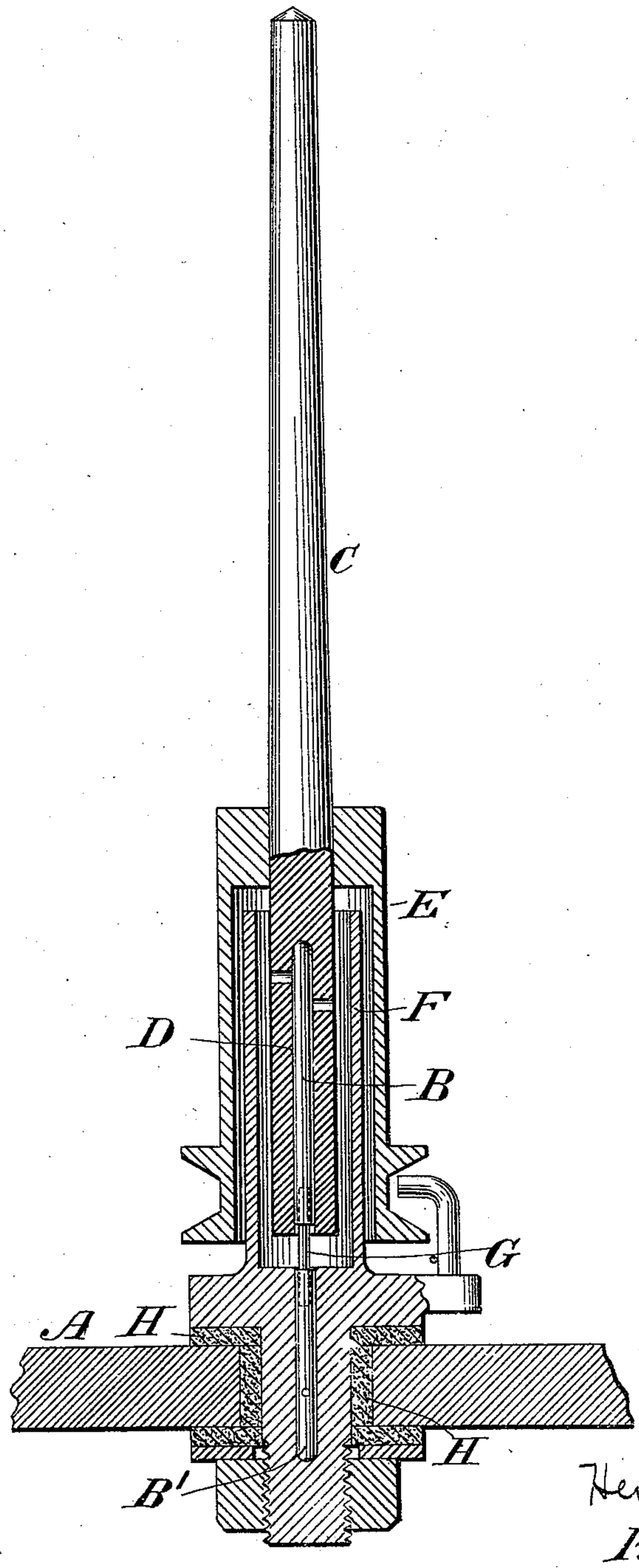
(No Model.)

H. D. KLOTS.

SPINNING SPINDLE.

No. 549,727. Patented Nov. 12, 1895.



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UNITED STATES PATENT OFFICE.

HENRY D. KLOTS, OF NEW YORK, N. Y.

SPINNING-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 549,727, dated November 12, 1895.

Application filed December 10, 1894. Serial No. 531,352. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. KLOTS, a citizen of the United States, residing in the city, county, and State of New York, have invented a certain new and useful Improvement in Spinning-Spindles, of which the following is a specification.

This invention relates to spinning-spindles, particularly those known as "dead-spindles," in which the spindle-blade rotates upon an internal bearing formed on a fixed or dead spindle.

The particular object of my invention is to obviate in this class of spindles the injurious vibration due to an unbalanced load upon the spindle-blade, and I fully attain this object in practice by mounting the dead spindle yieldingly, as by means of a metallic or non-metallic cushion, on the spindle-supporting rail and constituting the dead-spindle with a flexible portion or spring intermediate its yielding support and its blade-bearing. I preferably make this spring of such a nature that the spindle-blade mounted thereon, together with its bobbin or load, will have a "natural" rate of vibration different from its normal rate of rotation and corresponding "artificial" vibration under an unbalanced load, so that its artificial vibratory tendency or moment will be opposed and neutralized by its natural vibratory tendency or moment and all vibration thus prevented.

I find that I obtain the best results with the yieldingly-mounted dead-spindle, as stated, the yielding support of which appears to co-operate with the intermediate spring to take up any differential or resultant vibration communicated through the spring.

The following is a detailed description of the mode in which I practice my invention, reference being had by letters to the accompanying drawing, forming part of this specification, in which the figure represents in sectional elevation one form of spinning-spindle by which my invention is carried into practice.

A designates a spindle-rail, B a non-rotating or dead spindle supported on the spindle-rail, C a spindle-blade rotating on an internal bearing D on the dead-spindle B and carrying a whirl E, and F an oil-cup surrounding the bearing portion of the blade C.

I provide the dead spindle B with a spring G below the blade-bearing D and above the rail C by reduction of the spindle B or by insertion of an elastic piece therein, as shown, so that the spindle B above the spring G, together with the blade and bobbin thereon, will have a natural vibratory rate about the spring G lower than the rate at which the spindle is run, and I then rotate the spindle-blade C at a rate higher than the said natural rate of vibration of the loaded spindle.

The loaded spindle, if unbalanced, will by its rotation tend to vibrate at the same rate as it rotates, but this rate being different from its natural rate of vibration its said vibratory tendency or moment, due to the unbalanced load, will be opposed and neutralized by its said natural vibratory tendency or moment and all injurious vibration of the spindle thus be obviated. I still further increase this neutralizing effect by mounting the dead-spindle B or its base B′ on a yielding support H on the rail, which yielding support may be a metallic cushion or spring or a non-metallic cushion, as here instanced, secured between the rail and the spindle-base B′.

The yielding support H appears to co-operate with the spindle-spring G in taking up or accommodating the differential or resultant vibration transmitted by said spring G.

I claim as my invention—

The combination of a spindle rail and a "dead" spindle having its foot yieldingly mounted on said rail and constituted with a spring between its foot and its bearing portion, with a rotatory spindle blade having an external bearing on said dead spindle above said spring, substantially as hereinbefore set forth.

In testimony whereof I, the said HENRY D. KLOTS, have hereunto set my hand this 28th day of November, 1894.

HENRY D. KLOTS.

In presence of—

GURDON PENDLETON, Jr.,

MARC FRIESER.