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TWISTER SPINDLE SEPARATOR.

APPLICATION FILED JULY 30, 1920.

1,373,390. Patented Mar. 29, 1921.

Fig. 1.

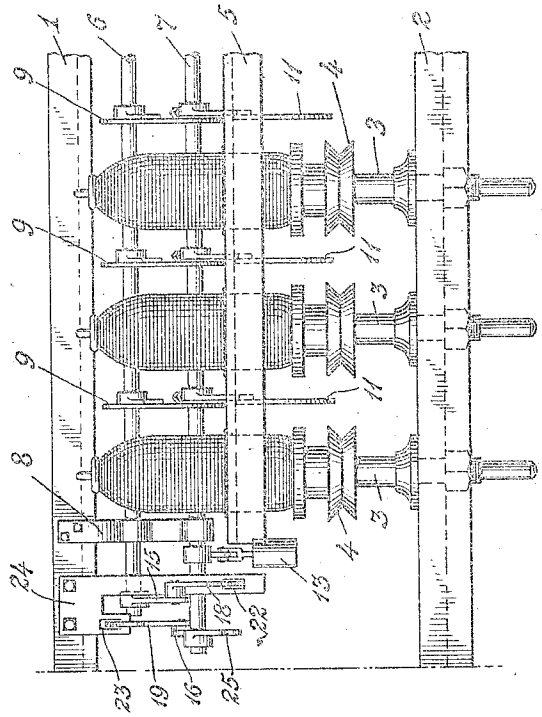


Fig. 4.

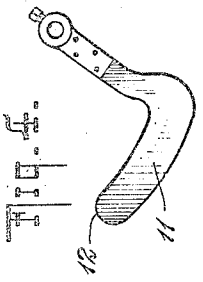


Fig. 2.

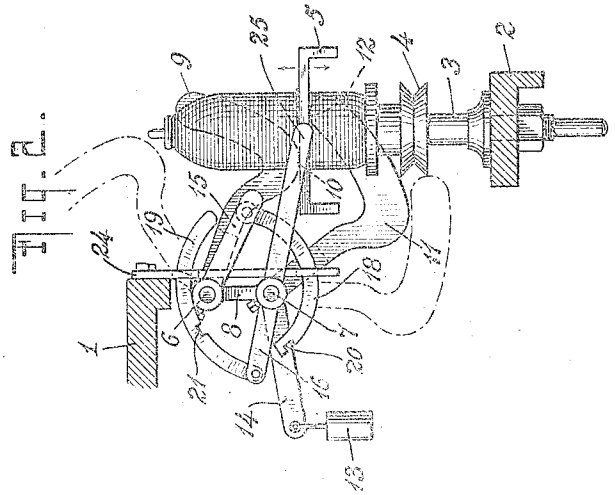
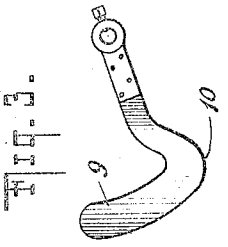


Fig. 3.



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TWISTER-SPINDLE SEPARATOR.

1,373,390. Specification of Letters Patent. Patented Mar. 29, 1921.

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To all whom it may concern:

Be it known that I, ALBERT E. BLAKELEY, a citizen of the United States, residing at Fall River, county of Bristol, and State of Massachusetts, have invented certain new and useful Improvements in Twister-Spindle Separators, of which the following is a full, clear, and exact description.

My invention relates to separators for twister spindles and has for its object to provide means for preventing what is known as lashed yarn, and also to provide such means which can be readily moved out of the way when desired. Twister spindles are held in a bolster on a stationary rail. Wooden bobbins are mounted on the spindles, which pass through round openings in the twister or ring rail, which latter travels up and down along the axes of the spindles. On this twister rail are mounted the usual rings encircling each of the spindles and small wire travelers go around these rings following the bobbin and holding the yarn clear of the same during the twisting operation. These rings and travelers have to be lubricated with grease, which gets very dirty in time. When an end breaks, the loose end lashes the bobbin on either side of it. The loose end continues to throw off the staple on to the bobbins on either side of the bobbin with the broken end, and this staple is twisted in, causing movable lumps. In addition, lint fills the travelers on the ring on either side, which causes these ends in turn to break. This will run along the rail unless remedied by the operative. In addition to these points, the end lashes the rings and collects grease on it, which it throws off by centrifugal force on to other bobbins. It is such troubles that my separators are intended to prevent, and, furthermore, to prevent them without materially interfering with the other functions or manipulation of the apparatus.

