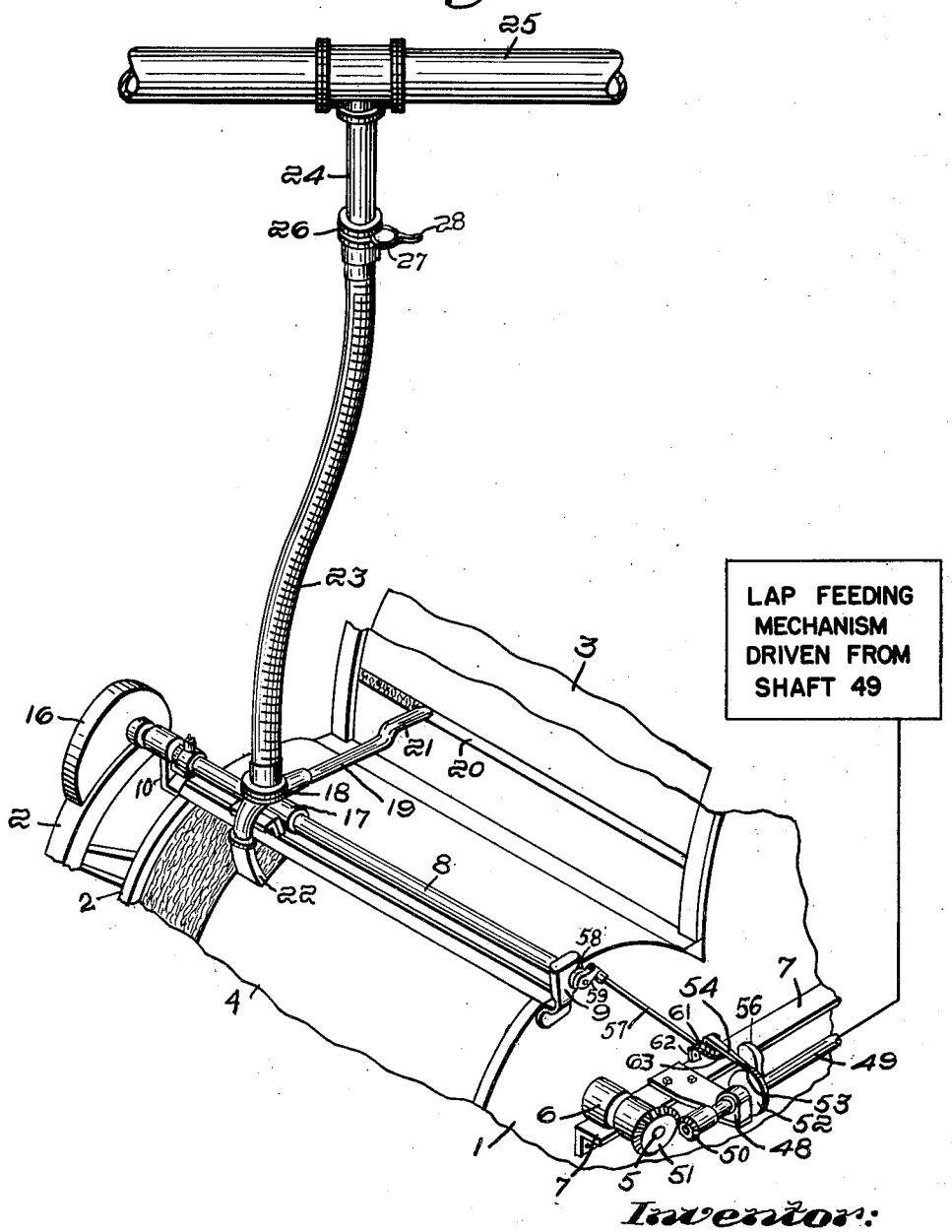
Feb. 13, 1951 E. CLARK 2,541,407

CARDING MACHINE

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Fig. 1.



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CARDING MACHINE

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Fig. 2.

