No. 42,829. PATENTED MAY 24, 1864.

J. BIRKENHEAD.

MODE OF ADJUSTING RINGS AND RING RAILS IN RING AND TRAVELER SPINNING FRAMES.

Fig. 1.

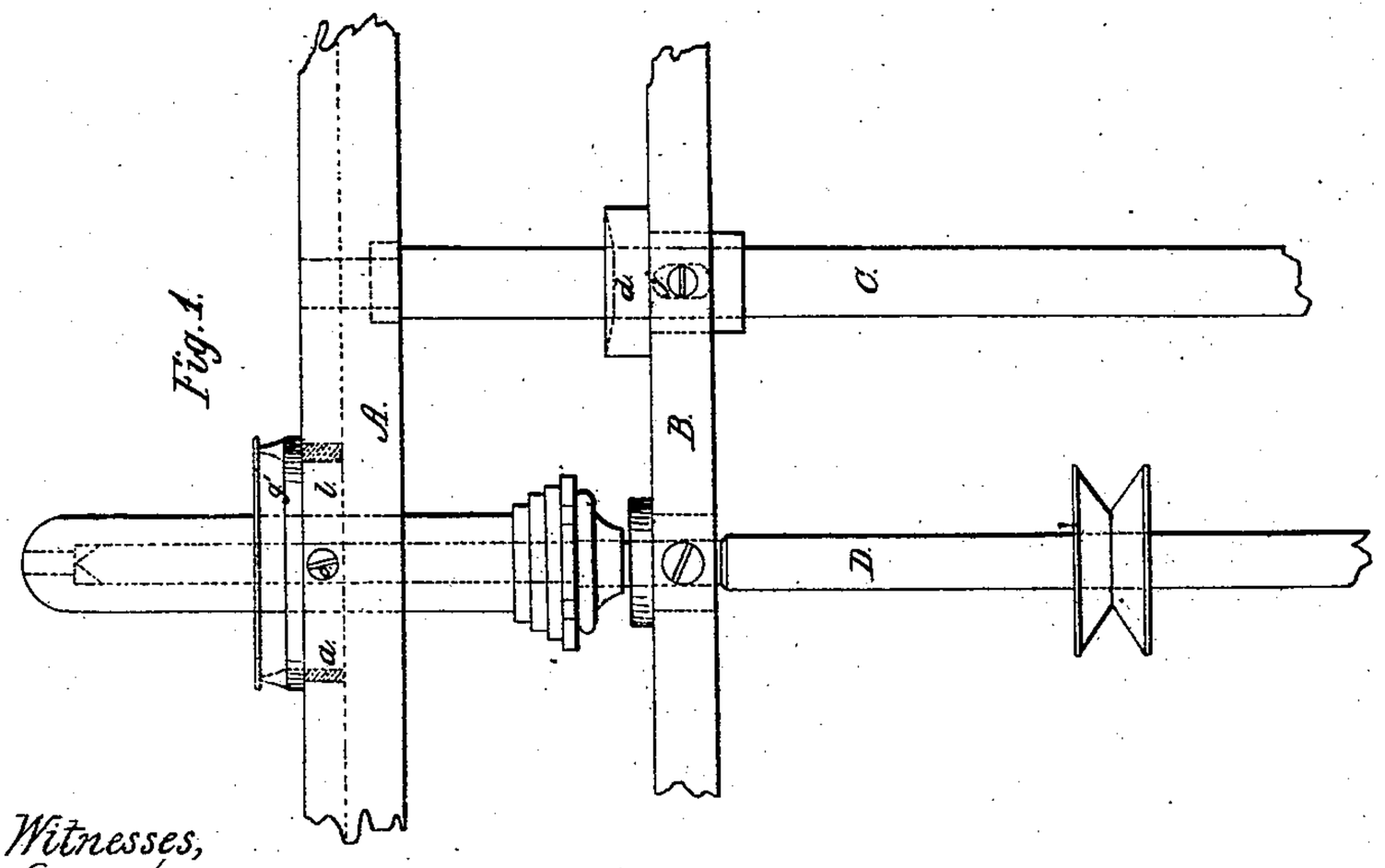

Fig. 2.

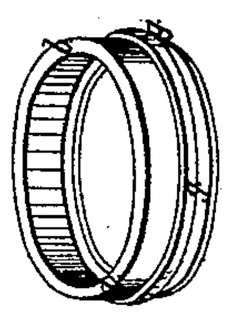

Fig. 3.

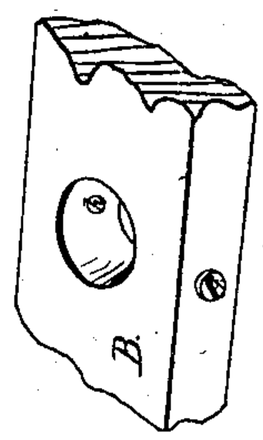

Fig. 4.

