

(No Model.)

2 Sheets—Sheet 1.

A. MASON.
SEPARATOR FOR SPINNING FRAMES.

No. 542,649.

Patented July 16, 1895.

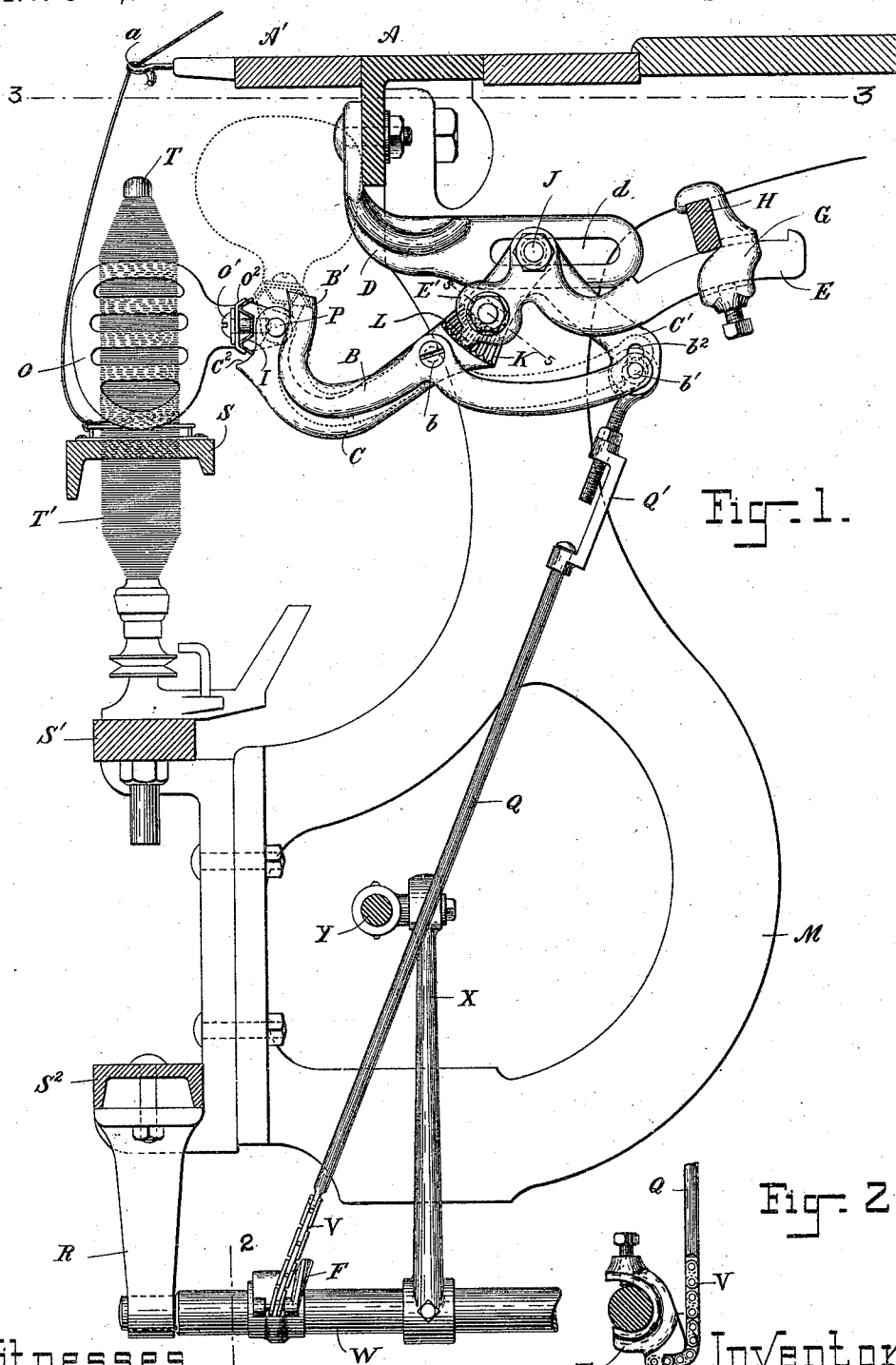


Fig. 1.

Fig. 2.

Witnesses.

John D. Nelson
Chas. S. Fordling.

Inventor.

Arthur Mason
by N. A. Copeland
his atty.

