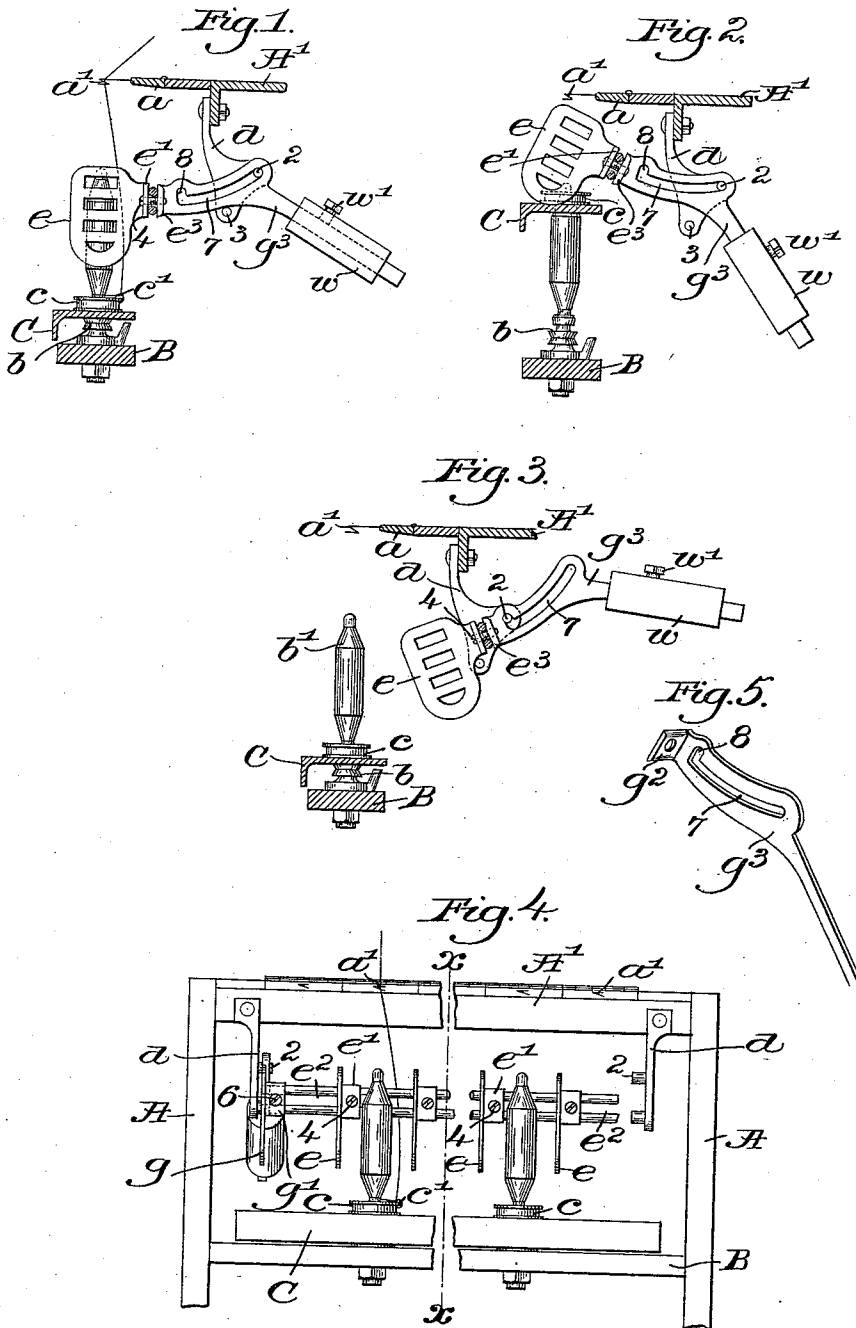


(No Model.)

G. A. & G. O. DRAPER.  
SEPARATOR FOR SPINNING FRAMES.

No. 526,010.

Patented Sept. 11, 1894.



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE A. DRAPER AND GEORGE O. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNORS TO GEORGE DRAPER & SONS, OF SAME PLACE.

## SEPARATOR FOR SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 526,010, dated September 11, 1894.

Application filed December 28, 1893. Serial No. 494,976. (No model.)

To all whom it may concern:

Be it known that we, GEORGE A. DRAPER and GEORGE O. DRAPER, both of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Separators for Spinning-Frames, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

Many different kinds of separators have been devised for use in connection with ring spinning and twisting frames to prevent the yarns from catching one against the other in case the yarns bow out or "balloon" as it is called, said separators being raised by or through the action of the ring rail, or in unison with said rail, by different mechanical appliances. When the bobbins have to be doffed from the spindles the separators are commonly turned up and back out of the way by hand. It is a desideratum, when doffing the frame and at other times under certain conditions, to be able to push the separators back out of place from between the bobbins or spindles, and this invention has for its object the production of a separator mechanism which has that capacity, and which may be pushed back into its abnormal or inoperative position by pushing from the outside of the frame, where the operator stands, inwardly.

One part of this invention, therefore, consists in a separator carrier bar and its attached arms, combined with a fulcrum, said arms and fulcrum being constructed in such manner as to enable one to be moved on or with relation to the other, whereby a bar with its attached separators may readily be pushed backwardly and the separators be thereby removed from between the spindles.

