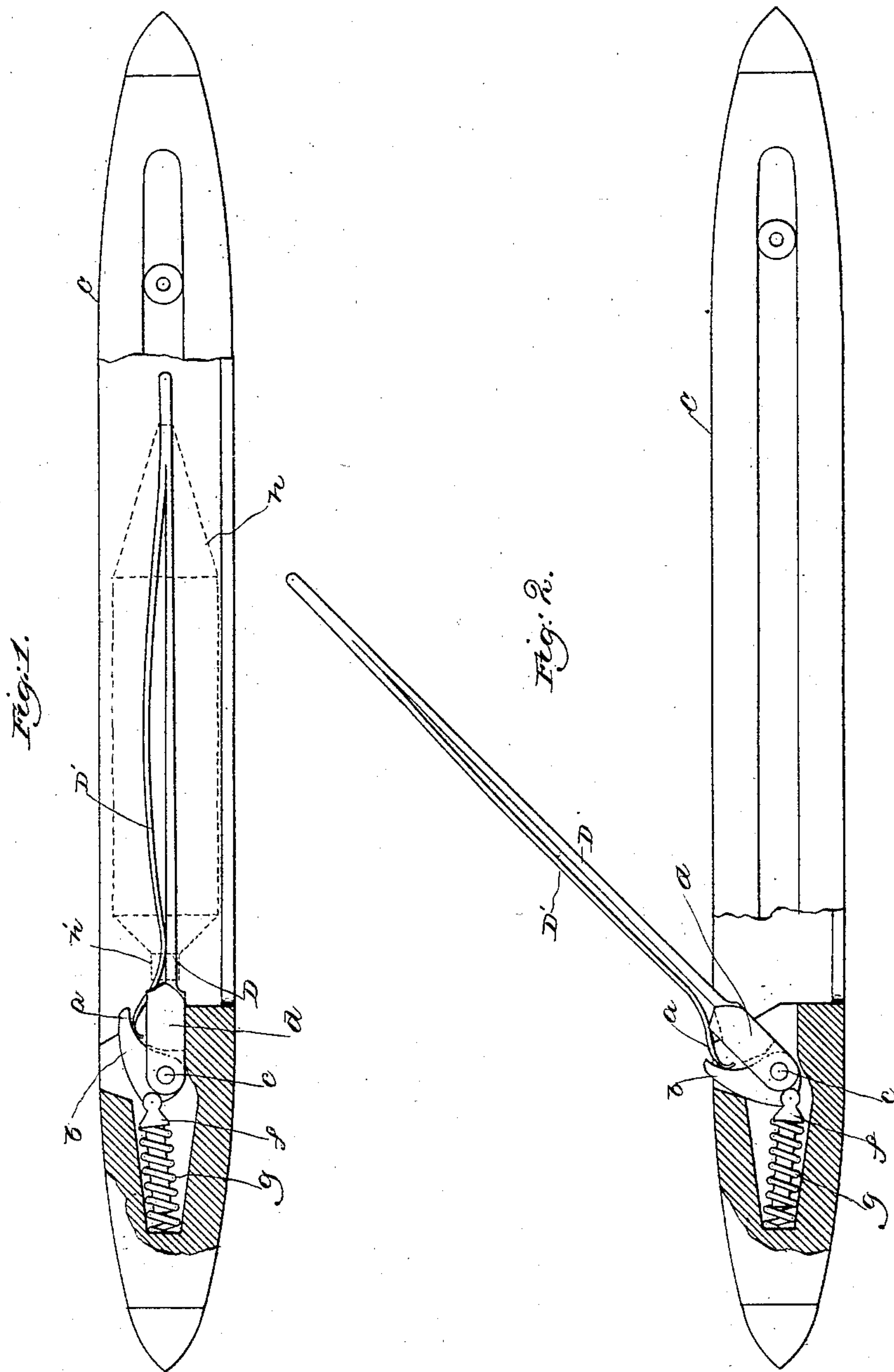


(No Model.)

M. F. FIELD.
LOOM SHUTTLE.

No. 360,574.

Patented Apr. 5, 1887.



