April 10, 1956 F. E. ROWE, JR 2,740,994

CLEANING NOZZLE FOR CARDING MACHINE

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Fig. 1.
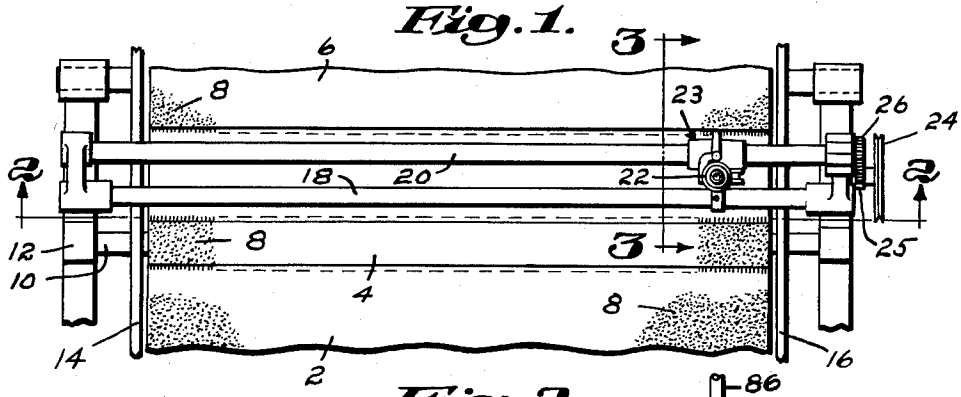


Fig. 2.

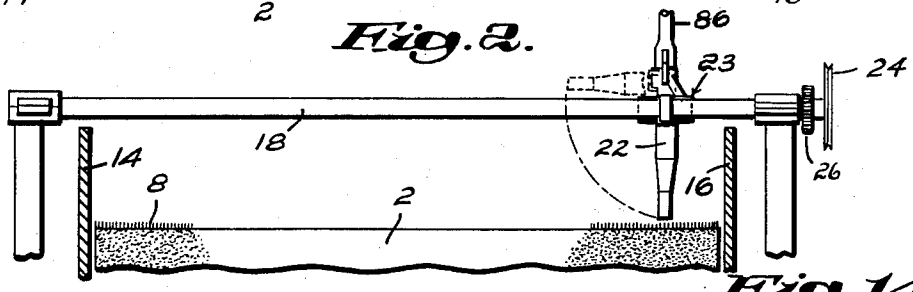


Fig. 14.

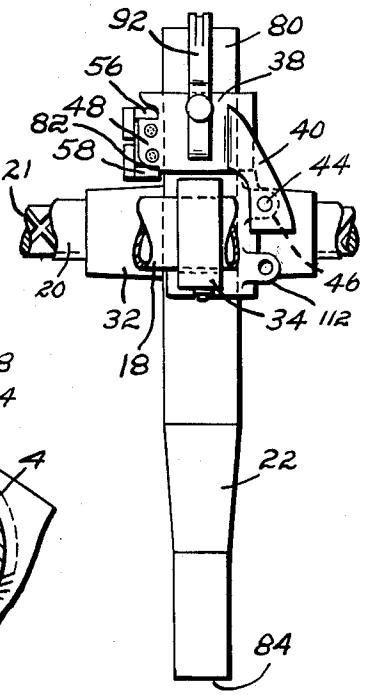
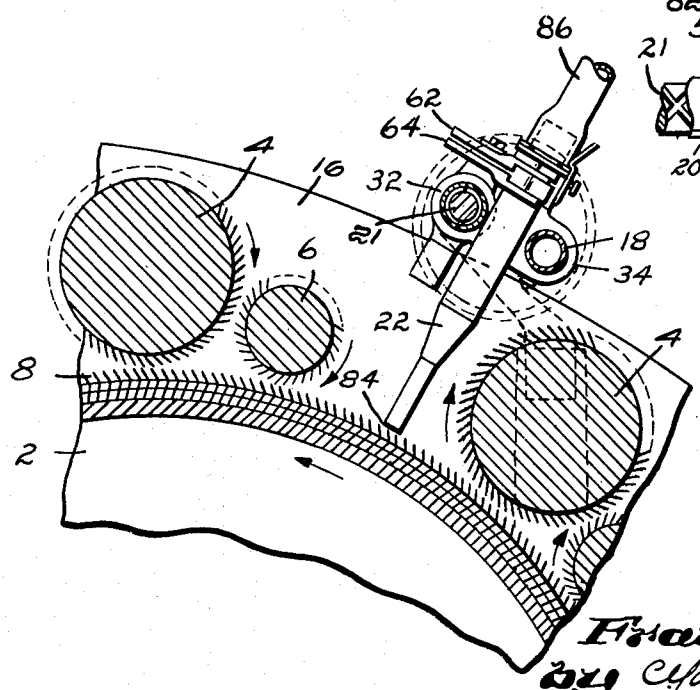


Fig. 3.