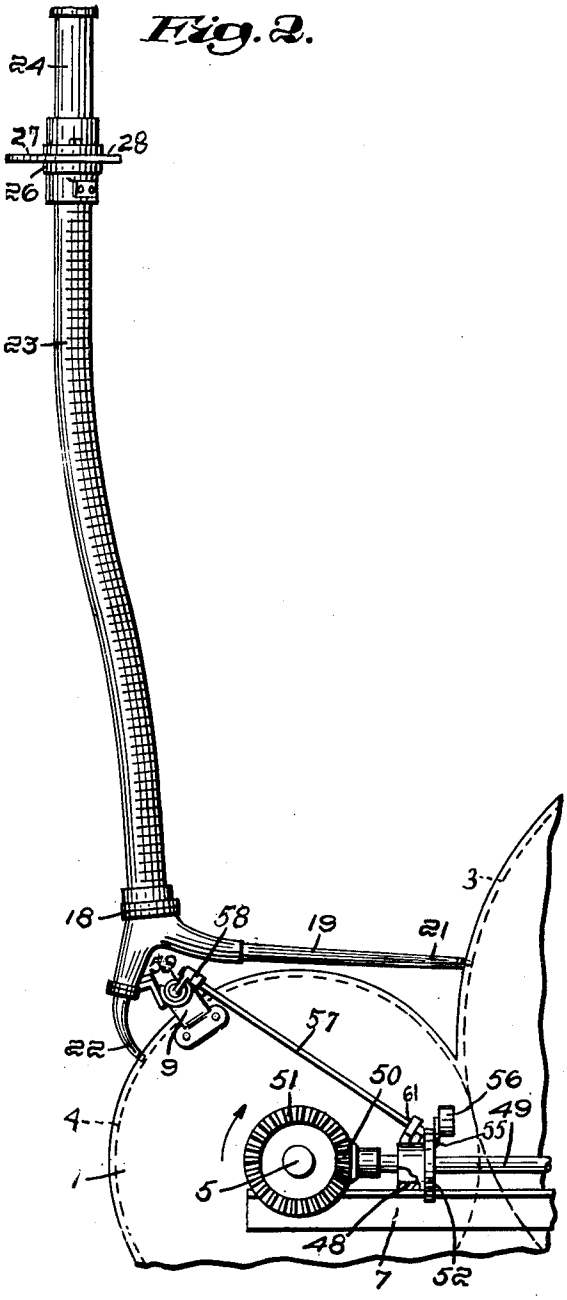
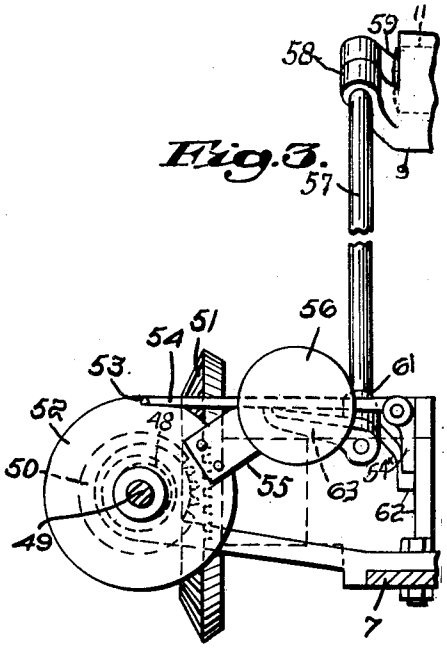


Fig. 3.



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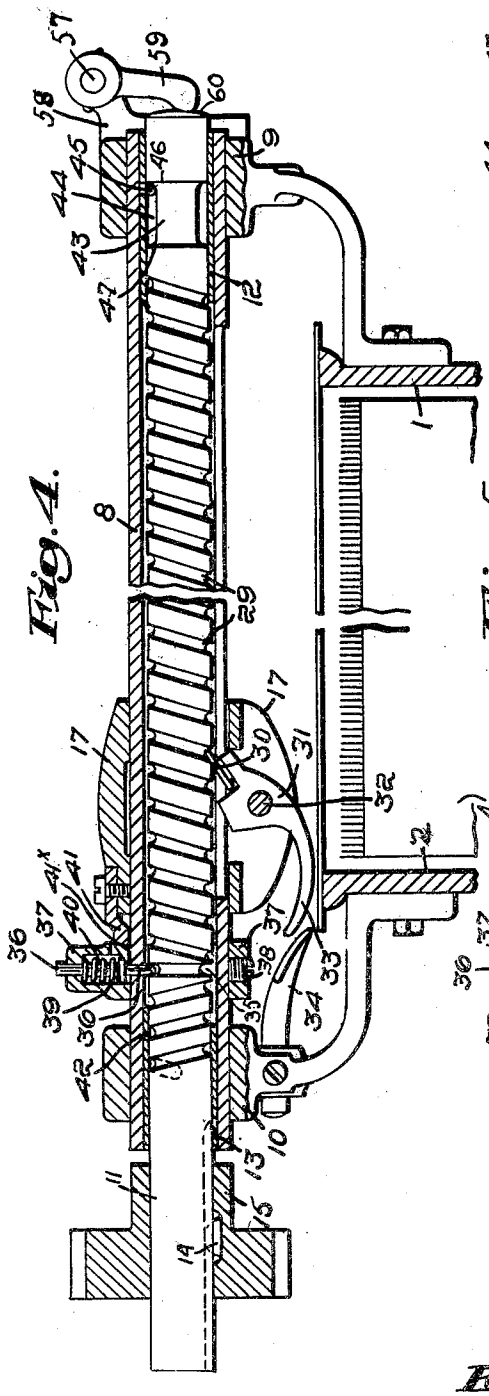


Fig. 4.

