

J. BIRKENHEAD.  
Yarn-Guide Support for Ring-Spinning Frames.

No. 214,749.

Patented April 29, 1879.

Fig. 1.

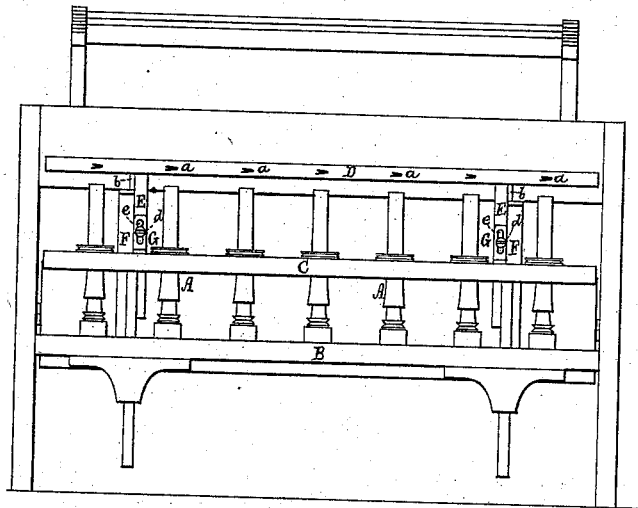


Fig. 2.

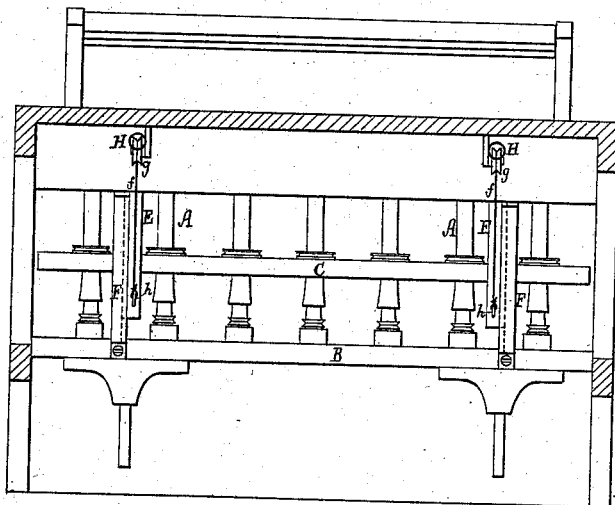


Fig. 3.

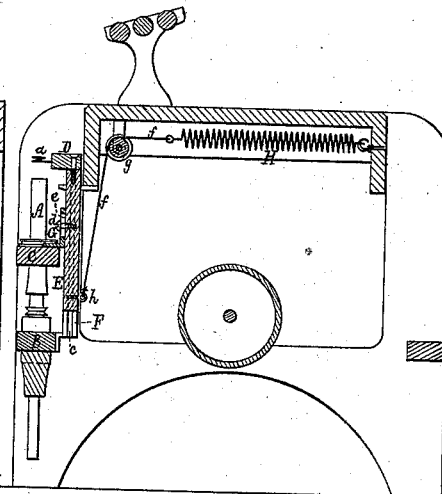


Fig. 4.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JOHN BIRKENHEAD, OF MANSFIELD, MASSACHUSETTS.

## IMPROVEMENT IN YARN-GUIDE SUPPORTS FOR RING-SPINNING FRAMES.

Specification forming part of Letters Patent No. **214,749**, dated April 29, 1879; application filed December 24, 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 Yarn-Guide Supports for 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 is a front elevation, and Figs. 2 and 3 transverse sections, of part of a ring-spinning frame with my improvement applied thereto.

The invention relates to a combination of the ring-rail and the yarn-guides with the guide-supports sustained by the rail, so as to be movable with and by it, and constructed to admit of the guides being movable vertically independently of the ring-rail for the purpose of being adjusted to different altitudes above it, such being shown in an application for a patent filed by me on September 28, 1878.

In carrying out my invention, I combine with the ring-rail and with the yarn-guide rail sustained by the ring-rail by devices essentially as hereinafter described, so as to be movable by and with it, as explained, mechanism or springs operating to approximate or substantially counterbalance the guides and guide-rail and its devices for sustaining it by the ring-rail, such counterbalancing mechanism being separate from or independent of that ordinarily used for counterbalancing or nearly counterbalancing the ring-rail.

My improvement is to prevent most of the weight of the guide-rail, its guides, and supports from being borne by or suddenly thrown on the ring-rail in its vertical movement. It has been found when the ring-rail has thrown upon it such a sudden accession of weight that the proper laying of the yarn on the bobbin is liable to be injuriously affected—in other words, that a small ridge is apt to be formed, or too much winding of the yarn in one place results.

I have not shown in the drawings the mechanism usually applied to the ring-rail for nearly counterbalancing it, as it is to be understood that it is to have such, which is to be entirely separate from and to operate inde-

pendently of that represented as applied to the guide-rail.

Furthermore, besides having the guide-rail and its devices for sustaining it by the ring-rail provided with counterbalancing mechanism, as and for the purpose set forth, I have combined with each of the sustaining-legs extending down from the guide-support rail an adjustable foot to project over the ring-rail. This foot is applied so as to be adjustable or set at different heights on the rail-leg in order to adjust the rail to bobbins of different lengths used on the spindles, as occasion may require.

In the drawings, A A, &c., denote a set of bobbins having spindles whose supports are to be applied in any well-known manner to a rail, B. C is the ring-rail, the latter being provided, as usual, with a ring to each spindle. The yarn-guides are represented at *a a a* as extending from a rail, D, fixed on the tops of two vertical bars or legs, E E, which have tongues *b b* projecting from their outer sides and entering vertical guide-grooves *c c* made in two standards, F F, extending up from the spindle-rail.

Fig. 4 is a transverse section of the legs E E and the standards F F, showing the tongues and grooves above mentioned.

The adjustable feet are represented at G G as fixed to the legs E E by set-screws *d d* going through slots *e e* made in the upright parts of the feet.

Long springs H H, fixed at their rear ends to the frame and extending horizontally below the top thereof, have lines *f f* attached to them at their free ends, such lines being carried partly around guide-wheels *g g*, and thence downward, and are fastened to staples or eyes *h h* projecting from the legs E E, near their lower ends. These springs serve to counterbalance most of the weight of the guide-rail and its appurtenances, the unbalanced weight of which is to enable the rail to descend with the ring-rail. In the place of the springs weights may be used.

What in the ring-spinning frame I claim as my invention is as follows, viz:

1. In combination with the ring-rail and with the yarn-guide rail sustained by the ring-

rail by devices essentially as described, so as to be movable with and by it, as explained, mechanism or springs H, applied to the frame and operating to counterbalance the guides, guide-rail, and its supports, all being substantially as and for the purpose specified.

2. In combination with the ring-rail and with the guide-rail and its support-bars, and

the counterbalancing mechanism applied thereto, the foot G, adapted to each of the said support-bars, and adjustable thereon relatively to the guide-rail, as specified.

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