J. OGDEN & J. GARRETT.

Cop-Building Rail for Spinning Mule.

No. 204,362. Patented May 28, 1878.

Fig. 1.

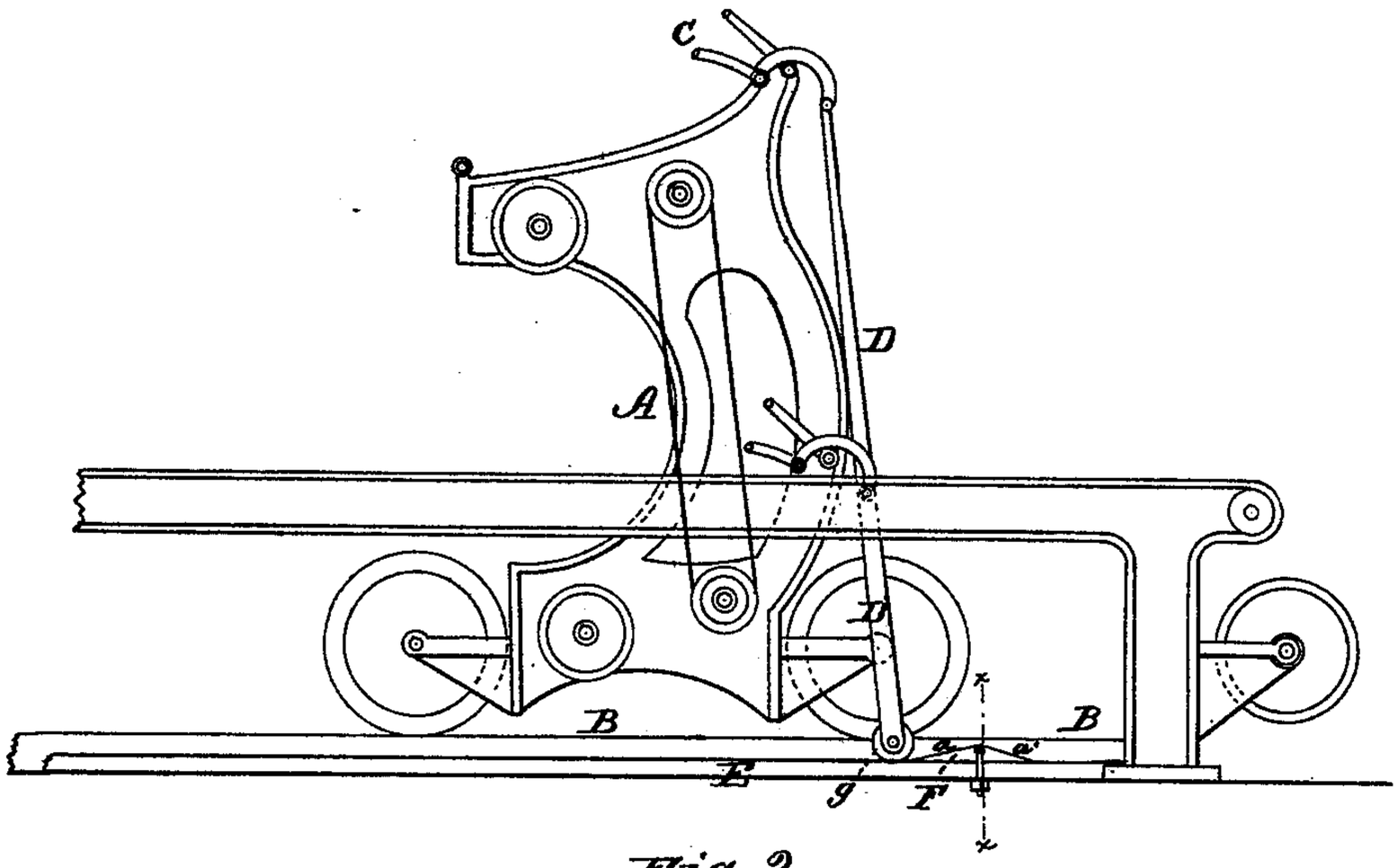
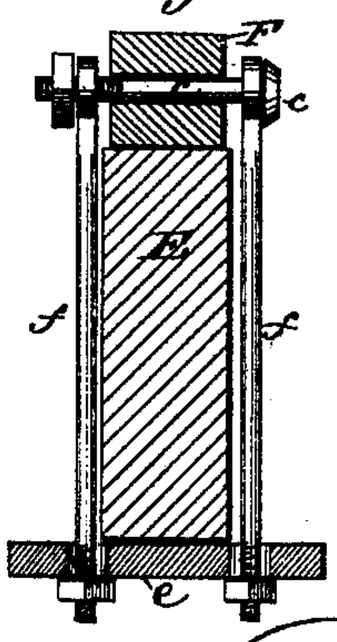


Fig. 2.