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Fig. 4.

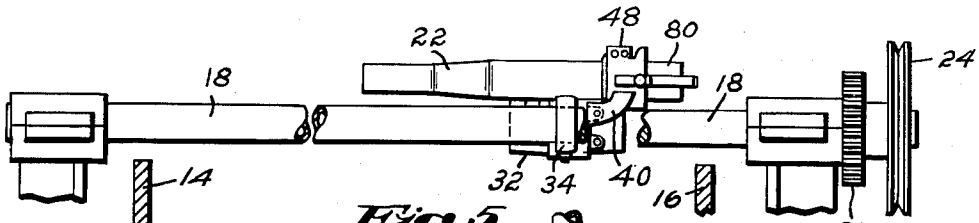


Fig. 5.

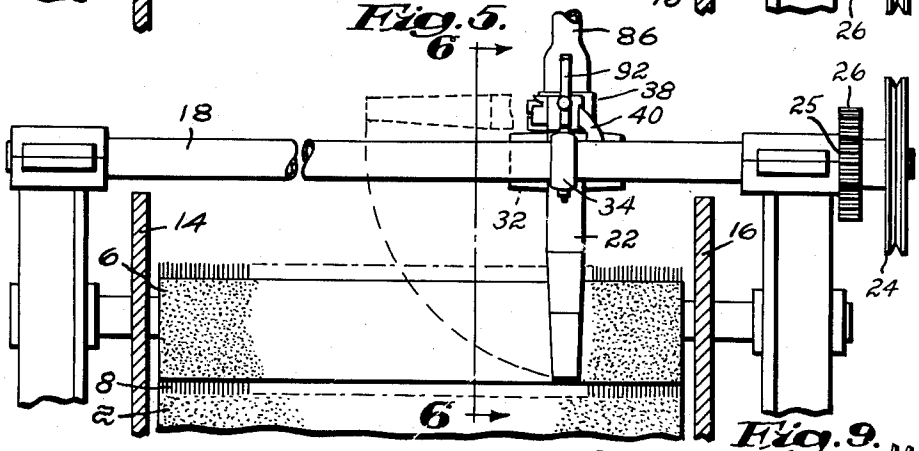


Fig. 6

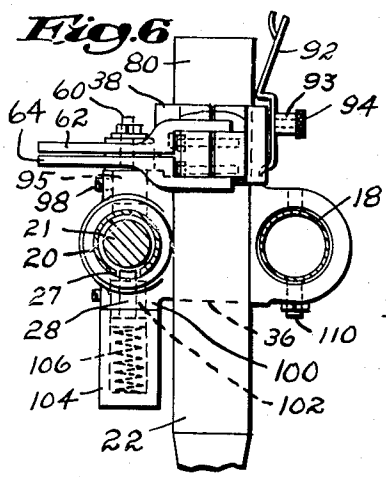


Fig. 7.

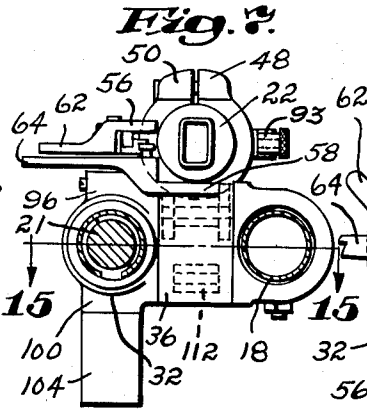


Fig. 9.

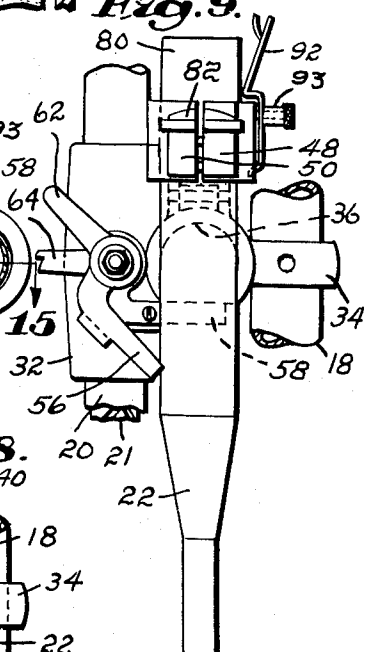


Fig. 15.

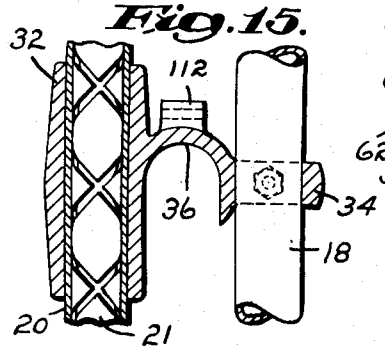
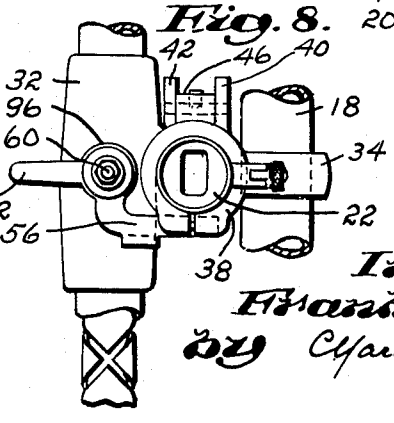


Fig. 8.



