J. JOHNSTON.
Loom-Shuttle.

No. 219,159. Patented Sept. 2, 1879

Fig. 1.

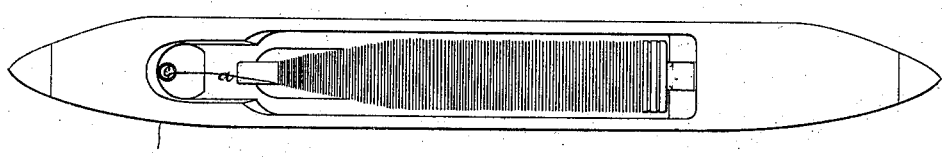


Fig. 2.

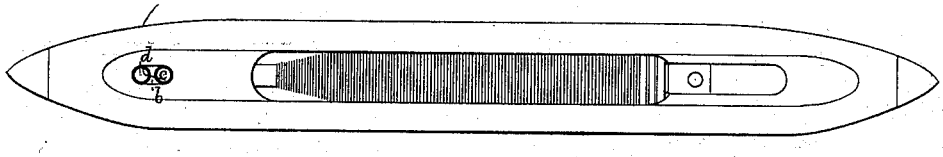


Fig. 3.

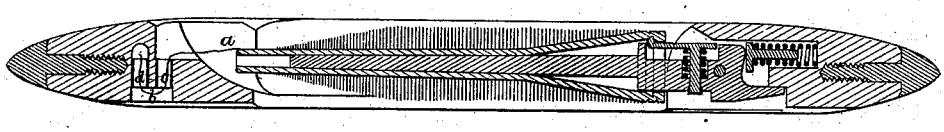


Fig. 4.

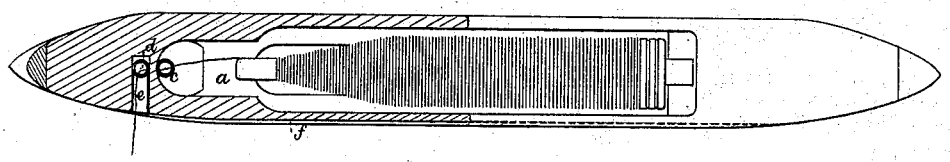
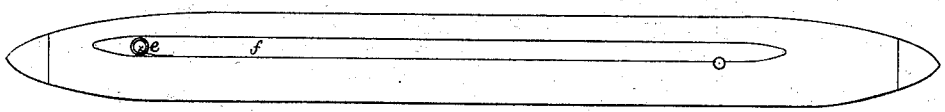


Fig. 5.



Witnesses.
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JOHN JOHNSTON, OF WOONSOCKET, RHODE ISLAND.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **219,159**, dated September 2, 1879; application filed June 25, 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 top view, Fig. 2 a bottom view, Fig. 3 a longitudinal section, Fig. 4 a horizontal section in part, and Fig. 5 a side elevation, of a shuttle provided with my improvement, which relates to the yarn-educt of the shuttle, the object of the improvement being to obtain, during the flight of the shuttle over the lay of a loom, tension of the yarn drawn off the bobbin sufficient to prevent such yarn from kinking.

In carrying out my invention, I form in the lower part of the shuttle, below its bobbin-nose chamber *a*, a short chamber, *b*, opening out of the bottom of the shuttle, and from the bobbin-nose chamber I make a passage, *c*, leading downward into such chamber *b*, near its rear end. At the other or front end of the said chamber *b* another such passage, *d*, is led upward out of the chamber and into an educt or passage, *e*, arranged transversely in the shuttle and opening out of it into its side groove *f*. Each of the passages *c*, *d*, and *e*, I usually provide with a tubular bushing to prevent wear of it by the yarn. Such bushing may be of metal or other suitable material.

The yarn, in passing from the bobbin, goes through the passages *c*, *d*, and *e*, and the chamber *b*, whereby, while being drawn through them, it obtains the requisite tension to prevent it from kinking.

In order to get the yarn through the chamber and passages leading to and from it, a person may first with his hand insert the yarn end foremost into and through the passage *c*, and thence into and out of the chamber *b*. Next he should turn the yarn end upward into the passage *d*, and, with his mouth applied to the outer end of the educt *e*, he, by suction of air through the passages *d e*, should draw the yarn through them; or, after having introduced the yarn into the passage *c*, he may estop the mouth of the chamber *b* with his finger applied thereto, and by suction, as before, draw the yarn through the chamber and the passages *c d e*. The open chamber, however, enables him to readily introduce the yarn into the passage *d*, should the yarn accidentally become estopped in the chamber.

In practice, the above-described arrangement of the eduction-chamber and passages has been found to be of great practical advantage.

I claim as my invention—

The shuttle provided with the open chamber *b* and the passages *c*, *d*, and *e*, leading therefrom, all being arranged relatively to the bobbin-nose chamber and grooved side of the shuttle, substantially as set forth.

JOHN JOHNSTON.

Witnesses:
R. H. EDDY,
W. W. LUNT.