Watson & Thurber,

Steps for Spindles of Spinning Frames

No. 44,265, Patented Sept. 13, 1864.

Fig. 1.

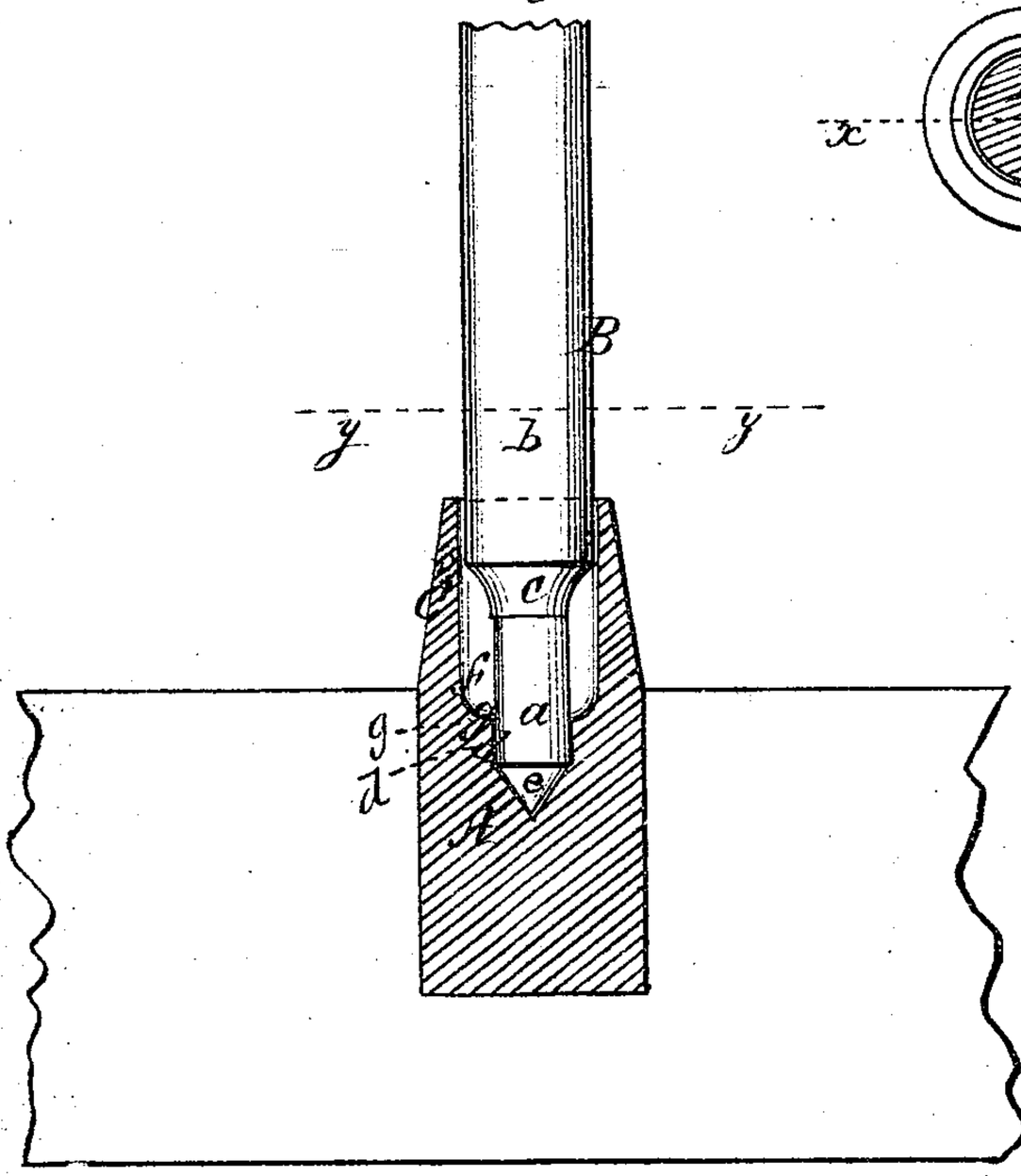

Fig. 2.

