

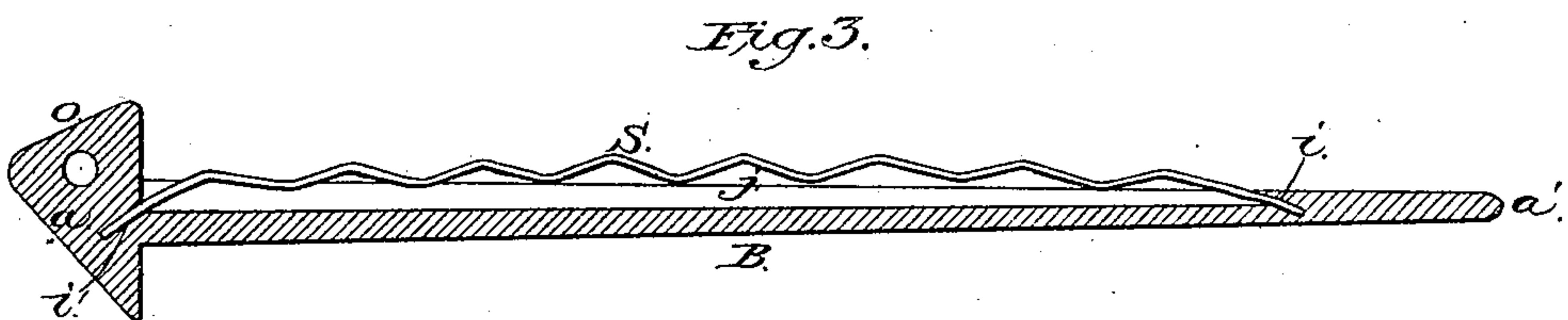
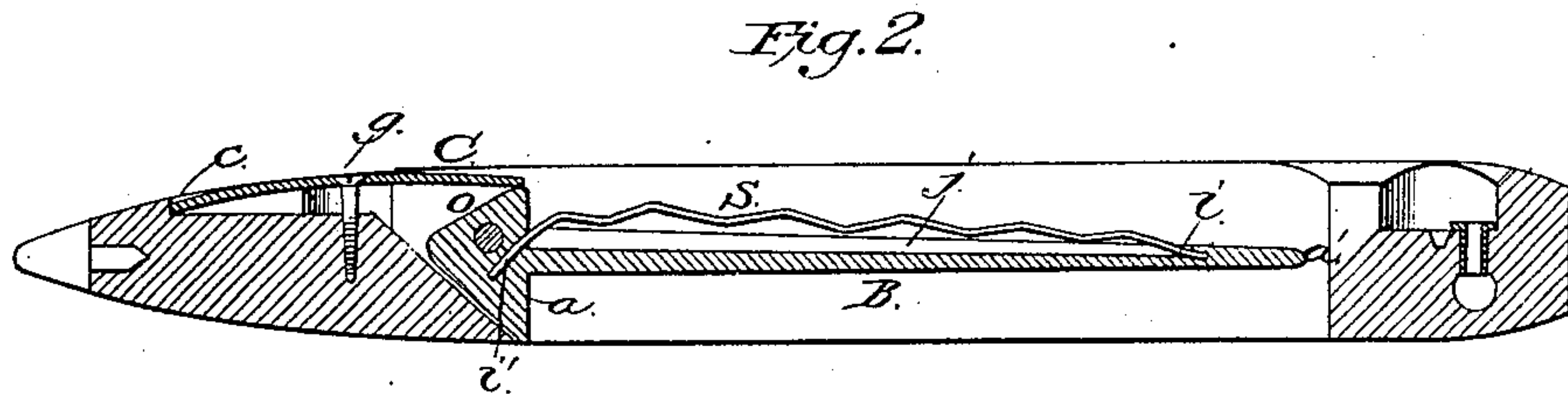
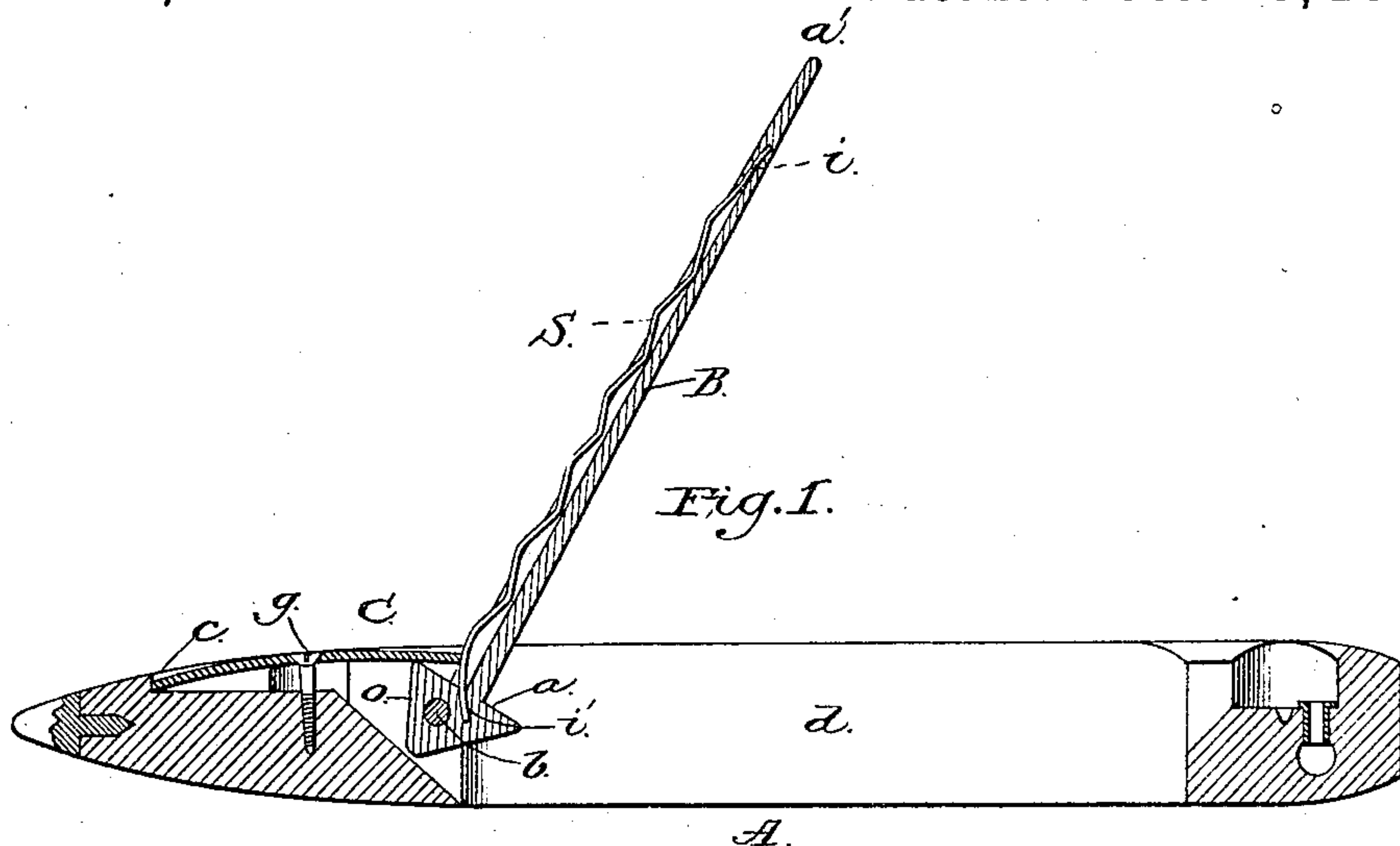
(No Model.)

