the disk, as described.

2. In a loom-shuttle, the combination of walls forming a semicircular recess extending downward and opening into the bobbin-cavity of the shuttle, walls forming a slot opening from the semicircular recess and extending at an angle from a point near the bottom of the recess upward toward the point of the shuttle, a guide-pin driven into the bottom of the recess the pointed end of which is bent over and into the slot and then upward to a point near the top of the slot, means forming a guide for the thread and to bring the thread below the surface of the shuttle, consisting of a dished or rounded recess in the upper edge of the shuttle-wall adjacent the guide-pin, walls forming a circular recess in the outside of the shuttle-wall adjacent the dished edge of the shuttle, and a metal disk secured in the circular recess, said disk being bent outward to form a space between the bottom of the recess and the disk, walls in the disk forming a central slot, and walls forming a slit from the central slot downward to the edge of the disk, said disk being cut away on its periphery to form a projecting stop on the disk and a space between the side wall of the recess and the edge of the disk, as described.

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

SUMNER A. DUDLEY.

Witnesses:

ADA E. HAGERTY,

J. A. MILLER, Jr.