Figure 1 in section shows a sufficient portion of a spinning or twisting frame with the improvements comprehended in this invention added to enable the same to be understood; Fig. 2, a view of the same parts but in a different position. Fig. 3 is yet another view of the same parts with the separators pushed back away from the ring rail and from between the spindles and bobbins. Fig. 4 is a partial front elevation of a spinning or twisting frame, the section represented by

Fig. 1 being in the line  $x$  Fig. 4, and Fig. 5 is a detail of one of the carrying arms for the carrier bar.

The frame-work A; the roller-beam A'; the guide-board  $a$  having guide-eyes  $a'$  for the yarn or thread; the spindle-rail B; the spindle  $b$ ; the ring rail C; the ring  $c$ , and traveler  $c'$  are and may be all as usual in ring spinning and twisting frames, so need not be here-in further described. The roller-beam has at or near each end suitable depending stands  $d$  provided each with a fulcrum 2 and with a stop or arresting device 3.

The separators  $e$ , composed preferably of thin metal have as shown a foot  $e'$  which rests on a carrier bar  $e^2$  composed preferably of two rods, and at the back of said bar is a nut  $e^3$ , a screw 4 being extended through said foot between said rods and screwed into said nut, the screw thus serving to fix the separators upon said carrier bar, but in an adjustable manner.

The endmost separators, designated by the letter  $g$ , are of the same shape as the separators  $e$ , and said separators  $g$  have a foot  $g'$  like the foot  $e'$  of the separators  $e$ , but instead of the screw 6, see Fig. 4, which confines the separators to the carrier bar entering a nut, as described of the separators  $e$ , the said screw is made to enter a threaded hole in a lip  $g^2$  at the forward end of the arm  $g^3$ , said arm, in the form in which this invention is herein embodied, having a slot 7 to embrace and slide on said pin 2, the outer end of the slot being offset, as at 8, to engage said pin when the separator carrier bar is moved back as in Fig. 3.

In practice the arms  $g^3$ , one at each end of the carrier bar, but only one of which is shown at the left in Fig. 4, will have mounted upon them in an adjustable manner a weight  $w$  controlled as to its position by a set-screw  $w'$ , the adjustment of said weight on said arm  $g^3$  properly counter-balancing the weight of the separators.

Viewing Fig. 1 the arm  $g^3$  is in its lowermost position and is sustained in that position by the stop 3. Now let it be supposed that the frame is started. The ring rail will be elevated in usual manner from the position Fig. 1, and will, as it rises, strike the

lower ends of the separators and will lift said  
 separators and their attached guide-bar, the  
 arms  $g^3$  turning on the fulera 2, as the center  
 of motion, and so long as the frame is run-  
 5 ning regularly the separators will be raised  
 and lowered in usual manner. Now if it be-  
 comes necessary to doff the bobbins, or nec-  
 essary for any reason that the separators be  
 removed from between the spindles, the op-  
 10 erator may take hold of the separators or  
 their frame and push the same back, such  
 pushing causing the arms  $g^3$  to slide on the  
 fulera 2 until said fulera finally enter the  
 15 notches 8 when the separators will be locked  
 in their backward position, as in Fig. 3.

Prior to this invention it is thought that  
 a separator carrier bar has never been so  
 mounted that the same could be raised and  
 lowered regularly by the ring-rail and could  
 20 be pushed back at any position of the ring-  
 rail, so as to leave the spaces between the ad-  
 jacent bobbins or spindles perfectly open and  
 free from the presence of separators.

The separator mechanism herein shown is  
 25 very simple in construction, is durable, is  
 composed of few parts, and may be easily op-  
 erated.

This invention is not, therefore, limited to  
 the exact shape shown for the arms  $g^3$  or for  
 30 the fulera 2, which not only form the center  
 about which the arms may turn in the up and  
 down movements of the separators, but also  
 a guide during the horizontal or backward  
 movements of the separators and their bar  
 35 when being put into their abnormal position  
 or out from between adjacent spindles.

Having described our invention, what we  
 claim as new, and desire to secure by Letters  
 Patent, is—

1. In a ring spinning or twisting frame, a 40  
 carrier-frame having a series of separators,  
 and laterally extended rigid arms, combined  
 with fulera or guides to sustain said arms and  
 permit the separators to be acted upon and  
 45 be raised and lowered by the ring-rail, said  
 arms being free to be slid longitudinally  
 across said fulera or guides for the purpose  
 of removing the separators from between the  
 spindles, substantially as described.

2. In a spinning or twisting frame, stands 50  
 provided with fulera, combined with slotted  
 arms attached to a separator carrier-frame  
 and engaging said fulera, and attached sep-  
 arators, to operate, substantially as described.

3. In a spinning or twisting frame, stands 55  
 provided with fulera 2, and suitable stops 3;  
 combined with slotted arms having locking  
 notches, a separator carrier-frame, and at-  
 tached separators, to operate, substantially as  
 described. 60

4. The ring-rail in combination with a sep-  
 arator frame having a series of attached sep-  
 arators, and having provisions in virtue of  
 which the same may stand normally above  
 the ring-rail, but in virtue of which they may  
 65 be moved back away from the rail when de-  
 sired by the operative, said provisions com-  
 prising stationary guides and arms free to  
 slide on or with relation to said guides, sub-  
 stantially as described. 70

In testimony whereof we have signed our  
 names to this specification in the presence of  
 two subscribing witnesses.

GEO. A. DRAPER.  
 GEORGE O. DRAPER.

Witnesses:

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 C. E. LONGFELLOW.