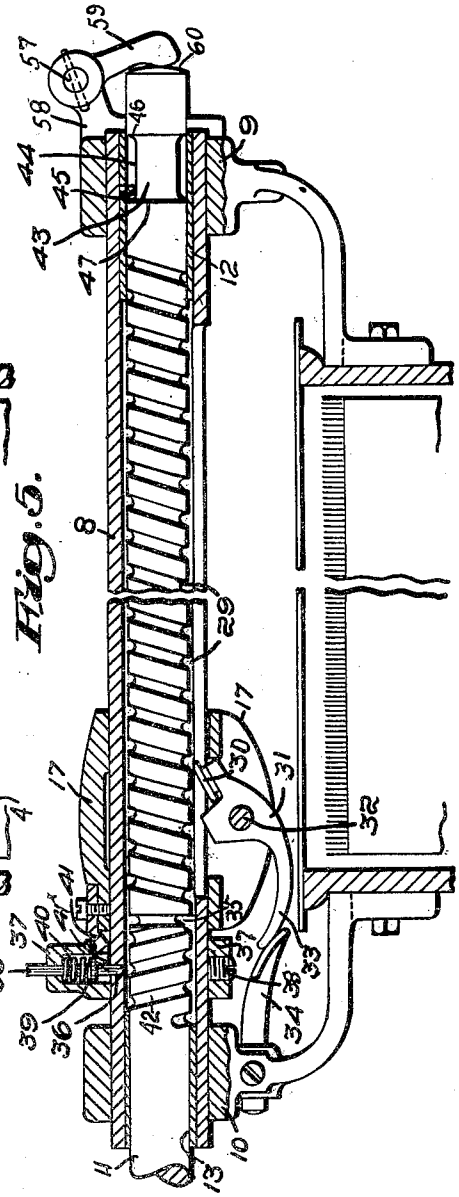


Fig. 5.

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Patented Feb. 13, 1951

2,541,407

UNITED STATES PATENT OFFICE

2,541,407

CARDING MACHINE

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Application October 23, 1947, Serial No. 781,716

7 Claims. (Cl. 19—109)

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This invention relates to improvements in carding machines having means for stripping a mat of accumulated short fibres, dirt, and other debris from the card clothed surface of the carding cylinder and doffer and particularly to pneumatic card stripping mechanism which comprises a carriage slidably movable longitudinally of the carding cylinder and doffer and provided with suction nozzles having their mouths properly positioned respectively in close proximity to the card clothing of the cylinder and of the doffer, with means for supplying suction to the nozzles during the stripping operation, means for shutting off suction during the carding operation, together with means for discontinuing the operation of the lap feeding mechanism before the stripping operation begins and automatically restoring the operation of the lap feeding mechanism at the completion of the stripping operation.

More particularly the invention relates to improvements in the general type of card stripping mechanism disclosed in Patent No. 2,281,268 for Carding Machine granted to me April 28, 1942.

One of the principal objects of the invention is to provide a card stripping construction which will insure complete stripping of the cylinder and doffer from end to end.

Another object of the invention is to provide novel mechanism for automatically causing the resumption of the lap feeding mechanism upon completion of the stripping operation.

In usual types of card stripping mechanism the carriage is moved manually to one end of the cylinder, means actuated to discontinue the operation of the lap feeding mechanism, suction then applied to the nozzles, and the carriage then caused to traverse to the other end of the cylinder and doffer by a continuously rotating traverse screw which is fixedly mounted in suitable bearings in the frame of the machine.

Inasmuch as the traversing movement is begun immediately upon engagement of means such as a pawl on the carriage with the thread of the traverse screw a spiral furrow will be stripped from the mats of material respectively on the carding cylinder and doffer. It is therefore necessary to hold the carriage in substantially initial stripping position a sufficient length of time to enable the cylinder and the relatively slow rotating doffer to rotate a sufficient number of times to remove the material from the end portions of the cylinder before the pawl on the carriage is permitted to engage the traverse screw; otherwise, a triangular strip or dog tail will remain upon the cylinder and may also remain on the

