May 22, 1951 T. L. HAND 2,554,104

STOP MOTION FOR CARDING MACHINES

Filed April 10, 1948 5 Sheets-Sheet 1

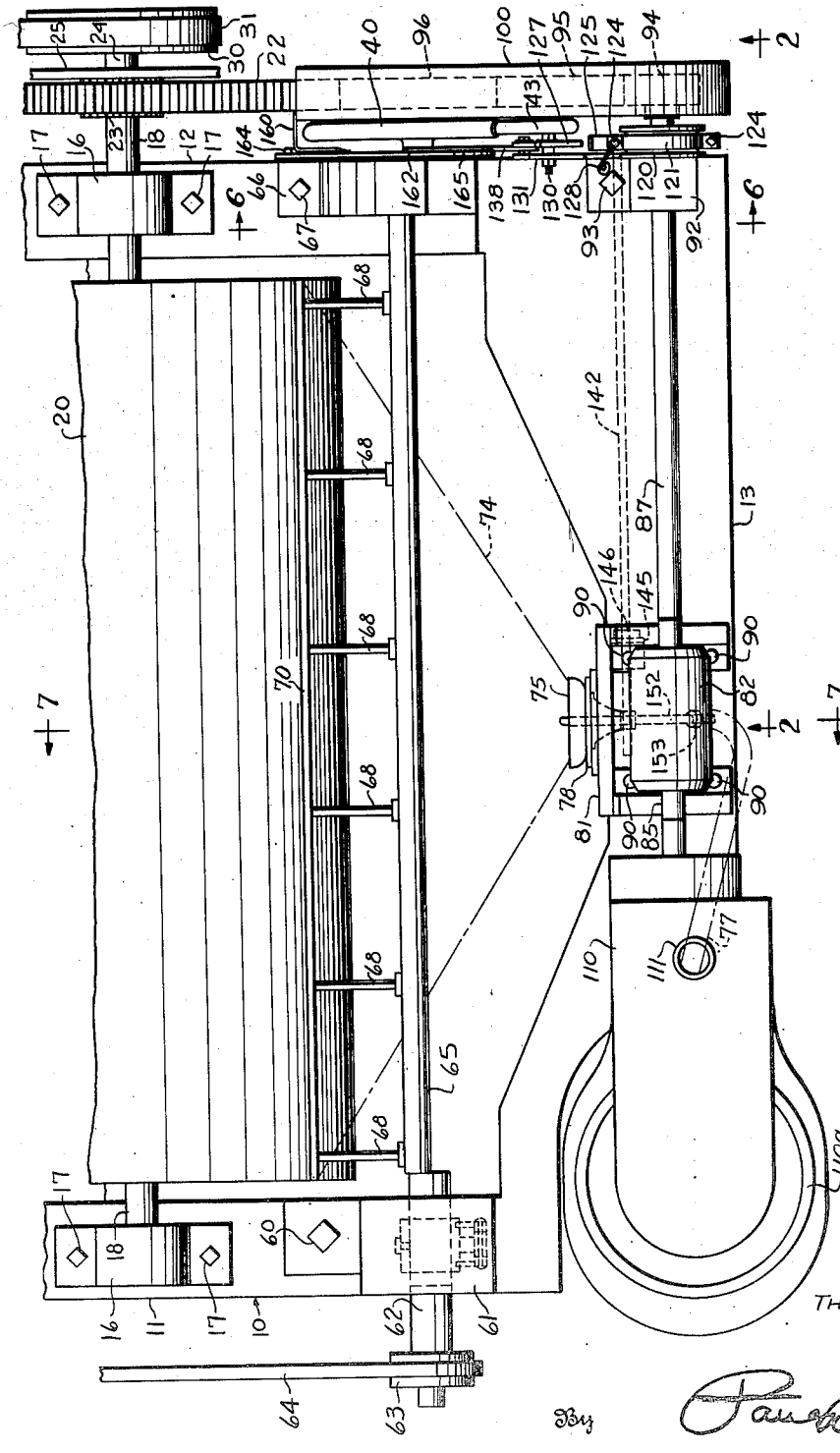


Fig. 1

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May 22, 1951 T. L. HAND 2,554,104

