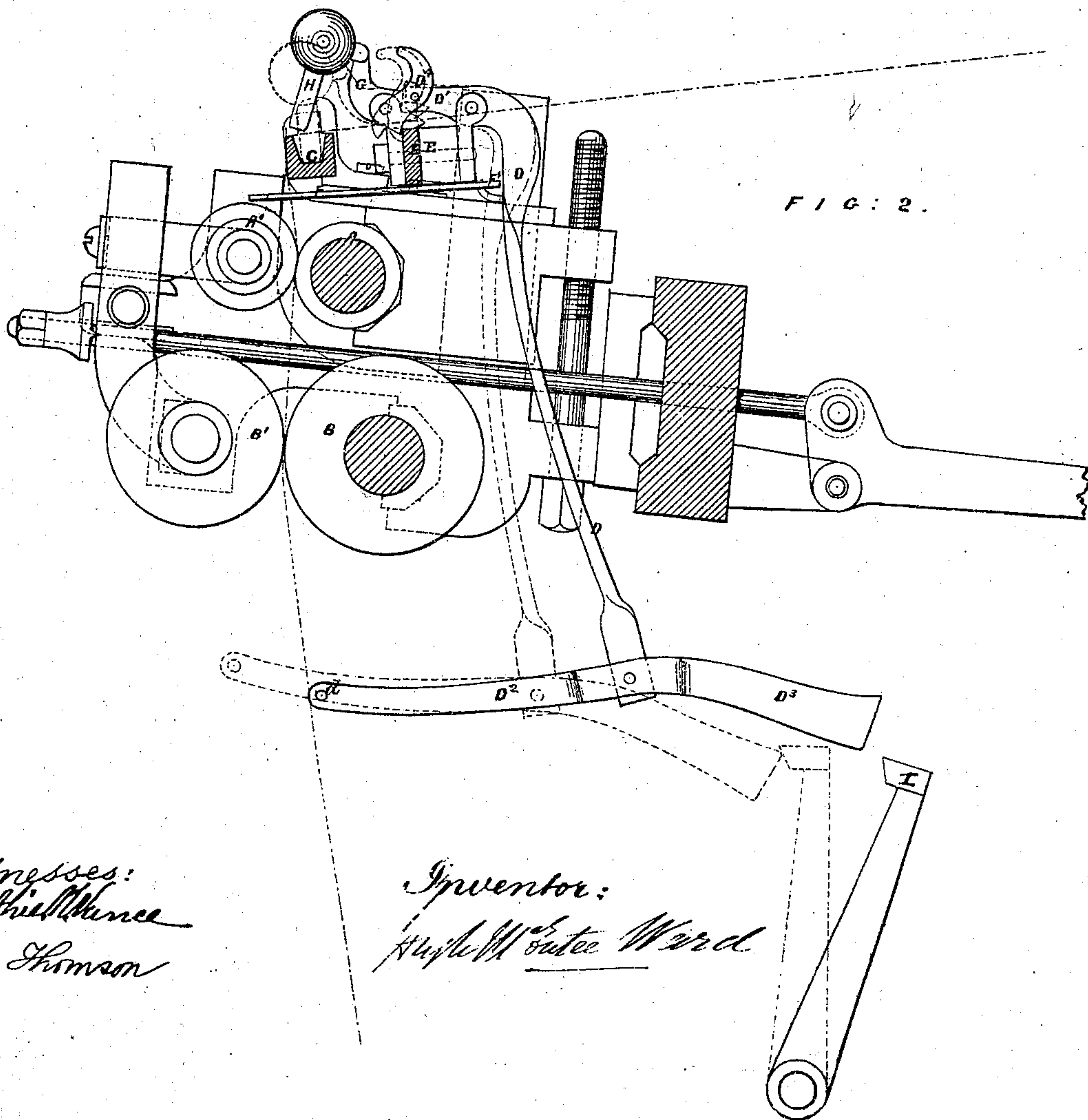
