

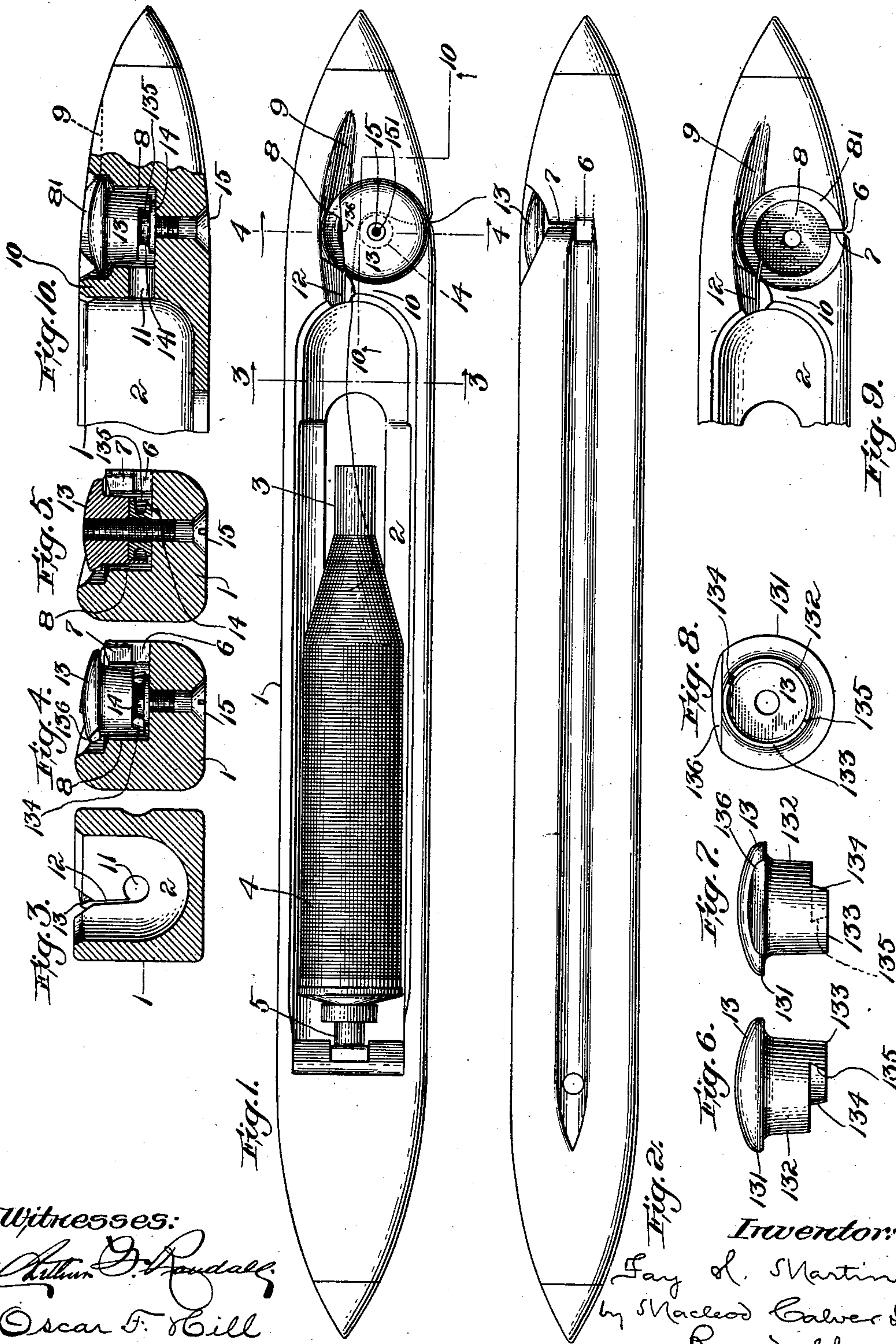
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F. H. MARTIN.
LOOM SHUTTLE.

(Application filed Jan. 14, 1901.)

(No Model.)



Witnesses:
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Fig. 2.
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UNITED STATES PATENT OFFICE.

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LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 697,508, dated April 15, 1902.

Application filed January 14, 1901. Serial No. 43,102. (No model.)

To all whom it may concern:

Be it known that I, FAY H. MARTIN, a citizen of the United States, residing at Hyde-
park, in the county of Norfolk, State of Mas-
sachusetts, have invented a certain new and
useful Improvement in Loom-Shuttles, of
which the following is a specification, refer-
ence being had therein to the accompanying
drawings.

