

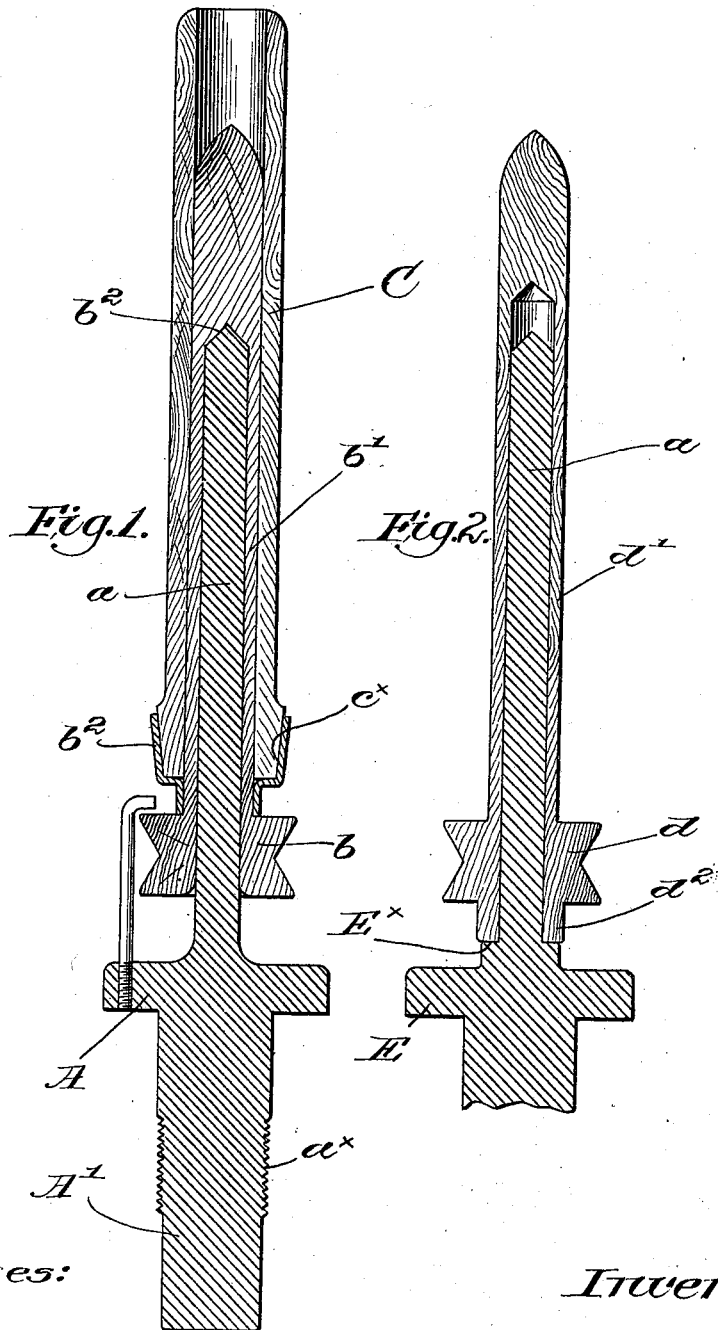
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G. O. DRAPER.
YARN SPINNING APPARATUS

(Application filed Nov. 3, 1899.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE O. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE
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YARN-SPINNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 647,917, dated April 17, 1900.

Application filed November 3, 1899. Serial No. 735,681. (No model.)

To all whom it may concern:

Be it known that I, GEORGE OTIS DRAPER, a citizen of the United States, residing at Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Yarn-Spinning Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to apparatus for spinning yarn; and it has for its object the production of a cheap, simple, and efficient apparatus for the purpose, the dead-spindle type of mechanism being made the basis of my invention.

The various novel features of my invention will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 is a vertical sectional view of a portion of a spinning apparatus with one embodiment of my invention applied thereto; and Fig. 2 is a similar view of a modification thereof, the yarn-carrier or bobbin being omitted.

I have herein shown the upright dead-spindle *a* or fixed axial support made, preferably, of hardened steel and secured to a suitable base *A*, having a depending shank *A'*, threaded at *a'*, Fig. 1, to receive a nut, (not shown,) by which the device is secured to the spindle-rail. A sleeve-whirl *b*, which I make of wood or other suitable non-metallic material, has secured to it, or it may be integral therewith, a long bearing-sleeve *b'*, which is mounted to rotate freely upon the spindle, the sleeve forming a long bearing for and serving to properly center the whirl. The whirl is rotated by a band in usual manner, and in order to lessen the friction between the metal spindle *a* and the sleeve *b'* the latter and the whirl may be soaked or impregnated with a suitable anti-friction compound.

In Fig. 1 I show the closed upper end of the sleeve as interiorly recessed at *b²* to form an end-thrust bearing for the spindle-tip, the whirl and sleeve depending therefrom and being thereby supported vertically.

The removable yarn-carrier or bobbin *C*, which is usually made of wood, may be constructed to engage the exterior of the sleeve with a close fit to be held and rotated therewith by frictional contact during spinning, and it will be seen that compared with the yarn-carrier the spindle *a* is quite short.

In Fig. 1 I have shown a metallic cup *b³* attached to the sleeve just above the whirl and outwardly flared at its upper end to receive the tapering lower end *c'* of the yarn-carrier.

In Fig. 2 the whirl *d* has an elongated up-turned sleeve *d'*, also closed at its upper end; but the vertical support for the whirl and sleeve is provided by extending the latter below the whirl, as at *d²*, to form an annulus, which rests upon an annular seat *E'* of the spindle-base *E*.

The sleeve and whirl are made of non-metallic material in this modification also and may be provided with antifriction compound, if necessary or desirable.

The construction hereinbefore described is very simple, cheap, durable, and efficient, and the wear between the metallic and non-metallic parts is very slight indeed.

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

1. A metallic dead-spindle, a whirl having an attached wooden bearing-sleeve loosely mounted to rotate upon the spindle, means to vertically support the whirl and its attached sleeve, and a removable yarn-carrier adapted to be supported by the whirl and its sleeve.

2. A dead-spindle, a whirl having an attached wooden bearing-sleeve, mounted to rotate freely on the spindle, an end-thrust bearing integral with the sleeve, and a yarn-carrier removably connected with the whirl.

3. A metallic dead-spindle, a non-metallic whirl having an integral bearing-sleeve loosely mounted to rotate on the spindle, and closed at its upper end to rest upon the top of the spindle and form an end-thrust bearing, and a yarn-carrier removably connected with the bearing-sleeve.

4. A metallic dead-spindle, a wooden whirl

having an integral bearing-sleeve mounted to rotate loosely upon the spindle and closed at its upper end to form an end-thrust bearing, to vertically support the latter and the whirl
5 from the tip of the spindle, and a removable yarn-carrier longer than the sleeve and held by frictional engagement thereupon.

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

GEORGE O. DRAPER.

Witnesses:

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