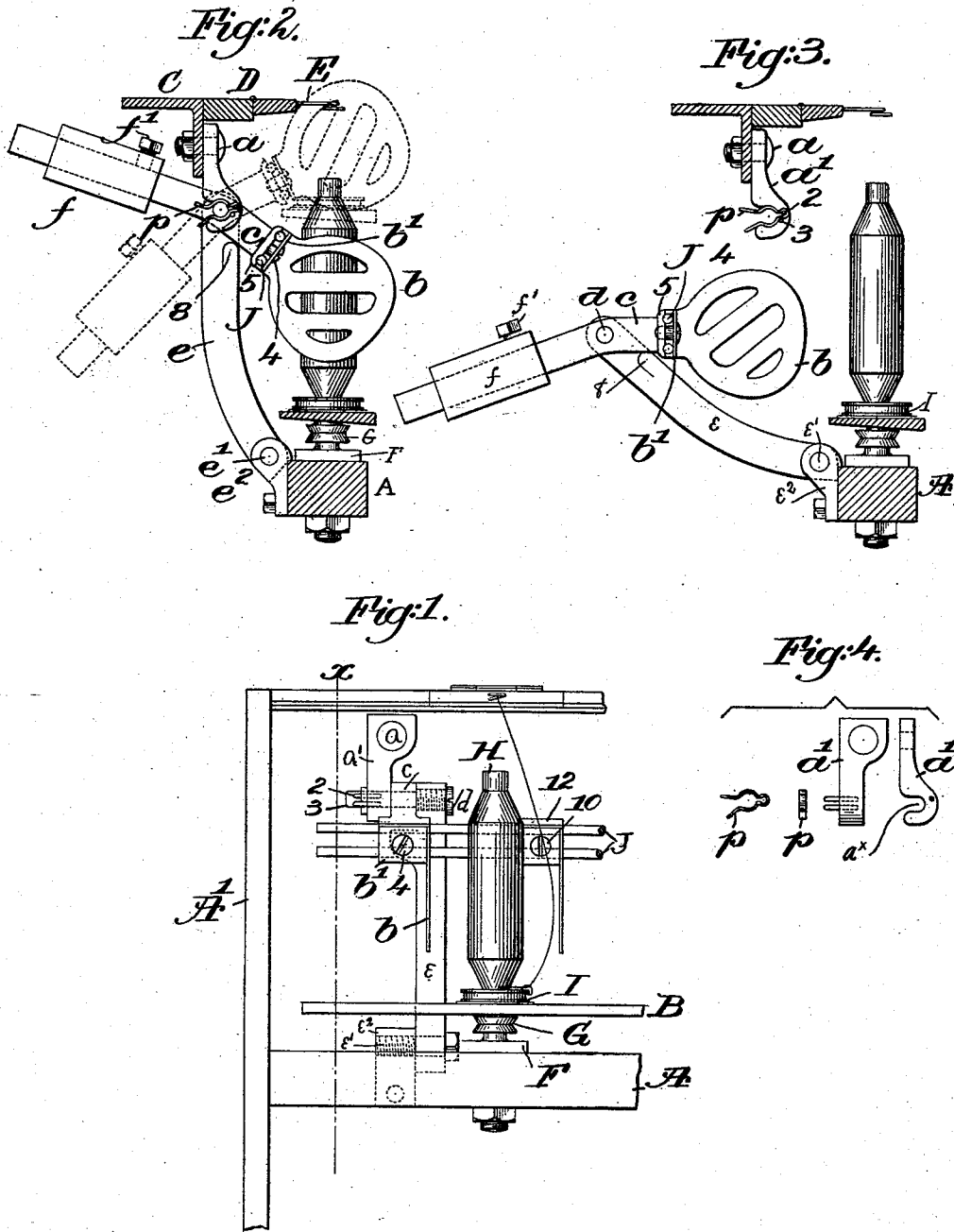


(No Model.)

G. O. DRAPER.  
SEPARATOR FRAME AND SUPPORT.

No. 524,166.

Patented Aug. 7, 1894.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

GEORGE O. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO  
GEORGE DRAPER & SONS, OF SAME PLACE.

## SEPARATOR-FRAME AND SUPPORT.

SPECIFICATION forming part of Letters Patent No. 524,166, dated August 7, 1894.

Application filed February 2, 1894. Serial No. 498,849. (No model.)

*To all whom it may concern:*

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

Separators now commonly used are carried by bars pivoted permanently on depending brackets, the separators being raised by contact with the ring rail.

In accordance with my invention I have devised a plan for supporting the separators in such manner that during the spinning operation they will remain above the ring-rail, and when the ring-rail is elevated, will occupy a position between the ring-rail and the guide-board, and extend beyond the yarns passing from the guide-eyes to the spindles, yet the separator frame and its supports are so constructed and combined as to allow the separator frame to be moved back away from the spindles, and the separators from between the bobbins thereon when it is desired to doff.

In my invention, the raising of the separators by or through the ring-rail does not interfere with the guide-board.

I have also devised novel means whereby the support for the separator frame is prevented from being twisted laterally out of place.

Figure 1, in front elevation, shows a sufficient portion of a spinning frame with my improvements added to enable my invention to be understood. Fig. 2 is a section on the line *x*, Fig. 2, looking to the right; Fig. 3, a like view with the parts in a different position, and Fig. 4 shows the holder and locking device detached.