STOP MOTION FOR CARDING MACHINES

Filed April 10, 1948 5 Sheets-Sheet 2

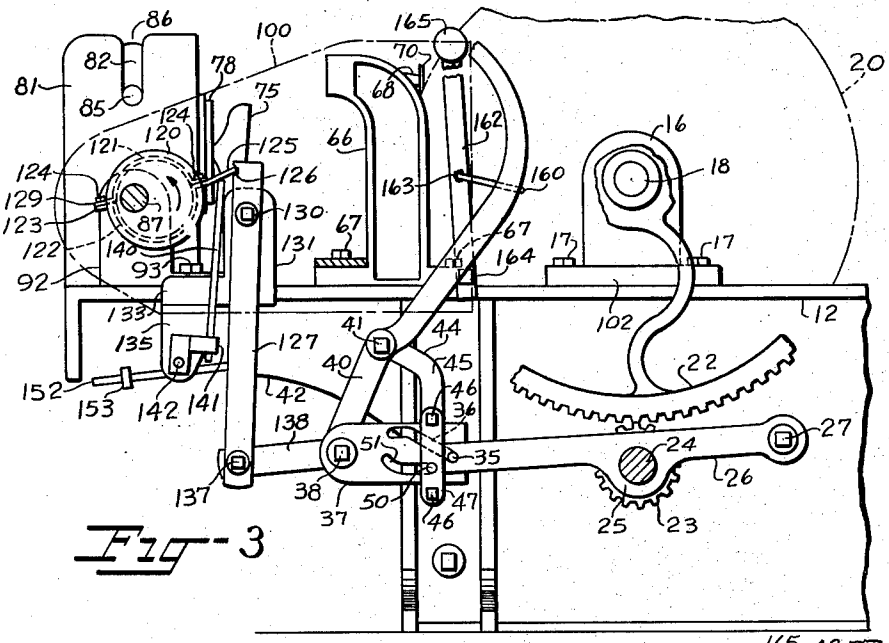


Fig-3

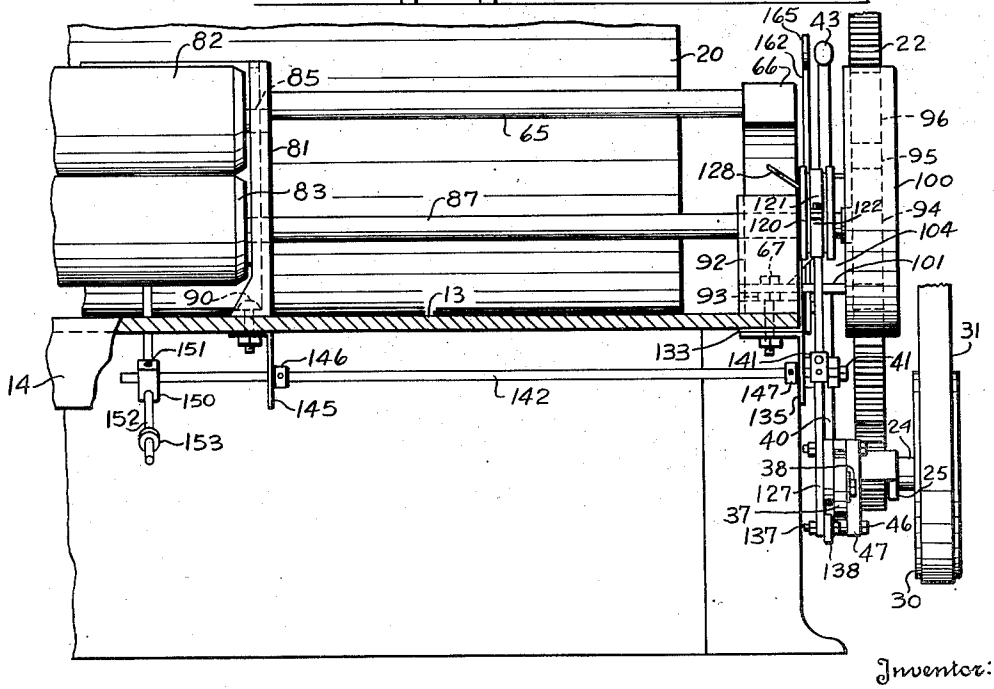


Fig-2

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STOP MOTION FOR CARDING MACHINES

