

E. P. BALL.
Loom-Shuttles.

No. 145,831.

Patented Dec. 23, 1873.

Fig. 1.

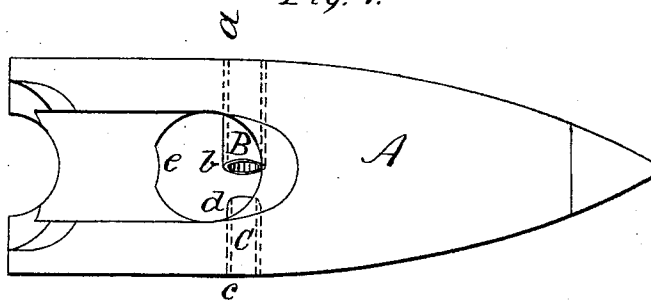


Fig. 2.

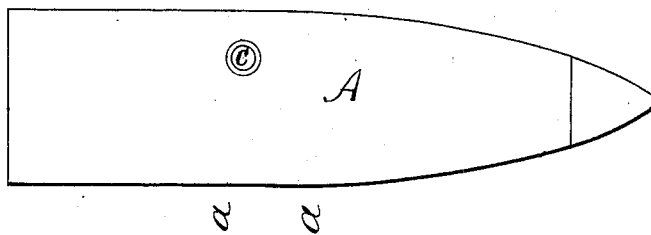
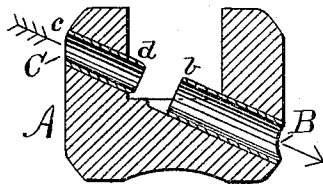


Fig. 3.



Witnesses.

Thomas S. Frobie,
Grover & Grover.

Inventor.

Edwin P. Ball.

UNITED STATES PATENT OFFICE.

EDWIN P. BALL, CHICOPEE, MASSACHUSETTS.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **145,831**, dated December 23, 1873; application filed May 16, 1873.

To all whom it may concern:

Be it known that I, EDWIN P. BALL, of Chicopee, in the county of Hampden and State of Massachusetts, have invented certain Improvements in Shuttles, of which the following is a specification:

The first part of my invention relates to the combination of a blowing-tube and shuttle eye or tube in such a manner that, by blowing through said blowing-tube, a current of air will be driven through the shuttle-eye or tube and carry with it the end of the yarn or filling, the effect being to thread the shuttle, the object of this part of my invention being to do away with that injurious operation now practiced and known as "sucking the shuttle," an operation in which the operative inhales the dust and fibers from the yarn, and where dyed yarns are used, particles of the dye-stuff, which is the cause of much sickness and disease.

Figure 1 is a plan of that portion of a shuttle embodying my invention. Fig. 2 is an elevation, showing that side of the shuttle in Fig. 1 which is nearest Fig. 2. Fig. 3 is a vertical transverse section, showing those parts of a shuttle which are at the left hand of the line *a* drawn across Figs. 1 and 2.

A is the shuttle, which should be substantially made. *B* is the shuttle eye or tube, which is common to most shuttles, and is firmly secured in position, the end *b* being on a line with the longitudinal axis of the shuttle. *C* is the blowing-tube, the center of which should be in a direct line with the center of the tube forming the shuttle-eye, and somewhat smaller than the eye. The hole in the shuttle for receiving the blowing-tube should be bored from the opposite side of the shuttle, the drill or auger being introduced through the shuttle-eye for that purpose. The end *c* of the blowing-tube *C* is made flush with the

outside of the shuttle, while the end *d* projects into the recess *e* a short distance, leaving a space between the ends *d* and *b* of the blowing-tube *C* and shuttle-eye *B* for receiving the end of the yarn. The yarn with which the shuttle is to be threaded is introduced into the recess *e* and between the ends *d* and *b* of the blowing-tube and shuttle-eye. The mouth is then applied to the end *c* of the blowing-tube *C*, and a current or blast of air forced through the blowing-tube *C* into and through the shuttle-eye *B*, in the direction shown by the arrow, and carrying with it the yarn which has been introduced into the space between the blowing-tube and shuttle-eye.

I am aware that shuttles have heretofore been made wherein a hole was made in the shuttle opposite the shuttle-eye, but both the shuttle-eye and the hole opposite were made of the same size and for the purpose of pushing the yarn through the eye with a wire or other similar instrument, and I do not claim the said arrangement of holes when they are made of the same diameter, as, for the purpose of readily and quickly blowing the yarn through the shuttle-eye *B*, it is absolutely necessary that the latter should be considerably larger in diameter than the blowing-tube *C*.

What I claim, therefore, as new, and as my invention, is—

The combination and arrangement of the blowing-tube *C* with the shuttle-eye *B*, when the latter is made of larger diameter than the blowing-tube *C*, substantially as and for the purpose described.

EDWIN P. BALL.

Witnesses:

THOMAS S. FRISBIE,
GROSVENOR GRAVES.