

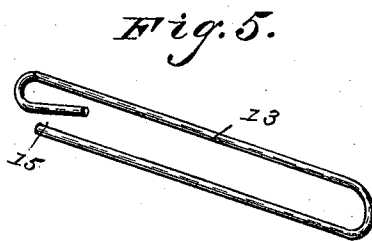
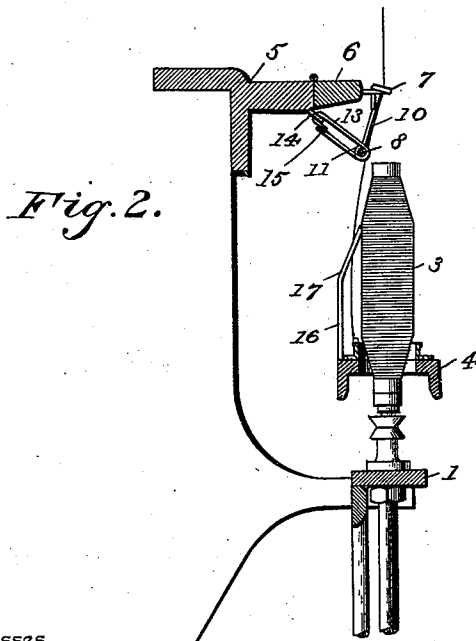
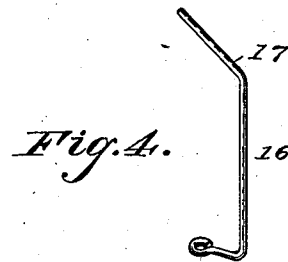
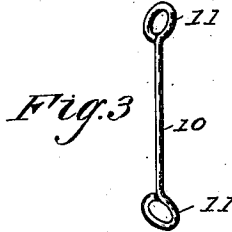
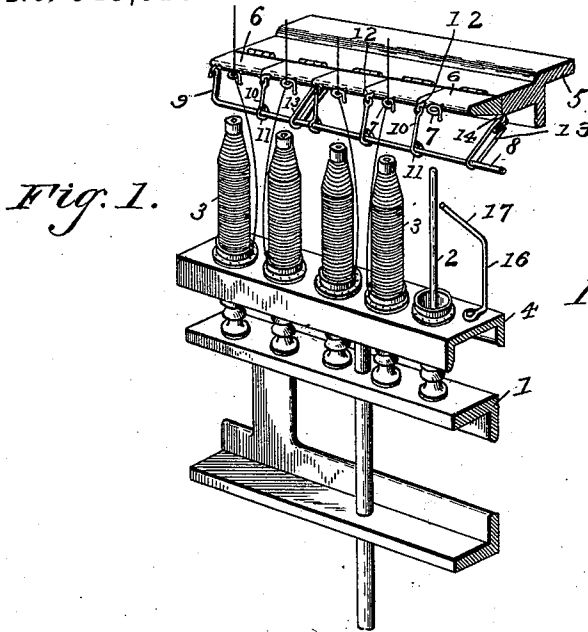
(No Model.)

M. LARNER.

YARN PROTECTOR ATTACHMENT FOR SPINNING MACHINES.

No. 545,510.

Patented Sept. 3, 1895.



Witnesses

Julius Ulke, Jr.
S. P. Malhaupt.

By his Attorneys.

Matthias Larner,

Cash & Co.

Inventor

UNITED STATES PATENT OFFICE.

MATTHIAS LARNER, OF MILLTOWN, CANADA.

YARN-PROTECTOR ATTACHMENT FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 545,510, dated September 3, 1895.

Application filed November 27, 1894. Serial No. 530,154. (No model.)

To all whom it may concern:

Be it known that I, MATTHIAS LARNER, a citizen of the United States, residing at Milltown, in the county of Charlott and Province of New Brunswick, Canada, have invented a new and useful Yarn-Protector Attachment for Spinning-Frames, of which the following is a specification.

This invention relates to yarn-protector attachments for spinning-frames adapted to be used in connection with that class of spinning-frames employing movable ring-rails working up and down over the bobbins.

To this end the main and primary object of the present invention is to provide a yarn-protector for spinning-frames having simple and efficient means for protecting the yarn from breakage as the ring-rail moves up and down as the spinning progresses on the bobbins, and in the attainment of this object the protector also serves as a tension-adjuster for the yarn to maintain the same as nearly as possible at the same tension at the top as well as at the bottom of the bobbins, and, furthermore, to provide for taking the "balloon" out of the yarn when the ring-rail is at the bottom of the bobbins and thereby dispensing with the necessity of heavy travelers which commonly cause the yarn to break very often and render the same quite uneven.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a portion of an ordinary spinning-frame equipped with the herein-described improvements. Fig. 2 is a transverse sectional view of the construction shown in Fig. 1, showing the relative position of the parts of the attachment. Fig. 3 is a detail in perspective of one of the hanger-links for the longitudinal protector-wire. Fig. 4 is a similar view of one of the wire guard-loops. Fig. 5 is a similar view of the wire-adjusting arm that is carried by the ring-rail of the spinning-frame.