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Fig. 10.

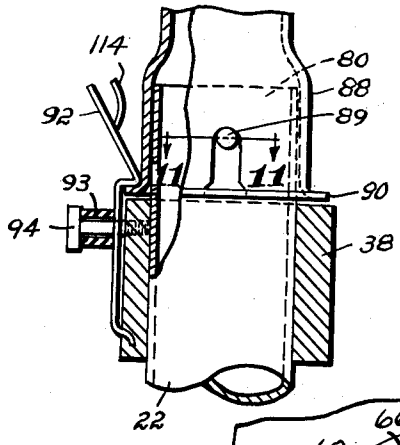


Fig. 11.

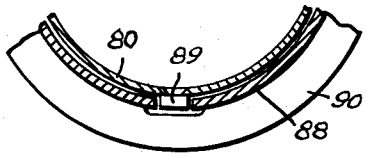
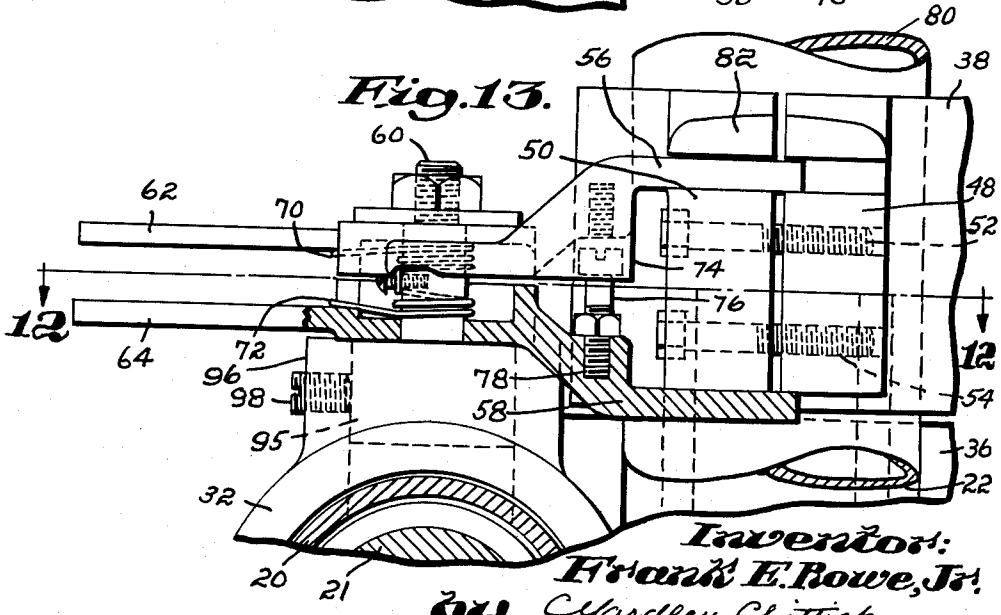


Fig. 12.

Fig. 13.



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2,740,994

CLEANING NOZZLE FOR CARDING MACHINE

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Application January 24, 1952, Serial No. 268,027

10 Claims. (Cl. 19—109)

This invention relates generally to the textile industry and is particularly concerned with a mechanism for cleaning the card clothing of a carding machine.

Vacuum or suction nozzles, arranged to be moved by a traversing mechanism back and forth across the surface of the cylinder of a carding machine to clean the card clothing from time to time as may be necessary, have been used successfully for many years past. These vacuum nozzles have been used for cleaning not only the cylinders of cotton and woolen cards but also other elements such as workers, strippers, doffers and fancies.

In woolen carding machines, it is customary to use side boards. These boards more or less encase the sides of the machine and, in general, are positioned close to the ends of the cylinders. The boards extend an appreciable distance above the periphery of the cylinders and other elements and may support removable lids or covers. In this way, the carding machine may be substantially enclosed, thus protecting the machinery from accumulations of dirt and dust and, at the same time, preventing lint and other light particles from leaving the machine and floating about the room.

