

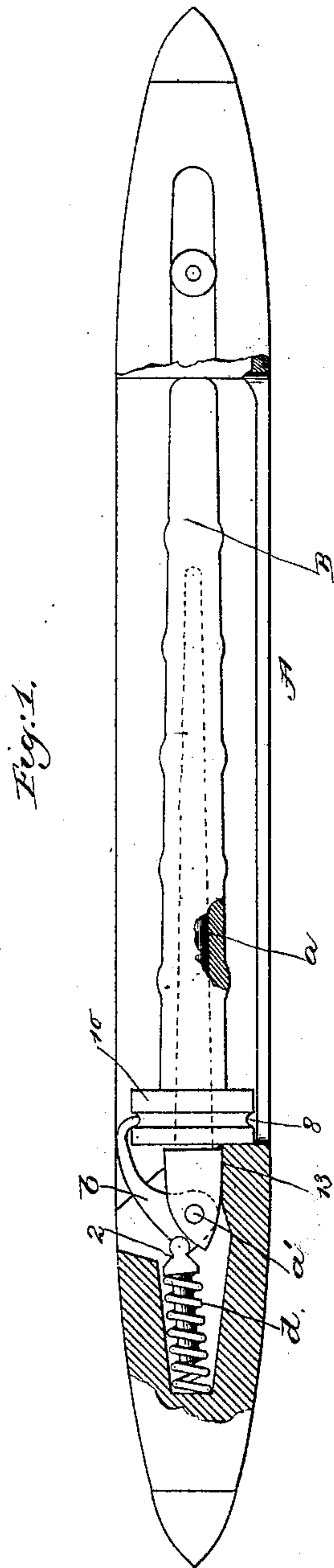
(No Model.)

M. F. FIELD.

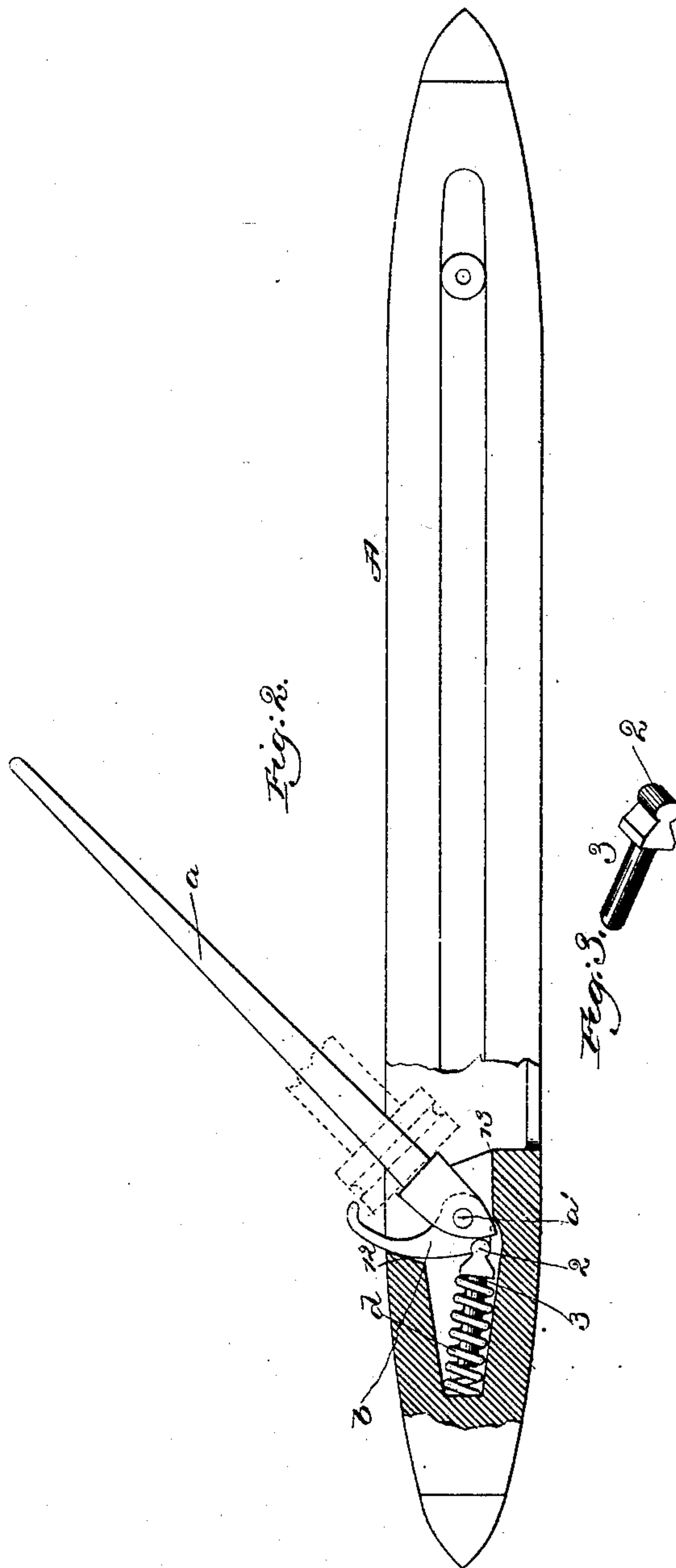
LOOM SHUTTLE.

