

(No Model.)

G. W. BAKER.

SHUTTLE FOR SEWING MACHINES.

No. 393,738.

Patented Dec. 4, 1888.

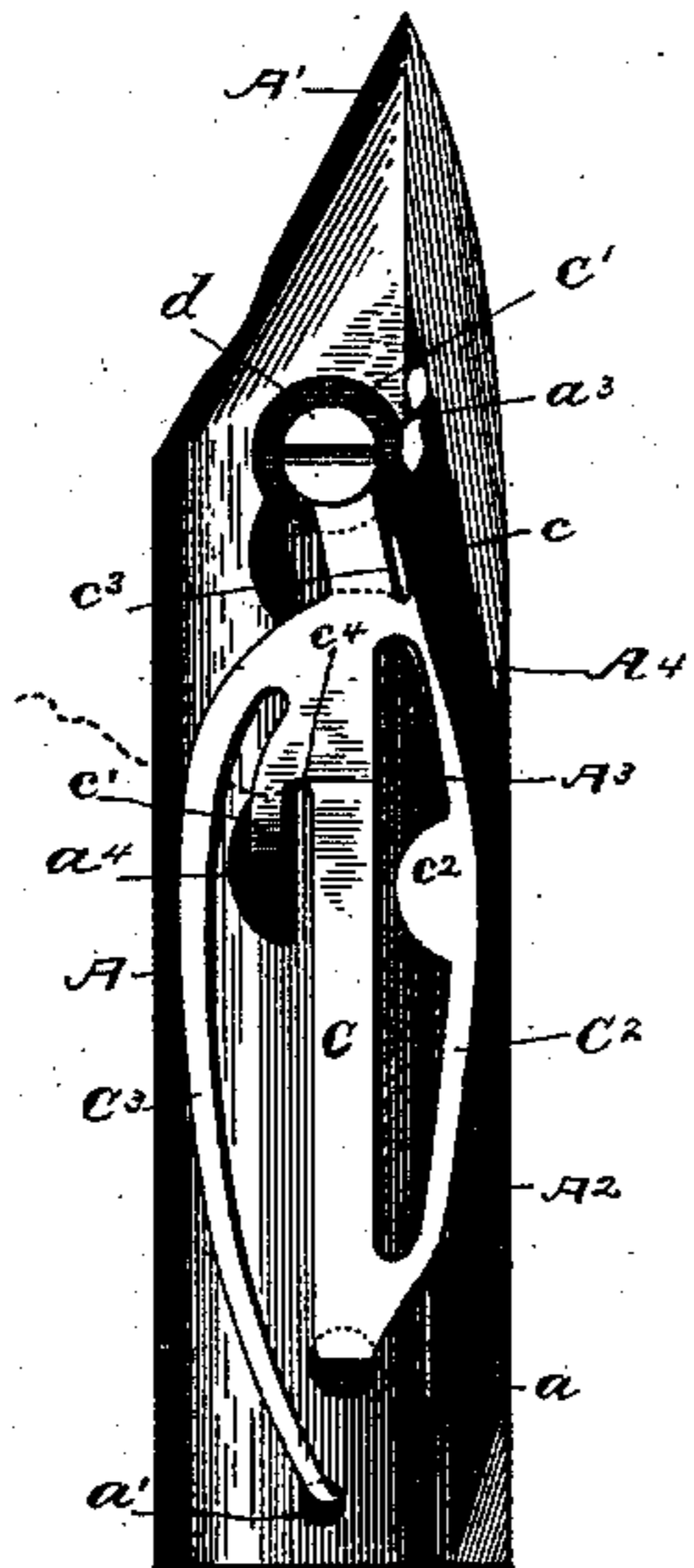


Fig. 1.