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doffer although the usual doffer stripping nozzle is wider than the cylinder stripping nozzle. Similarly, it is necessary to provide means for insuring complete stripping of the opposite ends of the cylinder and doffer at the finishing of the traversing movement in order to prevent the retention of similar triangular strips or dog tails of material particularly upon the more slowly rotating doffer before the resumption of the lap feeding mechanism in order that a sliver of uniform character and quality may be produced. In the construction of the type disclosed in my prior patent aforesaid means are provided for arresting the carriage at the end of its traversing movement, automatically cutting off the suction, and thereupon automatically restoring the operation of the lap feeding mechanism in order that production may be resumed immediately upon completion of the stripper. Mechanisms for accomplishing this result in machines of this type are of a complicated character and another object of the present invention is to provide relatively simple and inexpensive mechanism for insuring complete stripping of the carding cylinder and doffer at the end of the stripping movement. This is accomplished in the present invention by providing means for arresting or stalling the carriage at approximately the end of its stripping movement and thereupon causing the traverse screw to move longitudinally while suction continues to be applied to the nozzles and providing means operable by the longitudinal movement of the traverse screw to cause the resumption of the operation of the lap feeding mechanism. The operation of mechanism for shutting off the suction to the nozzles may be manually operated or automatically operated in suitably timed relation to the mechanism for resuming the lap feed to insure complete stripping of the terminal end portions of the cylinder and doffer so that a minimum amount of attendance of the operator will be required to cause repeated stripping of the cylinder and doffer of one machine and enabling him promptly to attend to other machines having means for applying the suction to several machines from the same source of power.

These and other objects and features of the invention will more fully appear from the following description and the accompanying drawings and will be particularly pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings as applied to a carding machine having pneumatic mechanism for stripping the cylinder and doffer thereof, in which,

Fig. 1 is a perspective view of so much of the

carding machine and card stripping mechanism and the means for controlling the operation of the lap feeding mechanism as is necessary to the understanding of the present invention as embodied in a machine of the type disclosed in my prior Patent No. 2,281,268, aforesaid;

Fig. 2 is a detail end view of the mechanism for controlling the operation of the lap feeding mechanism;

Fig. 3 is a detail view of the mechanism illustrated in Fig. 2, viewed from the right toward the left, the shaft for actuating the lap feeding mechanism being shown in vertical section;

Fig. 4 is a detail view, partially in vertical section, of the nozzle-supporting carriage, the tube supporting the traverse screw and the mechanism for releasably locking the traverse screw against longitudinal movement during the stripping operation, with the carriage positioned in proximity to the terminal end of its traversing movement with the pawl on the carriage engaging the thread of the traverse screw, the traverse screw being shown in elevation; and

Fig. 5 is a similar view showing the carriage at the end of its traversing movement with the traverse screw forced longitudinally to actuate the mechanism for resuming the lap feeding operation and the pawl on the carriage released from the traverse screw.

The carding mechanism illustrated in the drawings comprises partially illustrated side frames 1 and 2 in which are journaled the shafts of a usual carding cylinder 3 and doffer 4, the doffer shaft 5 being shown as journaled in a bracket 6 which is conventionally mounted on an angle bar 7 forming a member of the side frame 1 as shown in my prior patent aforesaid.

The traversing mechanism comprises a traverse tube 8 which is mounted at its ends in brackets 9 and 10 which in turn are mounted upon the side frames 1 and 2 respectively. The traverse screw 11 is provided with cylindrical end portions which are rotatably and slidably mounted in bearings 12 and 13 in the ends of the traverse tube 8. The traverse screw is connected by a feather and slot connection 14 with a gear 15 (Fig. 4) which is driven from the doffer shaft by suitable intermediate gearing enclosed in a gear box 16 mounted upon the side frame 2.

The carriage 17 is slidably mounted on the traverse tube 8 and comprises a suction box 18 having a cylinder and stripping suction nozzle 19 extending therefrom with its end slidably mounted in a slot 20 in the casing of the carding cylinder. The nozzle 19 extends centrally of the width of the suction box and preferably is provided with a laterally offset end portion 21, as shown in my prior patent aforesaid.

Another relatively wide nozzle 22 extends centrally of the width of the suction box 18 and has a relatively wide mouth positioned in operative relation to the doffer. A flexible suction pipe 23 leads from the suction box 18 to a rigid conduit 24 which communicates with a conduit 25 through which suction is applied to the suction box 18 and the suction nozzles 21 and 22 and through which conduit 25 suction also is usually applied to the stripping mechanism of other carding machines. The lower end of the rigid section 24 is connected to the flexible tube 23 by a fitting 26 comprising a valve 27 for controlling the application of, or cutting off of, the suction to the stripping nozzles.