Witnesses.
Thomas Hobday.
John F. C. Printz

Inventor.
Mellard F. Field.
By Henry Gregory atty.

UNITED STATES PATENT OFFICE.

MILLARD F. FIELD, OF CHELSEA, MASSACHUSETTS, ASSIGNOR TO THE
AMERICAN SPINDLE COMPANY, OF SACO, MAINE.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 360,574, dated April 5, 1887.

Application filed August 17, 1886. Serial No. 211,122. (No model.)

To all whom it may concern:

Be it known that I, MILLARD F. FIELD, of Chelsea, county of Suffolk, and State of Massachusetts, have invented an Improvement in Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve that class of loom-shuttles having a spindle provided with a spring which is adapted to be expanded after a cop, or it may be a bobbin, has been placed upon the spindle, the shuttle herein shown being adapted to receive not only a cop, but also a bobbin. The spindle, having a spring, as stated, is provided with a lever or catch, which is adapted to press upon the spring and expand it inside the cop after the latter has been placed in position on the spindle; or, if a bobbin is used, the tip of the finger or catch will engage the usual groove in the bobbin-head, as shown in my application Serial No. 210,696, and so retain the bobbin upon the spindle, the bobbin-head holding the said catch away from the free end of the shuttle-spring, so that it is not expanded, as in the case of the cop, thus allowing the use of a cop or of a bobbin interchangeably upon the same spindle.

The peculiar features in which my invention consists will be pointed out in the claim at the end of this specification.

Figure 1 in side elevation, partially broken out, shows a shuttle embodying my invention, the cop being shown in dotted lines as applied to the spindle; and Fig. 2 is a like elevation, partially broken out, the spindle being elevated and a cop removed.

Referring to the drawings, the shuttle-body C is and may be of usual construction. The spindle D is provided with a spring, D', which constitutes a split spindle, the said spring having its free end curved or bent, as at *a*, to be acted upon by the catch or finger *b*, pivoted upon a pin, *c*, inserted in the shuttle-body, the said pin serving also as the pin or fulcrum for the head *d* of the spindle D, the free end *a* of the said spring being located next the top of the spindle-head and being adapted to move radially toward and from the longitudinal axis of the spindle. The catch or finger, near its pivoted point *c*, is acted upon by the rounded head of a pin or rod, *f*, surrounded by a spiral spring, *g*.

The spiral spring *g* and rod, when the spindle is turned into the shuttle, as shown in Fig. 1, causes the catch or finger *b* to act upon the rounded free end of the spring D', pressure of the catch or finger upon the said free end causing the central portion of spring D' to be expanded, as shown in Fig. 1, within the cop *h*, shown by dotted lines as in position upon the said spindle, the said cop containing, if desired, any usual cop-tube, *h'*.

When the spindle is turned out from the shuttle, as in Fig. 2, the rounded end of the pin or rod *f* is moved toward the under side of the shuttle to a point below the pivot or fulcrum *c* of the spindle D, the force of the spring upon the end of the rod being then upon the catch or finger at a point below the point *c*, which effects the movement of the free end of the catch or finger away from the head *d* and the curved end of the spring D', thus permitting a central part of the spring D' to collapse and assume the position shown in Fig. 2 with relation to the main part of the spindle, leaving the cop, or it may be a bobbin, free to be withdrawn from the spindle.

The free end of the catch or finger *b* may be provided with a tip or inwardly-turned lip to engage the groove in the head of a bobbin, substantially as in my application Serial No. 210,696, filed on the 12th day of August, 1886.

I claim—

The shuttle-body, the spindle D, the spring D', attached thereto and having a curved or rounded end, *a*, located next the top of the spindle-head, the free end *a* of the said spring being adapted to move radially toward and from the longitudinal axis of the spindle, and a lever or finger having its pivotal center of motion coincident with the pivot or fulcrum of the spindle and adapted to operate against the curved free end *a* at the side of the spindle-head between the pivot *c* of the spindle and its point, combined with a spring-actuated rod bearing against the said lever or finger, the combination being and operating substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MILLARD F. FIELD.

Witnesses:

G. W. GREGORY,
C. M. CONE.