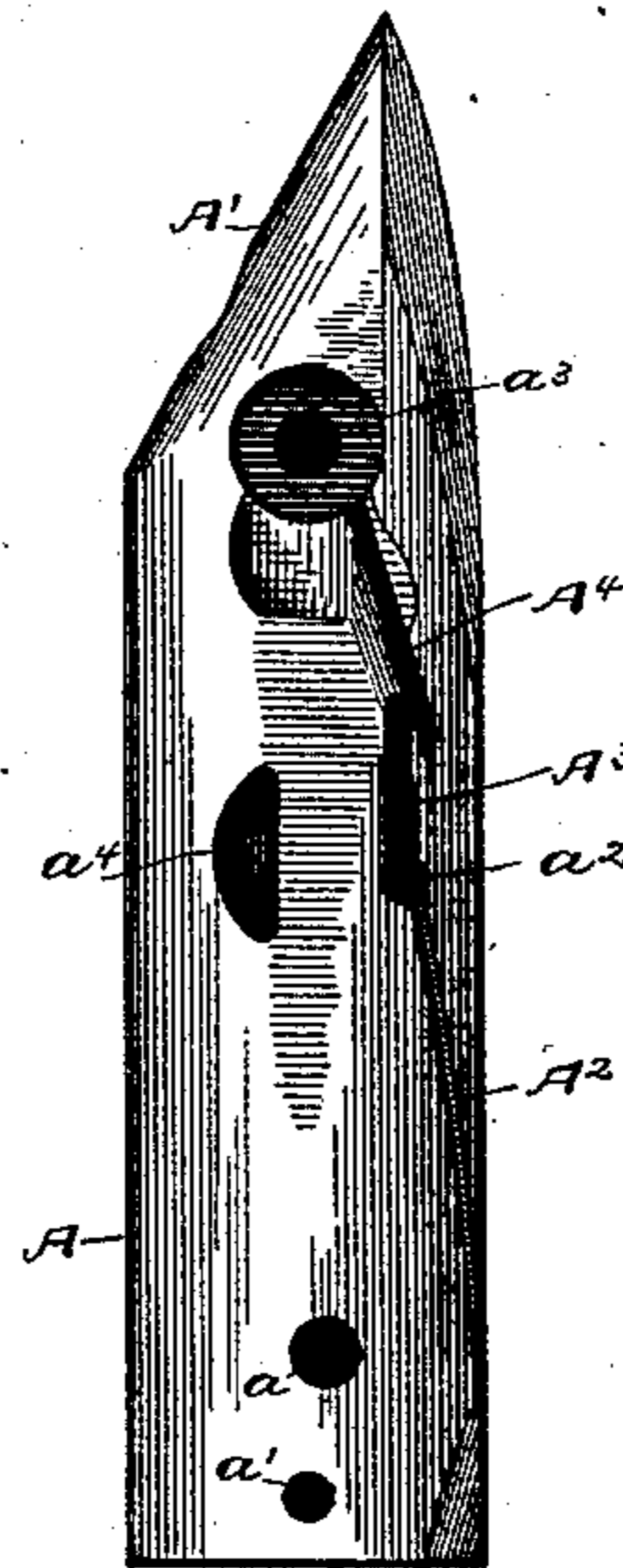


Fig. 2.