Suitable means may be provided for closing the shut-off valve such as a manually operable handle 28 or means automatically operable in suitably timed relation to the stoppage of the carriage at the finishing end of its traverse and to the mechanism for causing resumption of the operation of the lap feeding mechanism to insure complete stripping of the terminal end of the cylinder and particularly the doffer.

The traverse screw 11 as illustrated herein has a main thread 29 of uniform pitch which is engaged by the replaceable hardened member 30 on one arm of a pawl 31 which is pivotally journaled upon a shaft 32 which is mounted on the carriage. The other arm 33 of the pawl is of arcuate form and adapted at the end of the traversing movement to engage a reversely curved arcuate surface of a pawl-releasing arm 34 which is adjustably mounted in the bracket 10 which supports one end of the traverse screw. When the carriage is finally forced to the ultimate limit of its traverse, as hereinafter described, the pawl arm 31 rides upwardly upon the pawl-releasing lever 34 and disengages the pawl end 30 from the thread of the traverse screw and retains it thus disengaged during the normal carding operation. When it is desired again to strip the carding cylinders the pawl is manually withheld from engagement with the traverse screw and the carriage slid to initial stripping position in the usual manner.

In the present invention the traverse screw is continuously rotated and releasable means are provided for preventing longitudinal movement thereof during the stripping operation. In the construction illustrated the traverse screw is provided adjacent the finishing end of the traverse of the carriage with a deep annular groove 35 which is normally engaged by a pin 36 mounted in a bracket 37 which is adjustably clamped upon the traverse tube 8 by a set screw 38. The pin 36 is slidably journaled in a chambered upward extension of the bracket 37 and has an integral flange 39 which is normally forced downwardly by a spiral spring 40 interposed between the flange 39 and the upper end wall of the chamber in the bracket 37.

The carriage 17 has secured to its rear end a trip 41 which is provided with a beveled end portion 41x adapted to be forced beneath the flange 39 of the pin 36 when the carriage approaches the terminus of its movement and thereby raises the pin 36 out of engagement with the annular groove 35, thus freeing the traverse screw for longitudinal movement in its bearing. The bevel end 41x of the trip acts to raise the pin 36 clear of the groove 35 before the shoulder on the trip 41 engages the bracket, the bevel end 41x passing behind the pin. The carriage is thus stalled short of the terminus of its movement. The longitudinal movement of the traverse screw produced in the manner hereinafter described actuates mechanism for causing the resumption of the operation of the lap feeding mechanism.

The traverse screw is provided beyond the annular groove 35 with a subsidiary thread 42 of reverse pitch to that which causes the traversing movement of the carriage during the stripping operation for the purpose of returning the traverse screw to normal position and enabling the spring pressed locking pin 36 to engage the groove 35 and thereby hold the traverse screw in normal position during the next stripping movement of the carriage and its nozzles.

The cylindrical portion at the opposite end of the traverse screw, which is journaled in the bearing 12 in the traverse tube 8, has a reduced por-

tion 43 of predetermined length providing an annular recess 44 into which a stop 45 projects radially inward from the bearing 12 and during the normal operation of the stripping mechanism engages a shoulder 46 at the end of the recess and cooperates with the pin 36 when the end of the pin 36 is held in the groove by the spring 40 to prevent longitudinal movement of the traverse screw, as illustrated in Fig. 4. The opposite end of the recess 44 has a shoulder 47 which when the traverse screw is moved lengthwise engages the stop 45 and limits the movement of the traverse screw.

Means operable by the longitudinal movement of the traverse screw, to the right as illustrated in Fig. 5, are provided for actuating mechanism to cause the resumption of the lap feeding mechanism.

