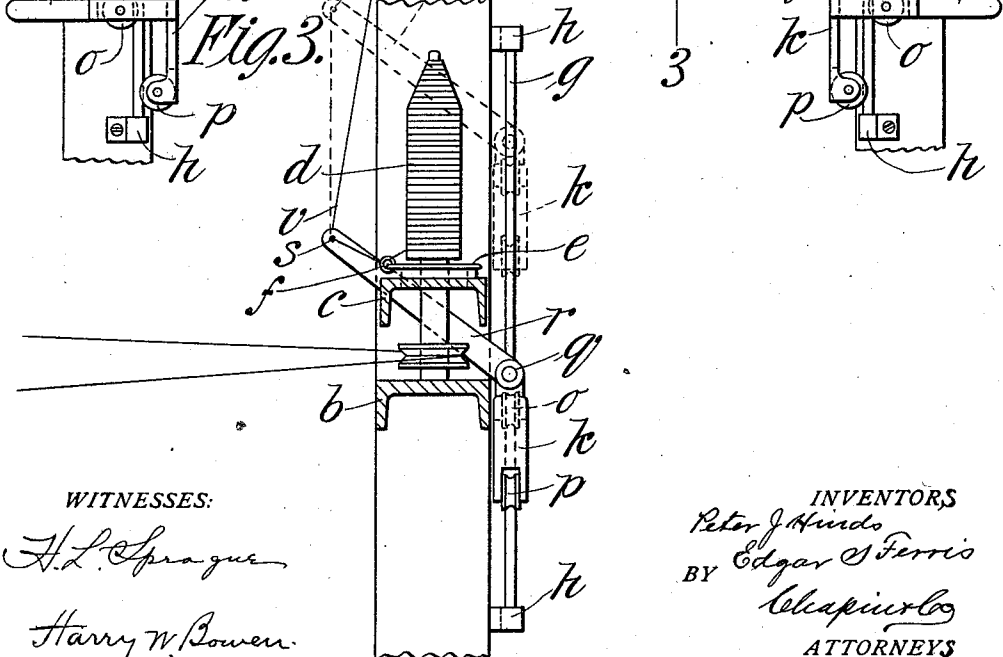
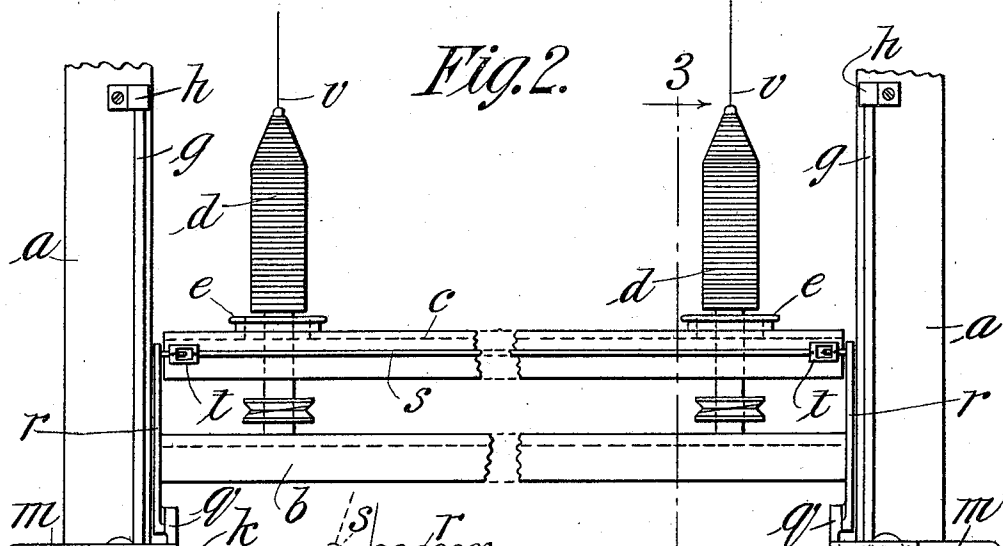
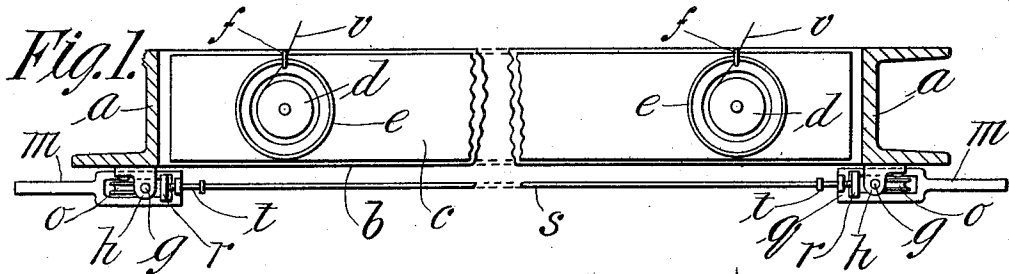


P. J. HINDS & E. S. FERRIS.
 DOPPING WIRE.
 APPLICATION FILED MAR. 18, 1911.

1,000,909.

Patented Aug. 15, 1911.



WITNESSES:
H. L. Sprague
Harry W. Bowen

INVENTORS
Peter J. Hinds
Edgar S. Ferris
 BY *Chapin & Co.*
 ATTORNEYS

UNITED STATES PATENT OFFICE.

