No. 728,384. PATENTED MAY 19, 1903.

G. FAIR, DEC'D.

L. L. FAIR, ADMINISTRATRIX.

SELF THREADING LOOM SHUTTLE.

APPLICATION FILED JUNE 6, 1902.

NO MODEL.

Fig. 2

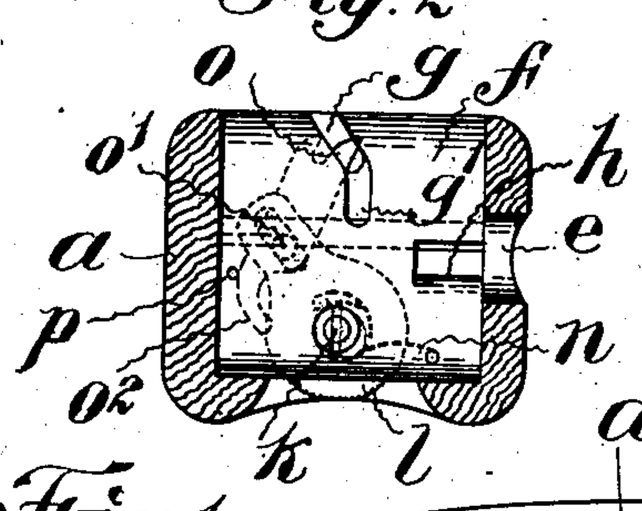


Fig. 3.

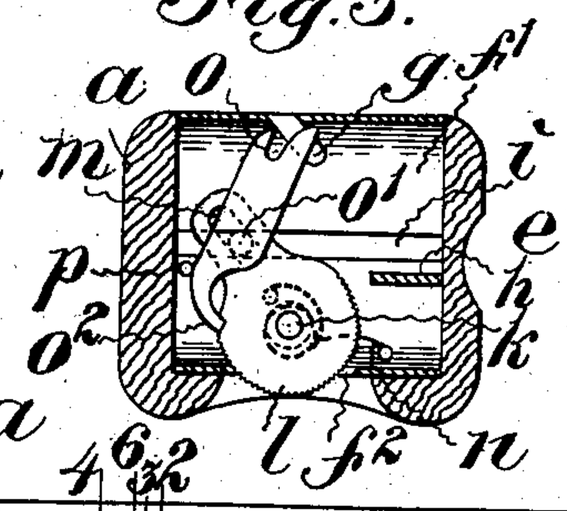


Fig. 4.

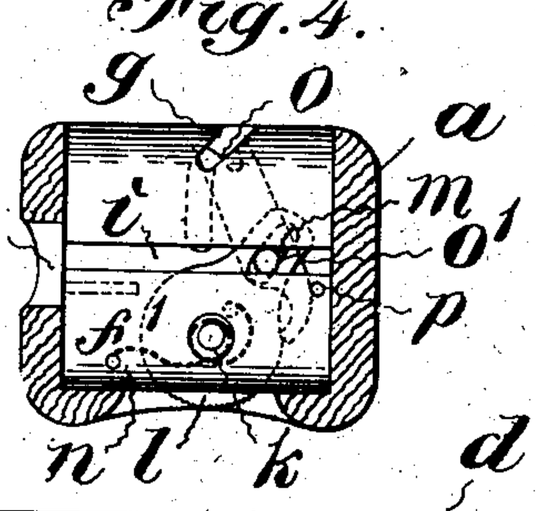


Fig. 1.

