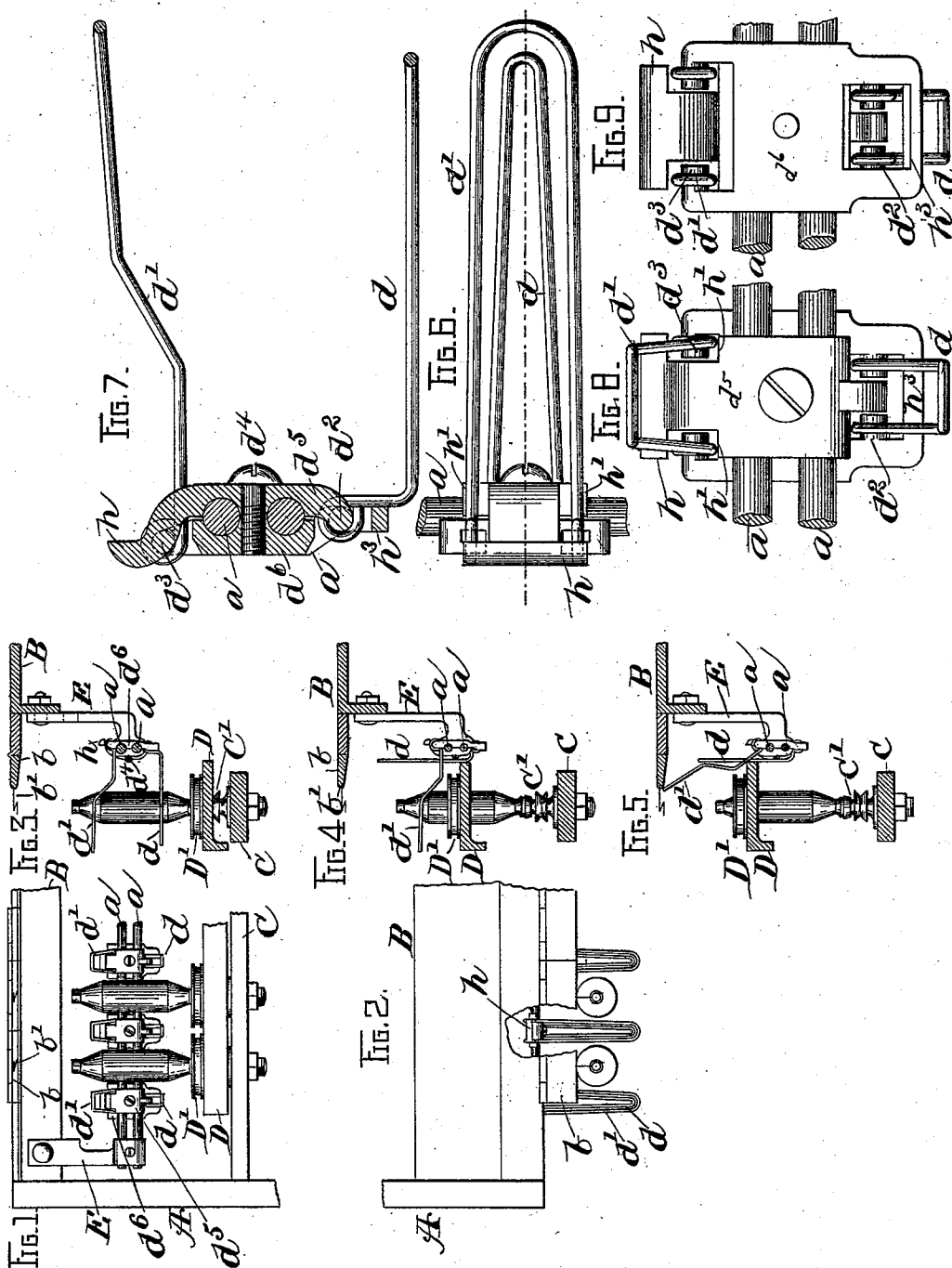


(No Model.)

A. E. RHOADES.
SEPARATOR FOR SPINNING RAILS.

No. 531,561.

Patented Dec. 25, 1894.



WITNESSES:

Fred S. Greenleaf.
Thomas Drummond.

