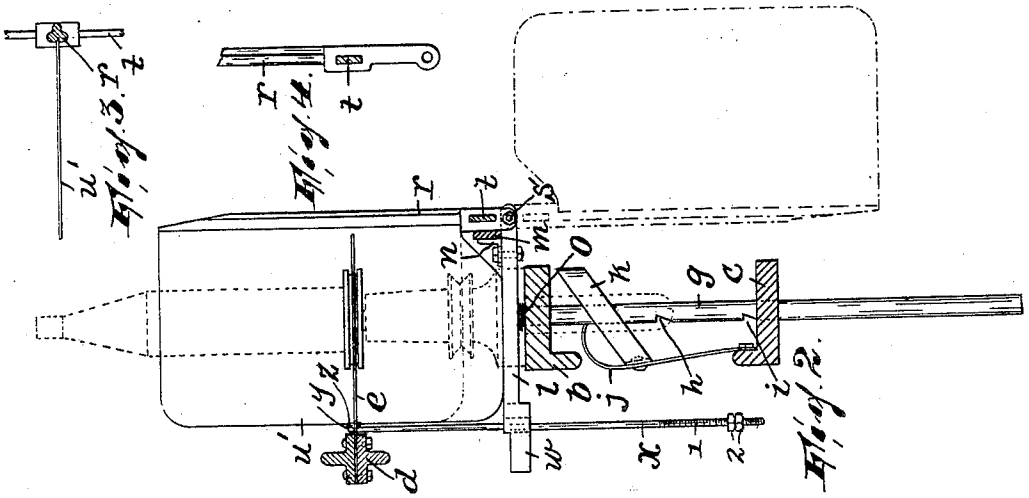
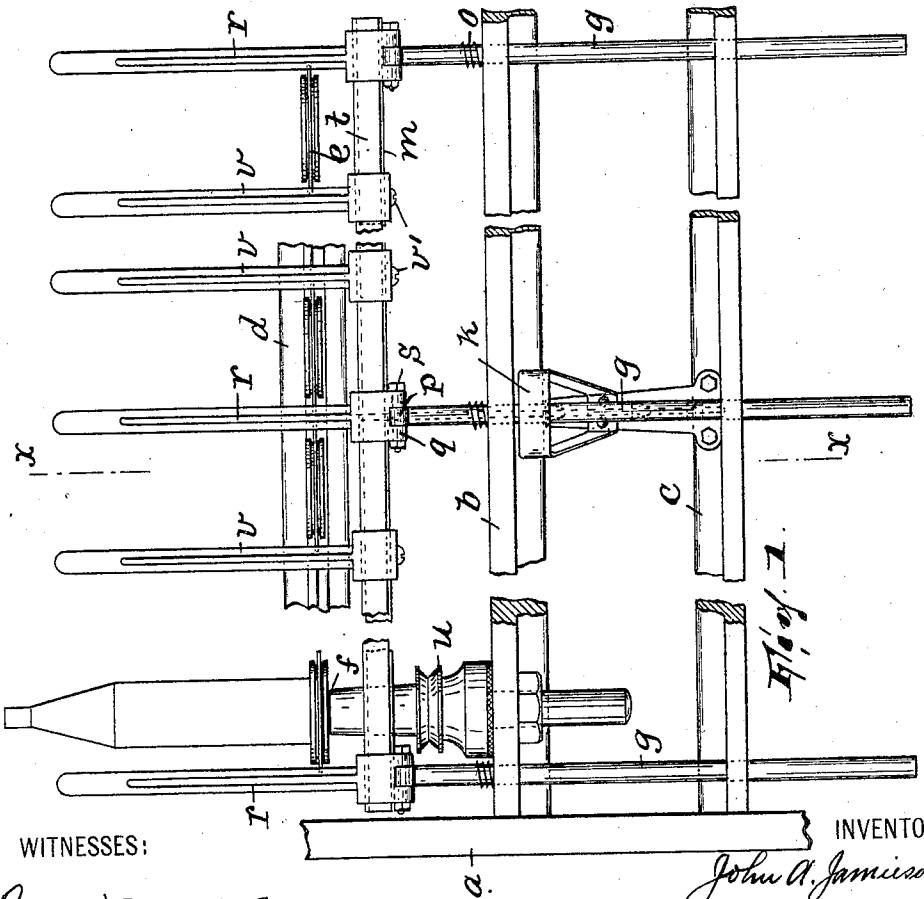
No. 828,661. PATENTED AUG. 14, 1906.