Referring to the accompanying drawings, 1 designates an ordinary spindle-rail of a spinning-frame, from which arises the series

of bobbin-spindles 2, on which are mounted the usual bobbins 3, and arranged to work above the spindle-rail over the bobbins, in the usual way, is the vertically-movable ring-rail 4, that subserves its usual function. Arranged above the spindles 2 in the ordinary location is the longitudinal guide-bar 5, at the front edge of which are arranged the hinged blocks 6, in the outer edges of which are fitted the ordinary thread-guides 7 to receive the yarn or thread of the bobbins that are disposed immediately therebelow, and in the present invention a longitudinal protector-wire 8 is loosely arranged behind the yarn or threads below the thread-guides and above the spindles. The said protector-wire 8 extends the entire length of the spinning-frame according to the number of spindles, and may be used in connection with any number of spindles desired. The said wire 8 is preferably provided at its point of connection with the guide-bar 5 with an angularly-disposed hanger portion 9, loosely connected to the front rail of the guide-bar 5, in order to allow the protector-wire to swing below and under the said guide-bar, as will be readily understood. At intervals along the front rail of the guide-bar 5, consisting of the usual hinged blocks 6, carrying the thread-guides, are arranged the wire hanger-links 10. The wire hanger-links 10 are provided at both ends with the eyes 11, and the upper ends of said hanger-links are loosely connected to the screw-eyes 12, secured to the guide-bar 5 at points between the thread-guides, and the upper suspended ends of said hanger-links are adapted to be arranged substantially in longitudinal alignment with said thread-guides, in order that the said hanger-links will normally hang straight up and down in a position that will support the longitudinal protector-wire 8 directly against the yarn or thread above the upper ends of the bobbins or spindles, it being understood that the eyes 11, at the lower ends of said hanger-links 10, receive the longitudinal protector-wire.

At points alternating with the wire hanger-links 10 are arranged self-adjusting wire guard-loops 13 that are loosely connected at one end to the screw-eyes 14, secured to the under side of the guide-bar 5, back from the

front edge thereof. The said wire guard-loops 13 essentially consist of a single length of wire doubled upon itself at opposite ends and the ends of said wire are left unconnected to form entrance-spaces 15 at the inner upper ends of the loops to allow the wire 8 to be readily placed within the loops or removed therefrom when necessary. By reason of the disposition of the guard-loops 13 it will be obvious that the same prevent the wire 8 from being adjusted or drawn too far to the front by the spinner when working over the bobbins, while at the same time allowing the wire to be freely adjusted back under the guide-bar 5 at the proper time. Normally the wire 8 hangs suspended directly in rear of and against the yarn or thread when the ring-rail 4 is in its lowered position at the bottom of the bobbins, and in this position the wire 8 serves to take the balloon out of the yarn or thread and also keeps the same at the proper tension without the use of extra travelers, but when the ring-rail rises to the upper ends of the bobbin a shifting-arm 16 is carried against the wire 8.

The shifting-arm 16 is attached at its lower end to the top of the rail 4 and is provided with an upper angled end 17 that is adapted to be carried against the wire 8, so that as the ring-rail rises the said wire will be automatically shifted back under the guide-bar and away from the yarn or threads, and this is necessary, inasmuch as when the rail is in its elevated position the yarn is at its greatest tension and does not need extra tension devices for the protector-wire 8 to be used in connection therewith, and by this arrangement the yarn or threads are maintained at as even a tension as possible during the operation of spinning.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what

is claimed, and desired to be secured by Letters Patent, is—

1. In an attachment of the class described, the combination with the guide bar, the spindles, and the ring-rail of a spinning frame; of a longitudinal protector wire loosely hung beneath the guide bar above the upper ends of the spindles, and an arm attached to the ring-rail and provided with an upper angled end to be carried against said protector wire to shift the position of the latter, substantially as set forth.

2. In an attachment of the class described, the combination with the guide bar, spindles, and ring-rail of a spinning frame, of a protector wire loosely suspended from the guide bar of the spinning frame above the spindles, and a shifting arm attached to the ring rail of the spinning frame for shifting the position of the wire by the movement of said rail, substantially as set forth.

3. In an attachment of the class described, the combination with the guide bar, bobbin spindles and ring rail of a spinning frame; of a series of wire hanger links loosely suspended from the guide bar between the thread guides thereof, a series of wire guard loops alternating with said hanger links and loosely connected at their upper ends to the under side of said guide bar in rear of the hanger links, a longitudinal protector wire strung through said guard loops and hanger links, and suspended thereby at one side of the yarn or thread of the bobbins above the latter, and a shifting arm attached to the ring rail and provided with an upper angled end to be carried against said protector wire, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MATTHIAS LARNER.

Witnesses:

GEORGE M. HANSON,
E. B. HARVEY.