INVENTOR:

Alonzo E. Rhoades
by Crosby Gregory *days.*

UNITED STATES PATENT OFFICE.

ALONZO E. RHOADES, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO GEORGE DRAPER & SONS, OF SAME PLACE.

SEPARATOR FOR SPINNING-RAILS.

SPECIFICATION forming part of Letters Patent No. 531,561, dated December 25, 1894.

Application filed October 24, 1893. Serial No. 488,978. (No model.)

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Separators for Spinning-Rails, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the so-called separators employed in connection with ring spinning and twisting frames to prevent the yarn of adjacent spindles striking together owing to ballooning, as it is called, thus breaking down ends.

My improved separator is composed essentially of a head having suitable stops, and a plurality of arms made of wire bent into loop form and pivoted onto said head, the stops determining the normal positions of the arms, one arm being raised after the other in succession in unison with the rising ring rail, as will be hereinafter described.

Figure 1 in front elevation shows a sufficient portion of a spinning or twisting frame with my improved separators added to enable my invention to be understood. Fig. 2 is a top or plan view of the parts shown in Fig. 1. Figs. 3, 4 and 5 are vertical sections showing the ring rail and separators in different positions. Fig. 6 is a top or plan view much enlarged of one of my separators and part of the usual sustaining rod. Fig. 7 is a section in the dotted line *x* Fig. 6. Fig. 8 is a view looking from the right in Fig. 6; and Fig. 9 is a view of the parts shown in Fig. 6 looking from the left.

The frame-work A; the roller beam B; the bolster or spindle rail C; the spindle C'; the ring rail D, having rings D' for the guidance of usual travelers; the stand E depending from the roller beam, and the supporting rods *a, a*, secured thereto, there being two or more of such stands located at proper distances apart as desired; and the guide-boards *b* having the guide eyes *b'* are and may be all as common in ring spinning and twisting frames, and in practice said ring rail may be raised and lowered and the spindles be rotated in

any usual manner, the particular movements imparted to the ring rail depending upon the shape of the bobbin or the shape of the yarn-load to be built thereon.

My newly devised compound separator consists essentially of two members *d, d'*, herein represented as a wire bent into the form of loops, the uppermost member *d'* being preferably wider or larger to let the member *d* pass up through it. These members *d, d'*, are pivoted one above the other and are adapted to be operated in succession, as the ring rail rises, said members descending preferably by gravity. The two members *d, d'*, are mounted on suitable journals *d², d³*, formed on block, *d⁶*, constituting heads which are clamped by suitable screws as *d⁴* to the rods *a, a*, said heads being adjustable on the said rods so that the separators may be put in just the desired position with relation to the spindles.

In operation let it be supposed that the ring rail is in its lowest position, as represented in Fig. 3. As the ring rail ascends from the position Figs. 1 and 3 it will meet the separator member *d* and turn it up into the position shown in Fig. 4, the said member passing the member *d'*, and as the rail continues to ascend from the position Fig. 4 it will strike the second member *d'*, of the separator and elevate it into position Fig. 5.

The frame of wires on which the separators are strung, instead of being mounted as shown, may be mounted in any usual manner common to separators whereby the frame may be turned back when it is desired to doff the bobbins from the spindles.

It will be noticed in this my invention that one member is raised and then the other member is raised and consequently one or more of the members are always in proper position between the spindles to obviate the striking together of the threads, if the latter for any reason balloon.

Making the members *d, d'* of wire and in loop form reduces their weight to the minimum and consequently the strain on the ring rail in lifting the members is but very slight.

The block *d⁶* has a stop *h* to determine the extent of upward movement of member *d'*, as

when it is turned fully back, and this block also has stop shoulders h' , h' , see Figs. 6 and 8, to determine the descent of the member d' .

The block d^6 has a stop h^3 to determine the descent of the member d of the separator.

Each member d , d' constitutes, it may be said, an arm.

By the term "wire" I mean to include metal in any cross section, round, or otherwise, in which metal is usually rolled or drawn.

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

A separator composed essentially of a head having stops, and a plurality of arms made of wire bent into loop form and pivoted on said head, the stops determining the normal positions of the arms, substantially as described.

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

ALONZO E. RHOADES.

Witnesses:

GEORGE OTIS DRAPER,
C. E. LONGFELLOW.