(No Model.)

A. ISHERWOOD.

LOOM SHUTTLE.

No. 486,109. Patented Nov. 15, 1892.

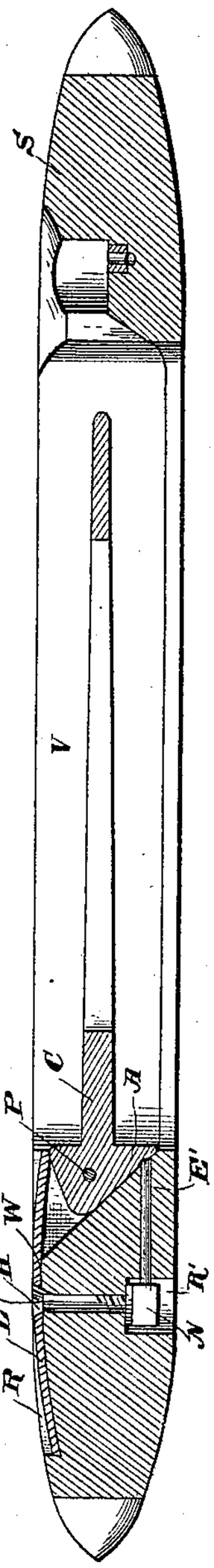

Fig. 1.

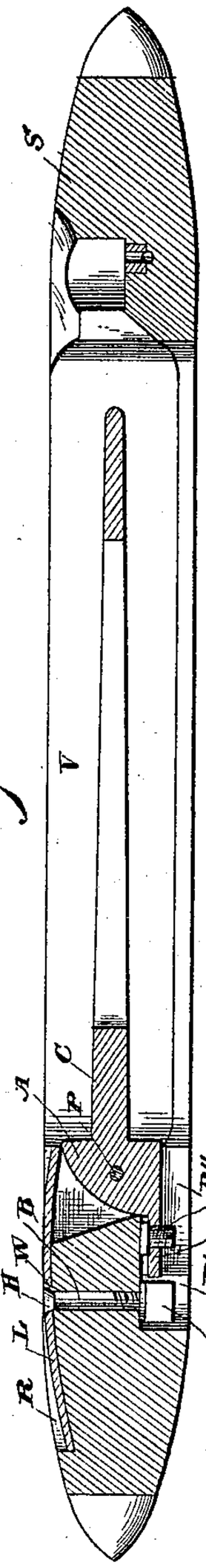

Fig. 2.

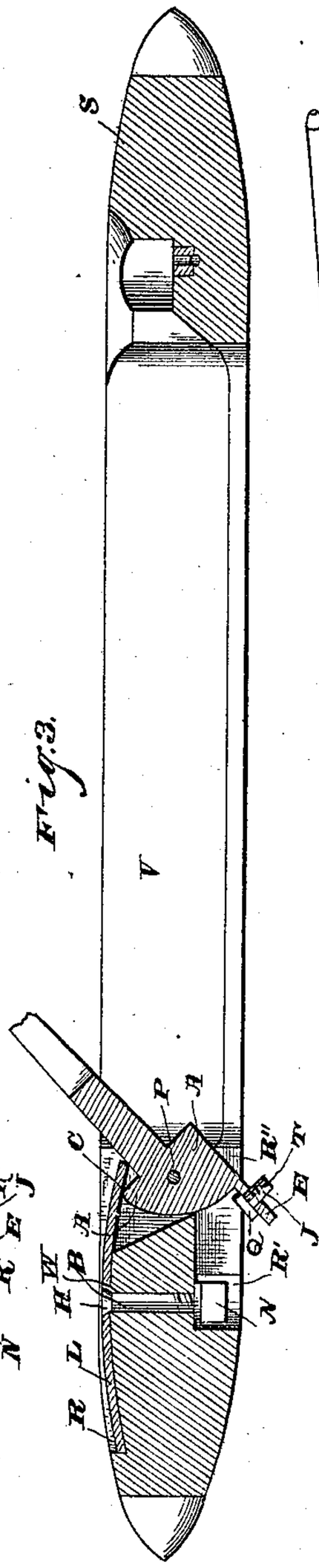

Fig. 3.

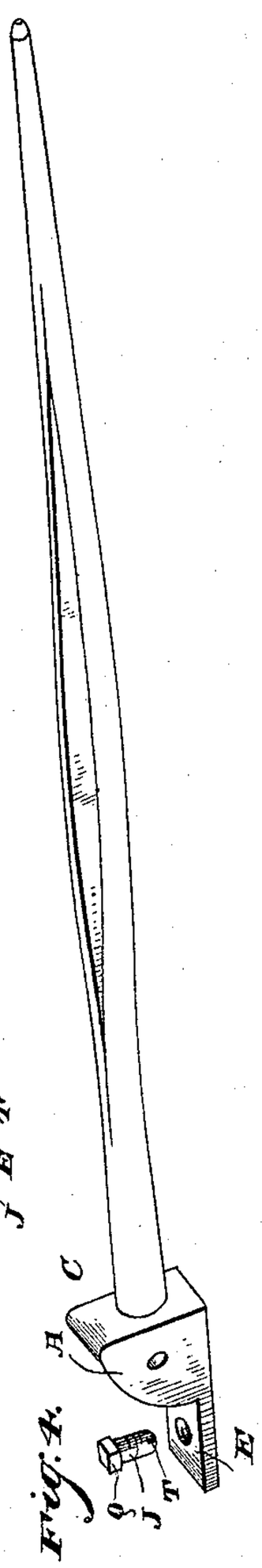

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

ALFRED ISHERWOOD, OF NEW BEDFORD, MASSACHUSETTS.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 486,109, dated November 15, 1892.