Filed April 10, 1948 5 Sheets-Sheet 3

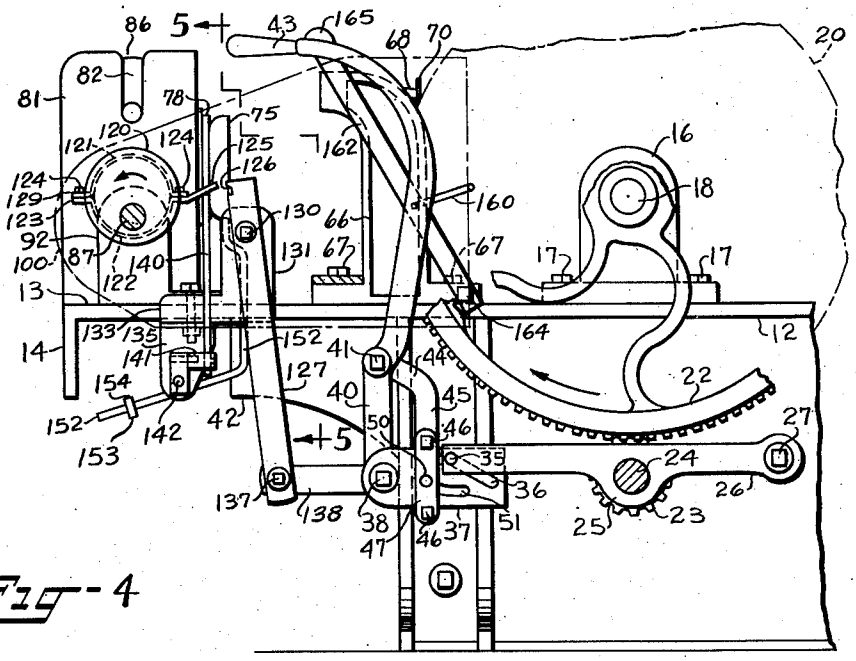


Fig-4

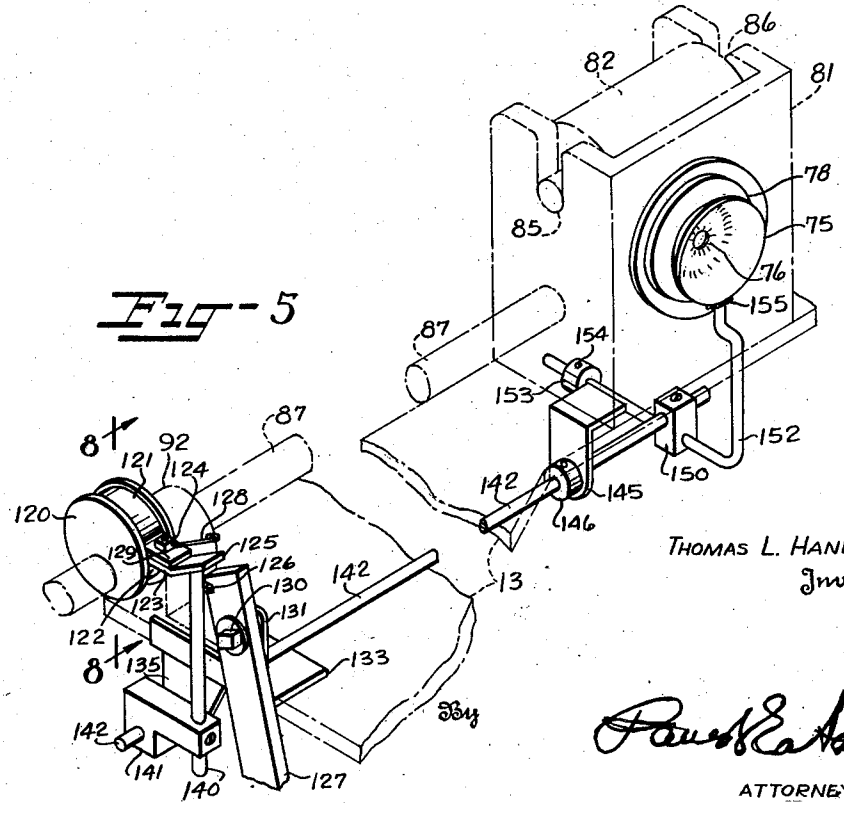


Fig-5

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May 22, 1951 T. L. HAND 2,554,104

STOP MOTION FOR CARDING MACHINES

Filed April 10, 1948 5 Sheets-Sheet 4

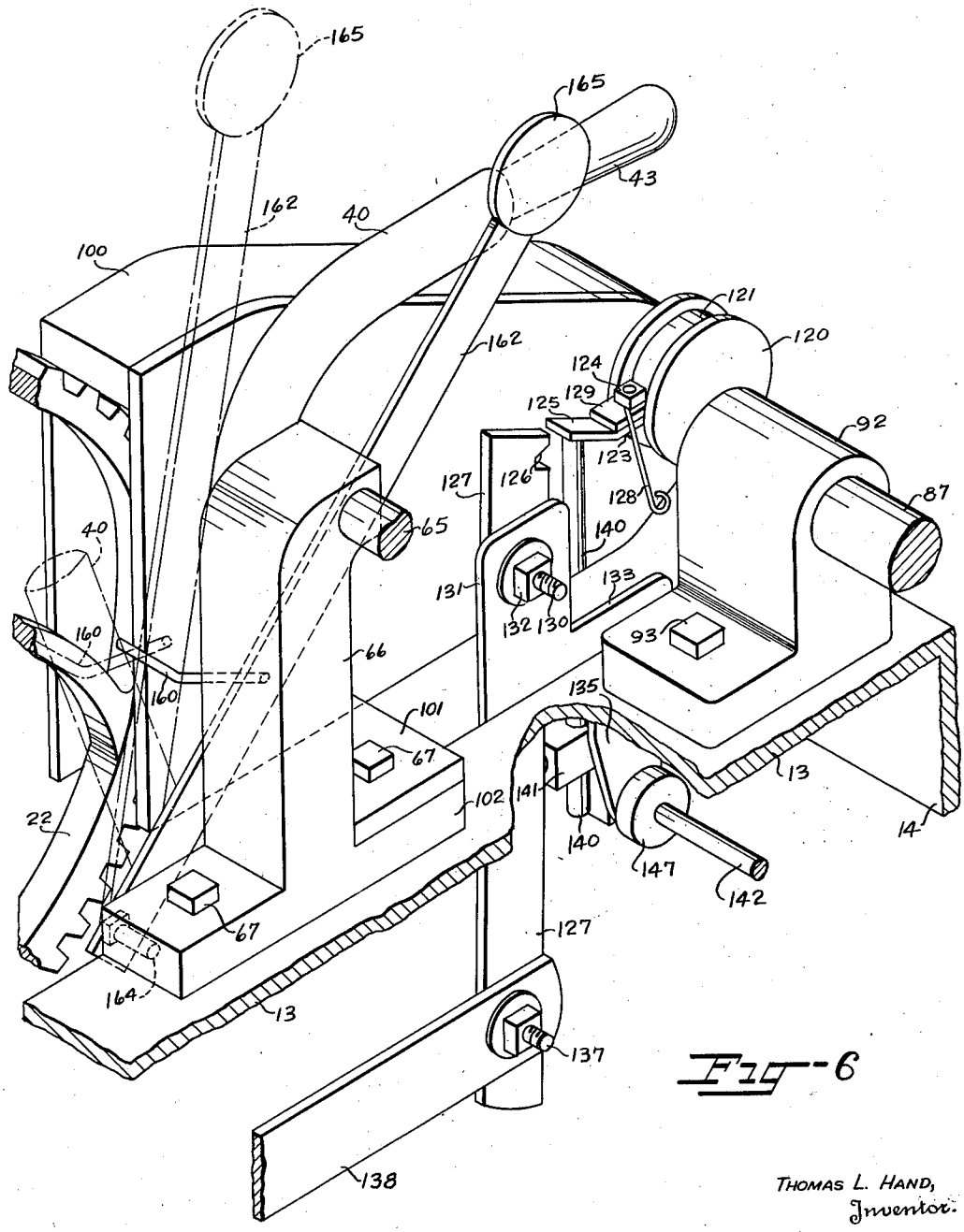


Fig-6

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May 22, 1951 T. L. HAND 2,554,104

