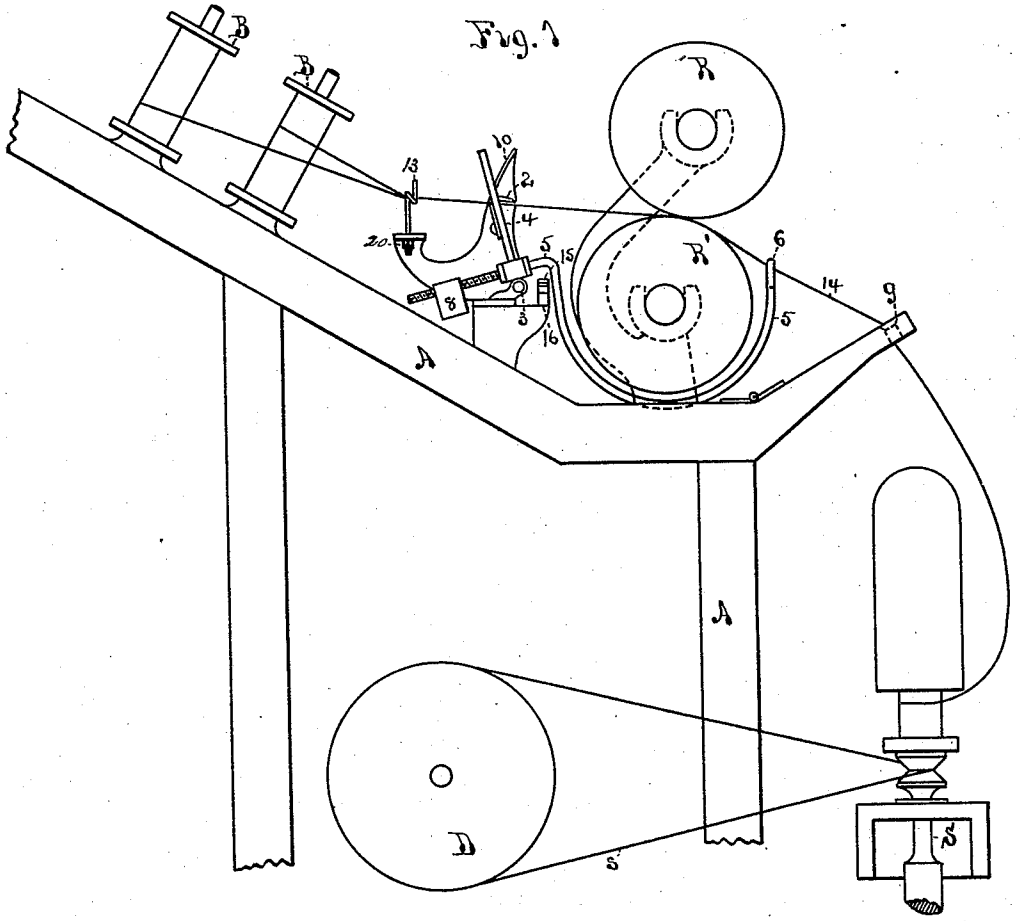
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W. E. WALSH.

CUT-OFF MECHANISM FOR SPINNING AND TWISTING MACHINES.

No. 455,521. Patented July 7, 1891.