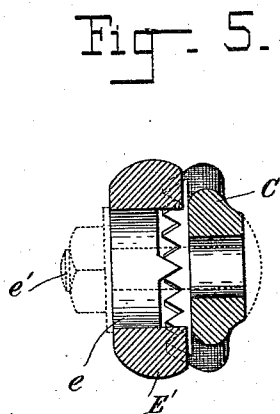
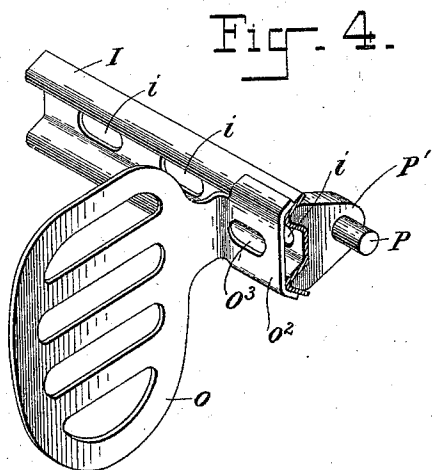
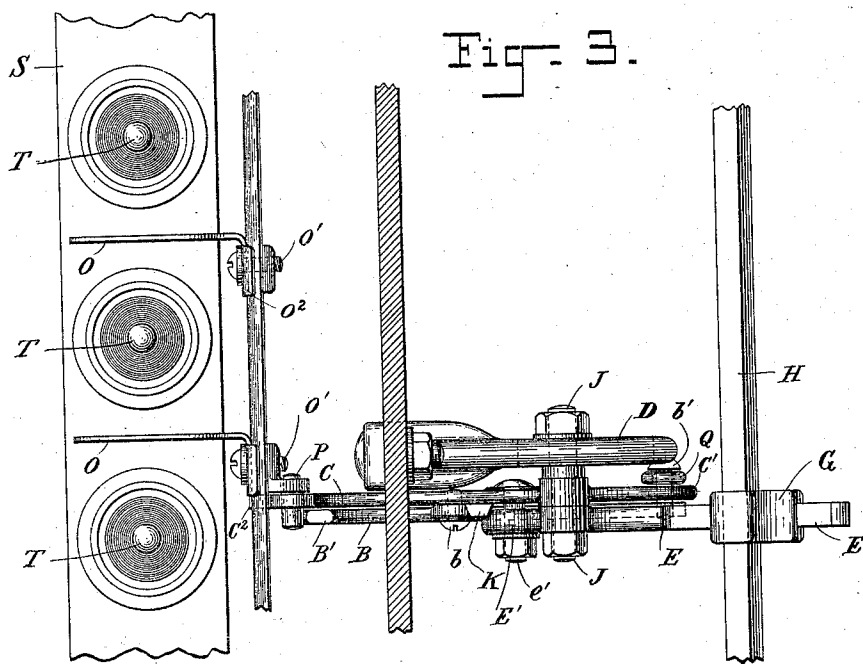
(No Model.)

2 Sheets—Sheet 2.

A. MASON.
SEPARATOR FOR SPINNING FRAMES.

No. 542,649.

Patented July 16, 1895.



Witnesses.

John F. Nelson
Chas. V. Gooding

Inventor.

Arthur Mason
by W. A. Leopeland
his atty.

UNITED STATES PATENT OFFICE.

ARTHUR MASON, OF TAUNTON, MASSACHUSETTS.

SEPARATOR FOR SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 542,649, dated July 16, 1895.

Application filed March 19, 1895. Serial No. 542,362. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR MASON, a citizen of the United States, residing at Taunton, in the county of Bristol and Commonwealth of Massachusetts, have invented a new and useful Improvement in Separators for Spinning-Frames, of which the following is a specification, reference being had to the accompanying drawings, which form a part hereof.

The object of my invention is to construct a separator in which a wide blade may be used for long winds as conveniently as a narrow blade, and which shall at all times be within a perpendicular line from the face of the ring-rail; also, to cause the separator-blade to be automatically thrown down again when the machine starts after the blades have been lifted for doffing or other purpose, and to provide a counterbalance for the separator-blades, which shall serve also as a stiffening-rod.