Any suitable mechanism operable by the longitudinal movement of the traverse screw may be employed for discontinuing the operation of the lap feeding mechanism during the card stripping operation and for resuming the operation of said mechanism at the end of the card stripping operation. That which is illustrated herein is similar to the mechanism disclosed in my prior Patent No. 2,281,268 aforesaid, and comprises a bracket which is mounted upon the angle bar 7 on the end 1 of the main frame and is provided with a rotatable eccentric bushing 48 in which is journaled one end portion of a countershaft 49 through which the lap feeding mechanism is actuated from the doffer shaft in the manner described in my prior patent. The countershaft 49 has at one end a pinion 50 normally engaging a gear 51 on the doffer shaft during the normal carding operation. The rotatable eccentric bushing 48 has fixedly secured to it a latching disk 52 provided with a notch 53 adapted to be engaged by a latch 54 which is pivotally mounted at its opposite end upon a bracket 54x mounted upon the angle bar 7 of the side frame 1 acting when the eccentric bushing is rotated in a counterclockwise direction to free the pinion 50 from engagement with the gear 51 on the doffer shaft 5 and to retain the same out of engagement therewith during the stripping operation. The latching disk 52 has secured to it an arm 55 provided with a counterweight 56 adapted to be raised manually to rotate the latching disk in the counterclockwise direction until the latch 54 engages the notch 53 thereby separating the pinion 50 from the gear 51 and causing discontinuance of the rotation of the shaft 49 and consequently interrupting the operation of the lap feeding mechanism during the stripping operation. When it is desired to strip the carding cylinder and doffer the operator first raises the counterweight 56 manually until the latch 54 engages the notch 53 thereby arresting the lap feeding mechanism. He then moves the carriage 17 manually to initial stripping position, then opens the valve 26 in the suction pipe and holds the carriage in initial stripping position with the nozzles registering with the end portions of the carding cylinder and doffer a sufficient length of time to permit such number of rotations of the cylinder and doffer as may be necessary completely to strip the initial ends thereof before causing the pawl 31 on the carriage 17 to engage the traverse screw. The operator then engages the pawl with the traverse screw and the carriage thereupon travels longitudinally of the traverse screw, to the left as illustrated herein, and causes the cylinder and doffer nozzles respectively to strip adjoining spiral furrows from the mats of material accumulated respectively on the cylinder and doffer in the usual manner.

When the carriage 17 has closely approached the finishing end of its traverse the inclined portion 41x of the trip 41 on the carriage is forced beneath the flange 39 on the pin 36 and raises the pin out of engagement with the annular groove 35, thereby freeing the traverse screw for longitudinal movement and arresting or stalling the movement of the carriage a sufficient length of time to insure complete stripping of the terminal ends of the cylinder and doffer before suction to the nozzles is shut off manually or automatically.

When the carriage 17 is thus arrested with the locking pin 36 withdrawn from the groove 35 the pawl 31 on the carriage remains in engagement with the thread 29 of the traverse screw and as the carriage is held stationary continued rotation of the traverse screw moves it longitudinally until arrested by engagement of the shoulder 47 of its recess 44 with the stop 45 as shown in Fig. 5 when the subsidiary thread 42 of reverse pitch will underlie but not be engaged by the raised locking pin 36.

This longitudinal movement of the traverse screw is, as before stated, utilized to cause resumption of the lap feeding mechanism. The mechanism for accomplishing this purpose, which is illustrated in the drawings, comprises a rock shaft 57 which is journaled near one end in an extension 58 of the bracket 9 which supports the outer end of the traverse tube 8. The rock shaft 57 has fixedly secured to it an arm 59 which upon longitudinal movement of the traverse screw is engaged by a preferably crowned end 60 of the traverse screw.

The opposite end of the rock shaft 57 is journaled in a bearing 61 in the bracket 62 which extends upwardly from and is bolted to the angle bar 7 of the end frame 1, as shown in Fig. 3. An arm 63, which is fixedly secured to the shaft 57, underlies the latch 54.

When the traverse screw 11 is moved longitudinally outwardly to the right, the arm 59 of the rock shaft is swung from the position shown in Fig. 4 to that shown in Fig. 5, thereby rotating the rock shaft 57 in a direction to cause the arm 63 at its opposite end to raise the latch 54 out of engagement with the notch 53 thereby permitting the counterweight 56 to descend by gravity and rotate the disk 52 and the eccentric bearing, which is rigid therewith, in a direction to move the pinion 50 on the countershaft 49 into engagement with the gear 51 on the doffer shaft 5 and thereby by again rotating the shaft 49 to cause the resumption of the lap feeding operation, in the manner disclosed in my prior patent aforesaid.

When the traverse screw is thus forced longitudinally outwardly to the right, by the engagement of its threads by the pawl upon the stalled carriage the shoulder 47 of the recess 44 will engage the stop 45, thus limiting further movement of the traverse screw after it has actuated the mechanism for resuming operation of the lap feed. When the shoulder 47 on the traverse screw is thus engaged by the stop 45 with the pawl 31 on the carriage remaining in engagement with the main thread 29 of the traverse screw the carriage 17 will be forced from its stalled position to the limit of its traverse causing the arcuate arm 33 of the pawl to engage and be lifted by the pawl-lifting lever 34 and the opposite end

of the pawl thereby disengaged from the thread of the traverse screw.