STOP MOTION FOR CARDING MACHINES

Filed April 10, 1948 5 Sheets-Sheet 5

Fig-8

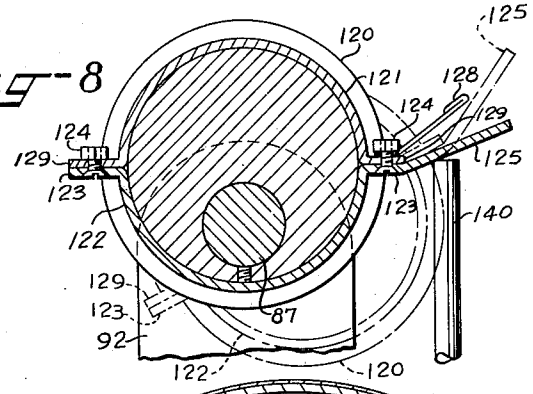


Fig-7

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Patented May 22, 1951

2,554,104

UNITED STATES PATENT OFFICE

2,554,104

STOP MOTION FOR CARDING MACHINES

Thomas L. Hand, Belmont, N. C., assignor of one-half to F. M. Grier, Belmont, N. C.

Application April 10, 1948, Serial No. 20,223

2 Claims. (Cl. 19—168)

1

This invention relates to a stop motion for use on revolving flat card machines and the like. It is a well known fact that card machines have a revolving cylinder which delivers carded material, such as cotton, cut synthetic fibres, and other fibres in lap form to a conventional doffer cylinder and this carded material is stripped from the doffer cylinder by means of an oscillating stripper knife or comb. After the paralleled fibres are combed from the doffer cylinder by the comb, they are formed into a web extending the full width of the doffer cylinder which is converged by means of a trumpet, into a sliver, which passes through an adjacent pair of calender rolls after which the sliver goes through a coiler to a coiling can.

In many instances a portion of the web of paralleled fibres breaks and falls away from that portion of the sheet which is being condensed into the sliver and this will cause the sliver to be of an uneven density at various points along its length as it is delivered to the coiling can.

Therefore, I have provided stop motion means, disposed adjacent the calender rolls, comprising a movable trumpet which may be disposed against the conventional trumpet, or the conventional trumpet could be omitted and only the new trumpet would then be used. My new movable trumpet has a rod extending downwardly from the lower edge of the same, and this rod is secured to a transverse shaft one end of which is connected to stop motion means which is actuated whenever the density of the sliver passing through the movable trumpet to the calender rolls decreases so as to permit the movable trumpet to fall away from the conventional trumpet, by gravity, which will, of course, transmit a partial rotation to the shaft, to which it is connected, and stop the machine.

It is an object of this invention to provide means through which the sliver from the doffer cylinder must pass from the doffer cylinder, said means being adapted to move in an arcuate path towards the doffer cylinder whenever the density of the sliver is not sufficient to hold said means in a vertical position, this means being adapted to lower a vertically disposed shaft so that means such as an oscillating plate which slides on the upper end of the vertical shaft is caused to engage a lever which is connected to the conventional shipper handle for knocking off the machine.

Inasmuch as this stop motion is automatic, it is another object of this invention to provide visible means whereby when the machine is automatically stopped, in the manner heretofore described, signalling means such as a signal arm moves into view of the operator to thus warn the operator that the doffer cylinder and other associated parts at the discharge end of the machine have stopped.

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Some of the objects of the invention having been stated, others will appear as the description proceeds when taken in connection with the accompanying drawings in which:

Figure 1 is a top plan view of the doffer or discharge end of a conventional revolving flat card machine showing this invention applied thereto;

Figure 2 is a front elevation of a portion of the discharge end of a machine with portions broken away and being taken substantially along the line 2—2 in Figure 1;

Figure 3 is an elevation with portions broken away, omitting the gearing, but showing the gear housing in dotted lines and is taken looking from the right-hand side of Figure 1 to the left, showing the various parts occupying the position in which they are disposed when the machine has been stopped;

Figure 4 is a view similar to Figure 3, but shows the various parts occupying the position in which they are disposed when the machine is operating;

Figure 5 is an isometric view of the invention showing a portion of the machine in dotted lines and is taken substantially along the line 5—5 in Figure 4;

Figure 6 is an enlarged isometric view showing the signal means in a solid line "on" position and in a dotted line "off" position, as well as other related parts, and being taken substantially along the line 6—6 in Figure 1;

Figure 7 is a vertical sectional view taken substantially along the line 7—7 in Figure 1;

Figure 8 is a vertical sectional view taken substantially along the line 8—8 in Figure 5, showing the flanged cam wheel in two positions.

Referring more specifically to the drawings the numeral 10 broadly designates a conventional frame of a revolving flat card machine. The frame 10 comprises vertical side frame members 11 and 12 which are bridged at their front ends by a horizontally disposed plate 13 having a flange 14 projecting downwardly from the front edge thereof.