In the drawings, A represents the spindle rail; B, the ring rail; C, the roller beam; D, a guide board; E, a guide eye; F, a supporting case; G, a spindle; H, a bobbin; I, a ring; and J, a separator bar composed as shown of two wires or rods, all the said parts being old and common and therefore it is not necessary to herein further describe the same.

The roller beam has connected to it, as

herein shown by a bolt *a*, a holder *a'*, represented as an arm having an open notch, there being at least one such arm near each side frame *A'* of the frame-work. This holder, as shown, has two pins 2, 3, which serve to hold in place a locking device *p*, shown as a two-legged spring, said locking device fitting over one pin as 2, and being kept in position horizontally by the pin 3.

Each endmost separator *b* has an ear *b'* which by a screw 4 is clamped to the bar J, said screw entering an ear 5 of an arm *c*, shown as journaled to turn freely on a stud or projection *d*, shown as screw threaded for part of its length, see Fig. 1, and as screwed into a brace *e* mounted on a stud *e'* of a stand *e''*, shown as bolted to the spindle rail, the lower end of said brace being beveled as represented by dotted lines Fig. 2, so that when the brace is turned back as in Fig. 3, said beveled end will contact with the rail A, or some fixed part of the frame and act to stop further movement of the brace away from the ring rail.

In practice the spinning frame will have a brace *e* near each end, and said braces, carrying the studs or projections *d* on which may turn the separator frame to be described, constitute what I denominate "a movable support for the separator frame," the said support having bearings on pivots of the stands *e''*. One end of each stud or projection *d* beyond the arm or lever *c* is adapted to enter an open notch *a<sup>x</sup>* of a holder *a'*, as shown in Figs. 1 and 2, said stud, outside said holder entering the locking device, spreading its arms and causing said locking device to catch and hold the stud to keep the separator frame and its attached separators up toward the ring-rail with the separator blades in working position between adjacent bobbins carried by the spindles of the frame, the separators being raised by the action of the ring-rail against them, the separators following by their own gravity the descent of the ring-rail for a part of its traverse, or until the separator frame meets one of the lugs or stops 8 on a brace *e*. When the studs or projections *d* enter the notches of the holders the latter act to prevent further movement of the separator frame pivots toward the ring-rail,

and said holders then act also to prevent any lateral movement of the support for the separator frame, or any movement in the direction of the length of the ring-rail. The weight *f* held adjustably upon an arm or lever *c* by a screw *f'* acts to nearly counterbalance the weight of the separators.

The screws 10 holding the intermediate separators in place enter nuts 12 at the rear side of the separator-bar.

Fig. 2 by full lines shows the parts in working position with the ring-rail down, the dotted lines in said figure, however, showing the ring-rail at the top of its traverse, and the separator lifted substantially up to the guide-board.

When it is desired to doff the full bobbins from the spindles, the separator frame is pushed back so as to remove the blades from between the bobbins on the spindles, the pressure exerted being sufficient to cause the studs or projections *d* to leave the locking devices and holders and enable the supports for the separator frame to assume the position shown in Fig. 3.

This invention is not limited to making the holders, the locking devices, the screw studs, or the support for the separator frame of the exact shape shown, as it will be obvious to those skilled in the art, that said parts and devices might be variously modified in shape by the exercise of only the skill of a mechanic, and without the exercise of invention.

The holders located at each end of the machine frame, serve, when the support for the separator frame is in working position, to stiffen and strengthen the parts and obviate, as stated, lateral play or movement.

Prior to this invention I am not aware that a separator frame having a series of separators has ever been pivoted on a swinging stud or projection carried by a support sustained on a pivot near the bottom of the frame.

The bar *J*, and levers or arms *c*, one near each end of the frame, constitute what I have denominated the "separator frame."

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

1. In a spinning and twisting frame, a sepa-

rator frame, a movable support for said frame pivoted below the ring-rail and on which said separator frame is pivoted to turn, and a series of separators, combined with holders to co-operate with and sustain said movable support firmly in position when the separators are in working position, substantially as described.

2. In a spinning and twisting frame, a separator frame, a movable support for said frame pivoted below the ring-rail and on which said separator frame is pivoted to turn, and a series of separators, combined with holders to co-operate with and sustain said movable support firmly in position, and devices to lock said supporting frame and holders together during the spinning operation, substantially as described.

3. In a spinning frame, a separator frame, a series of separators connected therewith, a support on which said frame may turn, said support having its bearings on a stationary part of the spinning frame below the ring rail, combined with a holder for the upper end of said support, substantially as described.

4. In a spinning machine, the following instrumentalities, viz:—a frame carrying separators, studs on which said frame is mounted to turn, and a pivoted support for said studs, combined with holders to receive said studs and stop the movement of said supports and separator frame toward the ring-rail, to operate, substantially as described.

5. In a spinning machine, a frame carrying separators, a support on which said frame is pivotally mounted, said support having a stop, as 8, to determine the extent of descent of the separators when they are removed from between the bobbins, bearings to sustain the support for the separator frame, and devices to determine the extent of movement of said support about its bearings, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE O. DRAPER.

Witnesses:

FREDERICK L. EMERY,  
JOHN C. EDWARDS.