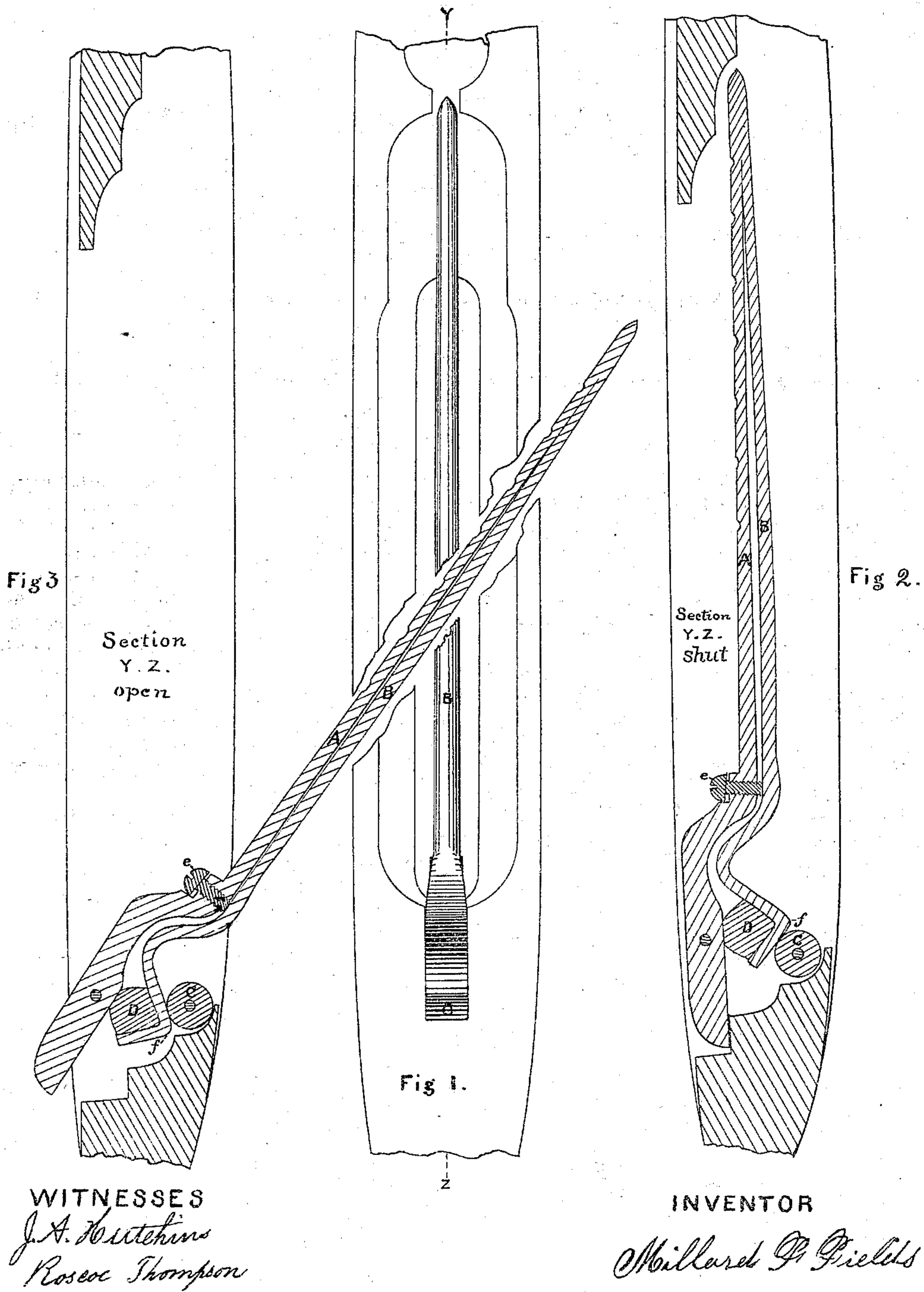


M. F. FIELDS.
Loom-Shuttles.

No. 143,976.

Patented Oct. 28, 1873.



UNITED STATES PATENT OFFICE.

MILLARD F. FIELDS, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **143,976**, dated October 28, 1873; application filed June 16, 1873.

To all whom it may concern:

Be it known that I, MILLARD F. FIELDS, of Lawrence, State of Massachusetts, have invented a Shuttle-Spindle, of which the following is a specification:

My invention relates to a split shuttle-spindle for holding the cop of filling on while the shuttle is in motion.

The spring-piece B, as shown in Figure 1 of the accompanying drawing, is welded at the point of the spindle A, the top surface being round. Fig. 3 shows the spindle in position for receiving the cop, the spring-piece B being unbent when the elbow *f* passes back beyond the center of the brass roll C, which revolves on a pin passing through the shuttle, to lessen the friction on the elbow *f*.

When the spindle is pushed down it draws

f under the roll C, thereby raising B and pressing the yarn into the round grooves in A, which prevents the cop from slipping on the spindle when the shuttle is in motion. D is a piece of rubber placed under the elbow *f* for a support to B, for holding the spindle down. The bend in the piece B can be governed more or less, as required, by the screw E, which passes through the shoulder in A.

I claim as my invention—

The shuttle-spindle A, provided with the spring-piece B with its elbow *f*, in combination with the friction-roll C, the rubber support D, and the adjusting-screw *e*.

MILLARD F. FIELDS.

Witnesses:

DANIEL LIBBY,
BALDWIN COOLIDGE.