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SPINNING MACHINE

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Fig. 2.

Fig. 3.

Fig. 1.

WITNESS

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SPINNING MACHINE.

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The object of this invention is to afford provision for readily and quickly securing the end of the thread or yarn preliminary to its being wound on a spool or other core in the spinning or kindred process. At present the yarn or thread is secured either by the attendant forming several turns of it around the spool or piecing it to a fragment of the thread or yarn left wound on the spool when the same was previously unwound. In either case there is the frequent trouble that the securing is not effective and the yarn slips so that the winding is not started properly it at all; besides, there is the trouble that frequently the securing is rendered difficult if not impossible by the presence of parts of the machine which are in the way, as when the machine stops with the traveller ring around the upper head or end of the spool.

According to this invention, instead of securing the yarn to the spool or other core, I provide for securing it to the spindle by bifurcating the upper end of the latter so as to receive the yarn or thread. This part of the spindle is always accessible, and by securing the yarn or thread to the spindle by the use of a bifurcation entering from the upper end of the spindle the attendant can accomplish the securing with the greatest celerity. This bifurcation may be such as to clinch the thread or yarn or the jaw or slit it affords may be too wide for that purpose, in which case after the yarn or thread is introduced into the jaw it may be formed in a hitch around the spindle end.

The drawing shows, in

Fig. 1 a side elevation of a spinning unit embodying the invention;

Fig. 2, an upper end elevation of the spindle; and

Fig. 3, a modification of the invention.

The invention is shown, by way of example only, in connection with that type of spinning unit in which the rotary yarn-guiding device as well as the spindle remains at a constant elevation and hence distance from the upper yarn guide and the spool or other core for the windings of the package being formed is reciprocated up and down.

The spindle-rail 1; bolster 2 secured therein; spindle 3 journaled in the bolster and having the driving whirl 4, the collar 5 secured on the spindle and having the upstanding cup 6 vertically slotted at opposite sides, as at 6^a; the disk 7, affording by the centrifugally actuated grips 8 mounted loosely thereon, means to support and impart rotary movement to the spool or other core 9 loosely fitted onto the spindle, the same having means as the rod 10 by which to reciprocate it, and consequently said core, vertically; the rotary yarn-guiding device 11, here comprising a ring 12 loosely mounted on the top of the cup and having a thread-guide proper 13, such device being subject to the adjustable fixed brake strap 14; and the upper fixed yarn-guiding device 15, are or may be all the same as in a type of spinning unit now well known and above referred to.

The spindle constantly projects above the spool when the latter is properly mounted thereon.

In Figs. 1 and 2 the upper end of the spindle is provided with a bifurcation 16 which enters from the end of the spindle and extends downwardly a suitable distance, its mouth or upper end being flared somewhat, as at 16^a. This bifurcation is of such width in this form as to clinch the yarn or thread A when the latter is introduced into the same as shown in Fig. 1 and on engaging the yarn or thread in the thread guide 13 preparatory to the spinning operation.

In Fig. 3 the bifurcation is formed by providing the spindle with a pair of upstanding spaced pins 17 at its upper end, preferably round in cross-section and having rounded free ends. These are mounted in place by boring holes into the end of the spindle proper and driving the pins thereinto.

In any case the yarn or thread can be entered into the bifurcation by the attendant and once the spindle is started rotating a hitch will form around the spindle thus to obtain a hold on the end of the yarn that will be effective for starting the winding on the spool.

It will be apparent that the attendant can by this invention effect the securing of the thread or yarn with the greatest facility and with assurance that it will always be securely held and also without undue wastage of the yarn or thread.

Bifurcating the spindle from its extremity is calculated both to increase the facility of hitching the yarn to the spindle and avoid

notching or recessing the same at points which might catch and break the yarn, as between the fixed and rotary guide.

Having thus fully described my invention, what I claim is:

1. The combination of supporting means, a spindle projecting therefrom and journaled therein, a core member penetrated by and mounted on and rotative with the projecting portion of the spindle, a yarn-guide offset from the free end of the spindle, a yarn-guide rotative around the core, means to effect relative reciprocation lengthwise of the spindle as between the same and the latter yarn-guide, said spindle having its free end constantly projecting from the latter yarn-guide and being formed with means to secure the yarn preparatory to the winding of the yarn on said core member.

2. The combination of supporting means, a spindle projecting therefrom and journaled therein, a core member penetrated by and mounted on and rotative with the projecting portion of the spindle, a yarn-guide offset from the free end of the spindle, a yarn-guide rotative around the core, means to effect relative reciprocation lengthwise of the spindle as between the same and the latter yarn-guide, said spindle having its free end constantly projecting from the latter yarn-guide and such end bifurcated and adapted to receive the yarn in securing the same to the spindle preparatory to the winding of the yarn on said core member.

3. The combination of supporting means, a spindle projecting therefrom and journaled therein, a core member penetrated by and mounted on and rotative with the projecting portion of the spindle, a yarn-guide offset from the free end of the spindle, a yarn-guide rotative around the core, means to effect relative reciprocation lengthwise of the spindle as between the same and the latter yarn-guide, said spindle having its free end constantly projecting from the latter yarn-guide and such end bifurcated from its extremity and adapted to receive the yarn in securing the same to the spindle.

In testimony whereof I affix my signature.

ROBERT BARBOUR.