J. BIRKENHEAD

Spinning-Ring and Spindle-Supports.

No. 210,400. **Patented Dec. 3, 1878.**

Fig. 8.

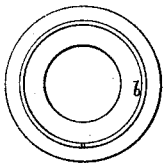


Fig. 6

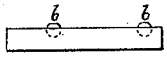


Fig. 7.

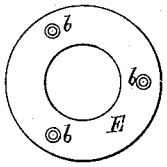


Fig. 9.

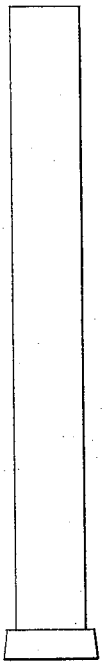


Fig. 10.

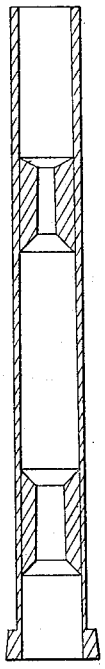


Fig. 3.

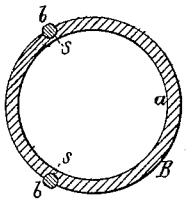


Fig. 1.

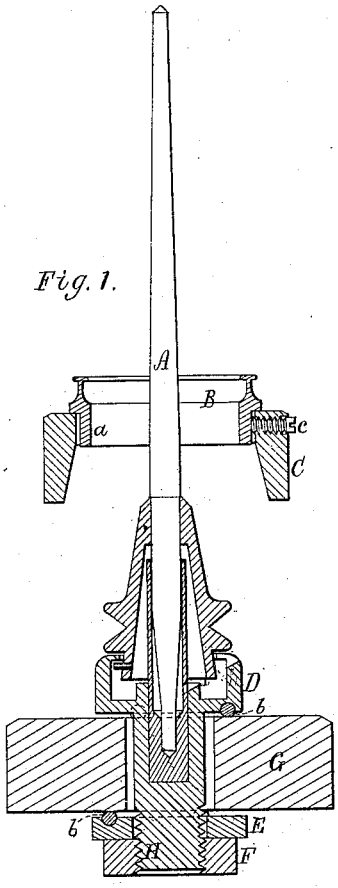


Fig. 2.

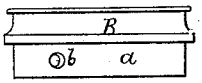


Fig. 11.

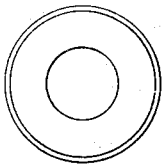


Fig. 4.

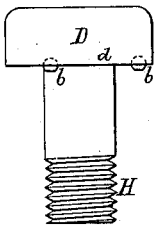


Fig. 12.

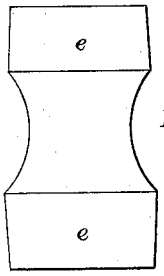
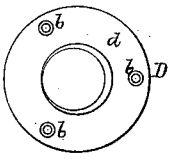


Fig. 5.



Witnesses.
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W. H. Preston

Inventor.
John Birkenhead.
by attorney.
R. H. Eddy

UNITED STATES PATENT OFFICE.

JOHN BIRKENHEAD, OF MANSFIELD, MASSACHUSETTS.

IMPROVEMENT IN SPINNING-RING AND SPINDLE SUPPORTS.

Specification forming part of Letters Patent No. **210,400**, dated December 3, 1878; application filed October 7, 1878.

To all whom it may concern:

Be it known that I, JOHN BIRKENHEAD, of Mansfield, of the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in the Rings and the Supports of the Spindles of Ring-Spinning Frames; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 represents, in elevation, a spindle; also, in vertical section, a spinning-ring and its supporting-rail and a stepped bolster and its sustaining-rail with my invention applied thereto. Fig. 2 is a side view, and Fig. 3 a horizontal section, of the ring, such section being taken through the yielding projections of the shank of the ring. Fig. 4 is a side elevation, and Fig. 5 a bottom view, of the stepped bolster. Fig. 6 is a side view, and Fig. 7 a top view, of the metallic washer of the screw-shank of the bolster. Fig. 8 is a top view of the washer as provided with a yielding or soft-metal ring extending from it.

The object of my invention is to enable the ring to be adjusted into concentricity with the spindle, or the spindle into concentricity with the ring, which I accomplish in a manner and by means different from any heretofore in use.

In carrying out my invention, I provide the spinning-ring, or one or more of the supports of the shank of the spindle, with one or more soft-metal or yielding projections, substantially as and for the object above stated.

In the drawings, A denotes the spindle; B, the ring; C, the ring-rail; D, the stepped bolster; E, its metallic washer; F, its confining-nut; G, the bolster-rail, and H the bolster-confining screw.

The spinning-ring has inserted in its shank *a*, and projecting outwardly from the outer periphery thereof, two or other suitable number of soft-metal or yielding projections, *b*. They may be of lead or copper. Generally speaking, I bore semi-spherical holes or sockets *s* in the ring-shank, and insert shot or globes of lead of like diameter in them, such being arranged in that half of the ring-shank which is opposite to the half against whose middle the ring-confining screw *c* is to abut. On forcing the ring in place, should it not be concentric with the spindle, it may be adjusted into concentricity therewith by a few blows of a hammer against the ring and by setting up the screw, so as to cause the projections to yield or be contracted to the necessary extent.

To effect the adjustment of the spindle to concentricity with the ring, I provide the lower surface of the head *d* of the bolster in like manner with a set of such soft-metal or yielding projections, *b*, arranged in sockets therefor, (see Figs. 4 and 5;) and the metallic washer may likewise have such projections applied to it, they being shown at *b* in Figs. 6 and 7. Sometimes in the place of such I employ a soft-metal ring, inserted partly in the bearing-surface of the bolster or that of its washer, such being as shown at *b* in Fig. 8. This ring is to project from the surface a suitable distance.

On screwing up the nut, should the spindle not be in concentricity with the ring, a few taps or blows of a hammer on the top of the bolster-head or bottom of the nut, and in a proper place or places thereon, will generally suffice to effect the desired adjustment, the yielding projections contracting under the force of such taps or blows to the necessary extent.

To ascertain when the ring and spindle are in concentricity, I apply to the spindle, in case it is a tapering one, a cylindrical quill or bobbin, (shown in elevation in Fig. 9 and longitudinal section in Fig. 10,) or I use a cylinder having a tapering bore to fit to the spindle; and concentrically on such quill or bobbin I place a centralizer, (shown in bottom view in Fig. 11 and in side view in Fig. 12,) the upper and lower portions, *e e*, of which are conic frustums. One conic frustum, however, is all that is necessary to the centralizer. When it has two, one is generally smaller than the other, to enable the centralizer to be adapted to rings varying in size. This centralizer, when the ring becomes concentric with the spindle, will drop into the ring in a manner well understood by spinners and makers of ring-frames.

The adjustment of the ring and spindle may be effected partially by taps on the ring, and also on the bolster, or on such and the washer. After the ring and spindle have thus been ad-

justed they will generally maintain their positions for a long period of time before further adjustment may be required.

I claim—

1. In a ring-spinning frame, the spinning-ring, or one or more of the supports of the spindle, provided with one or more yielding projections and sockets therefor, substantially as described, arranged therewith and to operate essentially in manner and for the purpose set forth.

2. In a ring-spinning frame, the spinning-ring, or one or more of the supports of the spindle, provided with one or more yielding projections, substantially as described, arranged therewith and to operate essentially in manner and for the purpose set forth.

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