When the pawl is disengaged from the traverse screw the weight of the arms 59 and 63 of the rock shaft will move the traverse screw longitudinally to the left, as shown, from the position shown in Fig. 5 toward normal position illustrated in Fig. 4. Means are provided for insuring the proper positioning and locking of the traverse screw while the pawl is thus disengaged from the traverse screw for the next stripping operation. This is accomplished by the reversely subsidiary threaded screw 42 on the traverse shaft 11 heretofore described which, when the carriage is again manually moved toward initial stripping position with the pawl 31 held from engagement with the traverse screw will, as soon as the trip 41 on the carriage has been withdrawn from beneath the flange 39 of the locking pin 36, enable the spring 40 to force the locking pin 36 into engagement with the subsidiary thread 42 on the shaft of the traverse screw, thereby causing the traverse screw to move in the reverse direction, to the left, until the pin 36 enters the deeper annular groove 35 and thereby locks the traverse screw against longitudinal movement in either direction.

In the operation of the stripping mechanism, assuming that the carriage and the other parts of the mechanism are in the position illustrated by Fig. 5, that is, with a stripping operation completed and the lap feeding mechanism in operation, when a stripping operation is to be performed the operator holding the pawl 30 out of engagement with the traverse screw slides the carriage to the extreme right end. At the beginning of this sliding movement of the carriage away from the bracket 37 the pin 36 is released and drops into the annular groove 35, but if the traverse screw has previously been moved to the extreme left by the weight of the arms 59 and 63 on the shaft 57, as more commonly happens, the pin 36 drops into the subsidiary thread 42 and is thereby brought immediately into the groove 35. The operator now still holding the pawl 30 out of engagement with the traverse screw raises the counterweight arm 55, 56, and thus arrests the operation of the lap feeding mechanism. He then opens the valve to supply suction to the nozzles and continues to hold the carriage stationary at the right hand end until the cylinder and doffer have rotated a sufficient number of times to insure complete stripping of their ends. The operator then releases the pawl 31 into engagement with the main thread 29 of the continuously rotating traverse screw and the stripping operation proceeds. When the carriage nears the terminus of its traversing movement the beveled end portion 41x of the trip passes beneath the flange 39 on the locking pin 36 sufficiently far to raise the pin out of engagement with the annular groove 35. But a slight vertical movement of the pin 36 is required and the parts are so adjusted, as by the adjustment of the releasing arm 34 in the bracket 10 and the position of the shoulder on the trip with relation to the bracket 37, that the pin 36 is withdrawn from the groove 35 before the pawl arm 33 engages the releasing arm 34 and before the shoulder on the trip engages the bracket 37 and with the bevel 41x of the trip moving at one side of the pin 36. Thus the carriage is stalled and held by friction short of the terminus of its movement to the left.

With the pin 36 out of the groove 35 and the pawl 30 still in engagement with the continuously rotating screw, it will be seen that the screw itself will be forced to the right until its shoulder 47 engages the stop 45. With the endwise movement of the traverse screw to the right stopped the carriage is given its little final movement to the left causing the carriage or some portion thereof to come up against the bracket 37 and the pawl arm 33 to engage the releasing arm 34 and release the pawl from the traverse screw. During the time the carriage is thus in its left hand positions the suction is maintained during sufficient rotations of the cylinder and doffer to insure the complete stripping of the ends and is then manually discontinued by the operator. Furthermore when the traverse screw was bodily moved to the right with the carriage stalled short of its terminus of movement the traverse screw engaged the arm 59 and effected the resumption of the operation of the lap feeding mechanism.

It will be understood that the particular embodiment of the invention shown and described herein is of an illustrative character and not restrictive and that various changes in form, construction and arrangement of parts may be made within the spirit and scope of the following claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. In combination with a carding machine having a carding cylinder and doffer, means for feeding a lap of material to the carding cylinder, and means for selectively discontinuing or resuming the operation of the lap feeding means, mechanism for spirally stripping the mats of material accumulated respectively on the cylinder and doffer comprising a carriage movable longitudinally of the cylinder and doffer having suction nozzles in cooperative relation to the respective surfaces of the cylinder and doffer, means for applying suction to the nozzles, a continuously rotating longitudinally movable traverse screw having a main thread for actuating said carriage, locking means normally holding the traverse screw from longitudinal movement, a pawl on said carriage adapted releasably to engage the traverse screw to enable the carriage to be moved to initial stripping position and to be held manually in stripping position to permit complete stripping of the mats from the initial ends of said cylinder and doffer and upon engagement of the pawl with the main thread of the traverse screw to move said carriage lengthwise of the cylinder and doffer progressively to strip spirals of the mat from the cylinder and doffer, means for temporarily stalling the traversing movement of the carriage as it closely approaches the terminus of its traverse with the nozzles thereof in registry with the terminal ends of the cylinder and doffer, means operable by said stalling means to release the traverse screw locking means and by continued engagement of the carriage pawl with the traverse screw to move the carriage screw lengthwise in a direction opposite to that of the stripping movement of the carriage, and means operable by such longitudinal movement of the traverse screw to actuate the mechanism for resuming operation of the lap-feeding means.