Application filed January 11, 1892. Serial No. 417,717. (No model.)

To all whom it may concern:

Be it known that I, ALFRED ISHERWOOD, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification.

This invention relates to weaving, and more especially to the shuttles used therein; and the object of the same is to provide an improved nut-lock for the spring-holding bolt.

To this end the invention consists in the construction hereinafter more fully described and claimed, and as illustrated on the sheet of drawings, wherein—

Figure 1 is a central longitudinal sectional view of my improved shuttle in its simplest form, showing the cop-spindle in place and in line with the shuttle-body. Fig. 2 is a similar sectional view of my preferred form. Fig. 3 is a view similar to Fig. 2, but with the cop-spindle raised. Fig. 4 is a perspective detail of the cop-spindle and set-screw of Fig. 3 slightly separated.

Referring to the said drawings, the letter S designates the shuttle-body on a pin P, within which is pivoted the head of the cop-spindle C. Said head is angular, as shown, and L is a leaf-spring bearing on this head, so as to hold the body of the spindle in either of two positions. The spring L is seated in a recess R in the upper face of the shuttle-body and is held in place by a bolt B, whose head H stands in a countersunk hole through the spring and preferably has a web W, engaging a notch in the edge of said hole, or any suitable construction of bolt may be used to prevent the same from turning axially.

N is a nut on the lower end of the bolt, which nut is rather thick, as shown, and stands in an opening R′ in the lower face of the shuttle-body.

The present invention contemplates the provision of means for preventing the nut from turning on the bolt during the vibrations incident to the use of the shuttle, which turning would loosen the bolt and the spring and permit the free end of the spindle to rise, and this would result in its catching in the warp-threads, breaking them, and necessitating the stoppage of the loom for repair.

In the simpler form of my invention I provide a rod E′, which passes longitudinally through an opening in the shuttle-body, one end standing normally against one face of said nut and the other end against the angular head A of the cop-spindle, said rod forming a locking-arm controlled by the spindle-head. When the latter is lowered into position, it is obvious that the spindle-head will force the rod E′ against the nut; but when the spindle is raised a key-wrench can be applied over the thick nut N to turn it, and its corner as it turns will push the rod E′ out of operative position.

In the preferred form of my invention the rod or locking-arm E is secured to the head A of the cop-spindle and forms a rearward extension thereof to secure the same end, such extension being preferably made flat, as shown, and the opening R′ is continued, as at R″, along the bottom of the shuttle-body into the cavity V for the cop. Through a hole in the rod or extension is threaded an adjusting-screw J, having a transverse notch T in its lower end for the reception of a screw-driver and having at its upper end a squared head Q of a size to fit closely in the opening R″. With this form of my invention, when the spindle is raised, as in Fig. 3, the head Q moves out of the opening R″ and the set-screw can be turned, and obviously the nut N may also be turned at this time. When the spindle is lowered, as seen in Fig. 2, the head Q passes into the opening R″ and prevents the set-screw from turning, while the flat end of the rod or extension E abuts against one face of the nut, and the latter is thereby prevented from turning.

It is well known to those skilled in this art that after long and continued use and wear of parts the cop-spindle will stand either above or below its proper and desired position, which is exactly parallel with the axis of the shuttle-body, and hence the yarn from the cop will not unwind properly, will often kink and tangle, and will sometimes break. The provision of the set-screw above described permits by its adjustment the position of the cop-spindle to be regulated, because it limits the downward movement of the spindle under the force of the spring L. The parts of this device are of any preferred sizes and materials, and considerable change in the details

can be made without departing from the spirit of my invention.

What is claimed as new is—

1. In a loom-shuttle, the combination, with the shuttle-body, the cop-spindle having an angular head pivoted in the shuttle-body, a spring bearing on said head, a bolt securing the spring to the body, and a nut on the lower end of the bolt, of a locking-arm working in a longitudinal opening in the shuttle-body and adapted to have one end forced adjacent to or against a flat face of said nut by said head when the spindle is lowered, as set forth.

2. In a loom-shuttle, the combination, with the shuttle-body, the cop-spindle having an angular head pivoted in the shuttle-body, a spring bearing on said head, a bolt passing through the spring and body and having a web under its head engaging a notch in the hole through the spring, and a thick nut on the lower end of the bolt, the nut standing in an opening in the lower face of the shuttle-body, which opening is continued into the cop-cavity, of an extension secured to the head of the spindle and standing within the continuation of the opening when the spindle is lowered with the free end of the extension against the nut, as set forth.

3. In a loom-shuttle, the combination, with the shuttle-body, the cop-spindle having its head pivoted in the shuttle-body, a spring engaging said head, a bolt connected with the spring, and a nut on the lower end of the bolt standing within an opening in the shuttle-body, which opening is continued into the cop-cavity, of an extension secured to the head of the spindle and standing within the continuation of the opening when the spindle is lowered, the end of the extension engaging the nut, and a set-screw threaded through the extension and having a square head at its upper end fitting within the continuation and a notch in its lower end, as hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED ISHERWOOD.

Witnesses:
LUTHER M. DAYTON,
LEMUEL LEB. HOLMES.