Rotatably mounted in conventional bearing blocks 16, which are secured to the vertical side frame members 11 and 12 by screws 17, is a shaft 18 having a conventional doffer cylinder 20

fixedly mounted thereon. The shaft 18, in the doffer cylinder 20, has, fixedly mounted on the right-hand end thereof, as observed in Figures 1 and 2, a gear wheel 22 which engages a pinion 23 fixedly mounted on a stub shaft 24. The stub shaft 24 is rotatably mounted in a bearing portion 25 of a substantially horizontally disposed, and longitudinally extending lever bar 26 which is pivotally mounted as at 27 on the outside vertical surface of the side frame member 12. The shaft 24 also has, fixedly mounted on one end thereof, a pulley 30 which has mounted thereon one end of a belt 31, the other end of which is connected to conventional driving means for the machine, not shown. Thus, the pinion 23 is driven by the pulley 30 on the shaft 24 and the pinion 23 transmits rotation to the gear 22, when the pinion is in engagement with the gear 22, as shown in Figure 4.

The horizontally disposed lever bar 26 extends to the left in Figure 4, from the pivot point 27, and has fixedly mounted therein an outwardly projecting transverse pin 35. A vertical plate 37, disposed adjacent the front end of the lever bar 26, has an angularly disposed slot 36 therein which is engaged by the pin 35. The plate 37 is pivotally mounted at its front end on a stud 38. The stud 38 also has pivotally mounted thereon, the lower end of a shipper lever 40 which extends upwardly and is pivotally mounted on a stud 41 which is secured to a downwardly projecting vertically disposed plate 42 the upper edge of which is welded to the horizontally disposed plate 13 and the rearmost edge of which is welded to the vertical side frame member 12.

This shipper lever 40 extends upwardly from the stud 41 and curves to the left, as observed in Figure 4, and has integral therewith a handle portion 43. There is also pivotally mounted on the stud 41, between the shipper lever 40 and the vertically disposed plate 42, one end of a bell crank 44 which extends rearwardly and then has a vertically disposed and downwardly projecting portion 45 integral therewith which engages that side of the plate 37 which is adjacent the side frame member 12. This downwardly projecting arm 45 has secured thereto, by screws 46, a vertically disposed bar 47 which is in spaced relation to the arm 45 and engages the opposite side of the plate 37. The arm 45 and the bar 47 have fixedly mounted therein a pin 50 which penetrates a curved slot 51 in the plate 37.

Secured to the top surface of the vertical side frame member 11, by a screw 60, is a conventional comb box 61 in which a shaft 62 is oscillatably mounted. This shaft 62 (Figure 1) extends outwardly from the comb box 61 and has fixedly mounted thereon a pulley 63 which has mounted thereon one end of a belt 64 which extends rearwardly to, and is driven by, conventional means, not shown. The shaft 62 extends through the conventional comb box 61 and is connected, in a conventional manner, to one end of a comb shaft 65 the other end of which is oscillatably mounted in a conventional bearing block 66 secured to the upper surface of the vertically disposed side frame member 12, by any suitable means such as screws 67 (Figures 1 and 6). The shaft 65 has, extending rearwardly therefrom, a plurality of arms 68 which have connected to the rearmost ends thereof a conventional stripper knife 70 which intermittently engages the periphery of the doffer cylinder 20, in a conventional manner, to thus comb the cotton stock from the surface thereof in the form of a web indicated at 74.

This web 74 converges and is condensed, in form, to a sliver 77 and passes through a movable trumpet 75 having a small aperture 76 in the center thereof. The trumpet 75 is a part of this invention and is to be hereinafter described. The sliver 77, which is formed by the web 74 as it condenses, then passes through a conventional trumpet 78, against which the movable trumpet 75 is adapted to be urged by the web 74 passing through the movable trumpet 75 and into the trumpet 78. The trumpet 78 is fixedly mounted in a conventional calender roll housing 81 having vertical slots 86 in each side thereof which have rotatably mounted therein an upper calender roll 82. The upper calender roll 82 is an idler roll and is fixedly mounted on a stub shaft 85 and the stub shaft 85 is rotatably mounted in the slots 86 in the calender roll housing 81. The upper calender roll 82 engages a lower calender roll 83 which is fixedly mounted on a shaft 87 which is rotatably mounted in the vertical side walls of the calender roll housing 81. The calender roll housing 81 is secured, by bolts 89, to the top surface of the horizontally disposed plate member 13 of the card frame 10.

The shaft 87, on which the lower calender roll 83 is fixedly mounted, extends outwardly from the calender roll housing 81 and is rotatably mounted at its right-hand end, in Figure 1, in a bearing block 92 which is secured by a bolt 93 to the upper surface of the horizontally disposed plate 13, of the frame 10. The shaft 87 also extends outwardly beyond the bearing block 92, in Figure 1, and has fixedly mounted thereon a pinion 94 which engages an idler pinion 95 which in turn engages another idler pinion 96 and this idler pinion 96 engages the gear wheel 22 and thus rotation is transmitted from the gear wheel 22 to the pinion 94 to rotate the shaft 87 in a counter-clockwise direction, as observed in Figures 3 and 4. The pinions 94, 95 and 96 are, housed within, and rotatably mounted in, a conventional gear housing 100 which has an inwardly projecting ear 101 integral therewith which is secured on the upper surface of an outwardly projecting portion 102 of the bearing block 66 and is secured to the same by one of the screws 67 which secure the bearing block 66 to the upper surface of the vertical side frame member 12 (Figures 2, 3, 4 and 6). Welded to the left-hand vertical surface of the gear housing 100, in Figure 2, and also welded to the horizontally disposed ear 101 is a triangularly shaped bracing plate 104 which serves to lend rigidity to the gear housing 100.