My invention consists in a loom-shuttle
having novel and improved threading ar-
rangements enabling the yarn drawn from a
cop or bobbin contained within the yarn-
chamber of the shuttle to be quickly and con-
veniently led through the same in readiness
for weaving, the said arrangements being of
a character to prevent the yarn from acci-
dentally becoming unthreaded therefrom.

I have illustrated one embodiment of my
invention in the accompanying drawings, in
which latter—

Figure 1 shows in plan a loom-shuttle hav-
ing the said embodiment of the invention ap-
plied thereto. Fig. 2 shows the same in side
elevation. Fig. 3 is a view in vertical sec-
tion on the plane indicated by the dotted line
3 3 in Fig. 1 looking in the direction indi-
cated by the arrows adjacent the ends of such
line. Fig. 4 is a view mainly in vertical sec-
tion on the plane indicated by the dotted line
4 4 in Fig. 1 looking in the direction indi-
cated by the arrows adjacent the ends of such
line. Fig. 5 is a view similar to Fig. 4, but
showing the button and collar in vertical sec-
tion. Fig. 6 is a side elevation of the button.
Fig. 7 is also a side elevation of the button,
viewing the same from the opposite side. Fig.
8 is a bottom view of the button. Fig. 9 is a
plan view of the forward end of the shuttle
with the button, collar, and securing-screw
removed. Fig. 10 is a view in section on the
line 10 10, Fig. 1, showing the forward por-
tion of the shuttle.

Having reference to the drawings, 1 desig-
nates the shuttle-body, and 2 the main or yarn
receiving cavity or chamber thereof. 3 is a
bobbin, with its yarn-load 4, mounted upon
the shuttle-spindle 5 within the said cavity
or chamber 2.

6 is the delivery eye or educt in one side of
the shuttle-body. 7 is a slit extending up-
ward from the said delivery-eye to the top of
the shuttle-body. 8 is the threading-cham-
ber into which the said delivery-eye and slit
open transversely.

9 is a longitudinal groove or depression in
the upper side of the shuttle-body, and 10 is
a transverse wall of the shuttle-body, sepa-
rating the threading-chamber 8 from the yarn,
receiving cavity or chamber 2. This wall is
provided with an eye or passage 11, Fig. 3,
therethrough in line with the axis of the
shuttle-spindle for the guidance of yarn from
chamber or cavity 2 to the threading-cham-
ber, the said eye or passage 11 being inter-
sected at one side thereof by a nearly tangen-
tial slot 12, the walls of which at the top of
the shuttle-body flare or diverge, as shown in
Fig. 3, to facilitate the entrance of the yarn
into the same from above, the flare being in
horizontal continuation of the longitudinal
groove or depression 9, Fig. 1.

Within the threading-chamber are located
a button 13 and collar 14. These two sur-
round the stem of a screw 15, which is passed
upwardly from below through a vertical hole
formed in the bottom of the said threading-
chamber, the interior of the central hole of
the button being threaded to fit the thread of
screw 15. By means of the said screw the
button and collar are held in place. The up-
per end of screw 15 is formed with an axial
hole 15¹, and after the parts have been as-
sembled and properly adjusted into the de-
sired working position the said upper end of
the screw is expanded slightly, as by the use
of a prick-punch, so as to cause the screw to
bind in the central hole or eye of the button,
thereby preventing accidental loss of adjust-
ment or loosening and separation of the parts.
The tightening effected in this manner is not
to such an extent or degree as to preclude the
possibility of separating the parts when it is
necessary to do so. At its top the button is
formed or provided with a horizontally-pro-
jecting flange 13¹, which is received within
the counterbore 8¹ at the top of the thread-
ing-chamber 8, the said flange overlapping

the shoulder that is constituted by the bottom of the said counterbore, sufficient space being left between the flange and the said shoulder to permit of the free passage between them of the yarn in being drawn around under the said flange, and sufficient space being left between the body of the button and the wall of the threading-chamber to enable the said yarn to be carried down between them. The horizontal flange 131 at the top of the button being received within the counterbore at the top of the threading-chamber 8, and thus located below the adjoining portions of the wood of the shuttle-body at the top of the latter, is so shielded at its opposite sides, considering the length of the shuttle, that warp-threads bearing on the upper surface of the shuttle are prevented from becoming caught under the flange. The said flange at the forward side of the shuttle projects over the upper end of the vertical slit 7, leading from the delivery-eye 6, so as to cover such end and prevent warp-threads from entering into the same.