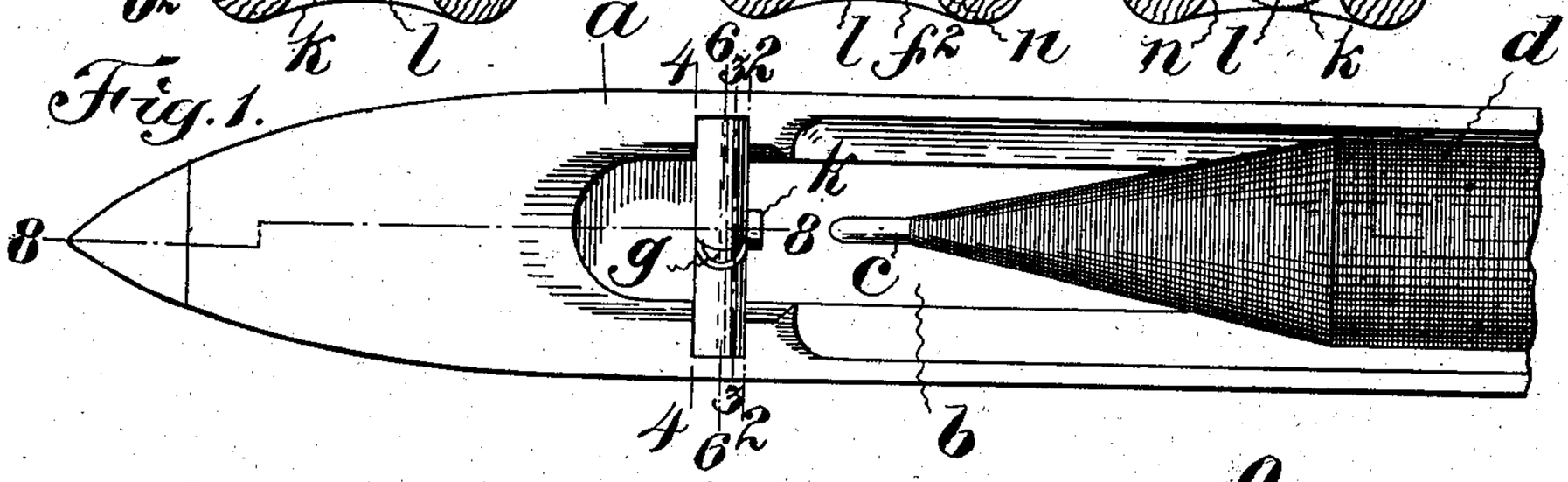


Fig. 5.

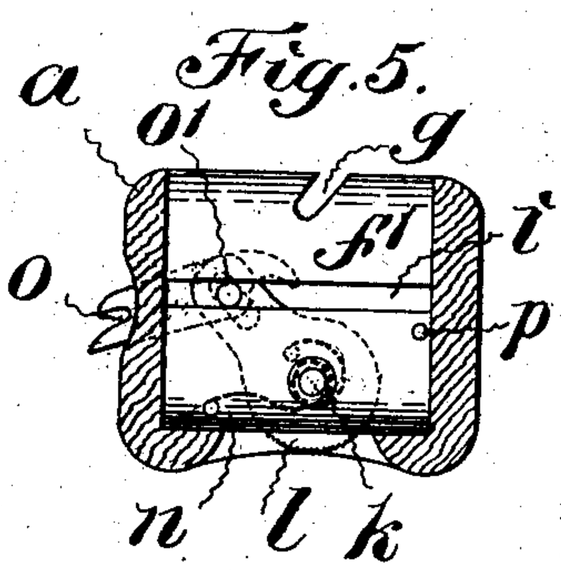


Fig. 6.

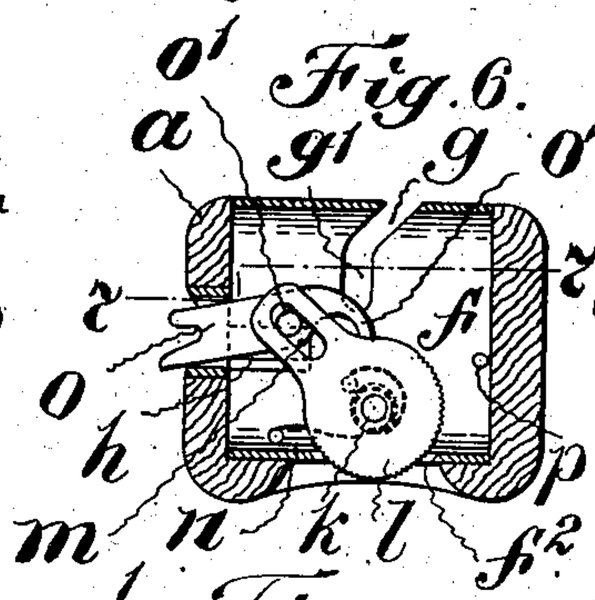


Fig. 7.