L. O. ALLEN.

LOOM SHUTTLE.

No. 248,628.

Patented Oct. 25, 1881.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

LEVI O. ALLEN, OF GARDINER, MAINE.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 248,628, dated October 25, 1881.

Application filed March 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, LEVI O. ALLEN, of Gardiner, in the county of Kennebec and State of Maine, have invented a new and valuable Improvement in Loom-Shuttles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 is a longitudinal vertical sectional view of my improved loom-shuttle, showing the spindle thrown up and the serpentine spring pressed against the spindle to permit of the application of the cop. Fig. 2 is a like view of the same, with the spindle thrown in working position and the serpentine spring released; and Fig. 3 is an enlarged sectional detail view of the spindle and serpentine spring.

This invention has relation to improvements in loom-shuttles; and it consists in the construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings, A designates the body of the shuttle, having the usual longitudinal slot, *d*, for the reception of the spindle B, and the cop arranged thereon. The spindle is a straight slightly-tapering rod of steel, having a triangular head, *a*, and a longitudinal groove, *j*, in its upper face, extending from the triangular head *a* to near the rounding point *a'* of the spindle. This groove *j* terminates in inclined holes *i i'*, the former near the point *a'* and the latter in the head *a*, below the pin *b*, by which the head *a* is secured in a recess at one end of the slot *d*.

S indicates a spring-wire, bent in serpentine form, as shown, and inserted at one end in the inclined hole *i*, slightly in rear of the point *a'* of the spindle, and having its other end inserted in the inclined hole *i'* under the pivot-hole of the head. In its normal position the spring S stands free of the spindle, except at its ends, there being a considerable interval between the spring and spindle, except where the ends of the spring enter the holes *i i'*. The spindle is held in the working position (indicated in Fig. 2) by a spring, C, of slightly arched

form, seated in a longitudinal recess, *c*, of the shuttle-body. This spring is secured by means of a set-screw, *g*, passing through its middle portion into the shuttle-body, and bears at its end on one of the inclined faces, *o*, of the head of the spindle. When the spindle is vibrated upward, as shown in Fig. 1, the end of the spring C is brought forcibly in contact with the spring S and presses it into the groove *j*, when the cop may be readily passed onto the spindle; but when the spindle is thrown back into the working position the spring S is relieved of the restraint of the spring C, springs outward, and by its resilience, and because of its serpentine form, holds the cop in place with that force that the jarring caused by the throw of the shuttle cannot displace it.

Heretofore a serpentine spring has been used with a flat-faced spindle, but the spring has been made integral with the point of the spindle, and its rear end has rested in a recess in the head of the same above the eye of the spindle, or a plain spring has been used in connection with a spindle having a flat face.

In my spindle the spring is an independent serpentine spring, which readily yields to permit the cop to be passed upon the same, and as readily adjusts itself to the cop or filling when the spindle is thrown back into the working position.

What I claim as new, and desire to secure by Letters Patent, is—

The shuttle-body A and the spindle B, having the longitudinal groove *j* in its upper face, terminating near the point *a'* in the inclined hole *i*, and in the triangular head in the inclined hole *i'*, in combination with the independent serpentine spring S and the spring C, the latter being secured at one end of the shuttle on top, and extending over the head of the spindle and the end of spring S, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEVI O. ALLEN.

Witnesses:

CHAS. O. WADSWORTH,
ALFRED CHASE.