When a vacuum nozzle is used with a woolen carding machine having side boards, the lateral travel of the nozzle is limited by its engagement with the side boards at the opposite ends of the carding cylinder and such engagement prevents moving the nozzle end beyond the edge of the cylinder. Therefore, it has been customary during those periods when the card is in operation and the cleaning nozzle is not functioning to leave the nozzle as close as possible to one edge of the cylinder. However, leaving the nozzle over the cylinder and between the adjacent workers and strippers is very objectionable because in this position the stock thrown off from the workers and strippers accumulates on the side of the nozzle. In addition, stock from the cylinder is thrown not only on the end of the nozzle but also farther up on the sides of the nozzle. When the accumulated pile of stock on the nozzle coming from the workers, strippers and cylinder becomes large enough, it then sooner or later breaks away to produce irregularities in the carded fibers coming from that area in the cylinder. This, in turn, not only may cause defective roving but also in many cases the pile-ups are so large that, when suddenly freed from the nozzle to pass on through the card, serious damage is done to the wires on the cylinder, workers and strippers.

In view of the foregoing condition, it has been deemed desirable to provide a construction which will permit the nozzle, during non-cleaning periods, to be removed a sufficient distance from the surface of the card clothing so as to eliminate any possibility of the above referred to pile-up of fibers. Since the nozzle cannot be moved sideways beyond the edge of the cylinder because of the side boards, it must be raised from its position adjacent the card clothing.

Accordingly, the present invention is concerned with a specific mechanism that has been designed to permit

the removal of the nozzle from its normal position close to the card clothing, to a more elevated location during the non-cleaning periods. The mechanism hereinafter disclosed and claimed enables the operator to shift the nozzle position readily without danger of injury to himself and, at the same time, insures that the nozzle on being returned to operative position will automatically be located at exactly the correct distance from the surface of the card clothing.

Therefore, it may be said to be an object of the present invention to provide supporting means which may be used with a conventional vacuum nozzle actuated by traversing mechanism that will permit manual shifting of the nozzle from its normal relationship with the card clothing to a position thereabove by relatively simple, easy-to-operate mechanical elements.

It is also an object of the invention to provide supporting means in the form of a carrying bracket for the nozzle which is reversible so that the nozzle may be stopped at the end of the cleaning operation at either side of the cylinder, as may be more convenient, and thereafter shifted to raised position from whence it may be returned to correct operating position when the next cleaning operation is to be performed. That is, when the bracket is in one position, it will be stopped at that side of the card that will permit the nozzle to be swung inwardly of the cylinder. When the bracket is reversed then the nozzle will be stopped at the other side of the cylinder so that the nozzle can still be swung inwardly but in the opposite direction. Ordinarily, the bracket will be arranged so that the inoperative nozzle position will be on the same side of the card as the belt and gearing that drives the traverse screw. In this way, the operator may easily remove the belt from the traverse screw pulley, disconnect the vacuum hose from the upper end of the nozzle and then swing the nozzle so that the lower end will swing inwardly of the cylinder to a height where it will be clear of all fibers when the card is in normal operation.

These and other objects of the invention will become more apparent as the description proceeds with the aid of the accompanying drawings in which

Fig. 1 is a plan view of a section of a cylinder with a cleaning nozzle carried by traversing mechanism positioned thereover.

Fig. 2 is an elevation of Fig. 1 on the line 2—2. This view shows the side boards at the ends of the cylinder.

Fig. 3 is an enlarged sectional elevation on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged view of the upper part of Fig. 2 showing the nozzle swung up to its raised inoperative position and with the side boards inside the bearings close to the cylinder.

Fig. 5 is a view similar to Fig. 4 showing the nozzle in normal vertical operative position.

Fig. 6 is an enlarged side elevation of the nozzle taken on the line 6—6 of Fig. 5.

Fig. 7 is a side elevation similar to Fig. 6 but with the nozzle swung upwardly to horizontal position.

Fig. 8 is a plan view of the nozzle shown in Fig. 6.

Fig. 9 is a plan view of the nozzle shown in Fig. 7.

Fig. 10 is an enlarged vertical fragmentary sectional elevation of the upper part of the nozzle showing means for connecting the suction hose to the upper end of the nozzle.

Fig. 11 is a horizontal section on the line 11—11 of Fig. 10.

Fig. 12 is a still further enlarged horizontal section of the nozzle on the line 12—12 of Fig. 13.

Fig. 13 is an elevation, partly in section, taken on the line 13—13 of Fig. 12.

Fig. 14 is a side elevation of the nozzle looking from the right of Fig. 6.

Fig. 15 is a horizontal section on the line 15—15 of Fig. 7.

Since those familiar with the woolen carding industry understand the nature of the cylinders, workers, strippers, doffers and fancies used therewith and the card clothing that covers these elements, it has been deemed unnecessary to show more than fragmentary sections of the carding machines. The vacuum nozzle disclosed herein has been in widespread use in the industry, for some time past, for cleaning cylinders. Accordingly, in Fig. 1 there is shown in plan view a cylinder 2, a worker 4 and a stripper 6. All of these are covered with the conventional card clothing 8. They are carried for rotation by the usual shafts and bearings of which the worker shaft and bearings are shown at 10 and 12.