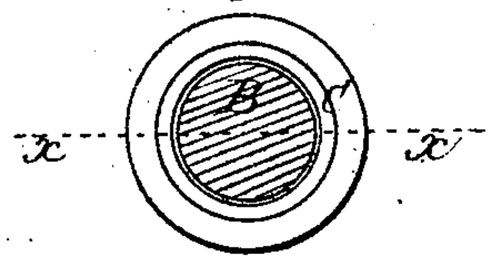

Fig. 3

Witnesses.
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UNITED STATES PATENT OFFICE.

BENJAMIN G. WATSON AND A. W. THURBER, OF JEWETT CITY, CONNECTICUT, ASSIGNOR TO BENJAMIN G. WATSON AND IRA G. BRIGGS.

IMPROVEMENT IN STEPS FOR THE SPINDLES OF SPINNING-FRAMES.

Specification forming part of Letters Patent No. **44,265**, dated September 13, 1864.

To all whom it may concern:

Be it known that we, BENJAMIN G. WATSON and A. W. THURBER, of Jewett City, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Steps for the Bobbin-Spindles of Spinning-Frames; and we do hereby declare that the fo'lowing is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical central section of our improvement with a spindle fitted in it—*x x*, Fig. 2, indicate the line of section; Fig. 2, a plan or top view of the same, the spindle being in section, as indicated by the line *y y*, Fig. 1; Fig. 3, a vertical section of the step and cap now in use.

Similar letters of reference in Figs. 1 and 2 indicate corresponding parts.

This invention has for its object two essential results—first, to protect the lower end of the spindle and interior of the step from dust and portions of cotton, the former of which soon cuts and wears the spindle so as to render it useless, and the latter by its absorbent quality depriving the step of oil, so as to cause the spindles to wear from being imperfectly lubricated; second, to prevent the oil being thrown from the step by the rapid revolution of the spindle, a contingency which invariably occurs when the spindle is first started.

The protection of the spindle and step from dust, as well as from the contact of portions of cotton, has hitherto been attained by what is termed a "cap," the same consisting of a conical tube which rests upon the copping-rail and encircles the upper end of the step and the lower part of the spindle. This cap, however, fails to prevent the escape of oil from the step under the quick revolutions of the spindle.

Our invention consists in forming the cap, above mentioned, and the step in one piece, or, combining them in such a manner that the two important results specified will be attained.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents the step, which is formed in the usual way to receive the lower end, *a*, of the spindle B, which is turned down so as to be considerably smaller in diameter than its main portion, *b*, and has a concave shoulder, *c*, at the junction of *a* and *b*, as shown clearly in Fig. 1. The cavity *d* of the step is of cylindrical form, with an inverted conical bottom to receive the conical end *e* of the part *a* of the spindle, and the portion *f* of the step above the cavity *d* is equal in diameter to the main portion *b* of the spindle, and has a rounded concave bottom, *g*. The upper part of this step we term the "cap," designated by C, and it extends a short distance above the shoulder *c*, as shown in Fig. 1, leaving an oil-chamber, *f*, of sufficient capacity between the shoulder *c* of the spindle and the bottom *g*. The cap and step may be constructed out of a single piece of metal, or they may be made in two or more parts screwed or otherwise secured together so that the cap and step will be united.

From the above description it will be seen that the cap C effectually prevents the admission of dust into the step, and also protects the lower part of the spindle from the contact of portions of cotton, which would absorb the oil and cause the spindle to be imperfectly lubricated; and it will further be seen that the spindle cannot, by its rapid rotation, throw the oil out from the step, as the step and cap are formed out of one piece of metal or connected so as to be both in one piece, and thereby not leaving any opening for the escape of the oil.

The advantage of our invention over the old step and cap will be seen at once by referring to Fig. 3.

D is the step fitted in the copping-rail, and E is the cap made of a separate piece and resting on the copping-rail over the step. The cap E protects the step from fragments or pieces of cotton-wool, but it will be seen that the oil can escape over the top of the step between it and the lower part of the cap, and the spindle therefore requires to be frequently

lubricated in order to keep it in proper working order.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, with the step A and spindle B, of the cup C, (fitting at top the main portion *b* of the spindle,) the concave shoulder *c*, small cylindrical journal *a*, and chamber *g*, when all the said parts are constructed. arranged, and employed in the manner and for the purposes herein specified.

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Witnesses:
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