E. OSGOOD.

Improvement in Spindles for Spinning and Twisting.

No. 130,860. Patented Aug. 27, 1872.

Fig. 2

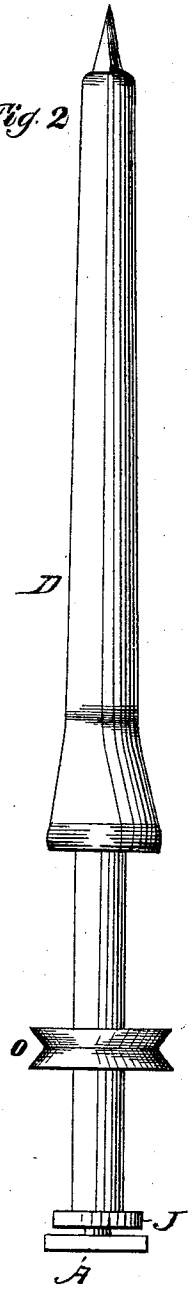
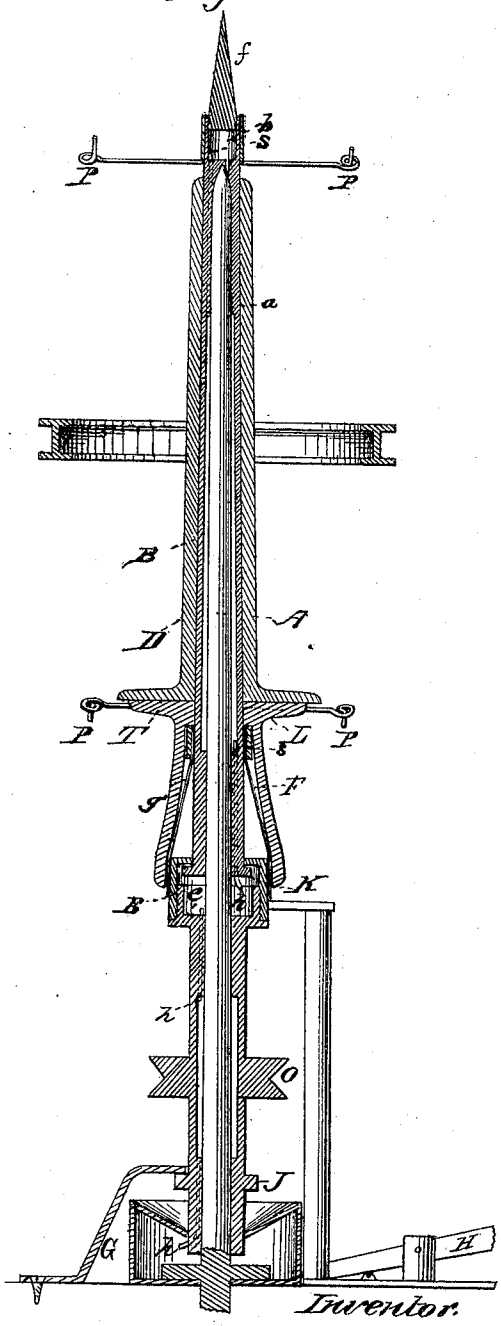


Fig. 1.



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IMPROVEMENT IN SPINDLES FOR SPINNING AND TWISTING.

Specification forming part of Letters Patent No. **130,860**, dated August 27, 1872.

To all whom it may concern:

Be it known that I, ENOCH OSGOOD, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in different devices for a single and compound spindle to revolve on a stationary one; and that the following is a full and clear description of the same, reference being had to the accompanying drawing with letters of reference marked therein, in which—

Figure 1 is a section through my invention, showing its different parts; Fig. 2, a perspective view.