After the sliver 77 (Figure 7) passes through the conventional trumpet 78 it then passes between the conventional calender rolls 82 and 83 and then extends upwardly and above a coiler bonnet 110a of conventional coiler 110 into which the sliver 77 is guided, by a conventional forming trumpet 111. The sliver is condensed as it passes downwardly through the forming trumpet 111, and then the sliver 77 extends downwardly from the coiler 110 and is finally delivered into a conventional sliver can 112. The sliver can 112 is rotated by, and supported by means, not shown, disposed within a conventional portion 113 of the coiler 110. The portion 113 has an upright portion 114 integral therewith, the upper end of which is connected to the conventional

coiler bonnet 110*a* at the upper end of the coiler 110.

All of the parts heretofore described, with the exception of the movable trumpet 75, are conventional parts of a revolving flat card machine and it is with these parts that this invention is adapted to be associated.

It has already been described how the shaft 87 rotates in a counter-clockwise direction, as observed in Figures 3 and 4, and how rotation is transmitted to the shaft 87 through the gear 94 which is mounted on the right-hand end of the shaft 87 in Figure 1. Fixedly mounted on the shaft 87 and disposed between the bearing block 92 and the pinion 94, is a flanged cam wheel 120 which is circular in cross-section but is penetrated off-center by the shaft 87. This flanged cam wheel 120 has loosely mounted thereon a strap iron member comprising an upper arcuate member 121 and a lower arcuate member 122, the inner surfaces of which are adapted to conform to the periphery of the flanged cam wheel 120. The upper arcuate member 121 and the lower arcuate member 122 are bent outwardly at their proximate ends to from lip portions 123 and 129 which are penetrated by bolts 124 to thus secure the upper and lower arcuate members 121 and 122 together. The lower arcuate member 122 has an outwardly extending lip portion 125 which is integral with the lip portion 123 and this lip portion 125 is adapted to engage a notch 126 in the upper end of a substantially vertically disposed lever bar 127 when the stop motion is actuated, in a manner to be later described. The bolt 124, that secures the rearmost ends of the arcuate strap iron members 121 and 122 together, also secures a short wire member 128 to the upper surface of the outwardly extending lip portion 123, the purpose of which will be later described.

The substantially vertically disposed lever bar 127 is pivotally mounted on a shoulder bolt 130 (Figures 3 to 6 inclusive) and this shoulder bolt 130 penetrates an upwardly extending portion 131 of an angle plate 133 and is secured in the same, by any suitable means such as a nut 132 which threadably engages the shoulder bolt 130. The angle plate 133 extends downwardly and is turned inwardly and this inturned portion is secured to the lower surface of the horizontally disposed plate portion 13 of the card frame 10, by the bolt 93 which also secures the bearing block 92 to the upper surface of the plate 13. This bolt also penetrates an angle clip 135, the purpose of which will be later described.

The substantially vertically disposed lever bar 127 extends downwardly from the shoulder screw 130 and is pivotally connected, as at 137, to a horizontally disposed bar 138. The horizontally disposed bar 138 is pivotally mounted on the stud 38 on which the lower end of the shipper lever 40 is also pivotally mounted. The strap iron member, comprising the arcuate members 121 and 122, and having the outwardly projecting lip 125 integral therewith, is loosely mounted on the cam wheel 120, as heretofore stated, and the outwardly extending lip portion 125 overbalances that portion of the strap iron member, comprising the arcuate members 121 and 122, to thus cause the lip portion 125 to move downwardly by gravity. However, the lip portion 125 rests on the upper end of a vertically disposed rod 140, the lower end of which is fixedly mounted in a block 141.

The block 141 is fixedly mounted on one end of a transverse shaft 142 which extends crosswise of the machine and is oscillatably mounted in the angle clip 135, at one end, and is oscillatably mounted adjacent its opposite end in an angle clip 145. The angle clip 145 is secured to the lower surface of the horizontally disposed plate portion 13 of the card frame 10 by one of the bolts 90, which has heretofore been described as securing the calender roll housing 81 to the top surface of the horizontally disposed plate portion 13. There is disposed adjacent the angle clips 135 and 145, and being fixedly mounted on the shaft 142, collars 146 and 147 to thus prevent endwise movement of the shaft 142.

The shaft 142 extends to the left of the angle clip 145, as observed in Figure 2, and has fixedly mounted thereon a block 150, by any suitable means such as a set screw 151. The block 150 extends downwardly a short distance below the shaft 142 and is penetrated by a rod 152 extending longitudinally of the machine. This rod 152 extends towards the discharge end of the machine, from the block 150, and has secured thereon a weight member 153 which is secured thereto by a set screw 154 and by loosening the set screw 154 the weight member 153 may be moved longitudinally of the shaft 152, by an operator as desired to accommodate the required density of the web 74. The rod 152 is fixedly mounted in the downwardly projecting portion of the block 150, by any suitable means such as a set screw 156, and this rod 152 extends towards the doffer cylinder 20 and is then bent upwardly and has, welded to the upper end thereof, as at 155, the trumpet 75 which has heretofore been described as being the point of convergence of the web 74.

It may be observed, in Figures 1 and 4, that the shipper lever 40 extends upwardly between the conventional gear housing 100 and the conventional bearing block 66, which is mounted on the vertical side frame member 12 of the card frame 10. Now, when the card machine is operating, the handle 43 of the shipper lever 40 is lowered in the position shown in Figures 1 and 4. However, when the machine is automatically stopped, in the manner to be presently described, the shipper lever moves from the lowered position shown in Figure 4 to the raised position shown in Figure 3. As the shipper lever 40 moves to this position, the rear surface of the same engages a horizontally disposed pin 160. This pin 160 is supported, during the time that the handle 43 is in the lowered position, as shown in Figure 4, against the rear vertical surface of the conventional gear housing 100. As the shipper lever 40 moves rearwardly the horizontal pin 160 is engaged by the shipper lever and moves rearwardly to the position shown in Figure 3. This horizontal pin 160 is bent forwardly and then to the left in Figure 1 and is welded, as at 163, to a substantially vertically disposed arm 162.