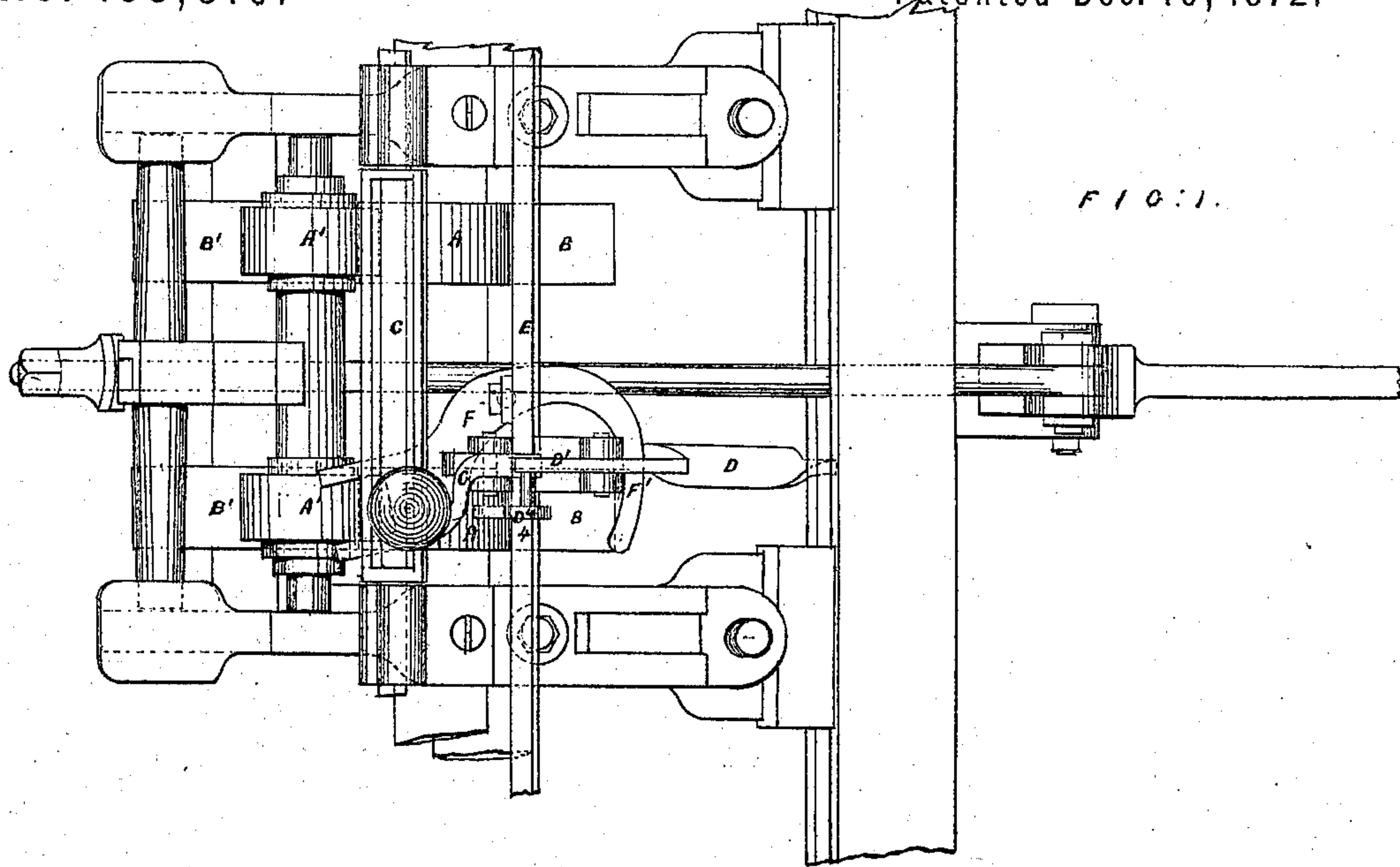