J. A. JAMIESON.

SEPARATOR FOR TWISTING MACHINES AND THE LIKE.

APPLICATION FILED MAR. 2, 1905.





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SEPARATOR FOR TWISTING-MACHINES AND THE LIKE.

No. 828,661. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed March 2, 1905. Serial No. 248,048.

To all whom it may concern:

Be it known that I, JOHN A. JAMIESON, a subject of the King of Great Britain, residing in Harrison, Hudson county, and State of New Jersey, have invented certain new and useful Improvements in Separators for Twisting-Machines and the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to separators for twisting-machines, spinning-machines, and the like. These devices are blades which when in operative position partition off the various fields of winding from each other for purposes well known to those skilled in the art, and with the object of having access to the various parts they are made movable out of their operative positions, either individually or in groups, by being pivotally mounted. I find in practice that it is an advantage in point of convenience and the saving of time to have the separators arranged for movement vertically as well as pivotally.

One object of my invention is therefore to so construct and arrange the various parts as to provide for such vertical movability of the separators.

Another object is to provide means which will automatically move the separators to their normal or operative position should they be inadvertently left after starting the machine in an abnormal position, (to which they have been vertically moved.)

Other objects will be made to appear in the detailed description to follow.

My invention will be found fully illustrated in the accompanying drawings, in which—

Figure 1 is a front view of so much of a spinning-machine provided with my improvements as is necessary to illustrate the invention. Fig. 2 is a sectional view on line *x x* in Fig. 1 looking toward the right. Fig. 3 is a detail view illustrating one of the separators in plan, and Fig. 4 is a detail view illustrating a slight modification.

a in the drawings is one of the uprights of the machine-frame. *b* is the bolster-rail, *c* the lower rail, *d* the ring-rail carrying the ring-plates *e*, and *f* a spindle, all constructed and arranged substantially as usual.

Penetrating the bolster and lower rails are vertical shafts *g*—say three in number—to each section of the machine. They are movable vertically, and one of them, preferably the middle one, has two notches *h* and *i* and is engaged by the upper overhanging end of a stout plate-spring *j*, which is suitably secured to rail *c* in such manner that if either notch coincides with the end of the spring the latter will take into the same and support said shaft and also the other two shafts *g* and certain other parts, as will appear later on.

k is a bow or presser piece attached to spring *j* and projecting upwardly convenient to the reach of the tender's hand or knee.

Each shaft *g* is surmounted by a cross-arm *l*, rigidly fixed thereto and extending transversely of the machine. These are preferably braced or bound together, so as to make of them and shafts *g* a vertically-movable structure by a bar *m*, having brackets *n*, which are bolted to the cross-arms. I may, however, state that this bar *m* and brackets *n* can be left off, if so desired. On each shaft is coiled a spring *o*, which rests on the bolster-rail and serves as a buffer for the corresponding cross-arm when the structure falls to its lowest limit, Fig. 2.

The front end of each cross-arm has an extension *p*, and this receives the bifurcated portion of a bracket *r*, which is pivoted to the cross-arm by a bolt *s*, said bracket being thus removable upon removing the bolt. The several brackets are penetrated by a rod *t*, being thus adapted to be moved together on their pivots. In Fig. 4 rod *t* is shown slightly farther removed from the pivots of the brackets than in Figs. 1 and 2, so that in the normal or working position of the parts it will come about opposite the lowest limit of movement of the ring-plates *e*, serving thus as a guard for the lower flanges of the bobbins, if bobbins instead of cops are used. The bar *m*, it will be noticed, serves as a guard for the spindle-whirls *u* when the structure carrying the separators is in its lowest position and the separators turned down. I do not wish, however, to be limited to the positions of this bar *m* and rod *t*.