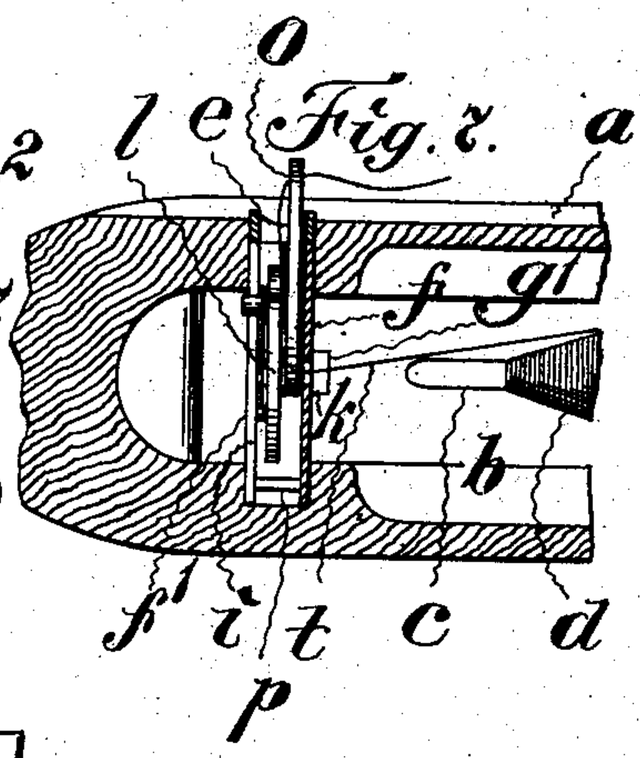
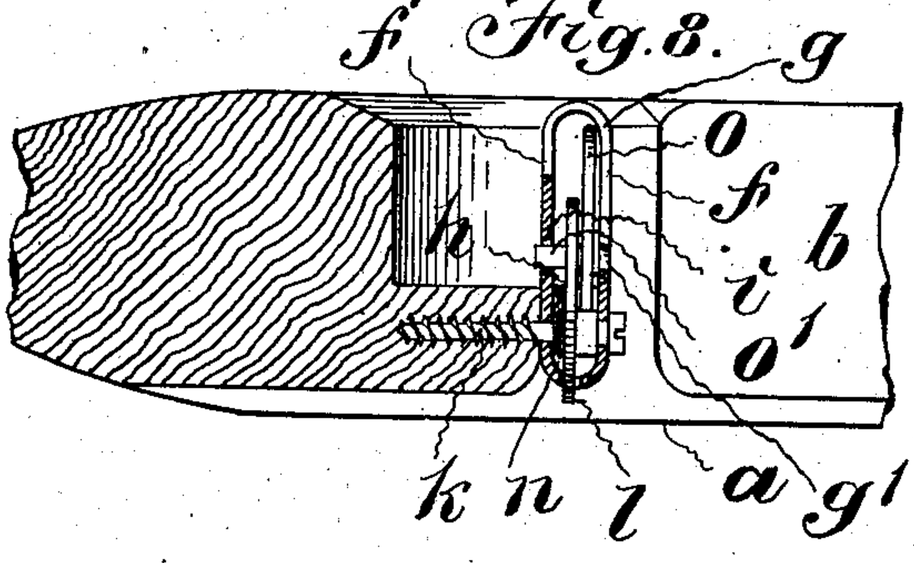


Fig. 8.



Witnesses.

R. Henry Marsh.

H. L. Robbins.

Inventor.

George Fair

by Wright, Brown & Quinby

Attorneys.

No. 728,384. Patented May 19, 1903.

UNITED STATES PATENT OFFICE.

