

G. DRAPER.

Bobbins for Spinning-Machines.

No. 152,219.

Patented June 23, 1874.

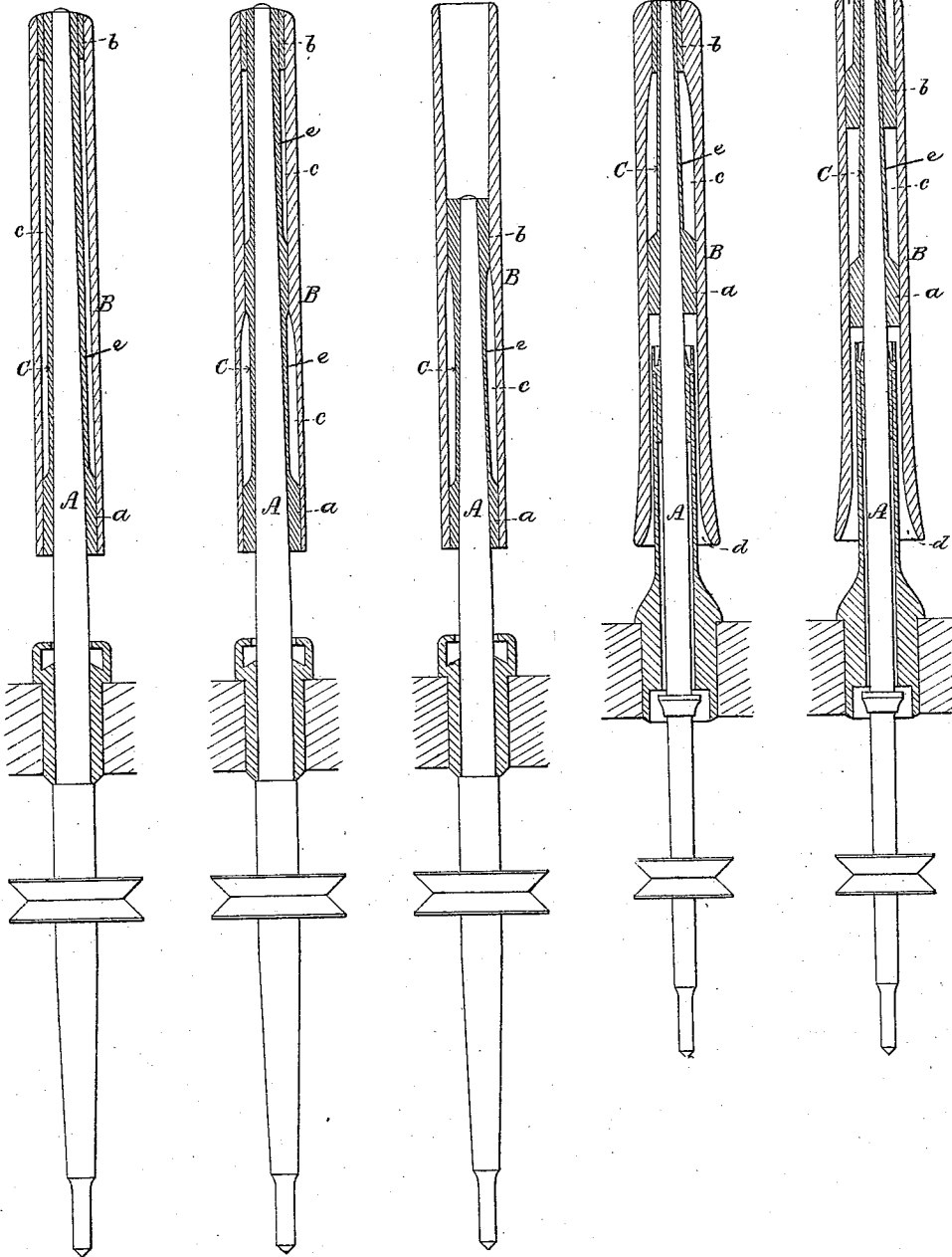
Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.



Witnesses.

S. N. Piper.
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George Draper.

by his attorney

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UNITED STATES PATENT OFFICE.

