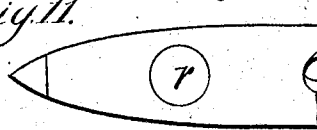
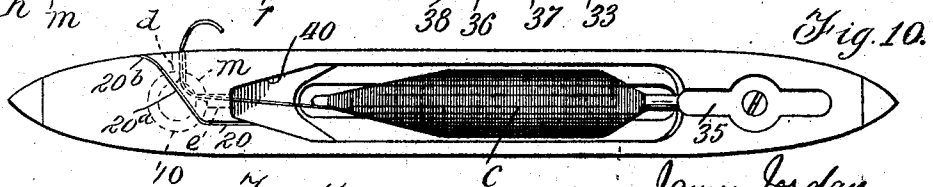
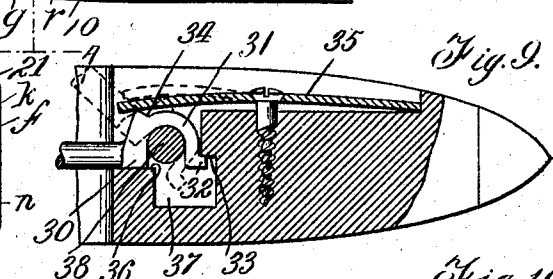
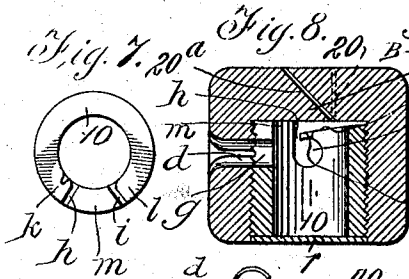
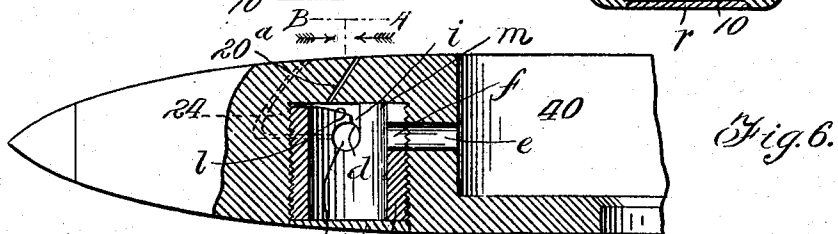
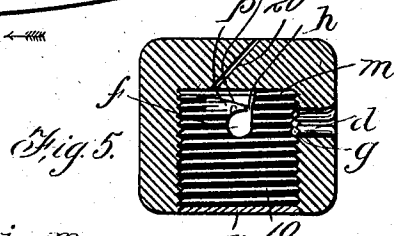
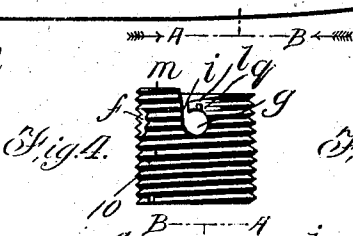
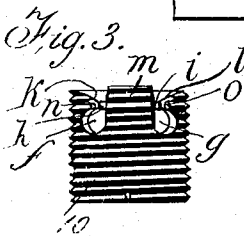
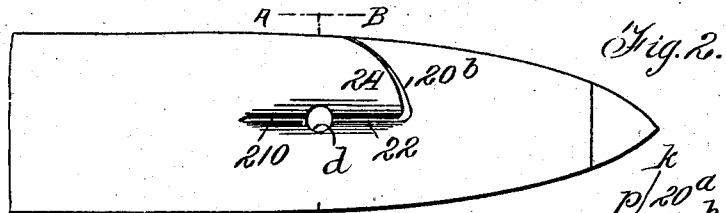


942,263.

[illegible]

Witnesses
 Albert J. [unclear]
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UNITED STATES PATENT OFFICE

JAMES JORDAN, OF MONTREAL, QUEBEC, CANADA.

THREADING DEVICE FOR SHUTTLES.

942,263.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed February 14, 1908. Serial No. 415,940.

