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SHUTTLE FOR LOOMS.

APPLICATION FILED MAY 9, 1904.

NO MODEL.

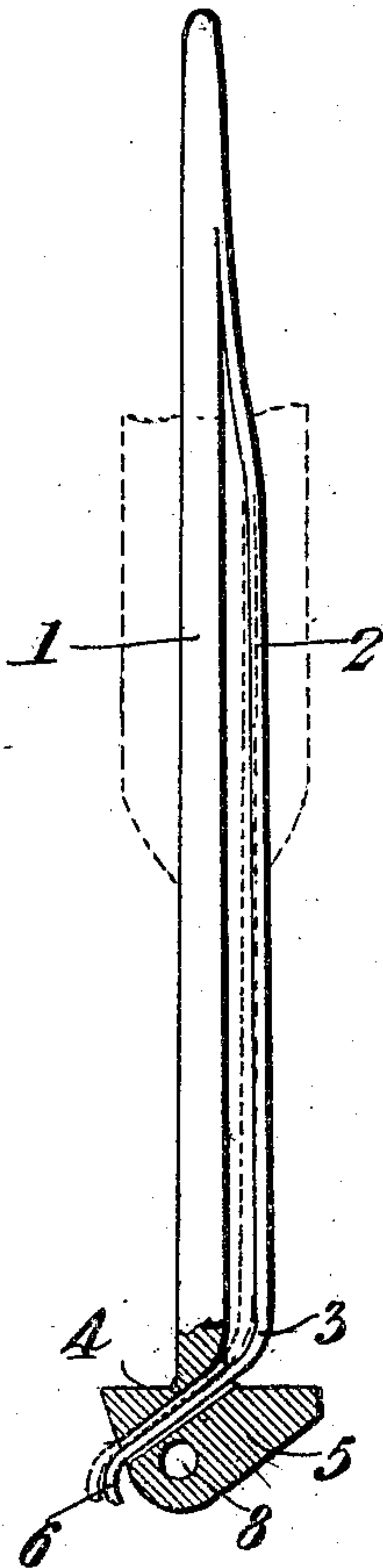


Fig. 1.

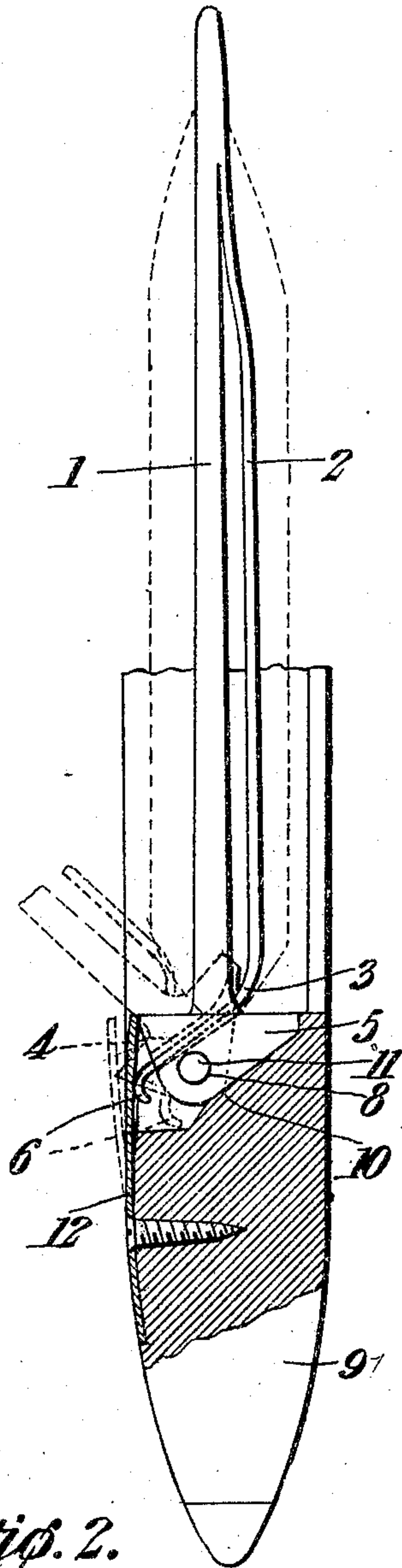


Fig. 2.

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SHUTTLE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 775,420, dated November 22, 1904.

Application filed May 9, 1904. Serial No. 207,152. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. GREGORY and JOSEPH BROWN, citizens of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Shuttle for Looms, of which the following is a specification.

This invention relates to shuttles for looms, and has for its object to provide an improved arrangement of shuttle spindle or peg whereby the cop may be readily fitted upon the spindle without damage thereto by the tension of the members of the spindle.