Along the sides of the entire machine run the side boards shown at 14 and 16. These are removed only for making repairs or cleaning the machine. During operation of the machine, they remain in position.

Extending transversely of the machine and located above the cylinder and generally between the worker 4 and stripper 6 is the vacuum cleaning device and the traversing mechanism. This consists of a transversely extending guide bar 18, a traversing screw 21 parallel to the guide bar (see Figs. 1, 8 and 15), screw housing 20 and the vacuum nozzle 22 supported by a bracket 23 which is carried by the screw and the screw housing and by the guide bar. Rotation of screw 21 will cause the bracket and nozzle to be moved slowly back and forth across the cylinder and, with suction applied to the nozzle, the end of which is close to the card clothing, cleaning will take place. As shown by Figs. 3 and 9, which illustrate the nozzle from two different angles, the mouth of the nozzle is contracted so that its dimension in an axial direction relative to the cylinder is greater than its dimension in a circumferential direction relative to the cylinder.

The mechanism for causing rotation of screw 21 is conventional. It consists of a belt driven pulley 24 which rotates small gear 25 and larger gear 26, the latter of which is affixed to screw 21. The screw housing 20 is slotted along its bottom at 27 and through this slot extends a spring pressed dog 28 (see Fig. 6), carried by the bracket 23. By engagement of dog 28 with the thread of screw 21, the rotary motion of the screw is translated into linear motion of the bracket.

It will be noticed in Figs. 1, 2 and 4 that the side boards 14 and 16 are close to the ends of the cylinder, thereby making it impossible to move nozzle 22 laterally far enough to have the end of the nozzle beyond the end of the cylinder. That is, nozzle 22, when in engagement with the side boards at the limit of its travel, will be at a position where it is still over the cylinder close to the end thereof. This, as heretofore pointed out, is an undesirable position for the nozzle when in inoperative condition.

Accordingly, there has been devised and will be described hereinafter a novel nozzle carrying mechanism supported by bracket 23 which permits the nozzle to be moved back and forth across the cylinder in the normal manner during the cleaning operation but thereafter, when the carding machine is in normal operation, the nozzle 22 may be swung upwardly to a horizontal position, as illustrated in Fig. 4, where it is out of the way and will be secure against interfering with the fibers on the card clothing.

Referring to the several figures, the nozzle is supported by the bracket 23 which bracket comprises a sleeve portion 32 adapted to fit over and slide on housing 20 and an extension thereof 34 forming a cooperating support which fits over and slides on guide bar 18. These two parts are connected together by a semi-circular web 36 (see Figs. 7 and 15) which is the direct support for the nozzle.

The nozzle 22 is clamped for vertical adjustment within the confines of a slotted collar 38 having a pair of downwardly extending arms 40 and 42 which are pivoted by a pin 44 to a boss 46. The left side of collar 38, as viewed in Fig. 14, has extensions 48 and 50 (see Figs. 12 and 13) which are clamped together by screws 52 and 54 to hold nozzle 22 firmly in the desired position with its end the proper distance from the cylinders. The pivotal arrangement just described is for the purpose of permitting the nozzle to be swung from the vertical position shown in Figs. 2, 3, 5, 6, 8, 12, 13 and 14 to the horizontal position shown in Figs. 4, 7 and 9. Attention is called to the position of pivot 44 in relation to the swinging movement of the end of the nozzle. This pivot is on the side of the nozzle that is away from the direction in which the end 84 swings. Thus, while the nozzle is of substantial width and located very close to the wires of the cylinder, there can be no touching of the nozzle by the wires because the arcs of movement of all parts of the nozzle end as it is shifted from normal operative position, will be away from the cylinder. The pivot 44 will always be below the nozzle when the latter is in inoperative position as shown in Figs. 7 and 8.

In addition to the pivoting mechanism just described, means must be provided to lock the nozzle in vertical position when the card clothing is being cleaned and to secure it in horizontal position when the card is in normal operation. This locking mechanism comprises in general a pair of manually operated spring pressed levers which will now be described in relation to the nozzle supporting mechanism. Referring to Figs. 3, 5, 6, 8, 12, 13 and 14, the nozzle is shown locked in vertical position. This is accomplished by an upper lever 56 which rests on the top side of extensions 48 and 50 and a lower lever 58 which is shown located under the said extensions. Both of these levers are pivoted on a common shaft 60 and have handles 62 and 64. A coil spring 66 is secured to the shaft 60 by a pin 68 with the two ends of the spring, as at 70 and 72, engaging the levers to urge them to rotate counterclockwise as viewed in Fig. 12. It is believed apparent that considering the levers as viewed in Fig. 12, either one or both of the levers 56 and 58 may be manually rotated clockwise by clockwise movement of handles 62 and 64. Upon release of the handles, the spring 66 will return the two levers to the positions shown.

As can be seen in Fig. 13, upper lever 56 has a web 74 depending therefrom which is adapted to be engaged upon rotation of lever 58 by the upper end of a pin 76 mounted on the lower lever 58 at 78.

