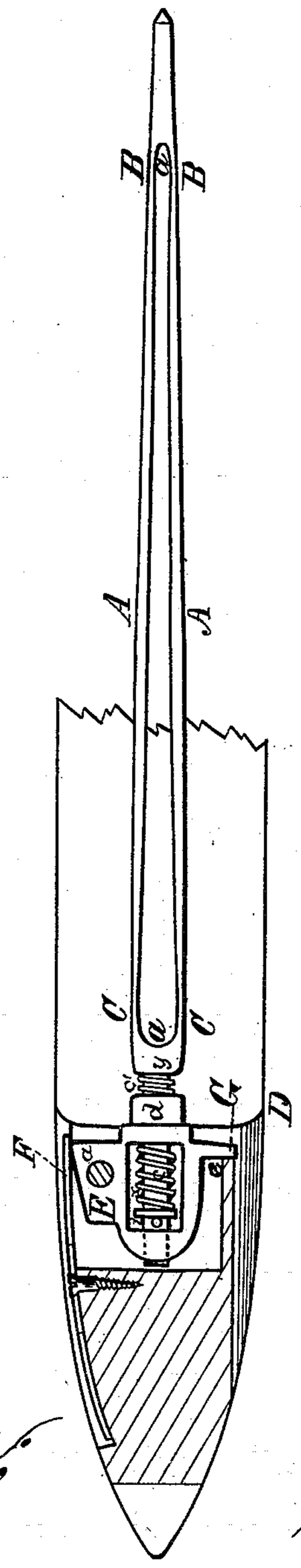
E. M. STEVENS.

SHUTTLE-SPINDLE.

No. 187,063. Patented Feb. 6, 1877.



Witnesses,
C. W. Dutton
E. A. Stock.

Inventor,
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UNITED STATES PATENT OFFICE.

EDGAR M. STEVENS, OF BOSTON, ASSIGNOR TO AMOS L. WOOD, TRUSTEE OF BROOKLINE, MASSACHUSETTS.

IMPROVEMENT IN SHUTTLE-SPINDLES.

Specification forming part of Letters Patent No. **187,063**, dated February 6, 1877; application filed October 5, 1875.

To all whom it may concern:

Be it known that I, EDGAR M. STEVENS, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Shuttle-Spindles, of which the following is a specification:

My invention relates to an improvement on the loom-shuttles for which Letters Patent were issued to me on the 15th day of June, 1875; and the invention consists in the peculiar construction of the head of the spindle for the purpose of better carrying out the objects of the said former invention, in which the spindle had a spring-bearing, rendering it capable of movement in both directions longitudinally, to overcome the injurious effects of concussion. In my said patented shuttle the spindle-head consisted of a plate hinged at one end to the shuttle-case, and provided with lugs, through which the spindle extended, this construction being found to be expensive from the nice fitting of the hinge and deficient in strength and durability.

I overcome these defects by the construction shown in the drawing, in which E is a metallic block, constituting the head of spindle A, and pivoted to the case by a pin, *a*, passing directly through the same. In the block is a central oblong opening, *x*, and at one side opposite the opening is a lug, *d*, through which, through the opening and through the opposite side, extends the spindle, which thus has an extended bearing supporting it firmly, and capable of resisting the wear which would soon impair the strength of a head made with hollow lugs, as heretofore. A spring, *c*, is interposed between the end of the block and a collar, *i*, on the spindle, and another spring, *c'*, between the end of the block and an enlargement, *y*, thus affording the spring bearing in both directions before described, and permitting the use of longer springs than heretofore. A lip, *e*, at the edge of the block limits the inward movement on its pivot, and a spring, F, maintains it in place, both when turned inward and when turned out.

In my aforesaid patented shuttle the sides of the slot I in the spindle were made thinner at the forward end, in order that the sides might yield to obtain a better bearing on the bobbin, but did not fully effect the result, as the rear end, which required the greatest elasticity, was the most rigid. By decreasing the thickness of the sides of the spindle at the points *c c* and B B, it is rendered elastic at the point where it is most likely to be compressed.

I claim, as an improvement on the shuttle patented by me, as aforesaid—

The block or head E, pivoted to the shuttle by a rod, *a*, having a central opening, *x*, longitudinal openings, and lip *e*, and adapted to the spindle and its spring, all as set forth.

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

EDGAR M. STEVENS.

Witnesses:

J. H. ADAMS,
E. A. STOCK.