

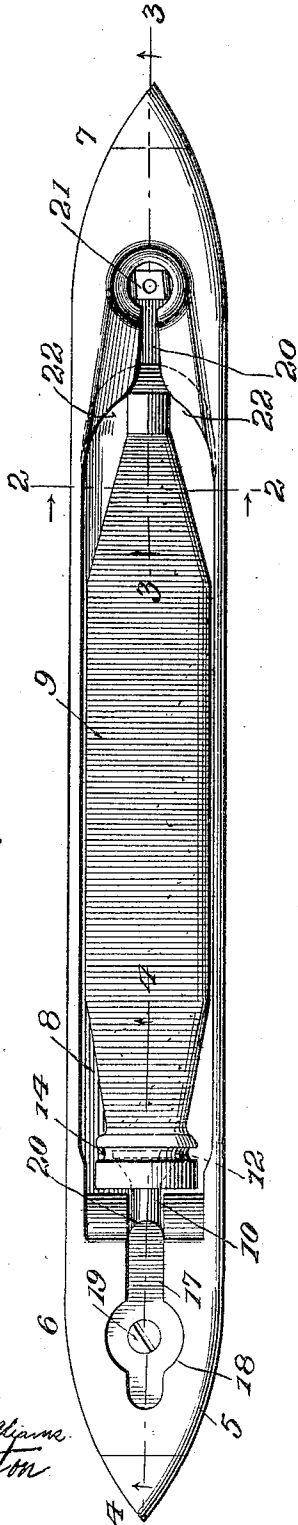
J. GAGNON.
SHUTTLE.

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971,187.

Patented Sept. 27, 1910.

Fig. 1.



Witnesses

W. Williams
R. L. Norton

Fig. 3.

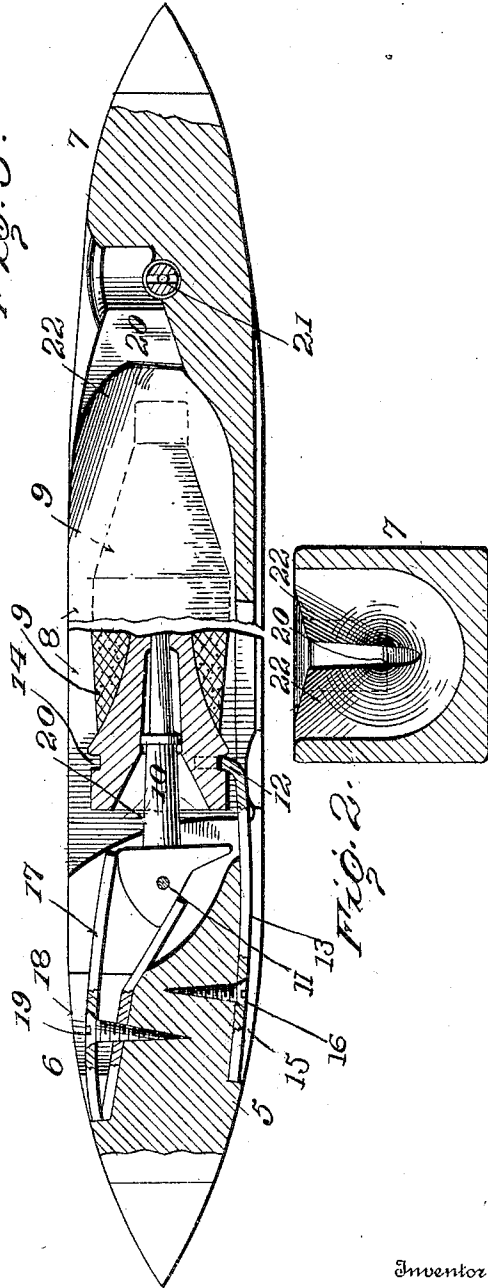


Fig. 4.

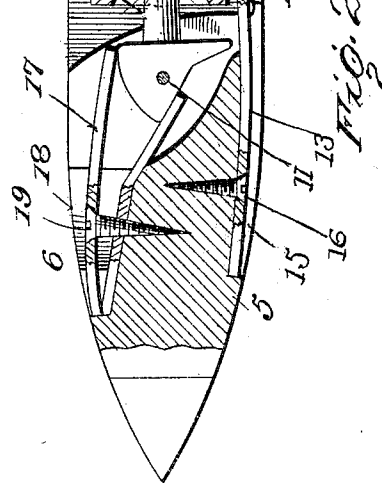


Fig. 2.

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SHUTTLE.

971,187.

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To all whom it may concern:

Be it known that I, JOSEPH GAGNON, a subject of the King of England, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Shuttles, of which the following is a specification.

My invention relates to certain new and useful improvements in shuttles, and it has for its object to provide a means which will prevent the bobbin from flying out of the shuttle when the bobbin is disengaged from its locking mechanism, due either to the breaking of the locking plate or the breaking of the rear end of the bobbin between the groove with which the plate engages and the rear end.

With this and other objects in view my invention consists in certain constructions, combinations and arrangements of parts the preferred form of which will be first described in connection with the accompanying drawings and then the invention particularly pointed out in the appended claim.