This arm 162 extends downwardly and is pivotally mounted on a shoulder screw 164, the shoulder screw 164 being threadably embedded in the bearing block 66. Incidentally, the hole in which the screw 164 is threadably embedded, is the only additional hole needed on the card machine for installing this stop motion. The arm 162 extends upwardly above the pin 160 and has, integral with the upper end thereof, a disk 165 which serves as a warning signal to the operator of the machine that the doffer cylinder is stopped, that is, when the parts are in the position shown

in Figure 3 or, when the arm 162 is in the dotted line position shown in Figure 6.

Method of operation

Assuming that the pulley 30 is driven by the belt 31 in a conventional manner, to rotate the pinion 23 in a counter-clockwise direction in Figure 3, and that the pulley 63 is driven by the belt 64 in a conventional manner, the handle 43 of the shipper lever 40 is grasped by an operator and moved downwardly from the position shown in Figure 3 to the position shown in Figure 4. Now, inasmuch as the shipper lever 40 is pivoted at 41, the lower portion of the shipper lever 40 moves in a counter-clockwise direction from the position shown in Figure 3 to the position shown in Figure 4 and thus moves the vertically disposed plate 37 from left to right in Figures 3 and 4. This causes relative movement between the pin 35 and the groove 36, in the plate 37, and the pin 35 moves upwardly from the position shown in Figure 3 to the position shown in Figure 4 to thus move the pinion 23 upwardly, in an arcuate path from the pivot point 27, to engage the gear 22.

As the plate 37 moves rearwardly, the pin 50, which is fixed in the bars 45 and 47 and penetrates the slot 51, in the plate 37, also moves along the slot 51 to lend support to the rear of the plate 37 inasmuch as the plate 37 is pivotally mounted on the stud 38.

Now, as the upper portion of the shipper lever 40 moves, in a counter-clockwise direction, from the position shown in Figure 3 to the position shown in Figure 4, the pin 160 is engaged by the rear surface of the shipper lever 40, moves from right to left in Figures 3 and 4 until the pin 160 engages the rear vertical surface of the conventional gear housing 100. Inasmuch as the pin 160 is connected to the substantially vertically disposed arm 162, the arm 162, being pivoted at its lower end, moves in an arcuate, counter-clockwise path from the position shown in Figure 3 to the position shown in Figure 4 to where the disk 165, at the upper end thereof, is partially hidden from view of the operator, that is, in back of the upper portion of the shipper lever 40 and the disk 165 remains in the position shown in Figure 4 until the shipper lever 40 is returned from the position shown in Figure 4 to the position shown in Figure 3 and the doffer cylinder ceases to rotate.

As the pinion 23 moves into engagement with the gear 22 the gear 22 is caused to rotate in a clockwise direction in Figures 3 and 4 and the gear 22 rotates the shaft 18 on which the doffer cylinder 20 is fixedly mounted to thus rotate the doffer cylinder 20. As the doffer cylinder 20 rotates the stripper knife is caused to reciprocate adjacent the outer surface of the doffer cylinder 20 by the pulley 63 which is fixedly mounted on the shaft 62 and the shaft 62 transmits reciprocatory motion to the shaft 65 to which the stripper knife 70 is connected. The reciprocatory motion of the stripper knife 70 causes the cotton stock material to be removed from the doffer cylinder 20 in the form of the web 74. This web 74 converges and condenses into the sliver 77 as it moves into the movable trumpet 75 and thence through the trumpet 78 and between the calender rolls 82 and 83 in the conventional manner.

The weight member 153 on the rod 152 is so adjusted that, in the event any portion of the web 74 tears away from the rest of the web 74, or, if for any reason the web 74 is not of the desired density, then the web, as it is condensed into the sliver 77, is not of sufficient body to hold the movable trumpet 75, in the position shown in Figure 7, against the rear vertical surface of the trumpet 78. This, of course, permits the movable trumpet 75 to move from left to right, in Figure 7, by gravity, and transmits partial rotation to the shaft 142, inasmuch as the trumpet 75 is welded to the rod 152 and the rod 152 is securely mounted in the block 150 which is securely mounted on the shaft 142.

This partial rotation of the shaft 142 causes the block 141 to partially rotate, in a clockwise direction, in Figures 3, 4 and 5, and thus the vertically disposed shaft 140 moves downwardly. This downward movement of the shaft 140 permits the outwardly projecting lip portion 125 to move downwardly slightly by gravity. The outwardly projecting lip 125, being integral with the arcuate member 122, is caused to reciprocate in a horizontal plane by rotation of the grooved cam wheel 120 around the shaft 87 inasmuch as the cam wheel 120 is eccentrically mounted on the shaft 87. The shaft 87 is driven by the pinion 94 which is fixedly mounted on the right-hand end thereof, in Figure 1, and this pinion 94 is engaged by the pinion 95 which is in turn engaged by the pinion 96 and this pinion 96 is engaged by the gear 22 which is driven in the manner heretofore described.