To all whom it may concern:

Be it known that I, JAMES JORDAN, of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Threading Devices for Shuttles; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention may be said to consist of the several combinations, arrangements and construction of parts herein described and claimed and illustrated in the accompanying drawings in which similar reference characters indicate the same parts and wherein—

Figure 1 is a plan view of the top of the threader end of a shuttle provided with my invention; Fig. 2 is a side elevation thereof; Figs. 3 and 4 are detail side elevations of the thimble of my improved device, the respective views being taken at right angles to each other; Fig. 5 is a transverse vertical sectional view taken on line A, A, Figs. 1, 2, and 6; Fig. 6 is a vertical axial sectional view taken with the shuttle reversed, the point being shown in elevation; Fig. 7 is a plan view of the thimble; Fig. 8 is a transverse vertical sectional view taken on lines B, B, Figs. 1, 2 and 6. Fig. 9 is a vertical axial sectional view of the opposite end of the shuttle; Fig. 10 is a plan view of the complete shuttle; and Fig. 11 is a plan view of the underside of the threader end.

The shuttle is of the well known form at present in use and has as usual the well *b* for the cop *c*, and axial and transverse threading eyes *e* and *d* respectively.

The invention resides in the means for threading the shuttle eyes and the means for securing in place the spindle for carrying the cop:

My improved threading device comprises a thimble embedded in one end of the shuttle, and a particular formation of such end to present parts adapted to coact with portions of the thimble to guide the thread into the eyes of the shuttle and prevent accidental unthreading; while my improved spindle joint comprises a member formed integrally therewith and adapted to be held in position entirely by the usual removable spring.

More specifically speaking the thimble (indicated at 10) is of cylindrical form and has a pair of eyes *f* and *g* from which vertical slots *h* and *i* extend tangentially to the

top end of the thimble, such slots extending from the sides adjacent to each other of the eyes, the rear and underside of the portion *k* having a notch *n* and the underside of the portion *l* a notch *o*. Another feature of this thimble is that it is screw threaded and has smooth portions *p* and *q* leading to the eyes.

The shuttle is formed with a tapped boring slightly greater in depth than the thimble is in axial length, and adapted to have the latter screwed thereinto, and receive a closing plug *r*; and the eyes of this thimble are so located as to coincide with the eyes *d* and *e* of the shuttle when such thimble is screwed into place.

The sides 40 of the end of the cop-well adjacent to my improved threading device converge and terminate or merge in a transverse portion in which the eye *e* is formed.

A slot is cut in the head of the shuttle and extends from the eye *e* to the eye *d*. This slot commences in the cop-well intersecting one of the converged sides 40, and it extends first parallel to the axis of the shuttle as at 20 then diagonally as at 20^a, and finally curves around the shoulder of the shuttle head as at 20^b and joins the forward end of a second slot 22 cut horizontally (Figs. 2, 5, 6, and 8) and extended inwardly until it meets the slot 20, 20^a, 20^b, while the portions 20^a and 20^b of the latter slot are cut diagonally downward and away from the side of the shuttle having the slot 22 therein, in order to present an effective obstruction to the displacement of the thread from the slot *h*. The two slots 20, 20^a and 20^b and 22 form a deep gill 24 the point and sides whereof are rounded to prevent its tripping upon the threads or parts of the loom it crosses during action.

The preferred specific embodiment of the spindle-joint feature of my invention consists of a head 30 formed integrally with the butt of the spindle and presenting a hook 31 with its end turned outward as at 32 to engage beneath a shoulder 33, and a shoulder 34 adapted to have the usual spring 35 bear thereon, while the underside of such head is flat to rest upon a part 36 formed within the shuttle body which is recessed as at 37 to allow the end 32 of the hook freedom to swing when the spindle is turned to its dotted position (Fig. 9) for the purpose of changing the cop. A pin 38 is mounted permanently in the shuttle and is adapted to have the head 30 hooked thereover before the spring

is put in place, and the space between such pin and the shoulder 33 is made just sufficient to allow the said end of the hook to be introduced into position. This joint enables the spindle to be removed at will without the necessity of displacing the pin 38 and by simply loosening the spring 35 and swinging it to one side. The pin is preferably made of wood and soaked in oil.

In threading a shuttle provided with my invention the thread is taken from the cop and drawn downwardly over the gill-side of the point, it being thus caused to run down one of the converging sides 40, enter the mouth of the slot 20 and then fall behind the gill and rest momentarily upon the inner end of the thimble. It is then drawn horizontally toward the opposite end of the slot and by this action is caused to slide laterally across such inner end of the thimble and down the inclined portions *k* and *l* thereof to the abutment *m* which deflects it into the eyes *f* and *g*, thus completing the threading action.

The portion 210 of the slot 22 extending beyond the eye *d* accommodates the thread as the shuttle travels in the direction indicated in Fig. 2.

My improved arrangement of the shoulder 34, which causes the spring to exert pressure tending to press the spindle down, enables such spring to yieldingly retain the spindle in its position in the cop well and in its position ready to change the cop, in which two positions of the spindle the spring bears lightly on the top and inclined forward face of such shoulder, respectively. Thus the spring is in full tension only while the spindle is actually being changed from one position to the other.

