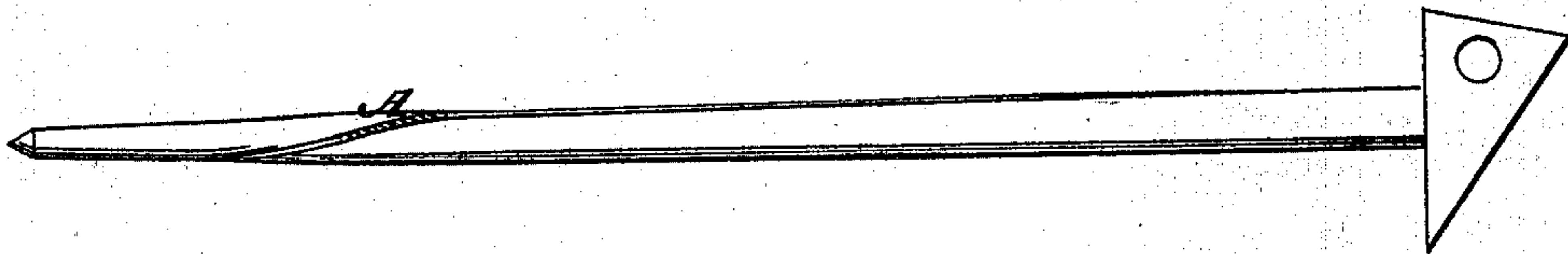


N. D. CHAPMAN.  
Loom-Shuttles.

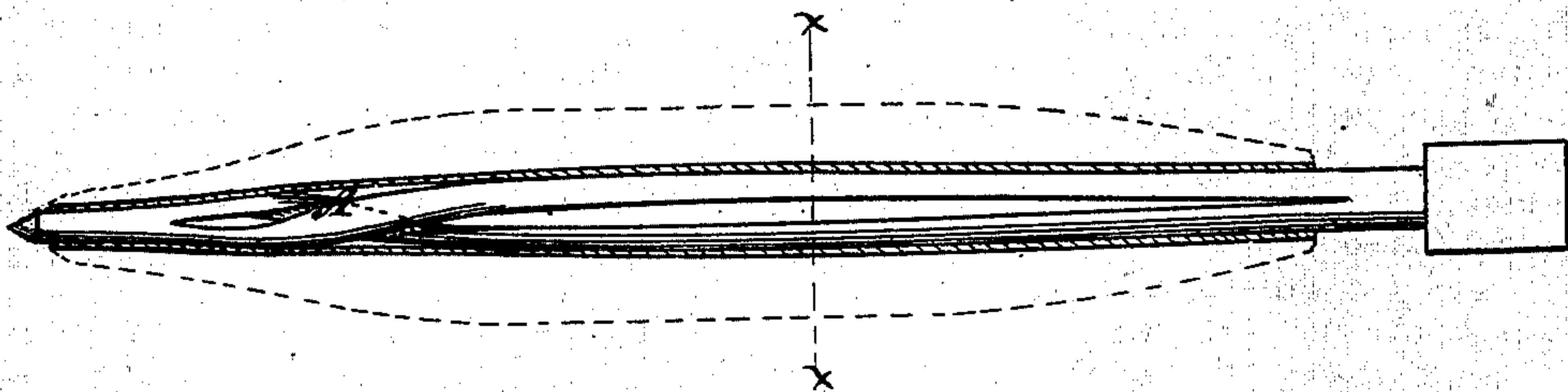
No. 144,657.

Patented Nov. 18, 1873.

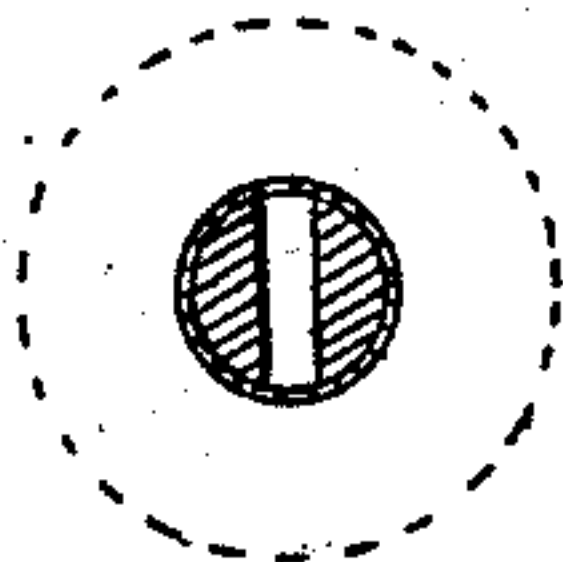
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES.

*E. Woff*  
*Chapman*

INVENTOR.

*N. D. Chapman*

BY

*Munn*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

NATHAN D. CHAPMAN, OF ROLLINGSFORD, NEW HAMPSHIRE, ASSIGNOR TO  
HIMSELF AND HORATIO H. WARREN, OF SAME PLACE.

## IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **144,657**, dated November 18, 1873; application filed  
November 1, 1873.

*To all whom it may concern:*

Be it known that I, NATHAN D. CHAPMAN, of Rollingsford, in the county of Strafford and State of New Hampshire, have invented a new and useful Improvement in Shuttle-Spindles, of which the following is a specification:

My invention relates to split shuttle-spindles; and it consists of a twist of, say, about half a turn in the two parts, say to the left near the point, by which the pressure of the cap on said parts along the middle portion swells them out at the twist, so as to bind the cap at the point to effectually prevent it from being thrown off by the shocks to which it is subject in the loom. When the point of the cap has been woven off the reaction of the two parts of the spindle along the middle is sufficient to hold the remaining portion on till woven off.

Figure 1 is a side elevation of my improved shuttle-spindle. Fig. 2 is also a side elevation of the spindle and a section of a cap on it, and Fig. 3 is a section on the line *x x*, Fig. 2.

A represents the twist in the two parts of the spindle, a little distance from the point,

which I prefer to make on a left-hand pitch from said twist toward the other end. I set said parts about the same as in the spindles. It will be readily understood that, in consequence of this twist, they will swell out by the pressure of the cap along the middle, and thus bind it harder at the point and prevent said point from jerking off.

When I put the cap on the spindle, I turn it to the right a little against the twist of the spindle, which also expands it at the twist, and by turning it the other way it expands the spindle so that it can be taken off readily when it is required to take it off.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A split shuttle-spindle having a twist of a half of a turn or thereabout, near the point for binding the cap, in the manner described.

NATHAN D. CHAPMAN.

Witnesses:

WILLIAM H. MORTON,  
HENRY M. PLUMMER.