I first take a stationary spindle, A, with a true center on top, and fit a thin metallic or hard rubber tube over it for a revolving spindle, B, which is to be a little larger than the stationary spindle A. In either end of this revolving spindle B I put a hard composition bearing at *g* and *a*. The top one *a* rests on the center and over the top of the stationary spindle A, and extends down as far as desired, with its outside just fitting the inside of the spindle B, and is soldered in it low enough down to form the oil-cup *b* above it, which is kept tight by screwing in a steel tip, as at *f*, supplying the place of the usual spindle-tip for spinning filling on a common spinning-jack. When desired a simple cap may be used instead of this tip *f*. The other composition-bearing *g* is soldered into the lower end, and has a small hole drilled up through it, as also has the upper bearing *a*. Small tubes *h h*, set in the lower ends of these holes, and having curved lips, or their equivalent, take up the oil during rapid motion of the spindle, and force it up through the bearing *g*, and fill the chamber above it, around the spindle A, and up through the upper bearings *a* into the oil-cup *b* above it, where it is retained by means of other small straight tubes, *s s*, set in the upper ends of the holes in the bearings *a* and *g*, which prevent the oil from running back except through other holes provided for that purpose through the bearings around the stationary spindle A, thus keeping them well lubricated. The oil-cup *g*, at the bottom of the stationary spindle A, has a curve downward on top to prevent the oil from being thrown out by the action of the spindle B. A curved tube, *h*, is also set in the lower end of the hole in the lower bearing. A common grooved pulley, O, is put on the lower end to drive the spindle. The object of making the revolving-spindle B thin and larger than the stationary spindle A is to have it light and form a chamber between the two to prevent the stationary spindle A binding, as it would if the bearing fitted the whole length; also to receive the composition bearings *a* and *g*, and to allow good facilities for the self-oiling apparatus, &c. Below the grooved pulley O is a small flange, J, for a stop to rest on, to keep the revolving spindle B from working up. In order that the upper part of the revolving spindle B may stand still while the lower part is in motion I make it in two pieces, and make the upper part just the same as when the whole is in one, with a flange, K, on the lower end to fit into the coupling E to keep it from working up. The lower part has two composition bearings, with holes drilled up through them, and small curved tubes set in them in the same manner as in the upper part of the spindle, and has a grooved pulley, O, to drive it. On the upper end of this lower part is a coupling, E, made hollow to form the oil-cup *e*, to hold oil for the upper part to take up and pass up through into the oil-cup *b* on top. The cap of the coupling E is made to fit over the flange K to keep the upper part from working up. The upper part or cap of this coupling E is taken off and applied by being slipped over the upper part of the revolving spindle B, which latter is then slipped on over the stationary spindle A, and the cap of the coupling E is screwed down tight with the end of the spindle B, its small curved tube *h* and flange K in the oil-cup *e* to take up the oil as fast as it is forced up from below, and pass up into the oil-cup *b* on top. I then slip on over the spindle B springs F, letting the lower end of them pass down over the coupling E, and secure them to the upper part of spindle B in such a manner that the springs F will not touch the coupling E unless the spool D or base L be forced down over them, so as to cause them to gripe the coupling E, and thus compel the two parts of the spindle to revolve together when the lower part is put in motion. The oil-cup *e* in the coupling E should be made large enough to hold the same amount of oil that the bottom cup G does, or else it will run over.

The spool D can be made of any material

desired, but for a superior article I use hard vulcanized rubber, which can be left rough on the outside to keep the thread from slipping off, and can be made much smaller, stronger, and lighter than wood. It can be raised on the spindle B by the fingers or by means of the lever H, (see Fig. 1,) which is more convenient, as it can be done while the lower part is in motion, the upper part standing still, as soon as the spool D is raised and the coupling E released from the gripe of the springs F.

One object of this revolving, hollow, small, and light spindle B, together with the spool D is, that it can be run much faster, easier, and without jar. With the oil-holes and oil-cups constructed as above named, there is produced a perfect self-oiler-and-cleaner, as the oil, in passing down, washes out all grit and dirt that may wear off by friction.

In order to spin thread where flyers are used from a spool located in the position occupied by the spool D I apply to the revolving spindle B small wires with twisted eyes, as at P, for the thread to pass through. The upper ones are to keep the thread from contact with the head of the spool when a double-headed one is used, and are secured to a bushing and slipped over the top of the spindle B. The lower ones are used, in some cases, to give the twist, when desired, and are bent up at right angles with the twist-eyes, which are made small enough to pass through the ring R, which guides the thread from the spool D, and are firmly secured to the base L, which is made to fit over the springs F in the same manner as the spool D and for the same purpose. Between the spool and the base L is to be placed a washer at T for the spool to rest on.

To use the fliers P P, the spool is taken off, and the base L, with the lower fliers P P and washer firmly attached to it, is slipped on; then the spool D and the upper fliers P P; and it is ready for use.

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

1. The revolving spindle B, made in two parts, and provided with the coupling E, flange K, and springs F, so that the two parts may be connected or disconnected, substantially as described.

2. The combination, with the stationary spindle, of the revolving spindle B, the oil-chambers G, *e*, and *b*, curved tubes *h*, and retainers S, substantially as described.

3. The combination, with the spindle and the base L, of the fliers P P, substantially as and for the purpose described.

ENOCH OSGOOD.

Witnesses:

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JOHN C. SMART.