GEORGE FAIR, OF SALEM, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO EDWIN W. GAY, OF NEWTON, MASSACHUSETTS; LYDIA L. FAIR ADMINISTRATRIX OF SAID GEORGE FAIR, DECEASED; GEORGE M. WEED ADMINISTRATOR OF SAID EDWIN W. GAY, DECEASED.

SELF-THREADING LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 728,384, dated May 19, 1903.

Application filed June 6, 1902. Serial No. 110,514. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FAIR, of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Self-Threading Loom-Shuttles, of which the following is a specification.

This invention relates to loom-shuttles, particularly of that type commonly known as "self-threading" or "hand-threading" shuttles.

A very common way of threading loom-shuttles is for the operative to drop or place the thread across or near to the inner end of the threading-eye and then by placing the mouth to the outer end of the threading-eye and sucking or inhaling the air through said eye to draw the thread through the eye. This method is injurious to the operative, particularly when colored thread is employed. Many attempts have been made to provide devices or attachments which, in connection with a slit formed in the wall of the shuttle and communicating with the delivery-eye, will enable the thread to be passed through said slit and guided to said eye. This construction, however, weakens the wall of the shuttle adjacent to the slit formed therein, and, furthermore, the upper edge of the slit in the shuttle-wall is liable to catch upon and cut the threads.

The object of this invention is to provide an attachment for shuttles having the usual delivering-eyes and having continuous walls—that is, walls having no slits, and therefore retaining their original strength—with an attachment by means of which the thread from the cop or spindle may be positively pushed through the eye, thus avoiding the necessity of inhaling or sucking through said eye.

To these ends the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a plan view of so much of a shuttle as is necessary to illustrate the invention, said shuttle having the invention in one of its embodiments attached thereto. Fig. 2 represents a section on line 2 2 of Fig. 1 looking toward the left. Fig. 3 represents a section on line 3 3 of Fig. 1 looking toward the left. Fig. 4 represents a section on line 4 4 of Fig. 1 looking toward the right. Fig. 5 represents a section similar to Fig. 4 with the parts in a different position. Fig. 6 represents a section on line 6 6 of Fig. 1 looking toward the right with the parts in the same position in which they are shown in Fig. 5. Fig. 7 represents a section on line 7 7 of Fig. 6. Fig. 8 represents a section on line 8 8 of Fig. 1.

The same reference characters indicate the same parts in all the figures.

The body of the shuttle is represented at *a* and is formed with the usual cavity *b*, one end of the spindle *c* and cop *d* being also represented in Figs. 1 and 7. Forward of the end of the spindle the shuttle is formed with a suitable cavity, preferably rectangular in form, to receive the casing presently described. This cavity for the casing is formed opposite the thread-delivery eye *e*, as clearly indicated in Fig. 7.

The casing for the thread-ejecting mechanism is preferably formed of a flattened tube having its open ends abutting against the side walls of the shuttle and having its rounded bottom resting upon the bottom of the cavity formed therefor in the shuttle and having its upper rounded edge at or a trifle below the plane of the upper edge of the side walls of the shuttle, as shown in Fig. 8. The front wall of this flattened tube or casing is indicated at *f* and the rear wall at *f'*. The lower rounded portion of the casing is formed with an opening f^2, through which the operating-disk, presently described, projects. The upper edge of the casing is formed with a thread-receiving slot *g*, which extends through both walls of the casing and is preferably formed at an angle, substantially as shown in the drawings. One end of this slot—the end which is formed in the front wall *f*—extends downward to a point approximately in alinement with the end of the spindle *c* to receive and guide the thread after the shut-

tle has been prepared for use. This guide end of the slot is represented at g' in Figs. 2 and 6.