No. 360,572.

Patented Apr. 5, 1887.



witnesses.
B. J. Noyes,
John F. C. Prindle



Traveler:
 Melard F. Field,
 by Crosby Sargent attys.

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. 360,572, dated April 5, 1887.

Application filed August 12, 1886. Serial No. 210,696. (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 in shuttles has for its object to provide simple and efficient means whereby a bobbin may be securely held upon a spindle, or be released to be withdrawn therefrom when the spindle is turned out from the interior of the shuttle.

My invention consists, essentially, in the combination, with the shuttle-body, of a spindle and a catch having a pivot common to both, and a spring-actuated rod, which acts directly upon the catch, causing it to engage or release the bobbin, as will be described.

Figure 1 in side elevation, partially broken out, shows a shuttle embodying my improvements, the spindle and bobbin being in working position. Fig. 2 is an elevation, partially broken out, with the spindle turned out, the base of the bobbin being shown by dotted lines with the catch thrown back; and Fig. 3 shows the rod removed from the shuttle.

The shuttle-body A, of any usual shape and material, is provided with a spindle, *a*, having as its fulcrum or pivot the pin *a'*, passed through the head of the spindle, the said pin also serving as the pivot or fulcrum for the catch *b*, preferably made rigid and having a lip to engage the usual annular groove in the head of the bobbin and hold the bobbin in place on the said spindle, as shown in Fig. 1, whenever the spindle is turned into the body of the shuttle in working position. The catch *b* at one side of its pivot *a'* is notched to receive the rounded end of the head 2 of the rod 3, the shank of which is surrounded by the spring *d*, as shown in the drawings.

The head 2 of the spring actuated or pressed rod, by its contact with the catch *b* at one side of the pin or fulcrum *a'*, common to the catch and the spindle, acts, when the spindle is in working position, as in Fig. 1, to cause the lip at the free end of the catch to enter the groove 8 of the head or base 10 of the bobbin B, thus

preventing the bobbin from turning, as well as holding it in position on the spindle, and at the same time operates to lock the spindle securely in its proper place in the shuttle. This style of catch and lock will adjust itself to any slight variation there may be in the size of the head, which will be found a great advantage.

When the spindle and bobbin are turned outwardly from the shuttle, the point of contact between the head 2 and catch is turned below a straight line drawn longitudinally through the shuttle and intersecting the pin *a'*, and the spring-rod (see Fig. 2) then acts to cause the free end of the catch to be withdrawn from the said groove 8, leaving the bobbin free to be removed from the spindle, the backward motion of the catch being arrested by the shoulder 12, made by a part of the shuttle-body A. The wood of the shuttle at 13 (see Fig. 1) forms a stop to arrest the head of the spindle when turned into the shuttle, as in Fig. 1.

Prior to my invention it has been common to extend the heel of the spindle for a considerable distance back of its pivot, thus forming an arm, to which is riveted a flat spring, the forward end of which bears against the outer side of the head of the bobbin; but such arm is objectionable, because it takes up room in the shuttle, requiring more of the wood to be cut away, thereby weakening the shuttle-body, and the spring so placed is easily broken. I have dispensed with the said backwardly-extended arm and with the spring attached to it, thus eliminating an element of weakness; and, further, which I deem to be a matter of the greatest practical importance, I have adapted the catch *b* to engage the bobbin-head at the upper rather than the under side of the shuttle-body, as commonly done prior to my invention.

By locating the catch so as to engage the bobbin at the top of the shuttle, the operator, when the bobbin and spindle is turned into the shuttle, as in Fig. 1, can readily see whether or not the catch has engaged the groove 8, whereas, when the catch is at the under side of the shuttle, as heretofore practiced, where it cannot be seen or known without extra effort whether or not the catch has engaged the bobbin, it frequently happens by carelessness that the bob-

bin is not caught, and consequently it is pulled from the spindle after the shuttle has been started.

In another application, Serial No. 210,697, I have shown a similar device, *b*, to press upon the bobbin and keep it in engagement with a projection on the spindle, and in another application, Serial No. 211,122, I have shown a device, similar to *b*, to co-operate with a spindle having a spring to be expanded inside a cop, after the cop is in position on the spindle, or to engage the groove of a bobbin, as in some mills both cop and bobbin filling are used, and to these mills it will be a convenience to have a shuttle-spindle that will accommodate either.

I claim—

1. The shuttle-body and the spindle and catch or finger, both having a common fulcrum or center of motion, combined with a spring-actuated rod acting directly upon the catch or finger and which causes the tip of the catch or finger moving with the spindle to engage and

retain or to release the bobbin, according to the position of the spindle, substantially as described.

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2. The shuttle-body and the spindle and catch or finger, both having a common fulcrum or center of motion, combined with a spring-actuated rod acting directly upon the catch or finger and which causes the tip of the catch or finger moving with the spindle to engage and retain or to release the bobbin, according to the position of the spindle, the catch being located at the upper side of the spindle and shuttle-body in order that the engagement of the catch with the groove of the bobbin may be readily ascertained, substantially as described.

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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.