My invention consists in a pivoted tripping-lever connected with the wave-rocker and actuated by the wave-rocker to trip the separator and throw it from an upright position into its operative position before the levers carrying the separator-blades are turned on their pivots; also, in certain adjustable features of the levers and in making a counterbalance, which serves also as a stiffening-rod and bears against the samson as a stop, and in other features which will be more particularly described and claimed.

In the drawings, Figure 1 is a cross-section through the roll-beam, showing an end elevation of so much of a spinning-frame as is necessary to illustrate my invention. Fig. 2 is a section through the dog on the wave-rocker on line 2 2 of Fig. 1. Fig. 3 is a horizontal cross-section on line 3 3 of Fig. 1, showing a plan of a portion of a spinning-frame. Fig. 4 is a detail view of a separator-blade and the bar to which it is intended to be attached, the bolt being omitted so as to show more clearly the elongated slot. Fig. 5 is a cross-section through the indicator on line 5 5 of Fig. 1.

The roll-beam A, thread-board A', and thread-guide a are of well-known form of construction. The spindle T, bobbin T', spindle-rail S', ring-rail S, and lower rail S² are common, and power is applied in the usual man-

ner. The samson M supports the roll-beam and other parts of the spinning-frame.

Secured to the roll-beam A is a bracket D, having an elongated slot d, in which is clamped a stud J, which forms a pivot for the bent lever C, at the forward end of which is pivoted the separator O. The bent lever E is also pivoted on the same stud J, and has an extension E', with a slot e, through which a bolt e' passes, bolting the two levers E and C together, so that they move on the pivot as one lever. The toothed indicator L engages with the toothed segment K, and is set in the proper notch before the bolt e' is set up. By observing the position of the pointer on the segment all the separator-levers in the line can be set at exactly the same position.

The stiffening-rod H runs the length of the machine, resting on all the levers E in the line, and is clamped to each one by a dog G. This serves to hold them all at a uniform position and serves also as a counterweight. It is so adjusted that the blades will outweigh the rod H sufficiently to assure that the separator-blades will fall by their own weight when the wave-rocker shaft W turns in its bearings R and relaxes the strain on the rod Q, the samson on M serving as a stop.

The wave-rocker W is actuated through the rocker-arm X and reciprocating-shaft Y.

The tripping-lever B, which throws down the separator in the manner which will be described later on, is pivoted to the lever C at b, and at its rear end is a stud b', which plays up and down in a vertical slot b² in the arm C' of lever C, the tripping movement being given by the wire rod Q, actuated by the rocker-shaft W.

The separator O is clamped to the holder I by screw-bolt O', which passes through an elongated slot O² in the bent shank O² of the separator. This holder consists of a sheet of metal having a series of elongated slots i, through which the screw-bolts O' pass, the separator thereby being capable of delicate adjustment to the proper alignment for its throw between the bobbins.

The pivot P by which the separator is pivoted to the lever C is secured in the bracket P', which is also clamped to the holder-plate I by the screw-bolt O'. I prefer to make this

holder-plate I of corrugated sheet metal, because it is light and is sufficiently strong for the purpose and is of a form which will be readily engaged by the tripping-lever B.

5 This tripping-lever B has an upturned end B', which, when the lever B is pulled down by the rod Q, bears up against the holder I on one side of its center and throws it over on its pivot.

10 The wire rod Q is adjustable in length by means of the turn-buckle Q', and at its lower end it is fastened to a chain V, which is secured to the dog F on the rocker-shaft W.

During the operation of winding the separator is between the bobbins, as shown in full lines in Fig. 1. The holder-plate I strikes on a shoulder C² on the lever C to prevent turning too far down on its pivot and the rod Q should preferably be adjusted in length so

20 that the separator shall at all times be held out of contact with the ring-rail. As the rocker-shaft R rocks, giving the up-and-down movement to the ring-rail, the chain V will wind and unwind over the dog F and give a reciprocating movement to the rod Q, thereby turning the levers E and B on their pivot and causing the separator O to also rise and fall at a corresponding rate of speed as the ring-rail. When doffing the separator is thrown back

30 on its pivot and may come up against the roll-beam. Heretofore when a wide separator is used, which is attached to the roll-beam as it projects out over the path of the ring-rail, if the operator forgets to throw the separator down again after doffing and before starting up the machine the rail will strike the separator and breakage of something will take place. In my device the separator need not be thrown back by hand. As soon as the machine starts

40 the rocker-shaft R turns, winding the chain and pulling down the rod Q as soon as its slack chain is taken up, if any, and pulling down the rear end of lever B and lifting its forward end and tripping the separator before the levers C and E begin to move. The stud J is adjustable in the slot d, allowing the levers to be adjusted to different frames.