The separators are adapted, as shown in the drawings, to swing forward and down from their working position to the idle posi-

tion. On a view to Fig. 2 it will be seen that each separator is (in the idle position) not only entirely out of the area occupied by it when in the working position, but entirely outside of either the vertical or horizontal zone (being the space between the parallel lines in which its opposite edges lie) occupied by it when in said working position. There is thus afforded (when the separators are in their idle position) absolute clearance for cleaning the separators while the machine is running.

On rod *t* between the brackets *r* are other brackets *v*, secured thereto by set-screws *v'*. This arrangement permits lateral adjustment of the brackets *v* and, according as it is required, varying the number thereof. All the brackets are preferably rounded on the edges, (see Fig. 3,) so as to minimize fuzzing upon a thread breaking and lashing against them. Each bracket *r* and *v* carries a blade *w'*, which is of such vertical dimension that when in operative position it extends about as high as the spindles and below the rings, thus perfectly isolating each winding unit from its neighbor and preventing the yarn ends from fuzzing or blackening the material on the neighboring spindles. The blade is preferably rectangular. The blades are all substantially alike except that those on brackets *r* are extended downwardly more than the others, so as to afford a rest for the whole series of blades (which owing to the arrangement above described are pivotally movable together) on the corresponding cross-arms, in which the brackets *r* may participate by having their pivoted ends when they are vertical abut squarely against the tops of the cross-arms. (See Fig. 2.)

From the foregoing it will be apparent that the structure, comprising shafts *g*, cross-arms *l*, bar *m*, the blades, and their interconnecting mechanism, is movable bodily from the normal or working position—*i. e.*, where spring *j* engages notch *h*—to a position either above or below the normal position—*i. e.*, where spring *j* engages notch *i* or where the structure is supported on springs *o*. Thus clear access to the work can be had for whatever purpose either from above or from below the blades. They can also be moved outwardly and forwardly on their pivots in the dotted-line position in Fig. 2 for cleaning, &c. The structure is raised by simply lifting it manually. It can be made to fall by gravity by pressing on bow *k*, so that the spring is thrown out of engagement with either of the notches *h i*.

In order to bring the structure above referred to to the normal or working position should it be left above or below that position after the machine is started running, I provide the following mechanism: The middle cross-arm *l* is formed with an extension *w* and is penetrated by a rod *x*, movable vertically therein This rod extends through the corresponding ring-plate *e* and then has its upper end bent over, as at *y*, being held against turning in the plate by a pin *z*. The lower end of the rod is threaded, as at 1, and carries a nut or nuts 2. If the said structure has been left below the normal or working position, when the machine starts the upward movement of the ring-rail will raise rod *x*, the nuts 2 on which will engage extension *w* and lift the structure far enough so that spring *j* can engage in notch *h*. If the structure is above the working position, the ring-rail will engage extension *w* and push the structure downwardly, the peculiar overhang of the spring *j* permitting its disengagement from notch *i* at this time and the structure falling until it rests on the spiral springs *o*. The ring-rail, rod *x*, and nuts 2 therefore serve as a moving part for bringing said structure to its working position if at any time it has been left out of that position.

Besides having rounded edges, as hereinbefore stated, it will be observed that the brackets *r* are relatively wide. Each bracket *r* thus presents a broad surface, preferably rounded, so that the separator, in effect, on the one hand, not only confines the lashing of the thread, but, on the other hand, offers a broad face for the thread to lash against, and thus materially reduces fuzzing.

I do not desire to be limited to anything specifically shown or described herein; but

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

1. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, and normally fixed separators arranged between the spindles, said separators being movable vertically, rectilineally, out of the working or normal position, substantially as described.

2. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, and normally fixed separators arranged between the spindles, said separators being movable vertically, rectilineally, and also pivotally, out of the working or normal position, substantially as described.

3. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, a normally fixed separator-supporting structure movable vertically, rectilineally, out of its normal or working position to dispose said separators out of their normal or working position, and means for securing said structure in its different elevations, substantially as described.

4. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators. a nor-

mally fixed separator-supporting structure movable vertically, rectilineally, out of its normal or working position to dispose said separators out of their normal or working position, and means for securing said structure in its different elevations, said separators being pivoted in said structure, substantially as described.

5. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, a normally fixed but vertically-movable structure carrying said separators, and means, carried by said frame and engaging said structure, for maintaining said structure at different elevations, substantially as described.

6. In a twisting-machine, spinning-machine, or the like, the combination with a horizontal portion of the frame, of the spindles, the separators, a vertically-movable structure comprising a notched shaft guided in said horizontal portion, said structure carrying the separators, and a structure-supporting device engageable in the notches of said shaft, substantially as described.

7. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, a vertically-movable structure carrying said separators and guided in said frame, said structure having a part thereof notched at different elevations, and means, engageable in said notches, for sustaining said structure at different elevations, substantially as described.

8. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, a vertically-movable structure carrying said separators and guided in said frame, said structure having a part thereof notched at different elevations, and a fixed plate-spring bearing against said part and engageable in its notches, substantially as described.

9. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, a vertically-movable structure carrying said separators, a moving part and means, engaging said structure, for holding said structure at different elevations, said moving part being engageable with said structure to move it from one elevation to another, substantially as described.

10. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, a vertically-movable structure carrying said separators, a moving part engageable with said structure from above and below the same to effect the movement thereof vertically from one position to another, and means for holding said structure at different elevations, substantially as described.

11. A separator for twisting-machines having its body portion of substantially uniform thickness throughout and having one edge thereof projecting materially beyond the plane of each face of said portion to present relatively wide confining and impact surfaces, whereby on the one hand to confine the lashing of the thread and on the other offer a broad-thread impact surface substantially as described.

12. A separator for twisting-machines having its body portion of substantially uniform thickness throughout and having one edge thereof projecting materially beyond the plane of each face of said portion to present relatively wide confining and impact surfaces, and being rounded, whereby on the one hand to confine the lashing of the thread and on the other offer a broad rounded thread-impact surface substantially as described.

13. A separator for spinning-machines consisting of a blade and a supporting-bracket extending along one edge of said blade, said bracket being broad relatively to the thickness of the blade, substantially as described.

14. A separator for spinning-machines consisting of a blade and a supporting-bracket extending along one edge of said blade, said bracket being broad relatively to the thickness of the blade and being also rounded, substantially as described.

15. In a twisting-machine, spinning-machine, or the like, the combination of the frame, the spindles, the separators, and a separator-supporting structure, said supporting structure being movable downwardly in the frame, means for normally maintaining said structure in an elevated position, and cushioning means interposed between the frame and said structure, substantially as described.

16. In a twisting-machine, spinning-machine and the like, the combination of the frame, the separators, a bar connecting said separators and a separator-supporting structure comprising another horizontal bar arranged parallel with said first-named bar, said bars being movable to and from a position substantially opposite the spindle-whirls, substantially as described.

17. In a twisting-machine, spinning-machine and the like, the combination of the frame, the separators, a bar connecting said separators, a separator-supporting structure comprising another horizontal bar arranged parallel with said first-named bar, said bars being movable to and from a position substantially opposite the spindle-whirls, and means for removably securing said separators in said structure, substantially as described.

18. In a twisting-machine, spinning-machine and the like, the combination of the

frame, the spindles, and separators arranged between the spindles, each separator being pivoted in its front portion and movable on its pivot forwardly to a position substantially entirely outside of the horizontal and vertical zones occupied by said separator when in working or normal position.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of February, 1905.

JOHN A. JAMIESON.

Witnesses:
ALFRED GARTNER,
JOHN W. STEWARD.