2. Mechanism as defined in claim 1 in which means are provided for arresting longitudinal movement of the traverse screw while the carriage pawl continues in engagement with the traverse screw thereby causing the carriage to resume its movement in the stripping direction to the terminus of its traverse to insure complete stripping of the mats from the cylinder and doffer.

3. Mechanism as defined in claim 2 in which means are operated by the longitudinal final movement of the carriage to release and maintain the pawl of the carriage out of engagement with the main thread of the traverse screw.

4. Mechanism as defined in claim 3 in which means are operable when the carriage is moved toward initial stripping position to move the traverse screw in the opposite direction to locking position and to effect the locking of the screw against longitudinal movement.

5. Pneumatic mechanism for stripping the cylinder and doffer of a carding machine, having lap feeding mechanism and means for discontinuing the lap feed during the stripping operation, comprising a carriage movable longitudinally of said cylinder and doffer having cylinder and doffer stripping nozzles, means for applying suction to the nozzles, a continuously rotating longitudinally movable traverse screw, a pawl on said carriage releasably engaging the thread of the traverse screw, means normally locking the traverse screw from longitudinal movement during the traverse of the carriage when the pawl is engaged with the traverse screw, means for temporarily stalling the carriage and means operable thereby to release the traverse screw for longitudinal movement as the carriage closely approaches the end of the stripping movement while the pawl on the carriage is in engagement with the traverse screw thereby causing longitudinal movement of the traverse screw, means operable by said longitudinal movement of the traverse screw to cause resumption of the operation of the lap feeding mechanism, means for then arresting said longitudinal movement of the traverse screw thereby causing the carriage, while the pawl is in engagement with the traverse screw, again to move in the direction of its stripping movement, to the limit of its traverse, means operable by the final movement of the carriage to release the engagement of the pawl with the traverse screw, means operable after the carriage is thus released from engagement with the traverse screw to move the traverse screw longitudinally to normal locking position thereby to enable said locking means to engage and retain the traverse screw from longitudinal movement.

6. Pneumatic mechanism for stripping the cylinder and doffer of a carding machine, having lap feeding mechanism and means for discontinuing the lap feed during the stripping operation, comprising a carriage movable longitudinally of the cylinder and doffer having doffer and cylinder stripping nozzles, means for applying suction to the nozzles, a continuously rotating and longitudinally movable traverse screw having a main thread for actuating the carriage and a circumferential groove in proximity to the terminal end of the main thread thereof, a subsidiary thread of reverse pitch communicating with said groove and extending therefrom in the opposite direction from that of the main thread, a pawl on said carriage releasably engaging the main thread of said traverse screw, a spring actuated

retaining pin engaging said groove normally holding the traverse screw from longitudinal movement during the stripping movement of the nozzles caused by the traverse of the carriage when engaged with the traverse screw, means on said carriage for withdrawing the retaining pin from said groove near the end of the stripping movement of the carriage while the pawl is in engagement with the traverse screw thereby causing longitudinal movement of the traverse screw, and means operable by the longitudinal movement of the traverse screw to cause resumption of the operation of the lap feeding means.

7. Pneumatic mechansim for stripping the cylinder and doffer of a carding machine, having lap feeding mechanism and means for discontinuing the lap feed during the stripping operation, comprising a carriage movable longitudinally of the cylinder and doffer having cylinder and doffer stripping nozzles, means for applying suction to the nozzles, a continuously rotating longitudinally movable traverse screw having a circumferential groove in proximity to the terminal end of the main thread thereof a subsidiary thread of reverse pitch communicating with said groove and extending therefrom in the opposite direction from that of the main thread, a pawl on said carriage releasably engaging the main thread of said traverse screw to permit the carriage to be moved manually to initial stripping position, a spring actuated retaining pin engaging said groove normally holding the traverse screw from longitudinal movement during the stripping movement of the nozzles caused by the traverse of the carriage when the pawl thereof is engaged with the traverse screw, means on said carriage for withdrawing the retaining pin from said groove near the end of the stripping movement of the carriage while its pawl is in engagement with the traverse screw thereby causing longitudinal movement of the traverse screw, means operable by the longitudinal movement of the traverse screw to cause resumption of the operation of the lap feeding means, means for arresting the longitudinal movement of the traverse screw while the main thread of the traverse screw is engaged by the pawl on the carriage thereby to cause the carriage to move to the limit of its traverse in the direction of terminal stripping completely to finish the stripping operation, and means operable thereupon to disengage the pawl from said traverse screw.

ERNEST CLARK.

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