In threading the shuttle the yarn is drawn by hand forward from the bobbin 3 over the groove 9, being depressed into the latter and under the flange 131 of the button, then being swung transversely around the button into the vertical slit 7 and down the latter into delivery-eye 6. Outward draft on the yarn, either communicated by hand or occurring after the shuttle has been placed in a loom and picked, will cause the yarn to pass downward through slit 12 into the eye 11 in line with the bobbin and also into the groove 141 of collar 14, or the yarn may be caused by hand to pass downward into and through the slit 12 at the same time that it is being drawn forward into groove 9 and passed under flange 131 of the button. The barrel or body 132 of the button 13 tapers slightly, so as to facilitate the slipping of the yarn downward into the groove 141 of the collar 14. The button is formed with a vertical depending flange 133 extending part way around the same, sufficient space being left between the said flange and the periphery of the collar to permit free entrance of the yarn. The end 134 of the said flange, which is located near the eye 11, slopes or bevels downward in a forward direction to facilitate the descent of the yarn below the flange in the threading operation; but the opposite end of said flange is reversely inclined to form an inclined shoulder 135 and an entrant angle adjacent the same, as indicated in Fig. 6. When the button is in proper position in the threading-chamber, the shoulder 135 is located in advance of the forward side of the shuttle-eye, and thereby is shielded by the said side of the shuttle-eye, so that the yarn in case it should accidentally become lifted upward through slit 7 and drawn reversely around under the flange 131 of the button toward the middle line of the shuttle, as in a flight of the shuttle from right to left in the drawings, cannot become retracted under the

point or corner of the said shoulder, and thus is prevented from passing the shoulder. In this case in the next flight of the shuttle from left to right the yarn would find its way back through the slit 7 into the eye 6. The shoulder 135 thus constitutes a detent which prevents unthreading.

For the purpose of facilitating the operation of introducing the yarn under the flange 131 the rear portion of the latter is cut away vertically at one side of groove 9 in the top of the shuttle-body on an oblique line, (see Fig. 1,) so as to leave an angular portion 136, and this last is beveled or sharpened, so as to produce a knife-edge-like formation.

Collar 14 is formed separate from button 13 chiefly for convenience in making the parts.

It will be apparent that the construction of the parts may be varied in different respects without necessarily involving any departure from the essential principles of the invention, and I therefore do not limit myself to the precise particulars which are herein shown and described.

The slot 12 enters the eye or passage 11 at one side thereof, and it extends in the same direction in which the yarn circles around in unwinding from the mass of yarn on the bobbin or spindle in the yarn-containing cavity. Consequently the yarn will tend naturally to pass downward from above from the said slot 12 into the said eye or passage 11, and after it once has entered the said eye it will remain therein. As will be perceived, one side of the slot extends in the direction in which the yarn circles around the eye or passage 11, and consequently protects or shields the said slot. The side at which the slot 12 enters the eye or passage 11 will be determined by whether the yarn is wound to the right on the bobbins or to the left.

I claim as my invention—

1. A loom-shuttle having the threading-chamber in advance of the yarn-containing cavity thereof, a slitted yarn-passage leading from said cavity to said chamber, the slitted or open delivery eye or educt, the button and grooved collar within said chamber, and the downwardly-extending flange on said button formed with the detent to prevent the yarn from being drawn back from around the button and collar, substantially as described.

2. A loom-shuttle having the longitudinal groove or depression in the top thereof, the threading-chamber, the slitted or open delivery eye or educt, the button flanged at its top and having the depending flange formed with the detent, and the collar, said button and collar occupying the said chamber, substantially as described.

3. A loom-shuttle having the longitudinal groove or depression in the top thereof, the threading-chamber, the slitted or open delivery eye or educt, the button having the depending flange formed with the detent, the said button having the flange at the top thereof cut away as described across the said groove

or depression, and the collar, said button and collar occupying the said chamber, substantially as described.

4. A loom-shuttle having the longitudinal
5 groove or depression in the top thereof, the
threading-chamber in advance of the yarn-
cavity, the slitted yarn-passage leading from
said cavity to said chamber, the slitted or open
delivery eye or educt, the button having the
10 depending flange formed with the detent, the
said button having the flange at the top there-

of cut away as described across the said groove
or depression, and the collar, said button and
collar occupying the said chamber, substan-
tially as described.

In testimony whereof I affix my signature¹⁵
in presence of two witnesses.

FAY H. MARTIN.

Witnesses:

MARY V. DAVIS,
LEPINE HALL RICE.