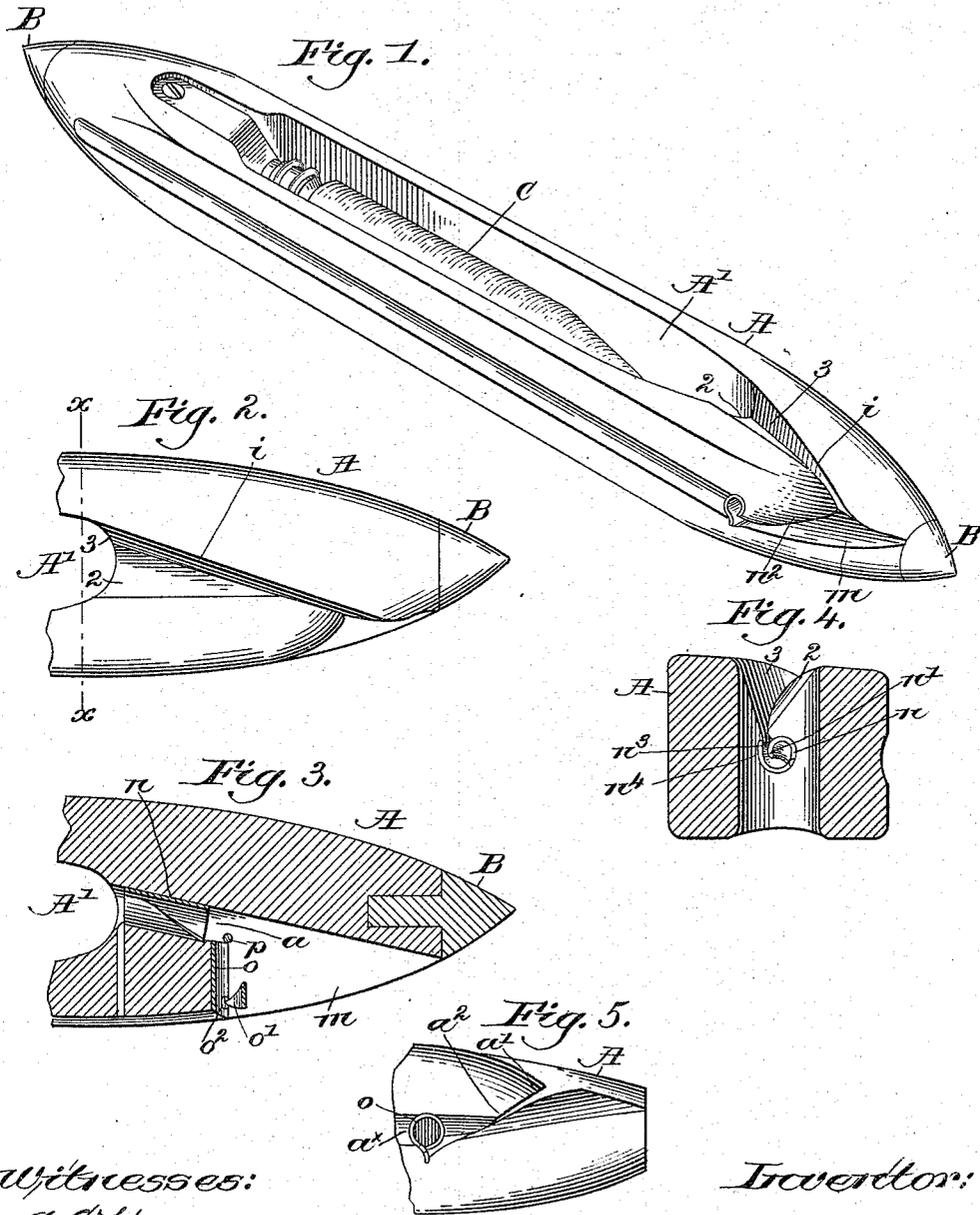


(Model.)

J. H. NORTHROP.
SELF THREADING LOOM SHUTTLE.

No. 568,207.

Patented Sept. 22, 1896.



Witnesses:
A. C. Harmon.
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UNITED STATES PATENT OFFICE.

JAMES H. NORTHROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO
GEO. DRAPER & SONS, OF SAME PLACE.

SELF-THREADING LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 568,207, dated September 22, 1896.

Application filed April 18, 1896. Serial No. 588,085. (Model.)

To all whom it may concern:

Be it known that I, JAMES H. NORTHROP, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Self-Threading Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the construction of a novel self-threading shuttle, or a shuttle for use in a loom wherein the filling is supplied automatically to the shuttle, the filling threading itself automatically into the delivery-eye of the shuttle.

Figure 1, in perspective, shows a shuttle embodying my invention. Fig. 2 shows a partial top view enlarged; Fig. 3, a horizontal section of the shuttle at its delivery end; Fig. 4, a section in the line x , Fig. 2, and Fig. 5 a side elevation of a sufficient portion of a shuttle to show its delivery-eye.

The body A has tips B, and the body is open from its upper to its lower side, leaving a bobbin-receiving space A', into which is placed the bobbin having filling C.