So long as the two levers 56 and 58 are in the position shown in Figs. 12 and 13 in engagement with extensions 48 and 50, the nozzle must remain in vertical position. Lever 56 prevents collar 38 from being rotated to the right about its pivot 44, as viewed in Fig. 14, and the engagement of the nozzle itself with the rear of semicircular web 36 prevents rotation to the left. When, however, it is desired to swing the nozzle to horizontal position, the operator moves handle 62 clockwise which swings lever 56 out of engagement with the upper surface of extensions 48 and 50. At the same time, the operator will grasp the upper end of the nozzle, as at 80, (the vacuum hose having previously been disconnected therefrom) pulling it toward the side of the machine and causing the nozzle to pivot about pin 44. As this pivoting proceeds, the rising front surface of nozzle 22 engages lever 58, causing it to swing clockwise. The tension of spring 72 and the frictional resistance between the surface of the nozzle and lever 58 do not seriously oppose movement of the lever clockwise as the nozzle swings up, thus permitting the nozzle to reach horizontal position. As soon as this position is reached, lever 58, under the urging of its spring, will snap back to the original position shown in the several figures where it will act as a support to maintain the nozzle horizontally. The position of the two levers when the nozzle is horizontal is shown in Figs. 7 and 9. The upper lever 56 is held out at the side by the

nozzle while the lower lever 58 is in supporting position beneath the nozzle. In this position the nozzle is inoperative and is safely maintained away from the card clothing so that it cannot interfere with the carding operation in any way.

Thereafter, when it is desired to return the nozzle to operative position, the operator reaches over the side board and pulls on handle 64, swinging lever 58 clockwise far enough to permit nozzle 22 to clear its end. As the lever 58 moves to the side of the nozzle, the nozzle commences its descent and as soon as it passes the end of the lever 58, then the nozzle falls the rest of the way to vertical position. While this is going on, lever 56 moves from the position shown in Fig. 9 out of engagement with the body of the nozzle to a crosswise position where it will then be encountered by the extensions 48 and 50 as they swing from the horizontal position of Fig. 9 to the vertical position of Fig. 6. The lower portions of the extensions 48 and 50 are bevelled as at 82 (see Fig. 14). When this bevelled portion hits the upper edge of lever 56 as the nozzle is descending, lever 56 will again be swung to one side permitting the extensions to pass thereby. Then, when the nozzle is finally vertical, the extensions will reach a point permitting lever 56 to snap back and over as shown in Figs. 6, 13 and 14. As soon as lever 56 is in this position, the nozzle is locked against further movement and is in correct operating position for the cleaning operation about to be performed. Since the nozzle has pivoted about axis 44 which is fixed vertically in relation to the card clothing, it follows that the lower contracted end 84 of the nozzle will be at the exact same distance from the card clothing that it was prior to being swung to horizontal position. In other words, so long as the nozzle remains properly clamped to collar 38, there is no chance of the nozzle getting out of adjustment with respect to proper clearance from the card clothing for maximum cleaning effectiveness.

Having returned the nozzle to vertical position, the operator then applies the suction hose 86 to the upper end 80 of the nozzle. The method of attaching the hose to the nozzle is shown in Figs. 3, 10 and 11. The suction hose 86 has an end connector 88, preferably of metal, in the form of a cylindrical member with an end flange 90 adapted to fit snugly over nozzle end 80. The operator merely slides the connector 88 over the end 80 and in so doing, the flange 90 will engage the side of a spring latch 92, pushing the latch to one side as the connector moves downwardly until the position shown in Fig. 10 is reached. At this point, latch 92 snaps back over flange 90, locking the hose to the nozzle.

The spring action of latch 92 is maintained by the use of a resilient rubber sleeve 93 and may be varied, if desired, by adjusting the screw threaded and headed support 94. In order to insure that the suction hose will be attached to the nozzle without improper twist therein, the connector 88 is slotted, as shown in Figs. 10 and 11, which slot drops over a short pin 89 which is permanently affixed to the side of the upper end 80 of the nozzle. With the hose again attached to the nozzle, the operator may then apply the belt to pulley 24 so that the nozzle 22 will recommence its back and forth cleaning movement across the cylinder. It will be understood that whenever the cleaning operation is performed, the cylinder will be rotated at a speed which will produce the best cleaning result. During periods of non cleaning operation, the suction hose may be removed by moving latch 92 outwardly, thereby freeing flange 90. The operator's finger, when actuating the latch, is protected from being scraped by flange 90 by the finger guard 114.