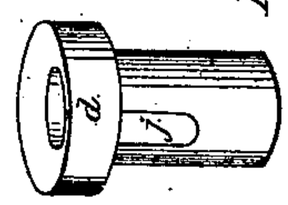

Fig. 5.

Witnesses,

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IMPROVEMENT IN MODE OF ADJUSTING RINGS AND RING-RAILS IN RING AND TRAVELER SPINNING FRAMES.

Specification forming part of Letters Patent No. **42,829**, dated May 24, 1864.

To all whom it may concern:

Be it known that I, JOHN BIRKENHEAD, of Ilion, in the county of Herkimer and State of New York, have invented a new and Improved Mode of Adjusting Rings and Ring-Rails in Spinning-Frames; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

To enable others skilled in the arts to make and use my invention, I will proceed to describe its nature, construction, and operation.

The nature of my invention consists in placing an eccentric ring within the ring-rail, and gib-bushes within the bolster-rail of spinning-frames.

In constructing ring-rails for spinning-frames great difficulty is found in getting the holes for the reception of the ring precisely in the center of the rail or concentric with the spindle. When the hole is not concentric with the spindle the traveler is caused to bear harder upon one side of the ring, causing the ring to wear and giving the traveler a vibrating motion. The traveler is caused to revolve around the ring by the tension of the yarn, and as its speed should be from six to seven thousand revolutions per minute it is necessary that the ring should be precisely concentric with the spindle. Now, when the spindle is not precisely in the center of the ring the traveler is caused to bear irregularly upon the ring, thus producing a greater amount of friction, which increases the amount of tension on the yarn and causes it to be uneven and worthless.

By using my eccentric-ring in places where the hole in the ring-rail is not concentric with the spindle the traveler can be brought to a uniform bearing upon all parts of the ring, thus giving that even tension to the yarn which is necessary in producing good and even yarn. Another great evil is caused by the wearing of the lifter pin or rod shown in the drawings at C, Figure 1. This wear generally occurs on that portion of the rod or pin which is in front of the machine, and here my gib-bush becomes very valuable for the purpose of taking up the motion that the lifter rod or pin may have acquired by its wear.

Fig. 1 is a view showing a portion of a spinning-frame with my improvements. Fig. 2 is a view showing the eccentric-ring in an inverted position for the purpose of showing its eccentricity at *a* and *b*. Fig. 3 shows a portion of bolster-rail with set-screws *f* and *h*. Fig. 4 is a view of bush *d* with its gib *j*; Figs. 5 and 6, front and edge view of gibs *j*.

A is the ring-rail; B, the bolster-rail; C, the lifter-pin; D, the spindle; *g*, the eccentric-ring; *a* and *b*, the eccentric portions of the ring *g*; *d*, the bush; *j*, the gib; *f* and *h*, the set-screws for holding the bush and gib in position, and *c* set-screw for holding the ring.

I construct my improvements in the following manner: I first turn my ring circular as usual on a true mandrel. I then give a slight eccentric form to the outside of the lower portion of the ring by turning it upon a mandrel having centers one side of the true centers thus giving the outer side of the lower portion of the ring the required eccentricity. The eccentric-ring is placed in whatever hole in the ring-rail of the spinning-machine is not concentric with the axis of the spindle passing through the ring, and is turned around until the spindle shall occupy a position precisely in the center of the ring, and it is then secured in its position by means of the set-screw *c*, Fig. 1.

The bush I construct in the ordinary manner, except making a slot in one side for the reception of the gib, which is made as shown in Figs. 5 and 6. The bush is then placed in the hole made in the bolster-rail for its reception, and the set-screw *f* is screwed slightly against the gib, and the set-screw *h* is screwed firmly against the rear side of the bush *d* for the purpose of holding it in its proper position. Now, when the lifter pin or rod C becomes worn, the ring-rail A is thrown toward the front side of the machine, which causes the traveler to have an irregular bearing upon the ring, thus causing a great wear of the ring, increased tension of the yarn, and, consequently, uneven and worthless yarn. With my gib within the bush *d*, and the set-screw *f* to screw against it, the ring-rail can be brought back to its original position. Whatever spindle may not then be concentric with its respective ring may be brought precisely concentric by the use of my eccentric-ring. Thus with the combined use of my eccentric-ring and gib-

bush a spinning machine may be made to work very perfectly.

I do not claim as my invention the use of the ring placed within the rail A, neither do I claim the bush *d* independent of the gib *j*; but

What I do claim, and wish to secure by Letters Patent of the United States, is—

1. The employment of the eccentric-ring *g*, as and for the purpose herein described and set forth.

2. The combination of the gib *j* and bush *d*, substantially in the manner as and for the purpose herein set forth.

JOHN BIRKENHEAD.

Witnesses:

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