Now, as the grooved cam wheel 120 rotates with the shaft 87, the lip portion 125 is caused to reciprocate, as heretofore described, and the rearmost end of this lip portion 125 engages the notch 126 in the upper end of the lever bar 127 when the vertically disposed shaft 140 is in its lowered position as heretofore stated.

As the grooved cam wheel 120 rotates from the position shown in Figure 4 in a counter-clockwise direction to the position shown in Figure 3 the outwardly projecting lip portion 125 moves from left to right in Figures 4 and 3 and thus moves the upper end of the vertically disposed lever bar from left to right or in a clockwise direction. This causes the lower end of the lever bar 127 to move in a clockwise direction, from the position shown in Figure 4 to the position shown in Figure 3, and this moves the horizontally disposed arm 138, which is pivotally connected, as at 137, to the lower end of the vertically disposed lever bar 127, from right to the left in Figure 3 and thus moves the vertically disposed plate 37 from the right-hand position shown in Figure 4 to the left as shown in Figure 3, inasmuch as the vertically disposed plate 37 is pivotally connected as at 38 to the horizontally disposed arm 138. Now, as the vertically disposed plate moves from the position shown in Figure 4 to the position shown in Figure 3 the guide pin 50, engaging the slot 51, in the plate 37, guides the vertically disposed plate 37 in a substantially horizontal plane and the guide pin 35 moves along the uppermost slot 36 to thus move the left-hand end of the lever bar 26 downwardly in a counter-clockwise direction, in Figures 4 and 3, to thus move the pinion 23 downwardly out of engagement with the gear 22 and thus stop the doffer cylinder and associated parts. The forward movement of the vertically disposed plate 37 also causes the lower end of the vertically disposed shipper lever 40 to move to the left, in a clockwise direction, and the upper end of the shipper lever 40 also moves in a clockwise direction and thus moves the signal disk 165 into

view of the operator so that the operator may know that the doffer cylinder and associated parts are no longer in operation.

When so desired, the operator may move the outwardly extending lip portion 125 of the arcuate member 120 out of engagement with the upper end of the vertically disposed shaft 140 by moving the same in a counter-clockwise direction, in Figure 4, around the grooved cam wheel 120 so that the outwardly extending wire 128, engages the front vertical surface of the bearing block 92 and the outwardly projecting lip 125 of the strap iron arcuate member 121 remains in this position inasmuch as it is urged downwardly, by gravity, until an operator desires to return the arcuate member 121 to operating position such as is shown in Figures 3, 4 and 5.

In the drawings and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a carding machine having a doffer cylinder and a stripper knife for removing the fibres from the doffer cylinder and having driving means for the doffer cylinder, said driving means comprising a gear wheel on the doffer cylinder and a driven pinion for engaging the periphery of the gear wheel, a pivoted lever bar pivotally mounted at one end and having the driven pinion rotatably mounted in an intermediate portion thereof, said carding machine having sliding means provided with a diagonal slot therein and a pin on the free end of the lever bar for engagement with said slot, movement of the sliding means in one direction serving to elevate the free end of said lever bar to cause engagement of the pinion with the gear wheel on the doffer cylinder and movement in an opposite direction serving to disengage the pinion from the gear wheel, said carding machine also having a shipper lever for moving said slidable member, an upwardly extending lever bar pivoted intermediate its ends and having a downwardly depending portion adjacent one end of the sliding member and a pivotal connection between the sliding member and the last-named pivoted member, said carding machine also having a pair of calender rolls through which the fibres are passed, and having a driving shaft for driving the calender rolls, an oscillatable shaft disposed below the calender rolls, a rod extending laterally and upwardly from said oscillatable shaft and having a movable trumpet mounted on its upper end and through which the fibres are passed from the doffer cylinder to the calender rolls, the driving shaft for the calender rolls having an eccentric member mounted thereon and a member encircling the eccentric member and having a laterally projecting lip associated therewith, an upwardly extending rod secured on said oscillatable shaft and on the upper end of which the said lip is adapted to rest and have sliding movement, said movable trumpet being adapted to move toward the doffer cylinder upon a predetermined decrease in the density of the fibres passing through the machine, thus oscillating the upwardly extending rod secured on said oscillatable shaft to lower the path of travel of the lip extending from said eccentric member to cause it to engage the upper end of the upwardly extending lever bar to thus move the slidable member to lower the free end of the first pivoted lever bar to thereby disengage the pinion in the pivoted lever bar from engagement with the gear wheel on the doffer cylinder shaft.

2. In a carding machine having a doffer cylinder and means for driving the same and having a stripper knife for stripping the fibres from the doffer cylinder and having a pair of calender rolls through which the fibres are passed, a shaft for driving one of the calender rolls, an oscillatable member eccentrically mounted on said shaft, an oscillatable shaft disposed below and in off set relation to the drive shaft for the rolls, and said oscillatable shaft having an outwardly and upwardly extending rod projecting in front of the calender rolls, a movable trumpet mounted on the upper end of said rod and through which the fibres are passed on their way from the doffer cylinder to the calender rolls, a normal density in the web of fibres being stripped from the doffer cylinder serving to move the movable trumpet on the upper end of said rod toward the calender rolls, and a decrease in density of the fibres passing through the movable trumpet allowing the movable trumpet to move toward the doffer cylinder, means on the oscillatable shaft which supports the trumpet for normally holding the oscillatable member on the shaft which drives the calender rolls in elevated position, and means engagable by the oscillatable member mounted on the driving shaft which drives the calender rolls for disconnecting the driving means from the doffer cylinder upon swinging of the trumpet away from the calender rolls.

THOMAS L. HAND.

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