PETER J. HINDS AND EDGAR S. FERRIS, OF HOLYOKE, MASSACHUSETTS, ASSIGNORS
OF ONE-THIRD TO ARTHUR J. RICHARDS, OF HOLYOKE, MASSACHUSETTS.

DOFFING-WIRE.

1,000,909.

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To all whom it may concern:

Be it known that we, PETER J. HINDS and EDGAR S. FERRIS, citizens of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Doffing-Wires, of which the following is a specification.

This invention relates broadly to spinning frames, and specifically to the construction and arrangement of a doffer device so applied to the frame that prior to doffing the full bobbins all the strands of yarn leading from the feed-rolls down to the rings may be held back of, and away from, the bobbins out of the way of the operator.

In the drawings forming part of this application,—Figure 1 is a sectional plan view of a frame looking down on the ring-rail and showing the doffing apparatus applied thereto. Fig. 2 is a front elevation of the parts shown in Fig. 1, the ring-rail being shown at a point somewhat lower than its lowest position would be during the ordinary traverse motion imparted thereto in the usual manner. This view also shows the doffing apparatus applied thereto, in front elevation. Fig. 3 is a sectional elevation on the line 3—3, Fig. 2, and looking in the direction of the arrow, showing the ring-rail in the same position as in Fig. 2, but showing the doffing device in two positions,—one in full lines and the other in dotted lines.

Referring to the drawings, the doffing device is applied to a spinning-frame as follows: The vertical end-frame is indicated by *a*, the bolster-rail by *b*, the ring-rail by *c*, and the bobbins by *d*. The ring-rail *c* is provided with the usual ring *e* and traveler *f*. The above mentioned parts are shown in a more or less conventional manner.

On each of the end-frames *a* is located a rod *g* parallel with the front of the frame and spaced therefrom, being rigidly secured thereto in any suitable way as by the clips *h*. Mounted on each of the rods *g* is a carriage *k* extending longitudinally of the rods and which is provided with an angularly offset forked arm *m*, through which arms the rods *g* extend. In the forked part of this arm *m* is mounted a grooved roll *o* which bears against one side of the rod, and in the lower end of the carriage *k* is another grooved roll *p* which bears against the opposite side of the rod. At the upper end of the car-

riage *k*, say at the point *q*, an arm *r* is pivotally secured to the carriage to swing at right angles to the ring-rail *c*, and in the upper ends of the arms *r* is secured a wire *s* extending from one of said arms *r* to the other, lengthwise of the frame. Preferably this wire *s* is secured, by means of one or more turn-buckles *t*, whereby it may be kept taut, and the strain of this wire tends to hold the rolls *o* and *p*, respectively, tightly in contact with the rods *g*.

While the bobbins *d* are being filled with yarn, the doffing device remains in the position shown in Fig. 2, that is in its lowermost position, where the wire will not in any way interfere with any of the usual operations of piecing up ends, etc.: but when the bobbins are full, power is shut off from the frame when the ring-rail *c* is at its lowest point, whereupon, by means well known in the art and common to ring-spinning frames, the ring-rail may be lowered by the operative to a point a little below its normally low position, as shown in Figs. 2 and 3, and the drum is then given a few turns by hand to rotate the spindles and wind the yarn *v* either around the base of the bobbin, or around the spindle close to the base of the bobbin, in the usual way. At this point, an operative at each end of the frame, grasping the arm *m* of each carriage *k*, moves the carriages upward on the rods *g* about to the position shown in Fig. 3, whereupon the arms *r* carrying the wire *s*, are swung back over the top of the spindle, forcing all the yarns backward away from the spindles, as shown in dotted lines in Fig. 3, and the carriages *k* are then again run down the rods to the point shown in this Fig. 3, leaving a clear field for the operations of the doffer. As the latter moves along, removing the bobbins, one after the other, from the spindles, the yarn is broken between the bobbin and the spindle around which, as stated, a few turns of the yarn have been taken. The ends of the yarn thus remaining twined about the spindle, it is only necessary to place new bobbins or cops thereon and restore the ring-rail to its normal low position, by moving the wire *s* reversely to the manner described above, to bring it back to the position shown in Fig. 2, whereupon the frame may be started up and the yarn will then run onto the bobbins or cops in the usual way until time for another

doffing operation, when the process above described is repeated. Thus during the doffing operation with the yarns all held back away from the bobbins, the operative never catches the yarn between his hand and the bobbin, whereby it would be broken between the feed-roll and the traveler when he doffs the bobbin, and thus the piecing up of many broken ends is avoided at each doffing operation.

What we claim, is:—

1. In combination with the spindles of a spinning frame, two separated carriages vertically movable on the front of the frame, and a wire subtended between said carriages, and means for supporting said wire on each carriage to adapt it to be positioned either in front of, or behind the spindles, and in

either position to be moved by the carriage lengthwise of the spindles. 20

2. In a spinning frame provided with suitable spindles, two carriages mounted on the frame and vertically movable thereon, an arm on each carriage having a swinging movement across the line of the spindles in the frame, and a member extending from one of said swinging arms to the other, whereby by the movement of said arms, said member may be swung against the yarns above the spindles to hold them away from the bobbins on the spindles. 25 30

PETER J. HINDS.
EDGAR S. FERRIS.

Witnesses:

HARRY W. BOWEN,
A. J. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."