A portion of the front wall f of the casing is cut out and bent to form a substantially horizontal shelf or ledge h, and the rear wall f' is formed with a horizontal slot i. The casing is secured in its cavity by a suitable means, preferably a screw k, extending through both walls of the casing and into the body of the shuttle, as clearly shown in Fig. 8. Mounted to oscillate within the casing, preferably on the screw k, is a disk l, having its lower edge extending through the opening f^2 of the casing and having an arm provided with a slot m. A spring n is coiled about the stud or screw k and has one end secured to said disk and the other end to a suitable pin projecting within the casing. This spring is so coiled as to have a normal tendency to hold said disk and its slotted arm in the position shown in Figs. 2, 3, and 4.

The thread carrier or ejector is represented at o and comprises a finger having a pin o', which extends through the slot m and enters and is guided by the slot i, formed in the rear wall f' of the casing. The shorter arm of this loosely-pivoted finger is formed with a cam-surface o^2 and has its outer end preferably notched to engage the thread, as hereinafter described. This finger is so formed that its outer or notched end is considerably heavier than its cam-shaped rear end, so that its outer end will have sufficient weight to cause it to descend or drop quickly by gravity when moved away from the position shown in Figs. 2, 3, and 4. A pin p projects inward from one wall of the casing and acts upon the cam-shaped rear end of the finger o to depress said rear end and elevate the outer end and hold it there when the parts are moved from the position shown in Fig. 6 toward and to the position shown in Fig. 3.

When the shuttle is to be threaded, the thread from the cop is laid in the thread-receiving slot g and in the notched end of the finger, and the operative then places one finger against the milled edge of the disk l and swings the latter in a direction opposed to the tension of the spring n. The first movement releases the short end of the finger from the pin p, and the outer notched end then immediately drops until it rests upon the shelf h, whereupon further movement of the disk in the same direction causes the notched end of the finger to pass along said shelf and out through the delivery-eye e to the position shown in Fig. 6. The thread is then readily grasped and drawn through said eye to the desired extent. Upon release of the disk l the spring n causes it to swing or oscillate, so as to withdraw the finger o and cause the cam-shaped rear end of the latter to engage under the pin p. Said cam-shaped end rides under the pin p and is thereby depressed until the outer or notched end of the finger engages the under side of the arch formed at the upper meeting-point of the two walls $f f'$, the parts being so proportioned that they will come to a stop in the position shown in Figs. 2, 3, and 4.

I claim—

1. A loom-shuttle having a delivery-eye and a casing located in the body of the shuttle opposite said eye, said casing having a thread-receiving notch in its upper edge, and a movable thread-ejecting finger mounted in said casing and adapted to take the thread from said notch and eject it through the delivery-eye.

2. The combination with a loom-shuttle having a delivery-eye, of a casing contained therein, having front and rear walls and formed with an opening in its lower portion, a swinging member mounted in said casing and projecting through said opening, a spring for moving said swinging member in one direction, and a finger pivotally connected with said swinging member and having one end formed to engage the thread.

3. The combination with a loom-shuttle having a delivery-eye, of a casing contained therein, having front and rear walls and formed with an opening in its lower portion, and having a guide-shelf and formed with a horizontal guide-slot and a thread-receiving notch in its upper edge; a disk having a portion of its edge projecting through said opening in the casing and having a slotted arm, and a finger having a notched outer end and provided with a pin extending through the slot of the disk-arm and into the horizontal guide-slot of the casing, a spring being connected to said disk and a fixed point in the casing to normally hold the finger in position for receiving a thread in its notch.

4. The combination with a loom-shuttle having a delivery-eye, of a casing contained therein, having front and rear walls and formed with an opening in its lower portion, and having a guide-shelf and formed with a horizontal guide-slot and a thread-receiving notch in its upper edge; a disk having a portion of its edge projecting through said opening in the casing and having a slotted arm, and a finger having a cam-shaped rear end and a notched outer end and provided with a pin extending through the slot of the disk-arm and into the horizontal guide-slot of the casing, said casing being provided with a pin to engage the cam end of the finger, a spring being connected to said disk and a fixed point in the casing to normally hold the finger in position for receiving a thread in its notch, substantially as and for the purpose described.

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

GEORGE FAIR.

Witnesses:
HORACE BROWN,
A. W. HARRISON.