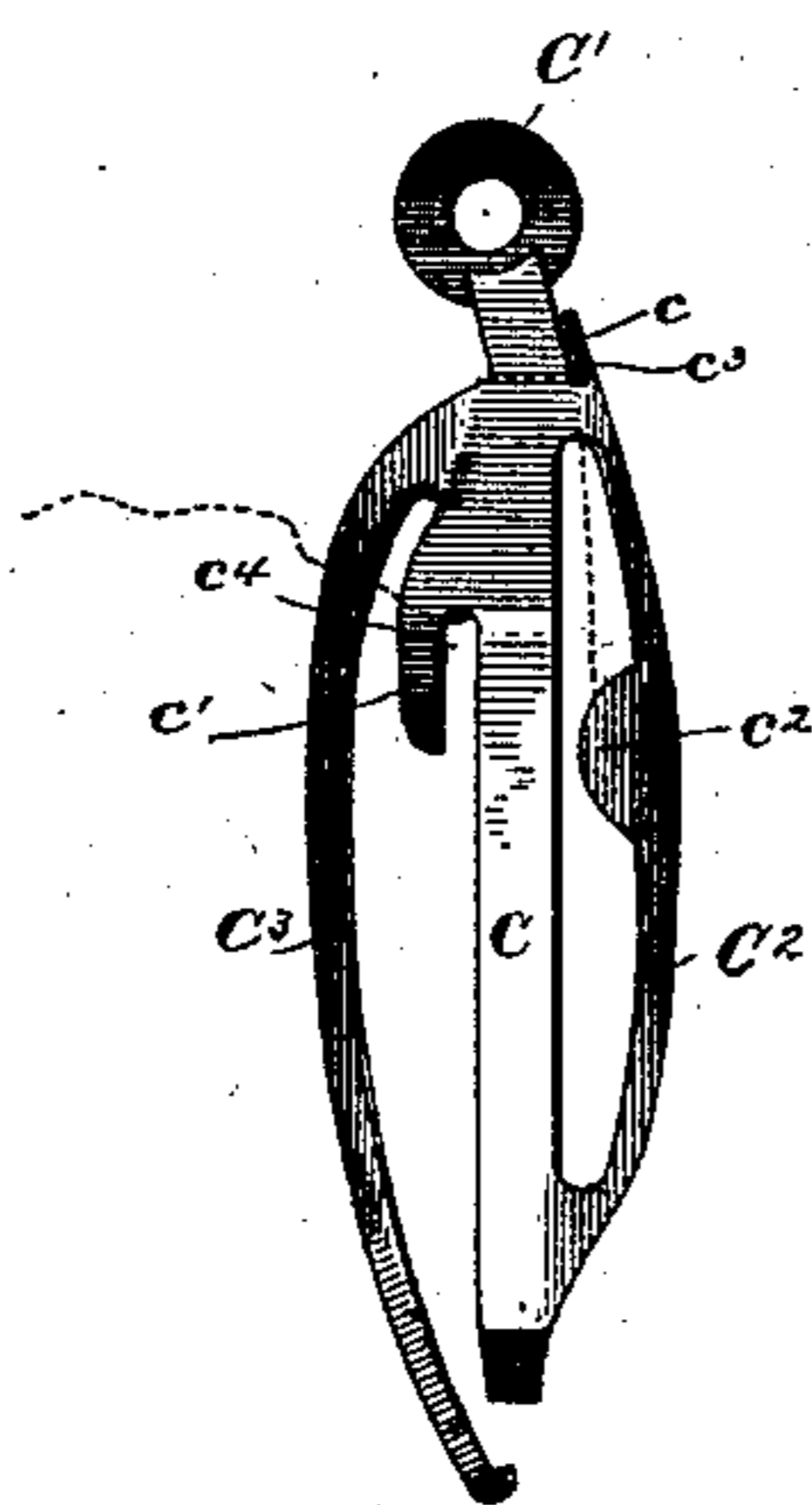


Fig. 3.

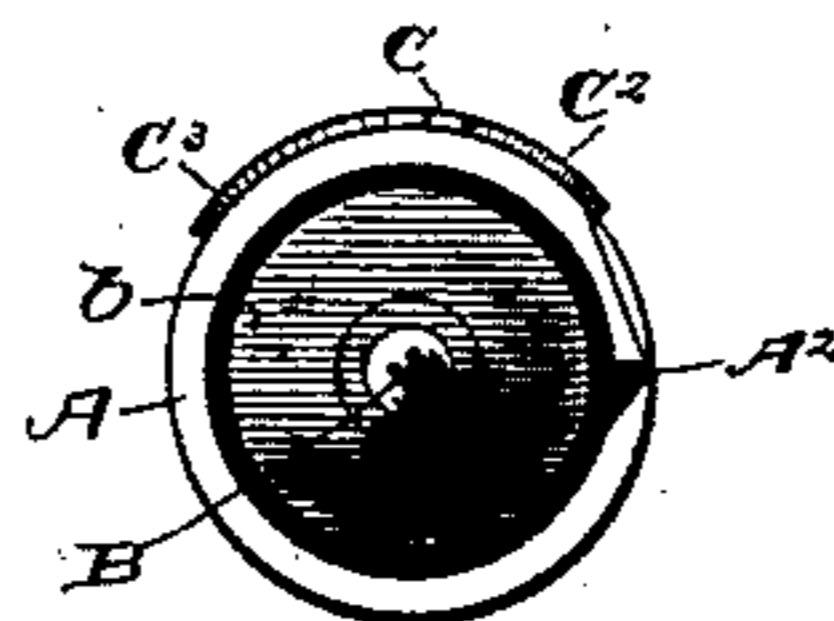


Fig. 4.

WITNESSES  
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GEORGE W. BAKER, OF CLEVELAND, OHIO, ASSIGNOR TO THE WHITE SEWING MACHINE COMPANY, OF SAME PLACE.

## SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 393,738, dated December 4, 1888.

Application filed September 12, 1887. Serial No. 249,442. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. BAKER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Sewing-Machine Shuttles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in sewing-machine shuttles; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the shuttle complete. Fig. 2 is a plan of the shuttle with the tension-spring removed. Fig. 3 is a plan of the tension-spring detached. Fig. 4 is a rear end elevation.

