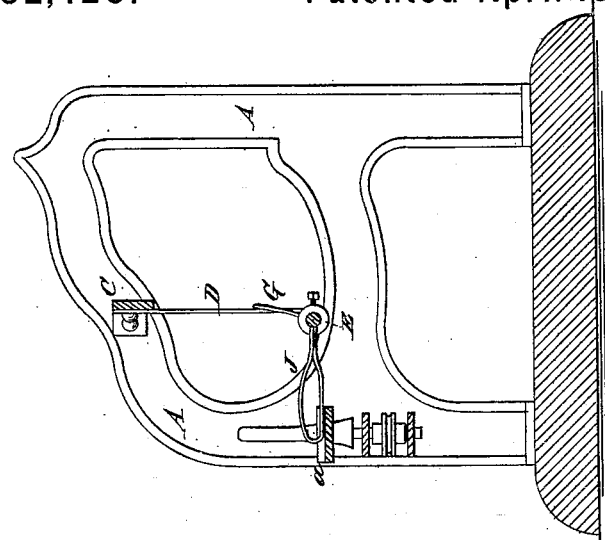
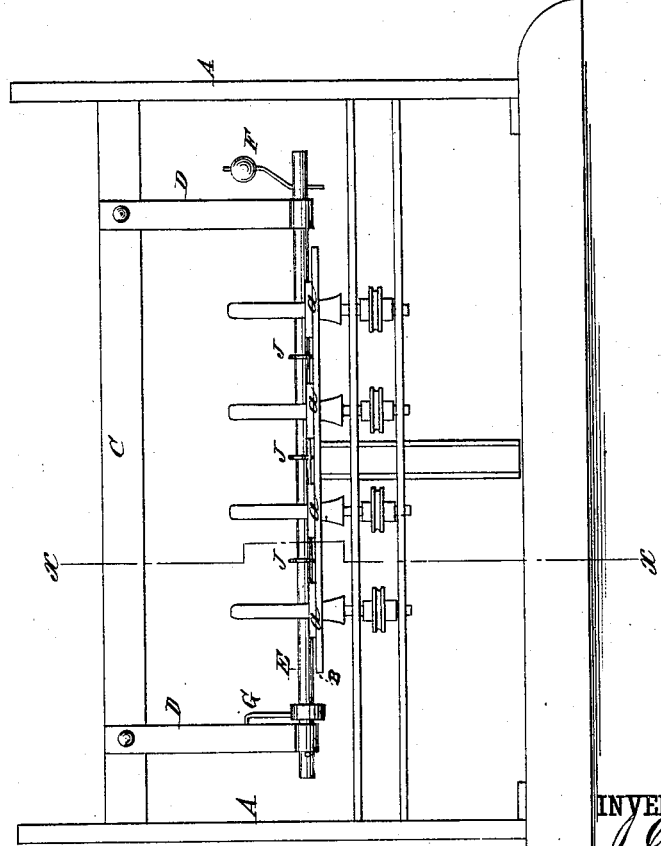


J. DOYLE.  
 Thread-Guard Support for Ring Spinning-Frames.  
 No. 202,420.      Patented April 16, 1878.

*Fig. 2.*



*Fig. 1.*



WITNESSES:

*H. Rydquist*  
*J. H. Scarborough.*

INVENTOR:

*J. Doyle.*  
 BY *M. Muntz*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JAMES DOYLE, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN THREAD-GUARD SUPPORTS FOR RING-SPINNING FRAMES.

Specification forming part of Letters Patent No. **202,420**, dated April 16, 1878; application filed August 18, 1877.

*To all whom it may concern:*

Be it known that I, JAMES DOYLE, of Lowell, Massachusetts, have invented an Improvement in Thread-Guard Supports for Ring-Spinning Frames, of which the following is a specification:

The invention has for its object an improved mode of holding the guards between adjustable spindles, so that they can prevent the yarn of two adjacent spindle-bobbins from coming in contact; also, of avoiding their attachment to the ring-rail, that produces so much extra weight, and is so objectionable to ring-spinners, and of removing all obstruction from those who piece the threads and operate the frame.

The invention consists in my particular means for holding the guards in a pendent position and regulating them by means of a weighted arm and stop-bar.

Figure 1 of drawing is a front elevation. Fig. 2 is a vertical section through line *x x* of Fig. 1.

A represents the ordinary frame; *a*, the rings, and B the ring-rail. C is a bar on frame A, and from it are hung the hangers D D, provided at their lower ends with a shaft, E, that is free to oscillate in rear of ring-rail nearly the full length of the machine, and has a loaded arm, F, as well as a stop-arm, G. J are looped guards rigidly attached to shaft E, and on the forward movement of the oscillation of this shaft they are brought between the rings *a*.

I am aware that guards have been used for this purpose; but being attached to the ring-rails by the same screws that hold the rings in place, and having their rock-shaft in line with the screws, it was impossible to remove a worn-out ring without first removing a section of the shaft.

The guards have also been heretofore arranged to run above the thread-guide when the ring-rail is at the top of bobbin, thus obstructing those who piece the threads.

My guards follow the ring-rail down to a point about half-way between the top and bottom of bobbin, remaining in a horizontal position by means of the stop-arms until the rail goes to the bottom of bobbin and returns up to the guard; also, whenever the ring-rail is to be adjusted for repair or correcting any defect in the lifting-rods, the ring-rail can be laid on the thread-boards without breaking the threads.

What I claim as new and of my invention is—

In ring-spinning machines, the guards J, in combination with a pivoted hanging shaft, provided with a weight and stop to regulate the position of said guards, as shown and described.

JAMES DOYLE.

Witnesses:

FRANKLIN S. COOLEIDGE,  
DENISON D. COLLINS.