The following is a description of an embodiment of my invention, reference being had to the accompanying drawings, in which,

Figure 1 shows a front view of a portion of a twister embodying my invention;

Fig. 2 is an end view of the same; and

Figs. 3 and 4 are detail views of separator elements.

Referring more particularly to the drawings, 1—2 are members of the frame of the twister. The member 2 supports the twister spindles 3, the same being provided with the usual driven whirls 4. 5 is the movable twister rail for carrying the ordinary rings and travelers and moving up and down along the axes of the spindles. 6 and 7 are two parallel shafts supported by hangers 8 from the upper member 1 so as to be free to turn. Connected to the upper shaft 6 by set screws is a series of sheet metal separators 9, having portions 10 resting on the upper surface of the rail 5 so as to be moved upward thereby and follow its downward movement. Connected to the lower shaft 7 by set screws is a series of sheet metal separators 11, which have portions 12 which engage the under side of the twister rail, being held in engagement therewith by a counter-weight 13 on an arm 14 connected to the shaft 7.

In order to be able to retract said separators and hold them retracted when desired, I provide the shafts 6 and 7 with arms 15 and 16 respectively and on those arms mount curved latches 18 and 19 having notches 20—21, which are adapted to engage abutments provided by holes 22—23 in a plate 24 secured to the member 1 so that when either separator is sufficiently removed from the rail 5 and retracted from the spaces between the spindles, its latch will hold it in retracted position. To aid in retracting the lower separators, I provide a handle 25 fixed on the shaft 7, which extends forward so as to be easily accessible.

By means of the separators above described, located between the bobbins, the broken ends are prevented from lashing and throwing grease on neighboring bobbins and are restrained from coming in contact with the same, and, furthermore, the separators can be easily moved out of place, which is essential, especially when the bobbins are being doffed, as there is very little room between them anyway and the addition of a permanent separator is therefore objectionable. It is further impossible to mount separators permanently on the twister rail because of the fact that on the downward motion if they were sufficiently long to fully protect the bobbins, they would interfere with the stationary rail and other mechanism mounted on the same, and on the upward motion with the guide-board on the

twister immediately above the spindle. The separators in my present embodiment swing about arcs, which make it impossible for them to interfere with the fixed members of the twisting frame in either the upward or downward motions of the rail and yet they are of sufficient length to afford full protection to the bobbins in any position of the rail. As the rail goes up, it pushes the upper separators ahead of it about the center of their shaft, which is so located that the separators will clear all of the fixed mechanism above the spindle top, and when the rail goes down a corresponding downward movement is imparted to the lower separators. When it is desired to move either set of separators out of the way for doffing or other purposes, they are pushed upward or downward as the case may be and the latch drops into place in the latch-plate, holding them in retracted position.

As will be evident to those skilled in the art, my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In a twister, the combination of a twister ring rail, twister spindles projecting therethrough, up and down which said rail is adapted to move, separators between said spindles normally moving with said ring rail and movable rearwardly out of the spaces between said spindles said separators being located below said ring rail.

2. In a twister, the combination of a twister ring rail, twister spindles projecting therethrough, up and down which said ring rail is adapted to move, separators between said spindles and located below said ring rail and normally moving with said ring rail and movable out of the spaces between said spindles, a revoluble shaft to which said separators are connected, and means for holding said shaft when turned so as to retract said separators from said spaces.

3. In a twister, the combination of a twister ring rail, twister spindles projecting therethrough, up and down which said rail is adapted to move, two sets of separators between said spindles normally moving with said ring rail and movable out of the spaces between said spindles, said separators of one set being connected together and located below and the separators of the other set being connected together and located above said ring rail, and means for retracting the separators of either set simultaneously.

4. In a twister, the combination of a twister ring rail, twister spindles projecting therethrough, up and down which said rail is adapted to move, two sets of separators between said spindles normally moving with said ring rail and movable out of the spaces between said spindles, one set of said separators being located below and the other above said ring rail, and both sets normally tending to move toward said ring rail under the action of gravity.

5. In a twister, the combination of a twister ring rail, twister spindles projecting therethrough, up and down which said rail is adapted to move, two sets of separators between said spindles normally moving with said ring rail and movable out of the spaces between said spindles, one set of said separators being located below and the other above said ring rail, revoluble shafts to which said two sets of separators are respectively connected, latches connected to said shafts and abutments adapted to be engaged by said latches to hold said separators when retracted from spaces.

ALBERT E. BLAKELEY.