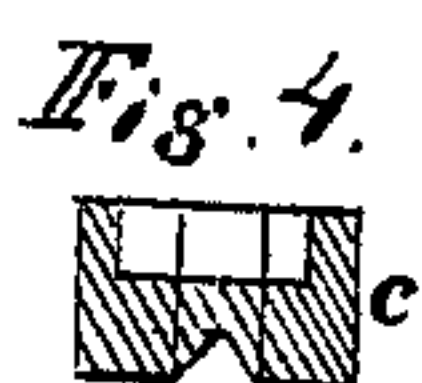
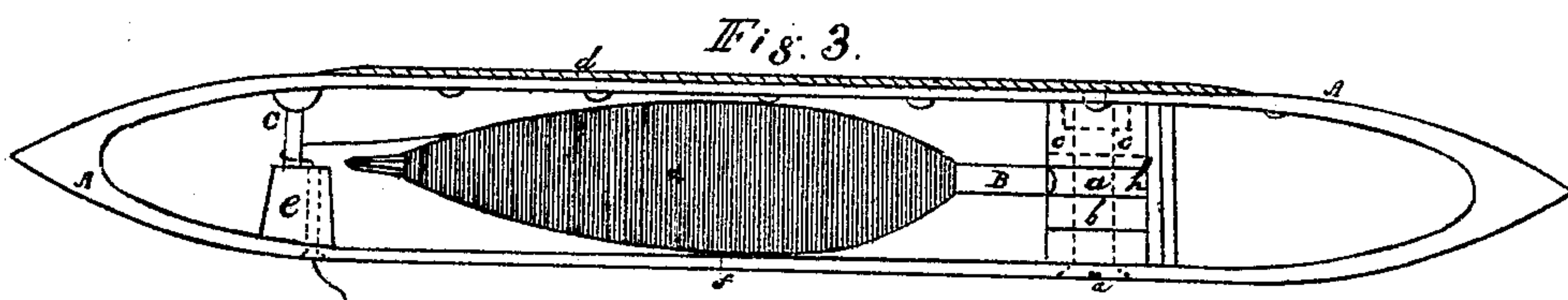
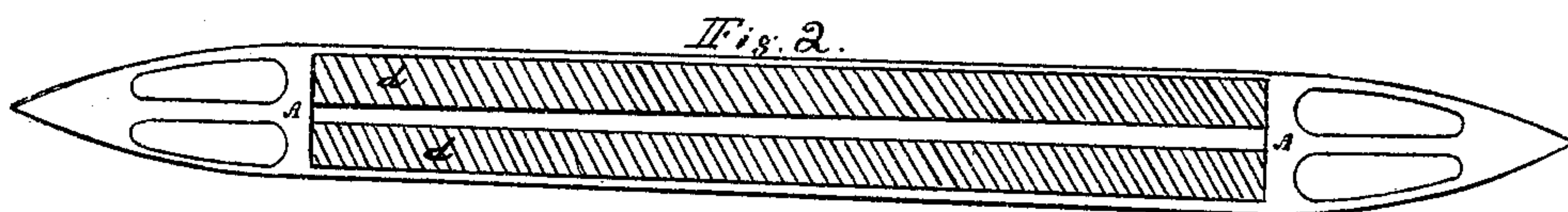
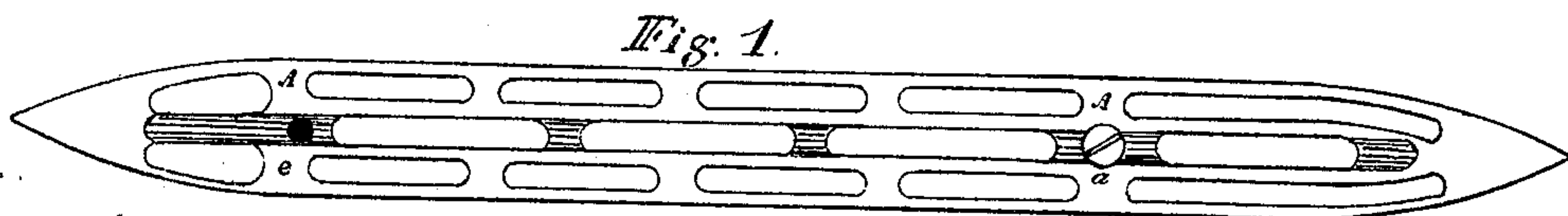


L. L. NORTHUP.

### Improvement in Loom-Shuttles.

No. 126,569.