The length of the rod Q should be adjusted by means of the turnbuckle, so that the chain will be slack during the traverse of the ring-rail below the separator-blade when the latter is in its lowest position as regulated by the rod H when it bears up against the samson, and the slack should not be so great but that

55 it will be all taken up at the proper time for tripping the separator when the ring-rail rises again.

What I claim is—

1. In a spinning frame, the combination of 60 a separator, a separator lever to which the separator is pivoted, a support in which the separator lever is fulcrumed, mechanism which turns the separator lever on its fulcrum and causes the separator to rise in advance of the ring rail when the separator is in its operative position between two bobbins, and a tripping device which, throws the separator

down into its operative position between the bobbins before the separator lever turns on its fulcrum to lift the separator, substantially 70 as described.

2. The combination of a separator, a separator lever, a fulcrum for said lever immediately between its ends, a tripping lever and a fulcrum for the tripping lever immediately 75 between its ends, a rod pivoted at its upper end to the rear arm of the tripping lever and to the rear arm of the separator lever, the pivot for said rod having play in a slot in the separator lever, a wave rocker, said rod 80 having at its lower end a flexible connection with the wave rocker whereby, when the rocker turns, the tripping lever will be turned on its fulcrum to throw the raised separator blade into operative position, before the separator 85 lever begins to move on its fulcrum, substantially as described.

3. The combination of a separator, a separator lever, a fulcrum for said lever immediately between its ends, a tripping lever and a fulcrum for the tripping lever immediately 90 between its ends, a rod pivoted at its upper end to the rear arm of the separator lever, the pivot for said rod having play in a slot in the separator lever, a wave rocker, said rod having at its lower end a flexible connection with the wave rocker, and a cam dog on the rocker which guides the flexible portion whereby, when said rocker turns, the tripping 100 lever will be turned on its fulcrum to throw the raised separator blade into operative position, substantially as described.

4. In a spinning frame, the combination of a series of separator levers, a series of brackets in which the separator levers are fulcrumed, a series of separators pivoted to the forward arms of said levers, and a stiffening rod which serves as a common counterweight for said separators adjustably secured to the rear arms of said levers, substantially as described. 110

5. A separator lever composed of two bars having overlapping ends bolted together, a toothed segment on one bar and a toothed guide on the other engaging in said toothed 115 segment whereby the two bars may be set at various angles to each other, substantially as described.

6. In a spinning frame, the combination of a series of brackets supported from the roll 120 beam, a series of separator levers pivoted in said brackets, a stiffening rod extending transversely of all the separator levers in said series and serving as a common counterweight, and a series of dogs which clamp said rod to 125 the levers, substantially as described.

7. In a spinning frame, a series of separators each having a blade O and a bent shank O² formed with flanged sides and an elongated slot O³, in combination with a corrugated 130 metal holder I embraced by the separator shanks and having a series of elongated slots which register with the slots in the separator shank, and bolts which pass through said slots

and secure the separators to the holder, substantially as described.

8. In a spinning frame, a series of separators, each having a blade O and a bent shank O² formed with flanged sides, and an elongated slot O³, in combination with a corrugated metal holder I embraced by the separator shanks and having a series of elongated slots which register with the slots in the separator shank, bolts which pass through said slots and secure the separators adjustably to the holders, a bracket P' also bolted to the separator holder, and a separator lever to which the bracket is pivoted substantially as described.

9. The combination of the bent levers C and E bolted together and forming a lever for the separator blade, a movable pivot on which said levers are fulcrumed, and a tripping le-

ver pivoted to the separator lever, substantially as described.

10. The combination of the bent levers C and E bolted together and forming a lever for the separator blade, an adjustable pivot on which said levers are fulcrumed, a toothed segment and indicator whereby the two levers C and E may be adjusted to different angles with relation to each other, a tripping lever pivoted to the compound separator lever, a rod H which is adjustably secured to the rear arms of a series of separator levers and which serves as stiffening rod and counterbalance, and which bears against the samson which forms a stop, substantially as described.

ARTHUR MASON.

Witnesses:

LLOYD E. WHITE,
HARRY S. WILLIAMS.