Referring to the drawings wherein the same part is designated by the same reference numeral wherever it occurs, Figure 1 is a plan view of a shuttle provided with the preferred form of my invention; Fig. 2 is a section taken on line 2, 2 of Fig. 1, looking in the direction of the arrow; Fig. 3 is a section of the front portion of the shuttle, the section being taken on line 3, 3 of Fig. 1, and Fig. 4 is a section of the rear portion of the shuttle taken on line 4, 4 of Fig. 1.

5 is the body of the shuttle having the end portions 6 and 7 and the usual central slot 8, in which is located the bobbin 9. The bobbin is slipped onto a spindle 10 which is pivoted at one end by a pin or shaft 11 extending crosswise of the shuttle at the end 6. When the shuttle is in its operative position the spindle 10 and the bobbin 9 occupy the position shown in Fig. 1, parallel with the longitudinal axis of the shuttle. The bobbin is then retained in place on the spindle and is prevented from slipping thereon by means of a bobbin catch 12 on a bobbin catch-plate 13, the catch 12 engaging a peripheral groove 14 on the end of the bobbin. The plate 13 is located in a recess 15 at the bottom of the end 6 of the shuttle, and is held in place by a screw 16 which passes through the plate 12 and into the wood of the end 6 of the shuttle. The spindle 10 is retained in its proper operative position shown in Fig. 1

by means of a bobbin spring or tongue 17. This bobbin spring or tongue is located in a recess 18 in the upper face of the end 6 of the shuttle, and is held therein by a screw 19 which extends through the bobbin spring and screws into the wood of the end 6 of the shuttle. This screw is adapted to tension the bobbin spring 17, as said spring is preferably slightly arched. The inner end of this spring coöperates with the head 20 of the spindle. This head is provided with suitable faces, so that the bobbin spindle may either be held in its position in the shuttle or when thrown out from the shuttle for the purpose of changing the bobbin. It will be noted that when the spindle is in the shuttle the groove 14 on the bobbin will be engaged by the bobbin catch 12, so that the bobbin is held in proper position in the shuttle. When, however, the spindle is moved on its pivot and out of the shuttle the groove 14 on the bobbin will be moved out of engagement with the catch 12 and the bobbin will thus be free to be withdrawn. There are several defects in the use of these old and widely known shuttles which involve the construction so far described. If in placing a bobbin on the spindle it is not pushed clear down on the spindle, but only partially pushed into place, as often happens with careless operators, the end of the bobbin is brought into contact with the bobbin catch 12, when the spindle is returned to its operative position. As result of such carelessness the bobbin catch plate is subjected to strain and it sometimes causes the breaking of the plate or the breaking of the end of the bobbin. Furthermore, even when the bobbin is properly positioned and locked the end of the bobbin will sometimes break, permitting the bobbin to slide up on the spindle. The result of many of these causes with the ordinary form of shuttle is that the end of the bobbin will wedge up on the front end of the slot and jump out of the shuttle, so that if the bobbin is passing through the shed the warped threads will be broken and the loom must be stopped until the damage is repaired.

In order to obviate the effects just enumerated I have formed the end of the shuttle slot at the end 7 of the shuttle in novel form, and it comprises the forming of the upper portions of the shuttle adjacent the thread slot 20 leading to the thread-guide 21, with the over-hanging

walls 22. The over-hanging walls are so positioned at the front end of the slot that when the bobbin is placed in proper position on the spindle and the spindle turned into the operative position with the bobbin catch 12 in engagement with the peripheral groove 14, the end of the bobbin will just clear the edges of the over-hanging walls 22, and when the spindle is forced down in the line of the axis of the shuttle the end of the bobbin will be beneath these walls. From this it will be seen that should anything break in the locking mechanism for the bobbin so as to permit the same to move longitudinally on the spindle, the end of the bobbin will pass over the overhanging walls 22 which will operate to prevent the bobbin jumping out of the shuttle and doing damage.

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

A shuttle provided with a central slot, a bobbin spindle pivoted at one end of the slot, a spring resting on the bobbin spindle and tending to hold the same in horizontal or vertical position, a bobbin catch adapted to engage a peripheral groove in the bobbin to hold the bobbin in axial position on the

spindle when the latter is in its horizontal position and parallel to the axis of the shuttle, the opposite end of the slot in the shuttle to that at which the bobbin spindle is pivoted having its side walls extended over the slot so as to form overhangs separated by a central axial opening, which opening decreases in size toward the end of the slot, and having a thread guide mounted transversely of the shuttle with its opening in line with the opening between the overhanging walls, the space separating the walls being less than the thickness of the end of the bobbin, said overhanging walls extending from the front of the slot toward the rear such a distance as to permit the end of the bobbin to just clear the rear edges of the overhanging walls when the bobbin is properly positioned on the spindle and the spindle is raised but to catch the end of the bobbin if it has moved forward on the spindle and prevent the bobbin and spindle being raised.

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

JOSEPH GAGNON.

Witnesses:

HUBERT LEGARE,
JOSEPH MENARD.