The filling is wound about the bobbin from the right to the left, and as it is unwound in weaving it comes rapidly off the bobbin from left to right.

To always insure the threading of the shuttle automatically, it having just received a new bobbin while the shuttle is being thrown through the shed, the free end of the bobbin-thread being connected to a fixed part of the loom, I have found it necessary to utilize this revolving motion of the shuttle-thread leaving the bobbin, and consequently I have provided the shuttle-body with a bore a , leading diagonally from the end of the space A' to the outer side of the shuttle-body near its tip, and I have cut a diagonal threading-slot i , which intersects said bore, and I have cut away at 3 the top of the shuttle leading into said slot i , so as to leave a broad, open, rounded, or flaring mouth into which the stretched thread readily enters as the shuttle is moving through the shed, and entering the broad open mouth it readily passes into the full length of said slot and passes below the end a' of the horn left at one side of said slot.

At the end of the space A' I place in the said bore an open-slotted thread-receiving eye n , (see Figs. 2 and 3,) said eye having preferably a diagonal slit, and the material of the eye, preferably sheet metal, is bent inwardly and downwardly below the inner end of said slot to present a hook or barrier n' in the open space of said eye, said hook or barrier constituting one side of an entrance-passage n^3 , the other side of said passage being the part of said eye below its edge n^4 , the said thread, coming off the bobbin in its circular sweep, easily entering said passage n^3 ; but once in it on its further sweep cannot escape from the said eye and get back again into and then out of the slot i , for the hook or barrier forbids it.

The side of the shuttle-body is cut away at m , intersecting said bore, (see Figs. 1 and 3,) leaving the under side of the horn inclined to present a breast, as at a^2 , and the shuttle is provided with a second bore at a^x to intersect the bore a , and into the bore a^x I insert a second or delivery eye o , it being made preferably of sheet metal, one part of the eye having a hole o^2 , which is entered by a point or end o' , so that the thread drawn into the slot i as the shuttle makes its first shot is by the return shot made to pass under the breast a^2 , and (see Fig. 5) will enter said delivery-eye, passing under and beyond the point o' , and once into said eye it cannot escape therefrom.

The down and inturned end n' of the receiving-eye, it being located close to the end of the bobbin-space A' of the shuttle, is a most important adjunct in an automatically-threading shuttle, and without it the shuttle-thread is apt at times to escape from the threading-slot, even after it has once entered the eye at the bottom of said slot. A pin p is placed between the eyes in said bore, about which the thread passes as it goes from the eye n into the eye o .

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

1. In an automatic self-threading shuttle, a shuttle-body having a bore leading out from the bobbin-receiving space, and a slot having an enlarged mouth and extended from said

space diagonally toward the outer front side of the shuttle near its tip and intersecting said bore; combined with an open thread-receiving eye located in said bore at the inner end of said slot and shaped to present an entrance-passage n^3 , the inner side or wall of said passage standing in said eye in prolongation of the wall of said slot, and constituting a hook or barrier in said eye to prevent the thread in its rotation about the end of the bobbin from entering said passage a second time, and thence into and from said slot, substantially as described.

2. In an automatic self-threading shuttle, a shuttle-body having a bore leading out from the bobbin-receiving space, and a slot having an enlarged mouth and extended from said space diagonally toward the outer front side of the shuttle near its tip and intersecting said bore; combined with an open thread-receiving eye located in said bore at the inner end of said slot and shaped to present an entrance-passage n^3 , the inner side or wall of said passage standing in said eye in prolongation of the wall of said slot, and constituting a hook or barrier in said eye to prevent the thread in its rotation about the end of the bobbin from entering said passage a second time, and thence into and from said slot, and a delivery-eye to take the thread from said receiving-eye, substantially as described.

3. A shuttle-body having a bore leading out from the bobbin-receiving space and a slot extended from said space diagonally toward the outer front side of the shuttle and intersecting said bore, combined with an open

thread-receiving eye located in said bore, and having an entrance-passage n^3 and a hook or barrier entering said eye and forming one side of said entrance-passage, to prevent the swinging of the thread in its rotation about the bobbin while being unwound from entering said passage n^3 and escaping from said eye, a delivery-eye to take the thread from said receiving-eye, and a pin located between said eyes about which the thread is passed, substantially as described.

4. A shuttle-body having a bore leading out from the bobbin-receiving space, and a slot extended from said space diagonally toward the outer front side of the shuttle and intersecting said bore, combined with an open thread-receiving eye located in said bore and having an entrance-passage n^3 and a hook or barrier entering said eye and forming one side of said entrance-passage, to prevent the swinging of the thread in its rotation about the bobbin while being unwound from entering said passage n^3 and escaping from said eye, a delivery-eye to take the thread from said receiving-eye, the under side of the horn left at one side said slot having a downwardly-inclined breast a^2 , said delivery-eye having its open side located at the base of said incline, substantially as described.

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

JAMES H. NORTHROP.

Witnesses:

GEO. OTIS DRAPER,
C. N. NICHOLS.