As was pointed out above, it may be more convenient in some installations to have the nozzle come to rest during non cleaning periods at the left rather than at the right of the carding machine. Therefore, I have designed the bracket 23 in a manner which will permit it to be placed in reverse position on the guide bar 18 and screw

housing 20. As can be seen in Fig. 6, the shaft 60 that carries levers 56 and 58 is mounted on a larger base 95 which fits within a corresponding cavity in a centrally located boss 96 on the top of sleeve portion 32. The base 95 is secured in position by the set screw 98. On the bottom side of sleeve portion 32 is another boss 100, the same size as boss 96. This lower boss holds the end 102 of the casing 104 which contains the spring 106 that continuously urges dog 28 into the thread of screw 21. On the cooperating support 34 there is an adjustable screw 110 which positions the support properly with respect to bar 18. On the rear of the web 36 there is a second boss 112, symmetrically located with respect to the other boss 46. Thus, it is believed apparent that the collar 38 and nozzle 22 could be disconnected from the bracket by removing pin 44, the shaft 60 could be removed from boss 96, and the finger pressing mechanism could be removed from boss 100. It would then be possible to invert the bracket so that the web 36 would face in the opposite direction. The shaft 60 could then be reinserted in boss 100 which would now be on top and the levers 56 and 58, being symmetrical, would likewise be replaced on shaft 60 in reversed position so as to be on that side of the nozzle away from the web 36, and the spring pressed finger mechanism could be installed in boss 96 which would now be on the bottom. The arms 40 and 42 could then be pinned to boss 112. With these changes, the nozzle could then be stopped at the left of the cylinder, as viewed in Figs. 1 to 5 and the nozzle, when swung to inactive position, would swing upwardly to the right. Having bracket 23 reversible in this manner permits economy of manufacture and convenience for the carding machine operator.

In Figs. 1, 2, 4 and 5, the side boards 14 and 16 are shown between the supporting bearings of the carding machine elements and the ends of the cylinder and thus act to limit the lateral movement of the nozzle. In some installations the pulleys driving the workers and strippers are located inside the poppet bearings and the belt which drives these pulleys runs close to the end of the cylinder. The belt thus prevents lateral movement of the nozzle beyond the end of the cylinder in the same manner as the side boards shown in Figs. 1 and 2. Thus, in either case, whether the side boards or the belt limit the movement of the nozzle, it is desirable that the nozzle be capable of being swung inwardly and away from cylinder during noncleaning periods. In the construction shown, the locking means for securing the nozzle in its swung-away position has been designed to hold the nozzle substantially horizontal with its axis generally parallel to the axis of the cylinder. However, it will be understood that it is not essential that the nozzle be swung through a full 90° arc, as shown. It might be swung through a lesser arc and maintained in such position provided the end of the nozzle is entirely clear of the fibers on the card clothing while the carding machine is in normal operation.

The suction hose has been illustrated and described as being removably connected with the upper end of the nozzle. This makes for convenience in swinging the nozzle to inoperative position and enables the operator to remove the suction hose to a position where it cannot become entangled with the carding machine during the carding operation. It will be understood, however, that the swing-away movement of the nozzle may be conducted whether or not the suction hose is affixed thereto.

It is my intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure which do not constitute departures from the spirit and scope of the invention.

I claim:

1. In combination, a carding machine cylinder with card clothing thereon, a vacuum nozzle for cleaning said clothing, means for supporting said nozzle and for maintaining its end in operative position a constant distance from the clothing of said cylinder, means for moving said

nozzle axially of said cylinder to perform said cleaning operation, means for stopping the movement of said nozzle near an end of said cylinder, a pivoted connection between said nozzle and supporting means permitting said nozzle, while stationary, to be swung away from said operative position and inwardly of the end of said cylinder near which said nozzle has been stopped, said pivoted connection being located on the side of said nozzle opposite from the direction in which said nozzle is swung and locking means for holding said nozzle selectively in operative or swung away position.

2. In combination, a carding machine cylinder with card clothing thereon, a vacuum nozzle for cleaning said clothing, means supporting said nozzle in cleaning position with its end close to the surface of said cylinder, means for moving said nozzle across said cylinder, means preventing travel of the end of said nozzle beyond the end of said cylinder, a pivoted connection between said nozzle and its supporting means whereby the end of said nozzle may be swung away from said cylinder and inwardly thereof, said pivoted connection being located on the side of said nozzle opposite from the direction in which said nozzle is swung and locking means for holding said nozzle selectively in operative or swung away position.

3. In combination, a carding machine cylinder with card clothing thereon, a guide bar and traversing screw parallel to each other and parallel to the axis of said cylinder, a bracket carried by said bar and screw to receive motion back and forth across said cylinder from said screw, a vacuum nozzle for cleaning said clothing carried by said bracket by means of a pivoted connection therebetween permitting said nozzle to be maintained in operative cleaning position between said guide bar and traversing screw with its end close to said cylinder or to be swung away from said operative position and inwardly of said cylinder and locking means carried by said bracket for holding said nozzle selectively in operative or swung away position.