GEORGE DRAPER, OF HOPEDALE, MASSACHUSETTS.

IMPROVEMENT IN BOBBINS FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. **152,219**, dated June 23, 1874; application filed May 27, 1874.

To all whom it may concern:

Be it known that I, GEORGE DRAPER, of Hopedale, of the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Bobbins for Machinery for Spinning; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figures 1, 2, 3, 4, and 5 are vertical sections of various kinds of "ring-frame" spindles and bobbins with my invention.

The nature of said invention consists in a cored bobbin, provided with a tubular flexible sleeve, connecting two or more bushings therein; and with a space in the body and around the tubular core.

It is well-known to bobbin-makers, machinists, and spinners that solid and unchambered bobbins cannot often be made to fit tapering spindles, and interchange from one spindle to another, without bending the spindle and causing it to run unsteadily. Consequently it is common to make bobbins with two or more adhesive or frictional bearings to fit the spindle, chambers of larger or smaller capacity being between the bearings. While, as bobbins have heretofore been constructed, chambers between the bearings are a necessity, for the reason above stated, they are injurious, inasmuch as they allow waste to collect in them, it being difficult to remove such waste, which, when not removed, produces bad results. The bearings of the bobbin, being necessarily short, are liable to wear out of shape, and also to wear the spindles smaller at the points of contact. I make a core consisting of bushings connected by a flexible sleeve, the said bushings and sleeve fitting the spindle, and the core is so formed and applied to the bobbin as to form annular chambers *c*. The core or inner tube of my bobbin should be so thin as not to bend the spindle when applied thereto. The core or tube fitting continuously, or essentially so, to that part of the spindle which is or may be within it, will not allow waste or extraneous matters to collect and accumulate within the bobbin; and, besides, the bearing on the spindle, being so long,

prevents, comparatively, the bobbin from wearing the spindle, or the latter from wearing the former, and thereby renders adhesion of the bobbin to the spindle, and the maintenance of the bobbin at its normal height thereon, surer from time to time. Furthermore, the tubular core, extending wholly or partially through the bobbin, and connected therewith at or near the ends of the core, with a space between the core and shell of bobbin body, insures to the bobbin both lightness and strength.

In each of the drawings, A denotes the spindle; B, the bobbin; C, the core composed of the bushings *a* and *b*, and the flexible sleeve *c*; and *c* is the space surrounding the tube or core, and within the bobbin or its bore.

In Fig. 1 the bobbin is shown as having the said bushings or connections at its opposite ends, with the sleeve and surrounding space extending from one to the other of said bushings.

In Fig. 2 the tube C is shown as enlarged at its middle to fit or about fit to the bore of the bobbin.

In Fig. 3 a bobbin is shown with its upper bushing or core-head at or near the middle of the bobbin, and with the sleeve extending down from such bushing to a foot-bushing at the lower end of the bobbin. The space *c* also extends from one bushing to the other. Above the upper bushing the bobbin is chambered, as shown, or it may be solid.

Fig. 4 exhibits a bobbin provided with a bolster-receiving space, *d*, and the core *c*; and its bushings and sleeve and surrounding space *c* are above said bolster-space.

Fig. 5 is a modification of the said bobbin. In this case the upper plug or bushing is larger in diameter at its lower part, or there fits to the bore of the bobbin shell or body, but above the fitting portion it is turned down smaller in diameter, so as to produce around it in the bobbin a circumscribing space, *c'*.

The term "bushings," as herein employed, means those portions of the core between the flexible sleeve and the body of the bobbin. They may be made with and as a part of the

sleeve, or separately, and then be placed between or attached to the sleeve and the shell or body of the bobbin.

The spindle or that part of it within the core is tapering, as shown.

I claim as my invention—

A bobbin, provided with a core, consisting of two or more bushings, *a b*, and a connecting tubular flexible sleeve or sleeves, *e*, the

sleeve fitting the spindle, and the bobbin and core being constructed and arranged with reference to each other, leaving spaces, as set forth.

GEORGE DRAPER.

Witnesses:

R. H. EDDY,

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