

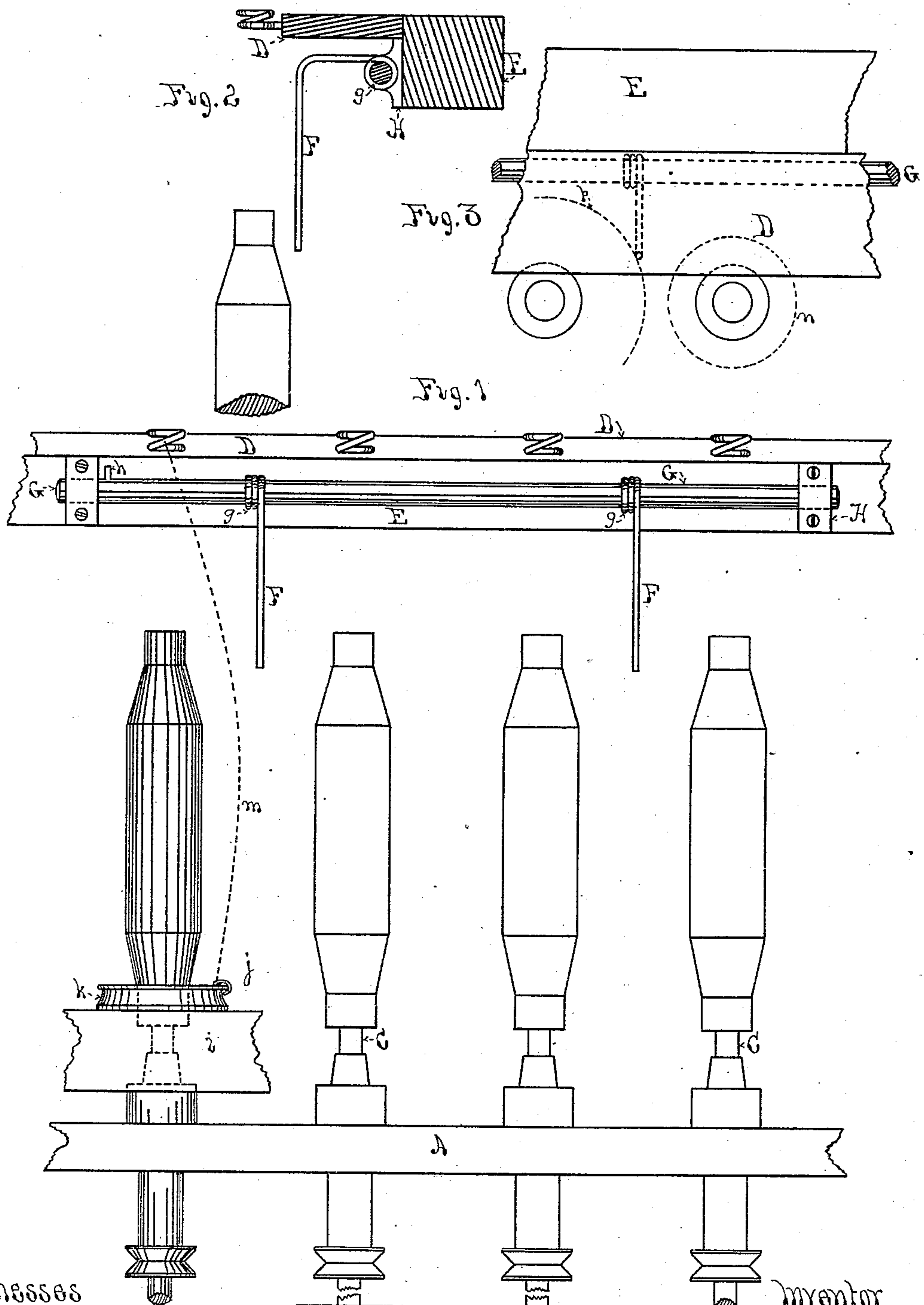
(No Model.)

W. A. WRIGHT.

THREAD GUARD FOR SPINNING MACHINES.

No. 259,627.

Patented June 13, 1882.



Witnesses

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WILLIAM A. WRIGHT, OF LOWELL, MASSACHUSETTS.

THREAD-GUARD FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 259,627, dated June 13, 1882.

Application filed March 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, W. A. WRIGHT, of the city of Lowell, county of Middlesex, and State of Massachusetts, have invented an Improvement in Thread-Guards for Spinning-Machines, of which the following is a specification.

My improvement relates to guards to prevent a thread being spun upon one ring-spindle from breaking down those being spun on adjacent spindles when it is spun but not laid into the cop.

The objects of my invention are to provide a thread-guard which shall prevent snarls or kinks formed in the thread being spun upon one spindle from breaking the thread being spun upon adjacent spindles, and to provide a thread-guard that can be readily swung out of the way to permit of the removal of the ring-rail for repairs, and one which shall not be in the way of the operator during the process of doffing. I accomplish these objects by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is an end elevation, partly in section. Fig. 3 is a plan showing my device attached to a spinning-frame.