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JOSEPH OGDEN AND JOSEPH GARRETT, OF CHESTER, PENNSYLVANIA.

IMPROVEMENT IN COP-BUILDING RAILS FOR SPINNING-MULES.

Specification forming part of Letters Patent No. **204,362,** dated May 28, 1878; application filed April 12, 1878.

To all whom it may concern:

Be it known that we, JOSEPH OGDEN and JOSEPH GARRETT, of Chester, in the county of Delaware and State of Pennsylvania, have invented a new and useful Improvement in Cop-Building Rails for Spinning-Mules; and we do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to an attachment for the cop-building rail of a spinning-mule; and consists in a block having a double-inclined face, the same being attached to the cop-building rail by devices which permit its adjustment lengthwise thereof. The function of the device is to cause the faller to make a sudden "dip" when the mule-carriage runs in, and thus cross-wind the yarn on the spindle, so that the regular contacted spirals or coils of the cop shall be firmly bound together. With this double incline the faller arm works in frictional contact, so that when the mule-carriage runs in, the faller will be caused to dip suddenly, so as to cross-wind the yarn, and thus bind the regular contacted spiral coils or layers of yarn firmly together.

In the accompanying drawing, forming part of this specification, Figure 1 is a side elevation of a portion of a self-acting spinning-mule—namely, the carriage-rails and part of the stationary frame. Fig. 2 is an enlarged cross-section on line *x x* of Fig. 1.

We have deemed it unnecessary to illustrate an entire spinning-mule, the parts omitted being of the ordinary construction found in self-acting mules.

Referring to the drawing, A indicates the carriage, and B the track on which it runs to and fro. C is the faller, which operates the wire-motion, (not shown;) and D, an arm or rod attached to the faller, and serving to vibrate it, as hereinafter explained.

E is the cop-building rail, fixed near and parallel to one of the rails of the carriage-track B, and attached thereto is a device, F, embodying our improvement. Said device is a metal block having a double-inclined face, *a a'*, the rear incline *a'* thereof being shorter or more abrupt than the other, to give a peculiar or sudden vibratory motion to the faller.

The device F is attached to the upper side of the rail E, with the longer incline *a* toward the mule-carriage. The means for attaching the device to the rail E are a cross-bolt, *c*, passing through the block F, a flat bar, *e*, which traverses the bottom of the rail E, and links *f*, which connect said bolt and bar, as shown.

The length of the bolt *c* and bar *e* considerably exceeds the width of the block F; and the bar *e* is also provided with slots lengthwise thereof, so that the lower ends of the links may be adjusted therein. These parts—to wit, bolt, bar, and links—enable the device *f* to be attached to rails of different widths, and to be adjusted thereon as required.

The lower end of the faller-arm D carries a friction-roller, *g*, which runs on the rail E as the mule-carriage reciprocates. When the carriage is run in, this roller rides over the face of block F, and when it passes the apex of the double incline it imparts a sudden dip or quick downward movement to the faller, which carries the yarn or thread down and up with corresponding rapidity, and thereby crosses it. The length of yarn thus cross-wound on or over the ordinary spiral layers or coils serves to bind different parts of the cop together, so that the latter is firmer and more dense than cops formed in the usual manner, and also has much greater tensile strength. It will hence retain its form when roughly handled, so that even if bent double it may be afterward shuttled and woven off, the chase or tapered portion of the cop clearing itself perfectly.

The cross-winding enables the use of tubes or bobbins to be entirely dispensed with in mule-spinning, the yarn being wound directly on the spindles, and hence the space usually occupied by such tubes or bobbins is utilized in the increased thickness of the sides of the cops, so that the latter will obviously contain a greater amount of yarn than cops made on tubes or bobbins, and having the same dimensions exteriorly.

The device whereby these results are attained is simple in construction and operation, and may be cheaply applied.

What we claim is—

In combination with the cop-building rail of a spinning-mule, the block F, having a double-inclined face, and devices for attaching the block adjustably to said rail, substantially as described.

The above specification of our invention signed by us this 4th day of April, A. D. 1878.

JOSEPH OGDEN.
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Witnesses:
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