A represents the body of the shuttle, consisting, in the main, of a hollow cylinder open-ended at the rear, and having a solid-pointed forward end,  $A'$ , in which latter is set the spindle B. The spindle extends back through the center of the cylinder, and has mounted thereon the bobbin or thread-spool  $b$ . The shell of the shuttle has holes  $a$  and  $a'$  for attaching the spring C, and has a hole,  $a^2$ , for the passage of the thread. A hole,  $a^3$ , is made in the solid portion of the shuttle, and is countersunk for receiving the shank of the spring, the reduced bore of the hole being screw-threaded for receiving the screw  $d$ , that holds the forward end of the spring, the desired tension being had by adjusting this screw. A thread-slot,  $A^2$ , commences at the heel or open end of the shuttle about midway up the side that lies against the shuttle-race, this slot running diagonally forward and upward to hole  $a^2$ , the latter being located, as shown, near the top of the shuttle. A slight external thread-groove,  $A^3$ , is made in the shell of the shuttle, leading from holes  $a^2$  forward, as shown more clearly in Fig. 2. A broader deeper groove,  $A^4$ , commences about opposite holes  $a^2$ , but lower down the face side of the shuttle, and runs obliquely forward and upward to hole  $a^3$ . A slight depression or pocket,  $a^4$ , is located substantially as shown in Fig. 2. The forward end or shank of spring C is offset down-

ward and terminates in an eye,  $C'$ , that fits in the counterbore of hole  $a^3$ , where it is secured by screw  $d$ . On the respective sides of the spring and integral therewith are slender bows  $C^2$  and  $C^3$ , the former having a lip,  $c^2$ , that covers hole  $a^2$  and covers a portion of the thread-slot and groove adjacent to this hole. By means of this lip the thread as it passes from the bobbin up through hole  $a^2$  is bent down and held in and made to follow groove  $A^3$ . Fingers  $c$  and  $c'$  are integral with the body of the spring and project, the one forward and the latter rearward, forming notches  $c^3$  and  $c^4$  between the respective fingers and spring proper, these notches serving as ways for the thread to run in. The rear end of the body of the spring and of bow  $C^3$  are offset or made with hook ends for fastening, respectively, in the holes  $a$  and  $a'$ . (See Fig. 3.) The outer edge of that portion of bow  $C^2$  that extends over groove  $A^4$  is turned down or slightly depressed into this groove; also, the point of finger  $c'$  is depressed into pocket  $a^4$ , leaving the upper surface of the finger end about flush with the periphery of the shuttle.

In threading the shuttle, the bobbin having been placed on the spindle and the operator retaining the end of the thread in hand, the thread is entered in slot  $A^2$  and drawn forward under bow  $C^2$  until the thread enters hole  $a^2$  and has passed under finger  $c$ , the thread thus being brought into groove  $A^3$  and into notch  $c^3$ . From thence the thread is passed over the shank of the spring, and is then drawn rearward under bow  $C^3$ , and when the thread reaches the rear end of this bow it will have passed under finger  $c'$ , entering notch  $c^4$ . Next, by drawing the thread forward the thread is brought over the top of finger  $c'$ , and leads from thence laterally under bow  $C^3$ , from whence it passes to the work. To recapitulate, the thread, when in position, leads from the bobbin through hole  $a^2$ , thence along groove  $A^3$  to notch  $c^3$ , thence over the spring and back under the spring to notch  $c^4$ , from thence over finger  $c'$ , and out laterally under bow  $C^3$ . The thread in its passage under the spring on its way to notch  $c^4$  is slightly compressed between the spring and shuttle to give the desired tension, such tension being, as aforesaid, regulated by screw  $d$ .

I am aware that in cylindrical shuttles of the class aforesaid thread-slots have been used; but these were located in such position usually approximately on the opposite side of the shuttle from the thread-slot shown in the drawings, and consequently in such position that the slack thread was likely to catch in the end of such slot. With the construction shown, the outer end of the thread-slot being located opposite from where the thread leaves the shuttle and from where the slack thread depends, there is nothing to cause the slack thread to catch in slot A<sup>2</sup>, and, besides, there is not length enough of the slack thread to reach this slot, and consequently the objectionable feature heretofore met with thread-slots for the purpose is entirely overcome.

What I claim is—

1. A cylindrical shuttle having a thread-slot commencing at the rear or open end of the shuttle, midway up the face side thereof,

and running from thence diagonally forward and upward to near the top of the shuttle, substantially as set forth.

2. The combination, with cylindrical shuttle having a thread-slot commencing at the heel of the shuttle, on the face side thereof, and running diagonally forward and upward, of tension-spring mounted on the shuttle, said spring having fingers *c* and *c'*, located substantially as shown, whereby the thread in passing from one side of the spring to the other side is made to pass over and around the spring, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 3d day of September, 1887.

GEORGE W. BAKER.

Witnesses:

CHAS. H. DORER,

ALBERT E. LYNCH.