A is the bolster-rail of a spinning-frame. B is the step-rail. C C are ring-spindles. D is the thread-board, into which the guide-eyes through which the thread passes on its way to the spindle are placed. E is the thread-board rail, to which the thread-boards are attached. F F are the guards. G is the guard rock-shaft, to which the guards are attached by spiral coil *g*, formed in their ends; H, the supporting bearing that sustains the guard rock-shaft. This bearing is attached to the thread-board rail by screws, as shown.

h is a stop to limit the movements of the rock-shaft. This stop consists of a pin so placed that it comes into contact with the thread-board rail or a lug upon the bearing supporting the shaft, so that the downward and forward movement of the thread-guard will be checked as the shaft is rotated when the guard is about perpendicular.

The guards are made of wire extending out from the rock-shaft until near the ring-rail *i*, when they are bent down perpendicularly, ending on a plane below the top of the bobbins,

when the latter are in place on the spindles, just above the highest point reached by the ring-rail when on its longest traverse, and therefore not extending much, if any, below the top of the cop being formed upon the bobbin.

When from any cause the thread being spun by a spindle becomes broken it no longer passes through the ring-traveler, and therefore is no longer laid upon the bobbin by the action of the ring and ring-rail during its traverse to form a cop; but as the breaking of the thread does not stop the delivery of the roving to be spun, there will continue to fall down a yarn of roving upon the cop already spun, the loose fibers of which will catch upon those of the thread on the cop, and a new thread will be begun, which as it is formed above the bobbin, being relieved of the tension given a thread by passing through the ring-traveler, and not being wound upon the bobbin, will double itself by reason of the twist put into it into kinks, which, through the action of the centrifugal force generated by the rapid rotation of the spindle, will be caused to fly out radially and horizontally from the head of the bobbin, striking against the threads being spun on adjacent spindles, breaking them. To do this the kinks have to reach more than half-way over to the adjacent spindles, because upon the plane at which they gather about the head of the bobbin the adjacent threads being spun are, as will be seen by dotted line on Fig. 1, circling around their spindles in circles having much less radius than half the distance between the spindles. The guards are, however, sufficiently long to prevent the kinks formed from breaking the threads being spun on adjacent spindles, if they extend downward to a point slightly above the highest point reached by the ring-rail, because the ring-rail does not rise to the horizontal plane of the top of the cop. If the pendent thread-guard is not extended below the horizontal plane reached by the ring-rail at its highest point of traverse, it will not be in the way of the doffer who removes the bobbins from the spindles when full, because when seized by him below the cop his hands will not come into contact with the guards, and as his hands are raised the bobbin can be brought forward away from the

guards because of its larger bore near its base. If the thread-guard be attached to the ring or bolster rail, as has sometimes heretofore been done, or permitted to extend between the bobbins their entire length, it is considerably in the doffer's way and delays him, because he must exercise greater care to prevent bringing his hands into contact with it. Any such delay shortens the time the frame can be actually run, and is therefore very objectionable.

The guards are fastened to the rock-shaft by a spiral formed on the end of the wire which composes them, which clutches the rock-shaft when slipped over it. They may, however, be attached in other convenient manner.

The rock-shaft is fitted into the supporting-bearings sufficiently tight so that it will remain in whatever position it is placed, which closeness of fit may be made adjustable by having the bearing compressed upon the shaft by a binding-screw, and as the rock-shaft does not have to be oscillated in its bearings very often, it is not difficult to preserve the required closeness of fit. When, however, it is necessary to remove the ring-rail or obtain access to any part of the mechanism to which the thread-guard renders access difficult, the operator can with a single movement rock the shaft downward, which will throw all the guards under and behind the thread-board rail, out of the way; and when it is desired to

return them a single movement made by the operator oscillates the rock-shaft back and brings all the guards instantly into place.

I have discovered that it is not necessary to place a guard in each space between the spindles to prevent the kinks formed by one spindle from breaking down the threads being spun on adjacent spindles, but only to put a guard in each alternate space, and that it is not necessary to put the guards in direct horizontal line with the spindles, but that they may be placed on a line considerably back of the line of the center of the spindles, in a position much less in the way of the operator when engaged in doffing.

I am aware that thread-guards constructed for the general purpose herein described have before been made, and I do not therefore claim such a device, broadly; but

What I do claim as new, and desire to secure by Letters Patent, is—

In a ring-spinning machine, the combination of the thread-board rail E, spindles C, and guards F with the rock-shaft G, which bears the guards, and is held by frictional contact in its bearings in whatever position of oscillation it is placed, substantially as described.

WILLIAM A. WRIGHT.

Witnesses:

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