4. In combination, a carding machine cylinder with card clothing thereon, a vacuum nozzle for cleaning said clothing, said nozzle having its entrance end of greater dimension axially than circumferentially of said cylinder, means for supporting said nozzle and for maintaining it in operative position a constant, small distance from the clothing of said cylinder, means for moving said nozzle axially of said cylinder, means for stopping said nozzle in its movement with respect to said cylinder close to one side of said cylinder, a pivoted connection between said nozzle and supporting means, said connection located laterally of the end of said nozzle and permitting the entrance end of said nozzle to be swung inwardly of said cylinder without engagement with said card clothing to an inoperative position and means for maintaining said nozzle in said inoperative position.

5. For use with a carding machine, the combination of a bracket comprising a sleeve adapted to be placed on a traverse screw, means on said sleeve for engaging said screw, a cooperating support adapted to be placed on a guide bar, a web connecting said sleeve and cooperating support, a vacuum nozzle pivotally mounted intermediate its ends on said bracket and extending between said sleeve and support, means for maintaining said nozzle substantially at right angles to the center lines of said sleeve and cooperating support and means for maintaining said nozzle at a second position in which it is at an angle with respect to the said center lines that is substantially less than 90° and in which said pivot is on the under side of said nozzle.

6. For use with a carding machine, the combination of a supporting bracket comprising a sleeve adapted to be placed on a traverse screw, means on said sleeve for engaging said screw, a cooperating support adapted to be placed on a guide bar parallel to said traverse screw, and a web connecting said sleeve and cooperating support, a vacuum nozzle pivotally connected to said bracket and extending between said sleeve and cooperating support, the said web acting as a stop to engage said nozzle to prevent said nozzle being swung in one direction beyond right angles with respect to the center lines of said screw and guide bar, means for releasably locking said nozzle in engagement with said web and means for releasably holding said nozzle in a second position in which it is swung away at a substantial angle from its previous position of engagement with said web and in which said pivot is on the underside of said nozzle.

7. The combination of a supporting bracket and vacuum nozzle for use in cleaning the clothing of a carding machine cylinder, said bracket comprising a sleeve adapted to be placed on a traverse screw, a dog connected to said sleeve for engaging said screw, a cooperating support adapted to be placed on a guide bar parallel to said traverse screw, a web connecting said sleeve and cooperating support and having a curved inner surface, a vacuum nozzle pivotally affixed to said web with a portion thereof normally in engagement with said curved surface, two levers pivotally mounted on said bracket and each normally urged by a spring against the side of said nozzle that is opposite said pivoted connection, an engaging member on said nozzle positioned below the first of said levers to prevent upward swinging of said nozzle so long as said lever remains in normal position, the second of said levers being below said first lever, said nozzle capable of being swung upwardly when said first lever has been swung away from said nozzle far enough to clear said engaging member, said second lever capable of being swung far enough to permit said nozzle to pass thereby, said spring causing said second lever to swing back to a position under said nozzle when said nozzle has been raised thereabove thereby to hold said nozzle in a raised position.

8. In combination, a carding machine cylinder with card clothing thereon, a vacuum nozzle for cleaning said clothing, means for supporting said nozzle and for maintaining its end in operative position a constant distance from the clothing of said cylinder, means for moving said nozzle supporting means and said nozzle axially of said cylinder, a connection between said nozzle and supporting means permitting said nozzle to be raised from said operative position and locking means mounted on said nozzle supporting means and cooperating directly between said nozzle supporting means and said nozzle for holding said nozzle selectively in operative or inoperative swung away position.

9. In combination, a carding machine cylinder with card clothing thereon, a vacuum nozzle for cleaning said clothing, means for supporting said nozzle and for maintaining its end in operative position a constant distance from the clothing of said cylinder, means for moving said nozzle axially of said cylinder to perform said cleaning operation, means for stopping the movement of said nozzle near an end of said cylinder, a pivoted connection between said nozzle and supporting means permitting said nozzle while stationary to be swung away from said operative position and inwardly of the end of said cylinder near which said nozzle has been stopped and locking means connected to said nozzle supporting means for holding said nozzle selectively in operative or inoperative swung away position.

10. For use with a carding machine the combination of a bracket comprising a sleeve adapted to be placed on a traverse screw, means on said sleeve for engaging said screw, a cooperating support adapted to be placed on a guide bar, a web connecting said sleeve and said cooperating support, a vacuum nozzle pivotally mounted on said bracket, means for maintaining said nozzle in a plane substantially at right angles to the center lines of said sleeve and cooperating support and means for maintaining said nozzle at a second position in which it is at an angle with respect to the said center lines that is substantially less than 90°, said bracket being symmetrical

with respect to said sleeve, web and cooperating support whereby said bracket may be inverted with respect to said traversing screw and guide bar and said vacuum nozzle may be pivotally mounted on said bracket in reverse position with respect to said web and said means for maintaining said nozzle at the said positions may likewise be reversed with respect to said bracket thereby permitting said nozzle to swing in the opposite direction with respect to said traverse screw.

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