Fig. 1



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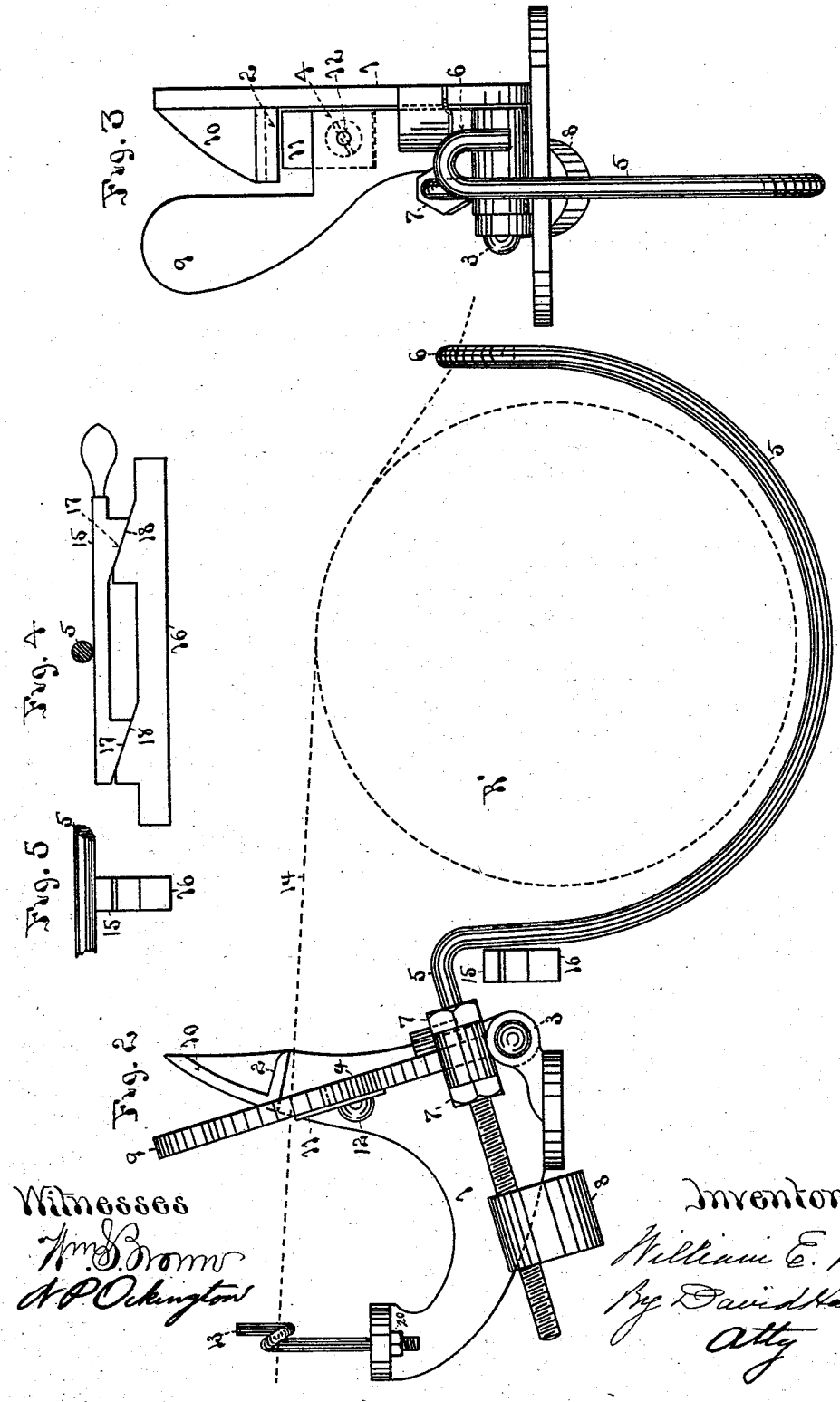
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UNITED STATES PATENT OFFICE.

WILLIAM E. WALSH, OF LOWELL, MASSACHUSETTS.

CUT-OFF MECHANISM FOR SPINNING AND TWISTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 455,521, dated July 7, 1891.

Application filed April 17, 1889. Serial No. 307,566. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. WALSH, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Cut-Off Mechanisms for Spinning and Twisting Machines, of which the following is a specification.

My invention relates to spinning and twisting machines; and it consists in certain new and useful constructions and combinations of the several parts relating to the cut-off mechanism for the yarns, substantially as hereinafter described and claimed.

In the drawings, Figure 1 represents an end view of a twisting-machine, showing the application of my invention. Fig. 2 is an enlarged view of a portion of the same for the purpose of showing its construction more clearly. Fig. 3 is a front side view of Fig. 2. Fig. 4 is a front side view of the apparatus for adjusting the mechanism for doffing, partly in section. Fig. 5 is an end view of the same.

A is the frame of the twisting-machine.

S is the spindle driven by the band *s* from the drum D in the usual manner.

g is a guide above the spindle, through which the thread passes.

R R′ are rollers, between which the threads pass from the bobbins B B to be twisted together by the action of the spindle.

When a thread breaks down in passing from the bobbins B B to the spindle, a large amount of waste is made unless some device can be used to check it, and improvements in this part of the device are the object of my invention.