It is furthermore designed to have the elastic or spring-actuated element of the spindle inactive when the spindle is disposed at substantially right angles to the body of the shuttle for the reception of the cop and to automatically render the elastic member active, so as to fit snugly within the cop when the spindle has been returned to its normal operative position within the shuttle.

A further object of the invention is to retain the common or ordinary pivotal or hinged connection between the spindle and the body of the shuttle, in order that the present spindle may be readily fitted to loom-shuttles now in common use by merely removing the ordinary spindles and substituting the present form of spindle therefor.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is an elevation of a shuttle-spindle of the present invention, parts being broken away to illustrate the disposition of the free end of the elastic member of the spindle. Fig. 2 is a side elevation showing one of the present spindles in its normal operative position upon a shuttle of the ordinary type, the shuttle being broken away

to illustrate the manner in which the spindle is secured thereto.

Like characters of reference designate corresponding parts in both figures of the drawings.

The present spindle consists of a shank which is split longitudinally, as usual, to form the shank members 1 and 2, of which the member 1 is considerably thicker than the member 2, so as to constitute the rigid shank of the spindle, while the member 2 is bowed outwardly to render the same elastic and has its free inner end bent laterally inward, as at 3, and passed through a diagonal opening or passage 4 in the heel 5, which is integral with the spindle member 1. The free extremity of the member 2 is projected at the opposite side of the heel. The heel 5 is also pierced transversely by an opening 8, located at one side of the socket 7 and the passage 4.

For an understanding of the cooperation of the present form of spindle with a shuttle reference is had more particularly to Fig. 2 of the drawings, wherein 9 indicates that end of an ordinary shuttle which is provided with the usual seat or socket 10 for the reception of the heel 5 of the spindle, which is pivotally mounted therein upon the usual pivot-pin 11 to permit of the spindle being swung outwardly at a suitable angle to the body of the shuttle to permit of the application of the cop. The outer side of the socket 10 is open, as usual, and closed by means of a leaf-spring 12, secured to the body of the shuttle, with its free end bearing against the adjacent side of the heel 5, thereby maintaining the spindle yieldably in its normal position with a sufficient tension to prevent accidental displacement thereof, while at the same time permitting the spindle to be swung outwardly.

When the spindle is set at an angle to the shuttle, the terminal 6 of the loose or movable spindle member 2 is free, so that when a cop (indicated by dotted lines in Fig. 2) is slipped upon the spindle the member 2 will offer practically no resistance to the cop, whereby the latter may be readily fitted to the spindle without damaging any portion thereof, as the spindle does not exert any outward

pressure or tension upon the bore of the cop. After the cop has been fitted upon the spindle the latter is swung upon its pivotal support 11 back to its normal position within the shuttle, whereby the trip-terminal 6 of the spindle member 2 will be brought into contact with the spring 12, and thereby forced laterally against the heel, which results in a separation of the spindle members sufficiently to place the desired tension upon the interior of the cop to maintain the spindle snugly within said cop, so as to avoid accidental displacement thereof.

It will here be noted that in the normal condition of the spindle one side of the heel 5 engages the inclined bottom wall of the socket or recess, while the other side is engaged by the spring 12, whereby the spindle is normally maintained in a comparatively rigid condition. Furthermore, the free end 6 of the loose spindle member 2 is housed in the space between the back of the recess, the spring 12, and the heel of the spindle, and therefore cannot be engaged by a cop or any other member and become damaged or displaced thereby.

From the foregoing description it will be understood that the present invention preserves the common or ordinary form of spindle-heel in order that the present spindle may be substituted for spindles now in general use without requiring any change or alteration whatsoever in the construction of the shuttles, while at the same time it provides for rendering the loose or elastic member of the spindle inactive when the spindle is in position to receive a cop and to automatically render the loose spindle member active to exert the desired tension upon the interior or bore of the

cop when the spindle with the cop thereon is in operative position in the shuttle.

Having thus described the invention, what we claim is—

A loom-shuttle having a socket provided with an inclined back wall and intersecting one side of the shuttle, a rigid spindle member having a cam-shaped heel pivotally mounted within the socket with one edge normally bearing against the inclined back of the socket and provided with an opening piercing the heel from the top to the bottom thereof at the opposite side of the pivot, a loose spindle member secured to the outer end portion of the rigid spindle member and having its inner end inclined transversely and working loosely through the opening in the heel with its free extremity projected into the socket, and a leaf-spring secured to the shuttle with its free end closing the open side of the socket and bearing against the heel of the spindle and the free extremity of the loose spindle member to normally spread the latter, the spindle capable of being turned upon its pivotal support to disengage the free extremity of the loose spindle member from the spring, said free extremity being housed within the socket between the head and the spring in all positions of the spindle.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JOHN T. GREGORY.
JOSEPH BROWN.

Witnesses:

ARNUL L. ANELET,
FRANK LEDOUX.