H. McE. WARD.
Spinning and Drawing Frames.
 No. 133,816. Patented Dec. 10, 1872.



Witnesses:
 Macaulay & Co.
 John Thomson

Inventor:
 H. McE. Ward

UNITED STATES PATENT OFFICE.

HUGH McENTEE WARD, OF LOOP BRIDGE MILLS, BALLYMACONAGHY,
IRELAND.

IMPROVEMENT IN SPINNING AND DRAWING FRAMES.

Specification forming part of Letters Patent No. 133,816, dated December 10, 1872.

To all whom it may concern:

Be it known that I, HUGH McENTEE WARD, of Loop Bridge Mills, Ballymaconaghy, in the county of Down, Ireland, have invented certain new and useful Improvements in Machinery for Spinning and Twisting Fibrous Substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is to stop the supply of sliver or material to be twisted or spun to the top or feed rollers when the sliver or thread breaks. To this end I provide for each pair of feed-rollers an arrangement of mechanism, which, on the breaking of the sliver or thread, will be set in action and will push the sliver out of the bite of the rollers, and will hold the broken end securely until the attendant pieces the broken thread or sliver and the mechanism is restored to its normal position. The invention consists in the construction and arrangement of devices, as hereinafter described.

In the accompanying drawing I have shown, in plan view at Figure 1, and in sectional elevation at Fig. 2, my improvements.

In these figures, A A' are the top or feed rollers, and B B' are the drawing or delivery rollers. C is the bar, which guides the rovings or slivers to the bite of the top or feed rollers. D is the pendent lever, (one for each pair of top rollers,) which is held in position by the twisted sliver or thread that is being spun. In rear of the guide-bar C I mount a fixed bar, E, parallel thereto, for the purpose of carrying a series of forks, F, one for each pair of feed-rollers. Between the prongs of these forks the slivers pass to the feed-rollers, and the space between the prongs is such as to allow of the slivers being traversed as usual over the rollers to distribute the wear over their surfaces. These forks are pivoted to the fixed bar so as to lie horizontally over the rollers and be free to rock to and fro. The forks are severally provided with a curved rear extension or tail-piece, F', which is connected to or embraced by an extension of the pendent lever D. This lever D is pivoted to and pendent from a bracket attached to the

back of the fixed bar E. The upper end of each of these pendent levers terminates in a curved finger, D¹, which bears upon the tail end of a cranked rock-lever, G, pivoted to one of a series of brackets attached to the front of the fixed bar E. This rock-lever G carries at its upper end a weighted presser-piece, H, which is made to drop into a groove formed in the guide-bar C, before mentioned, and under it (when the presser-piece is raised) the sliver passes to the feed-rollers. To the lower end of each pendent lever is attached an arm, D², carrying a pin or roller, d, at its outer end, over which the thread or sliver passes on its way to the flier. The pressure which the thread puts on this pin or roller serves to hold back the lower end of the pendent lever in the position shown by the drawn lines of Fig. 2, and keep its curved finger bearing upon the tail end of the rock-lever G, carrying the weight under which the sliver passes. The arm D² extends rearward and forms a stop, which is intended (when the breaking of a thread causes the lever to fall forward toward the dotted position of Fig. 2) to present itself to the ordinary rocking-bar I, and thus enable that bar to give a forward impetus to the pendent lever, whereby that lever will be caused to throw the fork F connected with it to one side, and thus move the sliver out of the bite of the feed-rollers. At the same time this motion of the pendent lever allows the rock-lever G to drop the weighted presser-piece H into the groove of the guide-bar C. The effect of this movement will be to hold the sliver firmly between the weight and the guide-bar, and to stop a further supply until the sliver is pieced and the mechanism is readjusted. In order the more effectually to stop the supply of sliver when the thread is broken, I mount on the extremity D¹ of the lever D the tumbling-catch D⁴, which, as the lever is thrown into the dotted position of Fig. 2, will catch onto the fixed bar E and retain the lever in the dotted position, at which time it will be clear of the weighted lever G.

In order to readjust the mechanism for the recommencement of the spinning operation, the attendant first lifts the tumbling-catch D⁴ off the bar E, and then pushes back the arm D², which causes the pendent lever D to

pull the fork F (between the prongs of which the sliver hangs) into the position shown by the drawn lines of Fig. 1, thus pushing the rove or sliver into the bite of the rollers, and the curved finger of the pendent lever D at the same time raises the weighted lever G. The attendant then pieces the thread, after which the operation of spinning goes on as before.

Having now set forth the nature of my invention of improvements in machinery for spinning or twisting flax, hemp, jute, and other fibrous substances, and explained the manner of carrying the same into effect, I wish it to be understood that

I claim—

1. The combination, with the pivoted vibrating fork F provided with the curved tail-piece

F', of the pivoted pendent lever D and the horizontal arms D² D³, as specified.

2. The combination of the tumbling-catch D⁴ with the levers D D¹ and bar E, as and for the purpose specified.

3. The combination of the weighted rock-lever G H, guide-bar C, fork F, lever D D¹, and arm D² D³, all arranged to operate as specified.

In witness whereof I, the said HUGH MC-ENTEE WARD, have hereunto set my hand and seal the sixth day of January, 1872.

HUGH MCENTEE WARD. [L. s.]

Witnesses:

MACARTHIE K. VANCE,
Belfast, Ireland.

JOHN THOMSON,
Belfast, Ireland.