Between the bobbins B B and the rollers R R′, I attach to the frame of the machine a stand 1, which has a shelf 2 projecting horizontally from its upper part and presenting a flat face on its bottom surface. Below this shelf 2 I pivot to the stand by the pivot 3, passing through lugs on the stand, the cut-off plate 4 in such position as to be capable of having its free end swing against the lower face of the shelf 2 and cut off the threads when brought into action by the breaking of one of them. Through the cut-off plate 4 I pass the wire arm 5, carry it around underneath the lower roller R′, and provide it with an eye 6 on its end, which projects upward between the rollers R R′ and the guide *g*. This wire arm is attached to the cut-off plate 4 by means of two check-nuts 7 7, screwed upon a thread cut on the arm, so that the position of the arm may be shifted in the cut-off plate 4, both to alter the position of the eye 6 at its outer end to bring it into the proper alignment between the rollers R R′ and the guide *g* and to balance the cut-off plate properly on its pivot, as may be desirable. On the same thread of the arm as the nuts is screwed the weight 8, which can be adjusted in or out to counterbalance the wire arm properly to bring it to the delicate adjustment necessary to bring the cut-off plate into operation when the thread breaks. The cut-off plate is provided with a thumb-piece 9, projecting above it, in order to be readily accessible to the operator in pushing the plate backward to pass the thread through when piecing up the ends.

Above the shelf 2 is a flange 10, attached to the stand 1, which is made inclined or curved on its upper edge, as shown, so as to form a convenient V-shaped opening between itself and the thumb-piece 9, into which the thread may be inserted in piecing up to bring it into position under the shelf 2 over the cut-off plate. The cut-off plate is provided with a blade 11, of steel or other suitable material, screwed to its upper side by set-screw 12 in position to form the cutting-edge which is to act against the shelf 2 and arrest and cut off the threads. This blade may, therefore, be renewed from time to time, when worn, cheaply and easily without disturbing the rest of the mechanism.

Between the bobbins B B and the cut-off plate is located a guide 13, screwed into the stand 1, so as to be adjusted up and down by screwing it through the stand more or less to bring the thread into proper alignment over the top of the lower roller R′, so that it shall just pass between the small space left between the blade 11 and shelf 2, when the cut-off plate is tipped back, without dragging or wearing upon either the blade or shelf while they are in that position. This guide is secured in position by the check-nut 20.

The dotted line 14, Fig. 2, shows the operation of the parts. The double thread passes through the guide 13, over the lower roller R′,

and through the eye 6 at the end of arm 5 and through the guide *g*, which is slightly above the eye 6, so as to lift on the eye and keep the parts operating in the position shown. When one or both of the threads break, the strength of the remaining one is insufficient to sustain the arm 5 in its upward position, and it falls down and brings the blade 11 of the cut-off plate against the shelf 2, and cuts off the thread at that point because the rollers R R′ draw on the ends of the threads, causing the blade 11 to nip tighter to the shelf 2.

When the bobbin is to be doffed from the spindle S, it becomes necessary to keep the cut-off plate out of action, and this is accomplished by the sliding bar 15, which works on a bar 16, attached to the frame of the machine underneath the arm 5. The lower face of the bar 15 is provided with inclines 17, which work on corresponding inclines 18 on bar 16, Fig. 4, so that as bar 15 is slid along endwise it rises up under the wire arm 5 and holds it in the position shown in Fig. 2. This bar enables the doffer when the bobbin is doffed to hold open one or more of the arms 5, if there be more than one in the frame, because the bar 15 may be made long enough to reach under more than one of the arms 5, if desired, and a single motion will throw the cut-off out of action.

The wire arm 5 may be adjusted in the cut-off plate 4 so as to be properly balanced by means of the check-nuts 7 7, instead of by the weight 8, if desired.

What I claim as new and of my invention is—

1. The combination, in a twisting-machine, of the guide *g*, rollers R R′, shelf 2, cut-off plate 4, with its cutting-edge pivoted to the frame and operating with said shelf, as described, and provided with the arm 5 and its eye 6, reaching around said roller R′ to a point between the latter and said guide, the lifter-bar 15, provided with inclines 17 17, and the corresponding inclines 18 18, attached to the frame of the machine, arranged to raise said arm and hold the cut-off plate out of engagement with the shelf 2, substantially as described.

2. The combination, in a twisting-machine, of shelf 2, provided with the inclined wing 10, projecting upward from it, with the pivoted cut-off plate 4, provided with the thumb-piece 9, projecting upward opposite to said inclined wing and forming with the latter a guiding slot or opening for the introduction of the thread through the same and between the shelf 2 and its cut-off plate, substantially as described.

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Witnesses:
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