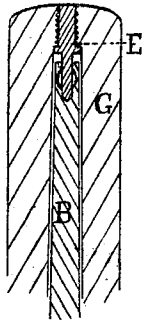


J. H. SAWYER.

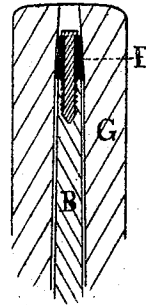
Improvement in Spindles for Spinning Machines.

No. 124,290.

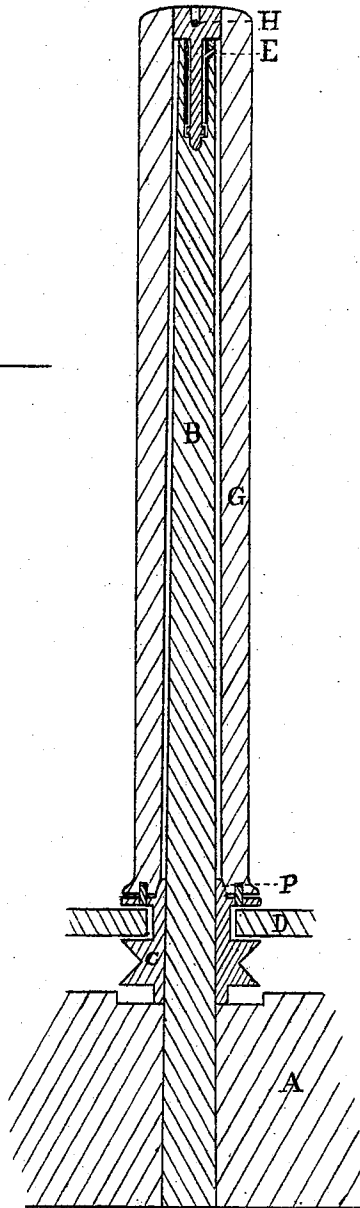
Patented March 5, 1872.



— Fig. 2. —



— Fig. 3. —



— Fig. 1. —

— Witnesses. —

A. H. Robinson
J. F. Slater

— Inventor. —

Jacob H. Sawyer.

UNITED STATES PATENT OFFICE.

JACOB H. SAWYER, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN SPINDLES FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. 124,290, dated March 5, 1872.

SPECIFICATION.

I, JACOB H. SAWYER, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Spinning and Twisting Machines, of which the following is a specification:

The object of my invention is to reduce the power required for driving those parts of the machine which revolve with and support the bobbin.

Description of the Accompanying Drawing.

Figure 1 is a vertical section through the center of the parts to which the improvement relates, in which—

A represents a portion of a rail forming a part of the frame of the machine, and serving as a support for the dead-spindle or standard B. B is the dead-spindle or standard, having a socket or step for the reception of the pivot E, formed in its upper end. C is a whorl or its equivalent, running freely on B, motion being communicated to it from a drum or shaft connected with the machine. D is a cover, which extends over the whorl and prevents it from being raised out of its place. E is a pivot or step inserted in the upper end of the standard B for the purpose of supporting the weight and guiding the upper end of the bobbin G. The bobbin is driven by pins or their equivalents, attached to the whorl C, or it may be driven by frictional contact with the whorl. The annular projection P extends inside of the bobbin for a greater or less distance. If the bobbin is driven by its contact with this projection, the latter should extend further into the bobbin than when its use is merely to hold the lower end of the bobbin in position. The hole in the upper end of the bobbin is made to fit the surface of the upper part of the pivot, and as the bobbin and pivot turn together, the upper end of the former is steadied by the latter, and no part of the bobbin is subjected to rubbing friction while turning. A pin, H, inserted transversely in the bobbin, near its upper end, rests in a slot in the upper end of the pivot, and imparts rotary motion thereto, or the pivot may be driven by frictional contact between its outer surface and the bobbin, or by a clutch connecting the two, or by equivalent devices. The pivot should be held in its place in the dead-

spindle by means of a projection located below the bushing inserted in the spindle, or by some equivalent device. In Fig. 2 the pivot is represented as a part of the bobbin, in which case it runs in a step in the upper end of the dead-spindle, substantially as in Fig. 1. In Fig. 3 a shell or ring, E, running on the upper end of the dead-spindle, is substituted in place of the pivot E and for the same purpose.

As applied to ring-spinning and twisting-machines, my invention is distinguished from previous forms by the method provided for steadying the rotation of the upper end of the bobbin by means of a step running in the top of the dead-spindle, and connected with and driven from the whorl solely by means of the bobbin. It is evident that the friction caused by the rotation of the part supporting the bobbin is greatly reduced by transferring the weight of the bobbin from the large bearing surrounding the dead-spindle at or near the whorl, as heretofore constructed, to the small bearing E at the top of the dead-spindle, as in my invention and the same holds good whether the pivot is independent of the bobbin, as in Figs. 1 and 3, or whether it forms a part of the bobbin, as in Fig. 2.

I am aware that the weight of the bobbins of spinning machinery have heretofore been supported from the tops of the spindles, and that the bobbins have been made to turn by means of clutches and other devices located at that place; but I am not aware that the part which supports and guides the upper end of the bobbin has been constructed as in my invention in such a manner as to be connected with and receive rotary motion from the whorl by means solely of the bobbin. I am also aware that in one form of Montgomery's machine an "auxiliary spindle was inserted into a hollow part of the fixed spindle." I do not, therefore, claim broadly the dead-spindle, having a step formed in its upper end, without reference to its combination, as herein described, with a pivot, which is connected with the whorl solely by means of the bobbin, so as to revolve simultaneously with and be driven by them, revolution for revolution, for the purpose of preventing wear of the bobbin by its rubbing friction on a surface not revolving at the same speed as itself. I am aware of the patent of

Bradshaw, dated January 18, 1833, and make no claim to any thing, combination, or arrangement of parts contained or described therein.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, substantially as described, of the fixed spindle B, the whorl C, the pivot E, and the bobbin G.

2. The dead-spindle B of a spinning or twisting machine, having its top provided with a socket or step for the reception of the pivot E, which pivot is connected and made to revolve

with and at the same speed as the whorl by means of the bobbin alone, substantially as and for the purpose specified.

3. I also claim the stationary spindle or standard B, the separate rotary whorl C, the cover D, the rotary bobbin G, and the pivot and bearing at the head of the spindle and bobbin, all arranged, constructed, and applied together substantially in the manner and to operate as described.

JACOB H. SAWYER.

Witnesses:

DAVIS S. TUCKER,
C. B. RUSHWORTH.