What I claim is as follows:

1. The combination with a shuttle having a cop-well and axial and transverse thread apertures, and provided at its threading end with a slot extending diagonally across the top and side of the shuttle and effecting a communication between the thread apertures such side being otherwise intact, of a threading device inserted through the bottom side of the shuttle and set in the path of such slot and presenting eyes coinciding with the thread apertures and slots leading from such eyes to one edge of the said device, and means for guiding into the last mentioned slots a thread dropped laterally into the slot in the shuttle.

2. The combination with a shuttle having a cop-well and axial and transverse threaded apertures, and provided at its threading end with a slot extending diagonally across the top and side of the shuttle and effecting a communication between the thread apertures such side being otherwise intact, of a threading device inserted through the bottom side of the shuttle and set in the path

of such slot and presenting eyes coinciding with the thread apertures, and slots leading from such eyes in the device to the top of the said device, and the said top of the device having inclined portions leading to the mouths of the slots therein.

3. The combination with a shuttle having a cop-well and axial and transverse thread apertures, and provided at its threading end with a slot extending diagonally across the top and side of the shuttle and effecting a communication between the thread apertures such side being otherwise intact, of a threading device inserted through the bottom side of the shuttle and set in the path of such slot and presenting eyes coinciding with the thread apertures, and slots leading from such eyes in the device to the top of the said device, the said top of the device having inclined portions leading to the mouths of the slots therein, and an upwardly projecting abutment at the top of the device between the eyes and adapted to deflect the thread into such eyes.

4. The combination with a shuttle having a cop-well, and a slot, of a threading device set in the threading end of the shuttle and consisting of a cylindrical member presenting eyes communicating with the slot, and such member also having slots leading from such eyes to one edge of the said member, and means for guiding into the last mentioned slots a thread dropped laterally into the slot in the shuttle and the said parts presenting a clearance for the thread between the portions of the device contiguous to the eyes and the interior of the shuttle.

5. The combination with a shuttle having a cop-well, a slot communicating with the cop well and extending diagonally across the top and one side of the shuttle such top and side being otherwise intact and the bottom of the shuttle having a boring intersecting the said slot, of a threading device set in the said boring such device consisting of a cylindrical member presenting eyes communicating with the slot, and the said member having slots leading from such eyes to one edge of the said member, and means for guiding into the last mentioned slots a thread dropped laterally into the slot in the shuttle and the device presenting a clearance for the thread between the portions of the device contiguous to the eyes and the adjacent wall of the boring.

6. The combination with a shuttle having a cop-well and axial and transverse eyes, provided at its threading end with a slot extending diagonally across the top and one side of the shuttle such side being otherwise intact and a transverse boring intersecting the said slot, of a threading device set in the said boring such device consisting of a screw threaded cylindrical member and presenting eyes coinciding with

the shuttle eyes, and slots leading from such eyes in the device to one edge of the said device, and means for guiding into the last mentioned slots a thread dropped laterally into the slot in the shuttle, the portions of the device overhanging the eyes therein presenting a smooth exterior.

7. A threading device for a loom shuttle consisting of a hollow cylindrical member having a pair of eyes and slots leading therefrom to the upper end of the device, such upper end having a pair of inclined portions leading to the slots, and an abutment projecting from the said upper end of the member between the said slots and forming an extension of one wall of each.

8. A threading device for a loom shuttle consisting of an externally screw threaded hollow cylindrical member having a pair of eyes and slots leading therefrom to the upper end of the device, such upper end having a pair of inclined portions leading to the slots, and an abutment between the said slots and forming an extension of one wall of each, the portions of the said device overhanging the eyes presenting smooth exteriors.

9. A threading device for a loom shuttle

consisting of a hollow cylindrical member having a pair of eyes and slots leading therefrom to the upper end of the device, such upper end having a pair of inclined portions leading to the slots, and an abutment between the said slots and forming an extension of one wall of each, the portion of the said device overhanging the rear eye presenting a notch.

10. A threading device for a loom shuttle consisting of a hollow cylindrical member having a pair of eyes and slots leading therefrom to the upper end of the device, such upper end having a pair of inclined portions leading to the slots, and an abutment between the said slots and forming an extension of one wall of each, the portion of the said device overhanging the rear eye presenting a notch and such notch communicating with the said eye.

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

JAMES JORDAN.

Witnesses:

WILLIAM P. McFEET.

ARTHUR H. EVANS.