

J. E. LADD & H. F. HENDERSON.

Loom-Shuttles.

No. 134,074.

Patented Dec. 17, 1872.

fig. 1.

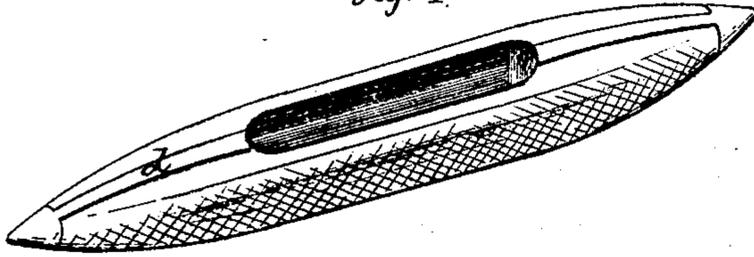


fig. 2.

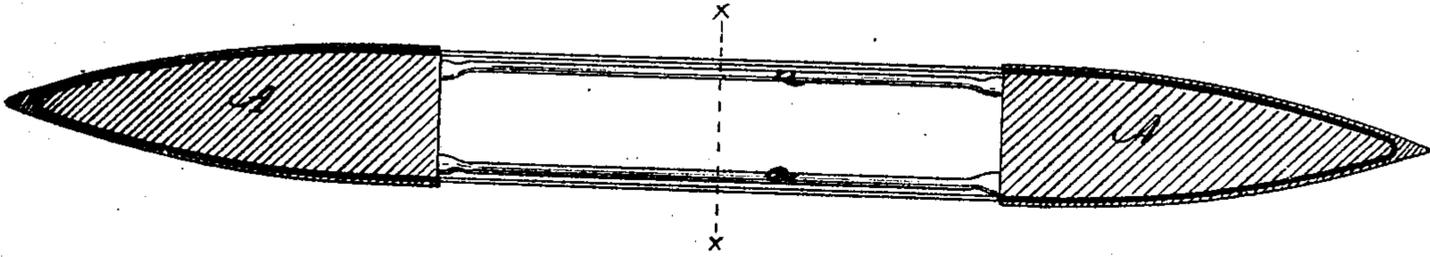


fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JAMES E. LADD AND HARRY F. HENDERSON, OF BRISTOL, CONNECTICUT.

## IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 134,074, dated December 17, 1872.

*To all whom it may concern:*

Be it known that we, JAMES E. LADD and HARRY F. HENDERSON, of Bristol, in the county of Hartford, and State of Connecticut, have invented a new Improvement in Shuttles; and we do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification and represents in—

Figure 1, a perspective view; in Fig. 2, a longitudinal central section enlarged; and in Fig. 3, a transverse section on line *x x*.

The invention consists in forming the body of the shuttle with two solid ends, connected together by rods or their equivalents at the center, one rod at each angle, and covered with rawhide, as more fully hereinafter described.

In external appearance the shuttle does not differ from the common wood shuttle. The ends A A are formed from a foundation of wood or any suitable material, and preferably tipped with metal as the common wood shuttle. These two ends are connected together by rods *a*; the space between the two ends constructed to receive the cop in the usual manner. Upon the outside of the frame or foundation thus

formed we place a casing of rawhide shaped to the required form, and secure it to the ends—this denoted in section, solid black, Figs. 2 and 3. In the center a metal strap or plate, *d*, by preference, extends from the tip to the opening and covers the joint between the two sections of which the shell is formed.

The rawhide may be shaped and dried in the required form before it is placed on the frame or formed thereon, as may be preferred.

The rawhide surface of this shuttle is practically that of a metal shuttle, without the objections or difficulties which would arise from the use of metal. As its surface cannot "check," "split," or "chip," there is no possibility, when properly finished, that the shuttle can catch on the threads, and the cost of the metal thus made is very little, if any, more than a common wood shuttle.

We claim as our invention—

The herein-described shuttle, consisting of the two ends, A A, connected together by a rod at each angle, as described, and covered with rawhide, substantially as specified.

JAMES E. LADD.

HARRY F. HENDERSON.

Witnesses:

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