

J. JOHNSTON.
Loom-Shuttle.

No. 214,156.

Patented April 8, 1879.

Fig. 1.

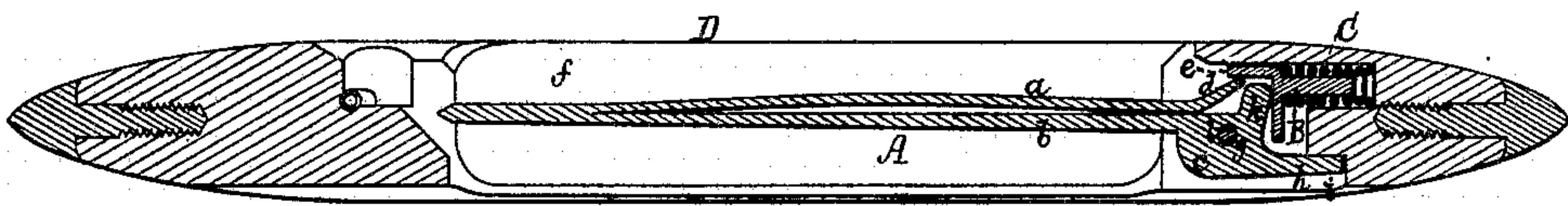


Fig. 2.

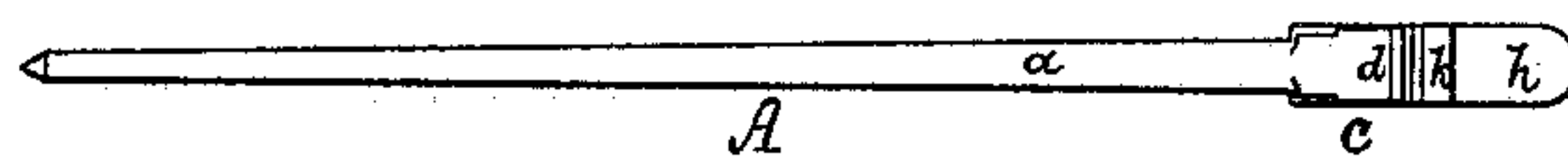


Fig. 3.



Witnesses.

S. W. Piper
S. W. Nichols

Inventor

John Johnston

by attorney.

R. H. Eddy

UNITED STATES PATENT OFFICE.

JOHN JOHNSTON, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO HIMSELF
AND MARION W. A. CLARK, OF SAME PLACE.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **214,156**, dated April 8, 1879; application filed
January 15, 1879.

To all whom it may concern:

Be it known that I, JOHN JOHNSTON, of Woonsocket, of the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Loom-Shuttles; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a longitudinal section of a shuttle provided with my invention. Fig. 2 is a top view, and Fig. 3 a side view, of the expansive spindle.

The spindle of the loom-shuttle to which my improvement appertains is designed to carry a cop, and to expand within it for the purpose of holding it in place.

In carrying out my improvement the spindle-blade A is to be composed, in part, of a bow-spring, *a*, fastened at its front end or part to the spindle-blade portion or shank *b* projecting from the head *c*. At its rear part the spring *a* simply rests on the top of the head, and from the point or line of contact therewith is bent upward at an obtuse angle to the shank, as represented, the part *d* so turned upward being what I term the "actuator," or actuating inflexible arm of the bow-spring. This actuator operates in conjunction with the right-angular head *e* of the pin B, which, with the helical spring C, is used to maintain the spindle in either of its extreme positions.

While the spindle after having been supplied with a cop is in the act of being turned downward into the chamber *f* of the shuttle-body D, the actuator *d* will be borne against the horizontal part of the head *e*, and, in consequence of resting at its foot on such head, the actuator will be forced down relatively to the head, so as to bow out the spring *a* or crown it more relatively to the shank or part *b*, or, in other words, cause the spindle to be expanded within the cop. While the spindle is being raised on its fulcrum *g* the part *d* will be relieved of the pressure on it, so as to allow the elastic power of the spring *a* to cause the spring to approach the part *b*, or the spindle to contract within the cop.

I am aware that prior to my invention a shuttle-spindle has been split lengthwise from its heel nearly to its toe, and has had its heel composed of two wedges or tapering portions united to the elastic bows of the spindle, such wedges or tapering portions being to turn vertically on the pivot-pin of the spindle and within a metallic V-shaped bow or its equivalent inserted in the shuttle-body, and held in place therein by the said pivot-pin, such spindle, by the action of the tapering portions against each other and the V-shaped bow, being expanded while being depressed and contracted while being raised in the shuttle-body; consequently I do not claim such.

With my spindle the head *c* only has a pivot-hole, *l*, in it to receive the pivot or pin *g*, which does not go through the actuator; and, besides, the bow-spring *a* and its actuator *d* are arranged wholly above or over the parts *b* *c*, the head being provided with a down-stop arm or projection, *h*, which, on passing into a recess, *i*, in the shuttle-body, when the spindle is down, prevents the actuator *d* from slipping off the head *e*. Furthermore, the spindle-head has the projection *k* to act against the head *e*, all being as represented.

What I claim as my invention is as follows:

1. The combination of the angular-headed pin B and the spring C, as represented, with the shuttle-cop spindle having the head *c*, shank *b*, and the bow-spring *a*, provided with the actuator *d*, arranged and applied substantially in the manner and to operate as set forth.

2. The combination of the angular-headed pin B and its operative spring C, as represented, with the shuttle-cop spindle having the pivotal head *c*, stop-arm *h*, shank *b*, and the bow-spring *a*, provided with actuator *d*, arranged and applied substantially as set forth.

JOHN JOHNSTON.

Witnesses:

R. H. EDDY,
S. N. PIPER.