Patented May 7, 1872.



Witnesses.

Frank H. Arnold.

James E Arnold

Inventor.

Louis L. Northrup

# UNITED STATES PATENT OFFICE.

LOUIS L. NORTHUP, OF OLNEYVILLE, ASSIGNOR OF ONE-HALF OF HIS RIGHT  
TO JOSEPH P. MANTON, OF PROVIDENCE, RHODE ISLAND.

## IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 126,569, dated May 7, 1872; antedated April 25, 1872.

### SPECIFICATION.

*To all whom it may concern:*

Be it known that I, LOUIS L. NORTHUP, of Olneyville, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Shuttles for Weaving Cotton, Woolen, and other fabrics, of which the following is a specification:

#### *Nature and Objects of the Invention.*

The nature of this invention consists, mainly, in constructing a metallic shuttle with a strip or strips of wood, or other suitable material, attached to the side of the shuttle that runs against the reed, to prevent the shuttle from injuring the dents of the reed; also, in placing a removable washer at one side of the cop-spindle head, with a spring on the other side, the washer or bolster being so constructed as not to turn, the cop-spindle head and washer being fitted together with a V-shaped projection and groove, as herein described.

#### *Description of the Drawing.*

Figure 1 is a front view of the shuttle. Fig. 2 is a back view of the shuttle. Fig. 3 is a top view of the shuttle. Fig. 4 is a representation of the bolster taken in cross-section in line with the axis of the screw. Fig. 5 shows a cross-section of the head of the cop-spindle.

#### *General Description.*

A is the body of the shuttle, which is made of some cast metal and intended to be cast all in one piece. B is the cop-spindle, pivoted on the screw *a*, which serves also to prevent the sides of the shuttle from spreading open. *c* is a bolster, placed on a square projection on the side of the shuttle, and having a V-shaped groove in its face to receive a V-projection, (see Fig. 5,) on the side of the hub of the cop-spindle, which is pressed up against it by the spring *b*. This spring is here represented as being made of India rubber, but it may be made of metal in various shapes. *e* is the eye or guide through which the thread passes out, and which may be bushed with some hard ma-

terial in the usual way. A pin, C, is put in near the eye, extending from one side to the other to support them and to serve as a friction-pin to pass the thread around to regulate the tension of it as it comes off of the cop s. On the back, or that side of the shuttle that runs against the reed, are one or more strips of wood, *d*, or other suitable material that will not wear the dents of the reed as it slides against them, as the metal sides of the shuttle would be likely to do if not so protected. This protecting material may be let into the side of the shuttle and fastened by riveting or cementing or other suitable method, it being intended to be removed when worn by use and replaced by new material.

The bolster *c* is made separate from the shuttle that the face of it may be more readily finished and hardened to resist the wear of the V-projection on the cop-spindle when a cop is put in, and that when worn a new bolster may be put in its place.

Some of the advantages of this shuttle over a wooden one are, its durability; it will never rub up rough as the grain of the wooden one sometimes does and fray the threads of the warp as it passes through the shed; and oftentimes the wood of the common shuttle will shrink and leave an opening or edge at the junction of the wood and the steel point that will catch the warp-threads and break them. It also obviates the trouble arising from the shuttle splitting open.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. I claim the combination of the strip or strips *d* with a metallic shuttle, substantially as and for the purpose set forth.

2. In combination with the screw *a* the shuttle cop-spindle-head, the removable bolster *c*, and the spring washer *b*, all constructed as and for the purpose set forth.

LOUIS L. NORTHUP.

Witnesses:

DANL. W. GLADDING,  
J. RUSSELL FIELD.